

i2 Solutions on the IBM erver iSeries Server An Implementation Guide

Learn about i2 Technologies products that are available for the iSeries server

Follow the easy, step-by-step installation instructions

Acquire helpful operational tips and techniques

Dan Sundt Ron Devroy Manfred Engelbart Karen Weatherby

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International Technical Support Organization

i2 Solutions on the IBM @server iSeries Server: An Implementation Guide

June 2002

- Take Note!

Before using this information and the product it supports, be sure to read the general information in "Notices" on page ix.

First Edition (June 2002)

This edition applies to Version 4 Release 5 and Version 5 Release 1 of the iSeries Operating System OS/400, Program Number 5769-SS1 and 5722-SS1.

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Preface

This IBM Redbook offers a collection of knowledge gained from IBM @server iSeries server professionals who have experience with i2 and the iSeries server. This detailed guide explains the concepts and specific tasks associated with the implementation of the following products on the iSeries server:

- i2 Active Data Warehouse
- i2 Demand Planner
- i2 Factory Planner
- i2 Link
- i2 Supply Chain Planner
- Merant SequeLink (used by i2 Link)

The information in this redbook covers:

- An overview of the structure, features, and functions of the i2 products supported on the iSeries server
- Implementation tasks and techniques necessary to install and properly setup i2 on the iSeries server
- Available support for i2 and the iSeries server

This redbook is designed to assist technical people among i2 customers, business partners, and service representatives. It targets those professionals who are directly involved with the installation and implementation of a total business solution consisting of iSeries server hardware, OS/400, i2 solutions, and supplemental solution products.

The team that wrote this Redbook

This Redbook was produced by a team of specialists from around the world working at the International Technical Support Organization Rochester Center.

Dan Sundt works at IBM and has ten years of experience with the iSeries server, mainly working on various teams within the IBM Rochester iSeries Support Center. He is currently part of the IBM Americas Advanced Technical Support (ATS) Solutions Center, specializing in i2 on the iSeries server. He has been working with i2 on the iSeries server for almost two years and was the project leader for this Redbook.

Ron Devroy is a Staff Software Engineer working as an ERP/SCM support focal point in the Rochester iSeries Support Center. He has worked at IBM for 24 years in such positions as Advanced Products Customer Service Representative in the field, Senior Automated Equipment Technician in PC manufacturing, System Programmer for S370 VM/XA and VM/HPO, and System Programmer for iSeries Licensed Internal Code. He has also developed and taught iSeries database and iSeries problem determination courses.

Manfred Engelbart is a Solution Engineer and SAP Certified Basis Consultant in IBM Germany. He belongs to the EAS Solution Sales team in the central region. Manfred has 12 years of experience in the iSeries field and has worked at IBM for 26 years.

Karen Weatherby is a Consulting I/T Specialist in e-business Technical Sales, IBM Americas, specializing in i2 on the iSeries server. She has 17 years experience with IBM midrange products providing technical, marketing, and services support. She has worked on the AS/400 and iSeries server in various capacities since it was announced in 1988. Previous accomplishments within IBM include achieving IBM Professional Certification as an I/T Specialist and Project Manager. She is also recognized as an award winning speaker at COMMON and holds Project Management Certification from the Project Management Institute. Karen has worked at IBM for 25 years.

Thanks to the following people for their invaluable contributions to this project:

Yessong Johng Aco Vidovic International Technical Support Organization, Rochester Center

- Tracy Bashore Doug Fiesel Dave Larson Joe Marsh Bill Meinhardt Paul Nordlund Michael Norris Daniel Orme Lakshmi Prabha Deb Smith Kay Tate George Timms **IBM Rochester**
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Chapter 1. Introduction to i2 on the iSeries server

This chapter introduces i2 Technologies, Inc. and the i2 products that are available on the iSeries server. It includes an overview of the iSeries platform and the advantages of using i2 with the iSeries server.

1.1 i2 Technologies, Inc. overview

This section provides an overview of i2 Technologies, Inc. It also introduces the i2 products.

1.1.1 Company

i2 Technologies, Inc. is a Dallas, Texas-based company founded in 1988 and has customers worldwide. They offer intelligent planning and optimization software that helps companies maximize efficiency, collaborate with suppliers and customers, conduct intelligent e-business over the Internet, and become more responsive to market demand. In this redbook, the focus is on the comprehensive i2 supply chain optimization software. The cycle of "buy-move-store-sell" is what is referred to as the *supply chain*.

— Note –

Starting with the 5.0 release, i2 Technologies renamed their Rhythm products to *i2 TradeMatrix*. Then, with the *i2 Five.Two* release, they dropped TradeMatrix from the name. You still see references to "Rhythm" with pre-Five.Two products and references to "TradeMatrix" with i2 Five.Two products.

1.1.2 Products

i2's solutions offer an intelligent answer for decision-making across an enterprise. i2's software optimizes and integrates key business processes, while delivering intelligent e-business through collaboration with trading partners. i2 offers a complete solution for Business Process Optimization (BPO) by offering the optimization, integration, and forward visibility required for high-velocity business. The i2 solution has delivered billions of dollars in measurable value for major companies in a wide range of industries.

The i2 products that are currently available on the iSeries server include:

- i2 Active Data Warehouse
- i2 Demand Planner
- i2 Factory Planner
- i2 Link (previously referred to as RhythmLink)
- i2 Supply Chain Planner

The following sections briefly describes each product.

1.1.2.1 i2 Active Data Warehouse

Active Data Warehouse provides:

- The accessibility of a single data repository
- The simplicity of one-to-many integration
- The ease of publish/subscribe messaging

- Persistent storage (where required)
- A platform for future expansion of i2's global decision-support capabilities

As a single repository of planning data, Active Data Warehouse serves as a central repository for all information pertaining to decision-support. Users may access archives of different versions of information. This includes previous plans within Active Data Warehouse, providing planners access to consolidated information from across the enterprise.

Active Data Warehouse improves user access to data and streamlines the data flow between transaction systems and the advanced planning engines. This results in seamless implementation and continuous low maintenance in the most complex, multi-enterprise supply chain environments.

As part of i2's e-business framework, Active Data Warehouse can be quickly and easily integrated with ERP systems from vendors such as SAP, Oracle Manufacturing, J.D. Edwards, and SSA. It provides a single data repository for all applications. This significantly promotes the sharing of information between applications and users across the supply chain. It also enables i2 to model supply chains more accurately than any other technology available. Configuration changes are easier to maintain. In addition, Active Data Warehouse enables easy extension of the supply chain to trading partners or other supply chains within the enterprise.

Active Data Warehouse provides a consistent repository for data. This ensures the planning environment always acts on the most current information. Active Data Warehouse gives you the universal data repository you need to generate truly comprehensive, dynamic supply chain models. By ensuring consistent data structures, Active Data Warehouse speeds implementation. This single data warehouse solution improves integration through:

- Common modeling
- Tight database interaction
- Secure publish/subscribe messaging capabilities

Active Data Warehouse is not bound by the limitations of fixed data structures. This flexibility enables it to accommodate enterprise data regardless of the format. Active Data Warehouse interacts with any data structure and enterprise to create a powerful common data platform for maximum collaborative success.

1.1.2.2 i2 Demand Planner

i2 Demand Planner is a forecasting and demand planning decision support system. You can create projections into the future based on history, past events, and planned (or estimated) future events. This powerful forecasting capability helps you forecast and plan sales and inventory cycles better. It also helps you analyze and evaluate forecast performance.

The demand planning process requires input from various groups within the supply chain planning process. Since each group is responsible for providing different information, it may use the system differently. For example, a sales representative who provides input to the forecast only needs basic Demand Planner features. However, a demand planner needs its sophisticated forecasting tools. Demand Planner supports these different approaches through the use of custom-designed spreadsheets (called *bookmarks*) to provide information unique to each user of the system.

You can work in Demand Planner regardless of whether you are connected to the network. Through the Disconnect Mode of the Extended Manual Adjust Matrix (XMAM), you can carve out a session, download it, make changes, log back in, and upload the changes to the server.

Demand Planner supports all forecasting methodologies (such as top-down, bottom-up, and middle-out) through its customizable toolbox approach. It comes with a wide range of predefined forecasting techniques, including:

- Exponential smoothing
- Moving averages
- Multiple regression
- Fitting straight lines to the data
- Adjusting for effects such as trends and seasonality
- A "PickBest" function that helps you select the best forecasting technique for a demand pattern

You can develop sophisticated forecasts based on the impact of such factors as promotions, price changes, competitive activities, and product life cycles. The powerful allocation capability allows you to update the database with the forecast results.

In addition to the pre-defined forecasting techniques, Demand Planner comes with its own modeling language. This language allows you to create custom models to support the unique needs of a company's demand planning process.

Changing the forecast is always a necessary part of the demand planning process. The ability to track these changes through the use of comments is integral to Demand Planner. You can create comments at any location in the hierarchy, and you can insert pictures and attach files to comments.

Forecast cycle times can be drastically reduced through the Demand Planner Batch Client function. By defining groups of processes to run consecutively, you can reduce manual intervention and speed the process.

Another key element of the demand planning process is the need to analyze forecast data through the use of reports. i2's next-generation reporting tool, i2 Analyzer for Demand Planner, makes this possible. This a reporting application that provides the ability to design, print, and view forecast data (the old reporting tool, i2 Demand Analyzer, will be phased out soon).

You can also export Demand Planner data to other software packages. This allows you to take advantage of their specific capabilities such as slideshows, advanced reports, and complex graphs.

i2 Demand Planner - Administrator

i2 Demand Planner - Administrator is an application designed to simplify the tasks for creating and maintaining Demand Planner and Demand Analyzer databases. It includes most of the functions previously handled by the Demand Administrator Utilities. It also includes the Extract Profile functions originally released as a standalone application on the Windows NT platform and most of the functionality contained in Objsetup.

Future releases of Demand Planner - Administrator will include additional functions that are presently performed by various Demand Administrator Utilities.

i2 Demand Analyzer

i2 Demand Analyzer is a query, analysis, and presentation system. It allows headquarters and field sales personnel to access current sales, marketing, and planning data. It enables you to create reports and bookmarks that contain a template of your analyses. When you retrieve these templates, Demand Analyzer populates them with the most current data available.

Demand Analyzer is designed to be used by multiple users at various levels of sophistication. This is most evident in the two modes it offers:

- Author mode: Has all the functionality that more experienced Demand Analyzer users expect.
- **Reader mode**: Allows users with little or no experience in Demand Analyzer to effectively use the system.

Demand Analyzer employs an Executive Information System (EIS) approach to data and its various views. In general, most actions that you need to perform are accomplished by pointing and clicking a mouse.

Users do not have to relearn how to do similar tasks in other Windows-based software. For example, Demand Analyzer contains significant graphing and charting capabilities. A user who knows how to produce graphs in Microsoft Excel may choose to simply cut and paste data from Demand Analyzer into Excel to produce a graph.

Demand Analyzer is a good example of a system that is data driven. That is, what you see when you use it may be significantly different from what another user in another company sees. Further, what you do with it, or how you use it, may be different even among users in your own company. The goal of Decision Support Systems (DSS), such as Demand Analyzer, is to empower users with access to data and tools that support and enhance the decision making process.

Transaction Processing Systems (TPS), on the other hand, are designed to automate and aid the implementation of business processes and procedures. Most of these systems have a clear, published objective. For example, an Order Processing System is designed to do one thing – take orders from customers. This type of system has mandatory fields of information that need to be captured to support the order taking and fulfillment aspects of processing customer orders. Reporting and inquiry capabilities are generally limited to well-defined data that resides within the system.

The implementation of a TPS generally follows well-established guidelines. The company implementing the TPS normally adapts its policies and procedures to fit the structure of the system being implemented. A good DSS, however, adapts itself to the way you do business. Demand Analyzer, for example, lets you define what data you want to capture, how you want to view it, what reports you want to produce, and so on.

i2 Demand Analyzer and Demand Planner

i2 Demand Analyzer is often used in conjunction with the forecasting and demand planning system called *i2 Demand Planner*. When used together, these two software packages share a common database. The Demand Analyzer then acts as a reporting tool for the data generated by Demand Planner. Demand Analyzer functionality is the same regardless of whether it is used with Demand Planner or alone.

1.1.2.3 i2 Factory Planner

Planning and scheduling are among the most under used areas of opportunity for manufacturing competitiveness. Planners make decisions that have a major impact on the company's performance on a day-to-day basis. They make these decisions without the proper tools to provide them with the correct information on the shop floor or to provide visibility of the effect of their decisions on factory performance.

Factory Planner is a set of tools for:

- Master Production Planning
- Master Production Scheduling
- Material Requirements Planning
- Capacity Requirements Planning
- Dynamic Finite Scheduling

These tools are made available through a graphical user interface (GUI), consisting of pull-down menus that access each of the functions of Factory Planner.

Factory Planner enables rapid what-if analysis. It identifies problems and solves them or allows the user to interactively solve them. An important aspect of Factory Planner is the efficiency of its algorithms for heuristic optimizations. It acts as a cementing agent for formalizing synchronous flow production. Factory Planner simultaneously considers material and capacity constraints when developing the finite capacity master production schedule by using a technique called *Constraint Anchored Optimization* (CAO).

A *constraint* is anything that limits the performance of a system. It could be a resource, such as a work center with limited capacity, and material such as a part that prevents the completion of an order.

Constraints are dynamic and interdependent. They may change based on demand pattern or product mix. CAO optimizes the overall performance of the system by considering the trade-offs among conflicting objectives.

Factory Planner is an intelligent planning and scheduling system with the following properties:

- Decisions are based on the latest shop floor information.
- Incremental adjustments may be made without complete rescheduling.
- High quality decisions are made in limited time using *domain knowledge*. Domain knowledge is used to focus the search in areas with a high possibility of yielding good solutions. Important decisions are separated from unimportant decisions (few scheduling systems have this capability). A typical domain characteristic is a known bottleneck.
- Decisions are made using global rather than local criteria. Global information is filtered and combined with local information.
- Decisions are made at the appropriate temporal level. Planning is performed for a longer horizon and scheduling only for a shorter horizon. If detailed scheduling decisions are made too early, fluctuations or dynamics of the shop floor will render those decisions invalid. The scheduling horizon depends on the benefits of predictive scheduling and the stability of the environment.

- Hard constraints are not violated. Soft constraints are relaxed in a manner that best achieves system goals.
- The system and the planning or scheduling procedures are flexible and accommodate new goals, constraints, and operating conditions.

1.1.2.4 i2 Link

i2 Link is a client/server application that automates the movement, transformation, and integration of information from one data server to another using industry-accepted Internet technologies and middleware. Data sources can include relational database management systems (RDBMS), flat files, or Enterprise Resource Planning (ERP) systems. The i2 Link server engine integrates the information that these systems gather for use by i2 electronic Business Process Optimization (eBPO) engines. These may include:

- Factory Planner
- Supply Chain Planner
- Demand Planner
- Transportation Planner

i2 Link has a client graphical user interface that provides the interface to the Link engine.





Figure 1. i2 Link functional use diagram

1.1.2.5 i2 Supply Chain Planner

Supply Chain Planner is an innovative decision support system. It is designed to give supply chain decision makers unprecedented visibility of their supply chain. It also provides intelligent suggestions on how to plan it better. It is designed to work cooperatively with all the decision makers in the supply chain (for example, planners, managers, and sales personnel) to be more effective in their domain and with the other decision makers involved. Therefore, it must be customizable

to the needs of each of the varied decision makers in the supply chain. Supply Chain Planner is designed to be easily customized by its users.

Supply Chain Planner is a Truly Integrated Planning (TIP) system. There are many books, papers, and advertising on the importance of integrated planning. However, the integrated solutions that are presented are consistently disintegrated. The solutions may involve helping disintegrated planning packages to communicate or bringing disintegrated planning tools into one package. Putting one user interface over a set of tools and one database under a set of tools does not integrate the planning performed by the independent tools. And it does not provide the decision makers with the visibility and capabilities needed to perform Truly Integrated Planning.

Truly Integrated Planning involves the integration of:

- · Material and capacity planning
- · Factory and distribution planning
- Master and operational (execution) planning
- Manual and automated planning
- Make-to-stock and make-to-order planning
- Discrete and repetitive planning

Effective supply chain management depends on the ability to have integrated plans throughout the supply chain. Supply chains are typically diverse in their needs. Repetitive suppliers feed discrete manufacturers. An essentially make-to-stock facility is fed by a make-to-order facility and feeds standard components to an assemble-to-order packaging plant. The key to success is at the customer interface. Therefore, regardless of how well the manufacturing facility performs, if the distribution plan is faulty, the manufacturer will suffer. The key to success may be to satisfy their customers. In this case, the decision makers must see the complete supply chain responsible for that satisfaction to make the decisions that optimize that satisfaction.

For a more thorough discussion of Truly Integrated Planning and the other concepts on which Supply Chain Planner is based, see the i2 Supply Chain Planning Concept Manual. You can find it on the i2 Support Web site (http://support.i2.com) under the Documentation link. The file was called *scpconmanual.pdf* at the time this book was written.

For additional information on i2 Technologies Inc., see: http://www.i2.com

1.2 iSeries server overview

The iSeries server has a long and successful history worldwide. By the end of the last millennium, more than 700,000 iSeries servers were shipped to over 150 countries (including regions). More than 30,000 iSeries business applications are available worldwide, including over 2,700 applications for e-business. The reason for this success is founded in six basic factors, which are described in the following sections.

Architecture

The iSeries server has a layered architecture that is divided into the actual user interface (OS/400 operating system) and a Technology Independent Machine Interface (TIMI). This architectural concept has allowed the iSeries server to

undergo several fundamental technology changes, while protecting the customer's investment in information technology.

High level of integration

One of the key factors that differentiates the iSeries server from other servers is the level of hardware and software integration. For example, in a UNIX environment, customers are required to select software components from different vendors (operating system, database, system management software, and so on).

The iSeries server takes a different approach. Hardware, microcode, the operating system, and IBM middleware are tightly interlaced to allow maximum exploitation of all available computing resources. The operating system includes a complete range of licensed programs (middleware) and offers the highest level of integration. By effectively reducing the extent of integration required to be performed, this minimizes implementation costs, increases reliability, and provides customers with the highest level of "ease-of-use".

Interoperability

The iSeries server offers a wide range of communication capabilities and functions that enable it to communicate with other IBM and non-IBM systems. Communications protocols supported by the iSeries server include:

- TCP/IP
- SNA
- OSI
- NetBIOS
- IPX/SPX
- AnyNet
- FDDI
- Synchronous Data Link Control (SDLC)
- X.25

Client/server capability

The iSeries server can operate with the following client platforms:

- Microsoft Windows 3.1, Windows 3.11, Windows 95, Windows 98, Windows NT, and Windows 2000
- UNIX (IBM-AIX, HP-UX, SUN-SPARC)
- Apple MacIntosh
- IBM OS/2

Scalability

iSeries servers cover a wide range of performance capacities. Models 1xx, 2xx, 7xx, and 8xx provide many processor options to choose from based on the performance requirements. At the high end of these servers, the iSeries server 840 with 24 central processors provides 330 times the performance boost over the smallest Model 250.

Price/performance

Many independent analysts have confirmed that the iSeries server represents a cost-effective platform in the long run. The iSeries server's extensive integration yields significant cost advantages.

For additional information on the iSeries server, see: http://www.iseries.ibm.com

1.3 The i2 and IBM partnership

The IBM and i2 partnership delivers the industry's first complete end-to-end solution for B2B e-commerce and collaboration. It meets three critical aspects of accelerating the B2B economy:

Full-service marketplaces

IBM and i2 best-of-breed technologies create an integrated B2B marketplace solution that enables businesses to rapidly build and deploy full-service marketplaces.

Integrated supply chain

IBM and i2 provide e-marketplace solutions. They help businesses effectively integrate their processes and B2B-enable their buying, selling, and supply chain processes from order to fulfillment.

Range of open services

IBM and i2 work together to deliver a common suite of open network-based commerce services. This includes payment, logistics, auction, and collaboration to power both enterprises and marketplaces. Services are available both as hosted Internet solutions and software solutions. This provides customers with rapid time-to-value, robust marketplace functionality, and a comprehensive solution that is available now.

For additional information on the i2 IBM alliance, visit the following Web sites:

- http://www.i2.com/ibm
- http://www.ibm-i2.com

1.4 Why i2 and the iSeries server

The iSeries server is the ideal platform for supply chain management (SCM) and a natural extension for customers already running ERP applications. With built-in Web serving support for Java and messaging technology, such as MQSeries, iSeries servers make it easy for businesses to integrate SCM with critical ERP and e-business applications.

And the iSeries server delivers unprecedented time-to-market for small-to-mid-sized companies installing their first enterprise-scale SCM solution. For those fast-growing small and mid-sized businesses that need a scalable SCM solution, the iSeries server delivers rapid installation, easy integration with other business critical systems, and a low cost of ownership with high availability.

1.4.1 Advantages of the iSeries server

Consider the advantages of the iSeries server as explained in the following sections.

Installation at the speed of e-business

SCM implementations on the iSeries server are consistently faster than those on UNIX or Windows NT platforms. And iSeries servers come with a Java Virtual Machine (JVM) that separates software from the underlying hardware

environment. This enables iSeries server customers to take advantage of rapid development tools, such as IBM WebSphere.

Server flexibility and consolidation

The iSeries server is capable of supporting all i2 applications on a single server. This flexibility allows a company to take full advantage of the hardware and software resources available. Fewer systems to manage means less support costs. Logical partitioning (LPAR) is not required, but may be considered if mixing i2 workloads and other application workloads on the same server.

Scalability

The iSeries server is scalable from a one-way system to a 24-way system. This allows for system and capacity growth as your business grows.

Airtight security

OS/400 is the market-proven operating system for the iSeries server. It includes built-in security features and an object-based architecture designed to protect data and application integrity.

Low Total Cost of Ownership and 99.98 percent availability

The iSeries's market-proven reliability makes it one of the most productive SCM platforms available today. It has consistently out-performed Windows NT and UNIX servers in major Total Cost of Ownership (TCO) studies.

Businesses can significantly reduce costs and downtime by moving from Intel-based servers to an iSeries server. This is according to the white paper "Server Cost of Ownership in ERM Customer Sites: A Total Cost of Ownership Study", published 27 September 2001, by industry analyst International Data Corp. (IDC). You can find a copy of the study on the Web at: http://www.ibm.com/servers/eserver/iseries/conslt/pdf/idctco.pdf

Be sure to review the following tables in the study:

- TCO Summary in Small and Large Environments
- Key Cost/Performance Metrics
- Productivity Metrics

For information on iSeries supply chain management, see the Web site at: http://www.iseries.ibm.com/scm

1.4.2 i2 products on the iSeries server

With the release of OS/400 V4R5M0 and the introduction of the OS/400 Portable Application Solutions Environment (OS/400 PASE), iSeries servers can now run AIX applications. The i2 products Demand Planner, Factory Planner, Link, and Supply Chain Planner run in this environment. The i2 Active Data Warehouse product was previously available on the iSeries server as a native DB2 UDB SQL collection with associated Java programs.

The i2 products used in this Redbook are a mix of 4.3.1, 5.0p1, 5.0.1, 5.1.1, and the latest i2 Five.Two (5.2).

Chapter 2. iSeries installation requirements and information

This chapter describes the hardware and software requirements for running i2 products on the iSeries server. It includes:

- OS/400 Portable Application Solutions Environment (OS/400 PASE) and Qshell definitions
- iSeries server setup details
- Details on how to request an i2 software license key

As mentioned in Chapter 1, "Introduction to i2 on the iSeries server" on page 1, Demand Planner, Factory Planner, Link, and Supply Chain Planner run in the PASE environment. These i2 products have an "engine" that starts on the iSeries Server in a PASE shell. Each product has a graphical user interface (GUI) client that connects via TCP/IP to the server where the engine is running. The i2 products use ASCII files that reside as stream files or flat files in the Integrated File System (IFS) on the iSeries server.

Since Active Data Warehouse is simply a repository for data, it does not require the PASE environment. However, it uses the Qshell interpreter and a standard SQL collection. If you are using the Data Loader component, you also use Java and XML files. Active Data Warehouse comes with a Web GUI client.

In general, the preliminary steps for implementation are:

- 1. Review iSeries server hardware and software requirements for compliance.
- 2. Review PC client requirements.
- 3. Obtain i2 software.
- 4. Complete iSeries server setup requirements.
- 5. Review PASE and Qshell usage information.
- 6. Begin i2 product installation.

2.1 iSeries server requirements

This section provides information on the hardware and software requirements to support i2 products on the iSeries server.

2.1.1 Hardware

IBM AS/400e servers (available September 1997) or the newer iSeries servers are required to run PASE and the i2 products. These systems came out with OS/400 V4R1M0 (6xx and sxx) or later (1xx, 2xx, 7xx and 8xx). The newer 2xx and 8xx iSeries servers with the SStar processor family deliver the best performance when running i2 applications.

Most RISC processors used in iSeries servers are designed to support both PowerAS and PowerPC architectures. They provide the supervisor with the ability to switch architectures on demand. However, hardware implementation issues prevent IBM from using PowerPC mode on some older existing systems without jeopardizing user data or system integrity. System License Internal Code (SLIC) prevents OS/400 PASE programs from running on any system that is not AS/400e or iSeries hardware.

2.1.2 Software

Demand Planner, Factory Planner, Link, and Supply Chain Planner require the following OS/400 components:

- Operating System OS/400, V4R5M0 (5769-SS1) or V5R1M0 (5722-SS1)
- Qshell Interpreter, option 30 of OS/400
- PASE, option 33 of OS/400
- iSeries TCP/IP Connectivity Utilities/400 (5769-TC1) or (5722-TC1)

i2 Five.Two is only supported on OS/400 V5R1M0, while the older 5.x versions are only supported on OS/400 V4R5M0.

To determine if these products are installed, follow these steps:

- 1. Go to the Work with Licensed Programs menu using the following command: GO MENU(LICPGM)
- 2. Select option 10.
- 3. Display the installed licensed programs. Or use the Display Software Resources (DSPSFWRSC) command press Enter.
- 4. You see a list of software products installed on the system. Page down and review the panels to verify that the required Licensed Program Products (LPPs) are installed. Examples are shown in Figure 2 and Figure 3.

- PASE -

PASE appears as "Private Address Space Environment" on OS/400 V4R5M0. This was the internal development name. When PASE was formally announced by IBM, it was officially named "Portable Application Solutions Environment". On OS/400 V5R1M0, it appears as "Portable App Solutions Environment".

			Display Software Resources		
Pacquirca				System:	12
TD	Option	Festure	Description		
5769551	30	5050	OS/400 - OShell Interpreter		
5769551	30	2924	OS/400 - OShell Interpreter		
5769551	31	2924	OS/400 - Domain Name System		
5769551	32	5050	OS/400 - Directory Services		
5769SS1	32	2924	OS/400 - Directory Services		
5769551	33	5111	OS/400 - Private Address Space Environmen	t	
5769SS1	34	5050	OS/400 - Digital Certificate Manager		
5769SS1	34	2924	OS/400 - Digital Certificate Manager		
5769SS1	35	5050	OS/400 - Cryptographic Service Provider		
5769SS1	35	2924	OS/400 - Cryptographic Service Provider		
5769SS1	36	5112	OS/400 - PSF/400 1-20 IPM Printer Support		
5769SS1	37	5113	OS/400 - PSF/400 1-45 IPM Printer Support		
5769SS1	38	5114	OS/400 - PSF/400 Any Speed Printer Suppor	t	
				More	
Press Ent	er to co	ntinue.			
F3=Exit	F11=Dis	play libr	aries/releases F12=Cancel		
F19=Displa	ay trade	marks			

Figure 2. DSPSFWRSC command results showing option 30 and option 33 of OS/400

	Display Software Resources		
	Sy	stem:	I2
Feature	Description		
5050	AS/400 TCP/IP Connectivity Utilities/400		
2924	AS/400 TCP/IP Connectivity Utilities/400		
5050	IBM AS/400 Integration for Windows Server		
2924	IBM AS/400 Integration for Windows Server		
5051	Integration for Windows NT 4.0		
2924	Integration for Windows NT 4.0		
5050	Client Access/400 Express for Windows		
2924	Client Access/400 Express for Windows		
5050	Client Access/400 Windows Family Base		
2924	Client Access/400 Windows Family Base		
5050	AS/400 Tools For Developers		
2924	AS/400 Tools For Developers		
5050	Qshell Utilities		
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		More.	
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arks			
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Figure 3. DSPSFWRSC command results showing 5769-TC1

5. To determine the software product release level, press the F11 function key. You see a panel like the example shown in Figure 4. Verify that the release level for OS/400 and options 30 and 33 are V4R5M0 or V5R1M0.

,								
				Display	Software Re	sources	Gratom.	то
	Resource			Feature			System.	12
	ID	Option	Feature	Type	Library	Release		
	5769SS1	30	5050	*CODE	OSHELL	V4R5M0		
	5769SS1	30	2924	*LNG	OSHELL	V4R5M0		
	5769SS1	31	5050	*CODE	QDNS	V4R5M0		
	5769SS1	31	2924	*ING	QDNS	V4R5M0		
	5769SS1	32	5050	*CODE	QDIRSRV	V4R5M0		
	5769SS1	32	29 24	*LNG	QDIRSRV	V4R5M0		
	5769SS1	33	5111	*CODE	QPASE	V4R5M0		
	5769SS1	34	5050	*CODE	QICSS	V4R5M0		
	5769SS1	34	2924	*LNG	QICSS	V4R5M0		
	5769SS1	35	5050	*CODE	QCCA	V4R5M0		
	5769SS1	35	2924	*LNG	QCCA	V4R5M0		
	5769SS1	36	5112	*CODE	QAFPLIB1	V4R5M0		
	5769SS1	37	5113	*CODE	QAFPLIB2	V4R5M0		
	5769SS1	38	5114	*CODE	QAFPLIB3	V4R5M0		
	Decar Det							
	PLESS ENU	er lo co	iiciiue.					
	F3=Exit	F11=Dis	play desc	riptions	F12=Cance	l F19=Display	trademarks	

Figure 4. DSPSFWRSC command results showing OS/400 version and release levels

See the documentation that comes with each product for instructions about installing the software on your iSeries server. *Software Installation*, SC41-5120, contains information for installing OS400 and LPPs. You can also go to the Work with Licensed Programs menu using the following command:

GO MENU(LICPGM)

Then select option 11.

Install the licensed programs, or use the Restore Licensed Program (RSTLICPGM) command directly.

Link requires the following products on OS/400 V4R5M0 if you are going to connect to an iSeries SQL database using an ODBC interface:

- Merant SequeLink 4.5.1 client for AIX
- Merant SequeLink Server for DB2 UDB for iSeries

Merant SequeLink products are ordered from i2 Technologies and are usually available at no cost to i2 customers.

The Active Data Warehouse base product requires:

- Operating System OS/400 V4R4M0 or later
- DB2 Query Manager and SQL Development Kit for iSeries (5769-ST1) for OS/400 V4R4M0 or V4R5M0. On OS/400 V5R1M0, 5722-ST1 is not required for product installation because the Run SQL Statements (RUNSQLSTM) command is now a part of OS/400. However, we recommend it for other SQL support.

The Active Data Warehouse Data Loader component requires:

- The capability to create and compile a Control Language (CL) program
- iSeries Toolbox for Java (5769-JC1 or 5722-JC1)
- iSeries Developer Kit for Java (5769-JV1 or 5722-JV1), Java Developer Kit 1.1.7 or higher

Application Development ToolSet/400 (5769-PW1), called WebSphere Development Studio (5722-WDS) on OS/400 V5R1M0, is the standard method for creating a CL program. Alternative methods like using the native Edit File (EDTF) command may be used if Application Development ToolSet/400 is not available. Programs may be created on another system with the LPP and transferred to the target system via FTP as an alternative. You can find more information in C.1.4, "Editing a member of an OS/400 source physical file" on page 629.

A 5250 display connection or a PC with 5250 emulation software is required for installing the i2 products. The IBM Personal Communications and IBM Client Access Express/400 (5769-XE1 or 5722-XE1) products can provide 5250 support.

Certain functions and capabilities of the i2 products require the use of the Perl language for scripting. Discuss your particular requirements with your i2 implementation partner or consultant. Perl may be loaded and used in the PASE environment. It is available as part of PRPQ 5799-PTL discussed more in B.1, "iSeries Tools for Developers PRPQ (5799-PTL)" on page 561.

2.1.2.1 Program temporary fixes

IBM may discover a problem with software code running on the iSeries server, or IBM may want to deliver new code or a product enhancement. It does this by using program temporary fixes (PTFs). You can download these to the iSeries server through the Electronic Customer Support (ECS) modem or from the Internet. Or you can have them shipped to you on CD-ROM. PTFs can also be packaged together by function (group PTFs) or OS/400 software release (cumulative PTF packages). They are ordered through a special marker PTF. For customers running i2 on the iSeries server, it is important to stay current on fixes or enhancements as they become available.

Informational Authorized Problem Analysis Report (APAR) II12656 lists PTFs that customers who use i2 on the iSeries server should be aware of. Such examples include the ones for the PASE environment or the Edit File (EDTF) command.

To view Informational APAR II1265, follow these steps:

- 1. Go to the Web site: http://www.as400service.ibm.com
- 2. Click Authorized Problem Analysis Reports (APARs).
- 3. Click All Info APARs by Release.
- 4. Click the arrow to the left of **R440** and look for **II12656** (you have to click **Next** a few times to see it). Or you can click **Search**, type II12656, and then click the **Search** button.

You see the heading for Informational APAR II12656 with the title "i2 on the iSeries 400 using PASE: Required/recommended PTF list for V4R5/V5R1."

5. Click II12656 to view the Informational APAR.

An example of the OS/400 V4R5M0 section from the informational APAR is shown in Figure 5.

Authorized Problem Analysis Reports - APARs - Netscape							
File Edit View Go Communicator Help							
📗 🦋 Bookmarks 🤌	🛛 🦋 Bookmarks 🛯 🙏 Location: http://www.as400service.ibm.com/supporthome.nsf/document 🔽 🍘 What's Related 🛛 🔟						
<u>)/)/</u>							
	Return to Technical Support						
APAR#:	Ш12656						
Component:	INFOAS400 - AS/400 Information						
Release(s):	R440						
Abstract							
12 TRADEMATRI	IX ON THE ISERIES 400 USING PASE						
REQUIRED/RECO	DMMENDED PTF LIST FOR V4R5/V5R1						
Error Descriptio	<u>n</u>						
Last update	ed 10/09/01						
///////////////////////////////////////	•••••••••••••••••••••••••••••••••••••••						
V4R5 OS/400 (General						
SF99105 = La	atest XPF DB Fixpack						
SF99450 = La +	atest OS/4UU Cumulative PTF package (1296)						
5760-000							
ылыраны мрраато – (б	1154) Delayed Apply						
MF24410 (0	1154) Delayed Apply						
MF24681 - ((1231) Delayed Apply						
ME25305 - (1	1005) Delayed Apply						
MF25558 - (1	1100) Delayed Apply						
MF26784 - (1	1296) Delayed Apply						
MF27076 - (1	1000) Delayed Apply						
MF27122 - (1	1000) Delayed Apply						
*							
5769-881							
SF62644 - (0	J189) Immediate or Delay						
SF65648 - (1	1198) Immediate or Delay						
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EDTF							
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a = 1	Document: Done 📃 💥 🛂 🚳 💋 👔 🏑						

Figure 5. Informational APAR II12656 - OS/400 V4R5M0 section

An example of the OS/400 V5R1M0 section from the informational APAR is shown in Figure 6.

💥 Authorized Problem Analysis Reports - APARs - Netscape	
File Edit View Go Communicator Help	
👔 🦋 Bookmarks 🎄 Location: http://www.as400service.ibm.com/supporthome.nsf/document 🗾 🌗 What's Related	N
Return to Technical Support	
VER1 00/400 Company	′ ▲
SR00501 - Latest VDR DR Rivnack	
SE99501 = Latest OS/400 Cumulative DTE package (1302)	
NOTE: Cumulative PTE package (1226) has been withdrawn	
Do not apply this package. Order and apply the	
current package (1302).	
*	
5722-999	
MF26504 - (1114) Delayed Apply	
MF26505 - (1114) Immediate or Delayed Apply	
MF26586 - (1163) Immediate or Delayed Apply	
MF26811 - (1226) Delayed Apply	
MF27120 - (1302) Delayed Apply	
MF27126 - (1000) Delayed Apply	
MF27187 - (1302) Delayed Apply	
MF2/343 - (1000) Immediate or Delayed Apply	
- E722 cc1	
ST01298 - (1163) Immediate or Deleved Apply	
ST01250 (1105) Immediate or Delayed Apply	
ST01968 - (1000) Immediate or Delayed Apply	
*	
5722-WDS	
SI02069 - (1000) Immediate or Delayed Apply	
*	
EDTF	
SI01615 - (1302) Immediate or Delay	
*	
Note: Number in parentheses indicates cumulative package	
number	
(4-aigits) where 1000 indicates PTF is available but not	
part or an available CUM.	-
📓 = 🕒 Document: Done 🔤 💥 😼 🚳 🌠	11.

Figure 6. Informational APAR II12656 - OS/400 V5R1M0 section

To check the status of a PTF, you can use the Display Program Temporary Fix (DSPPTF) command, for example:

```
DSPPTF LICPGM (5722SS1) SELECT (SI01615)
```

If you see a message that states PTF 5722SS1-SI01615 *ALL not found, then you do not have the PTF on your system. If you see a Display PTF Details panel, select option 1 (General information) and then for the PTF status field. You should see *Temporarily applied*, *Permanently applied*, or *Superseded*.

Group PTF packages are available for many different software applications or functions. Table 1 shows the current list for OS/400 V4R5M0. Table 2 shows the current list for OS/400 V5R1M0.

Table 1. Group PTFs for OS/400 V4R5M0

Group PTF ID	Function
SF99240	WebSphere Application Server V4.0 Advanced Single Server for iSeries
SF99239	WebSphere Application Server V4.0 Advanced Edition for iSeries

Group PTF ID	Function
SF99162	IBM Connect for iSeries 5733-B2B V1R1M0
SF99161	IBM Connect for iSeries 5733-B2B V1R0M0
SF99142	WebSphere Standard 128 Bit Encryption 5733-AS3 V3R5M0
SF99138	WebSphere Advanced 128 Bit Encryption 5733-WA3 V3R5M0
SF99136	WebSphere Advanced 128 Bit Encryption 5733-WA3
SF99135	WebSphere Advanced 56 Bit Encryption 5733-WA2
SF99134	WebSphere Standard 128 Bit Encryption 5733-AS3
SF99133	WebSphere Standard 56 Bit Encryption 5733-AS2
SF99129	WebSphere Commerce Suite V5.1 for V4R5M0
SF99128	WebSphere Commerce Suite V4.1 for V4R5M0
SF99126	Net.Commerce V3.2 Enhancements with Payment Server V1.2
SF99105	Database - DB2 UDB for iSeries
SF99096	Hipers
SF99083	Network Station V2R1 for iSeries
SF99082	Network Station V1R3 for iSeries
SF99077	Backup Recovery Solutions
SF99068	Java
SF99037	Performance Tools for iSeries
SF99036	IBM HTTP Server for iSeries
SF99035	IBM HTTP Server (powered by Apache) for iSeries

Table 2. Group PTFs for OS/400 V5R1M0

Group PTF ID	Function
SF99501	Database - DB2 UDB for iSeries
SF99242	WebSphere Application Server V4.0 Advanced Single Server for iSeries
SF99241	WebSphere Application Server V4.0 Advanced Edition for iSeries
SF99229	WebSphere Commerce Suite V5.1 for V5R1M0
SF99228	WebSphere Commerce Suite V4.1 for V5R1M0
SF99164	IBM Connect for iSeries 5733-B2B V1R1M0
SF99163	IBM Connect for iSeries 5733-B2B V1R0M0
SF99156	IBM HTTP Server for iSeries
SF99147	WebSphere Advanced 128 Bit Encryption 5733-WA3 V3R5M0
SF99146	WebSphere Standard 128 Bit Encryption 5733-AS3 V3R5M0
SF99097	Hipers

Group PTF ID	Function
SF99078	Backup Recovery Solutions
SF99069	Java
SF99038	Performance Tools for iSeries

For additional information on iSeries server PTFs or APARs, see the Web site at: http://www.as400service.ibm.com

2.2 Client requirements

The client requirements for i2 products are documented in the individual implementation guides. The workstation GUI clients in general are supported by Windows 98, Windows NT, or Windows 2000. Windows NT is the most common or preferred client. For i2 products that support a Web GUI, supported browsers are Netscape 4.x and Microsoft Internet Explorer 5.x.

– Note –

The strategic direction for i2 is to migrate to all Web GUI clients.

Assuming no other applications are significantly competing for client resources, we recommend the common client workstation configuration as shown in Table 3.

Table 3.	i2 client	requirements
----------	-----------	--------------

Platform	СРИ	RAM	Free disk
Windows NT version 4 (SP5) recommended	P2-233 or greater	128 MB	200 MB
Windows NT version 4 (SP5) minimum	P166	96 MB	200 MB

Other requirements are a network card, TCP/IP connectivity to the iSeries server, and a video resolution of at least 800 x 600 to be used effectively.

Client PCs should have the ability to transfer files from the PC to the iSeries server. Using FTP, setting up a mapped network drive, or using Client Access Operations Navigator are various ways to move data. The PC needs a CD-ROM drive to load i2 software, retrieve sample data for testing, and access documentation. We recommend that the PC also have 5250 emulation capability. The IBM Personal Communications and IBM Client Access Express/400 (5769-XE1 or 5722-XE1) products can provide 5250 support.

2.3 PASE and Qshell

This section provides an overview of the PASE and Qshell environments. It also offers tips for using them.

2.3.1 PASE overview

OS/400 Portable Application Solutions Environment (PASE) is an integrated runtime environment for AIX (or other UNIX-like) applications running on the

iSeries server. It provides a broad subset of the Application Binary Interface (ABI) of AIX 4.3.3. As a real runtime environment (not an emulator), it does not suffer the drawbacks of an emulation environment. However, PASE is not an operating system and does not provide support for developing UNIX applications.

PASE is an optional, nominally priced feature of OS/400 (option 33). It requires AS/400e or iSeries processor-based machines to run. OS/400 V4R5M0 and V5R1M0 PASE ships with a subset of the AIX Version 4.3.3 shared libraries.

PASE uses the iSeries processor's ability to switch runtime modes to enable running PASE applications concurrent with iSeries Integrated Language Environment (ILE) applications. In fact, PASE is intimately integrated with the ILE environment, the iSeries file systems, and DB2 Universal Database for iSeries.

Figure 7 shows a graphical drawing of the PASE architecture. It can easily call Java (via a thin wrapper) and iSeries ILE applications. Therefore, it exploits all aspects of an iSeries operations environment.



Figure 7. Simplified view of the OS/400 PASE architecture

iSeries customers running applications ported using PASE do not use UNIX system operations. PASE applications run in iSeries jobs using standard work management (subsystems), the iSeries Integrated File System with standard save/restore operations, and standard iSeries security. No special system operations are required to run PASE applications.

Note

The PASE environment is not an AIX operating system or a development environment. Not all AIX commands are supported, and you cannot compile an AIX application on the iSeries server.

PASE is designed to accept direct ports from AIX. Ports from any other UNIX-based environment may require an initial port to AIX as the first step toward compatibility. The i2 products supported on the iSeries server were already ported to AIX and then "re-hosted" to the iSeries server to take advantage of the PASE AIX runtime environment.

The PASE shells and utilities run in ASCII. They do not provide conversion between ASCII/EBCDIC byte stream file data. The PASE shells and utilities listed in Table 4 are shipped with OS/400 option 33 (as symbolic links in directory /QOpenSys/usr/bin). AIX documentation describes the syntax and behavior of all the shells and utilities mentioned, except for the iSeries-unique utility system. This system provides an interface for invoking Command Language (CL) commands or programs from a PASE terminal shell.

Refer to the following Web site for information on AIX Version 4.3 commands. It may be useful when trying to use commands in PASE:

http://www.rs6000.ibm.com/cgi-bin/ ds_rslt?lang=en_US&viewset=Global&view=Commands

alias	compress	expr	ksh	DS	time
apply	CD	false	ln	psh	touch
ar	cpio	fc	locale	pwd	tr
awk	cch	fa	loomame	read	true
hannor	dan]i+	form	la	rou	time
baimer	CSPIIC	Igrep	15	Tev	суре
basename	cut	tile	mkdir	rm	ulimit
bc	date	find	mv	rmdir	umask
bdiff	dbx	fold	nawk	sed	unalias
bfs	dc	getconf	newform	sh	uname
bg	dd	getopt	nl	sleep	uncompres
bsh	diff	getopts	nm	sort	unexpand
cat	diff3	grep	od	split	uniq
cd	dircmp	hash	pack	strings	unpack
chgrp	dirname	head	pagesize	strip	untab
chmod	dspcat	hostname	paste	sum	wait
chown	dspmsg	iconv	patch	system	WC
chroot	du	id	pax	tab	what
cksum	dump	install	pcat	tail	which
cmp	echo	jobs	pr	tar	xargs
colrm	egrep	join	printenv	tee	yes
comm	env	kill	printf	test	zcat
command	expand				

Table 4. PASE-supplied AIX utilities through OS/400 option 33

For additional information on the PASE environment, see *Porting UNIX Applications Using AS/400 PASE*, SG24-5970. You should also see the Application Factory: OS/400 PASE Web site at:

http://www.iseries.ibm.com/developer/factory/pase

2.3.1.1 V5R1M0 OS/400 PASE enhancements

Significant enhancements to OS/400 PASE in V5R1M0 include:

- Support for the AIX 4.3 64-bit application model
- Additional runtime APIs, including:
 - named pipes (mkfifo())
 - mapped files and additional interfaces (mmap() munmap() mprotect() msync())
 - recvmsg() and nrecvmsg()

- sendmsg() and nsendmsg()
- AIX system logging interfaces (syslog())
- Additional utilities, including:
 - locale64
 - logger
 - mkfifo
 - mknod
 - nohup
 - qsh (runs the OS/400 Qshell interpreter)
 - syslogd
- SQL Call Level Interface (CLI) server mode support
- National Language Version (NLV) enablement, including translated message catalogs for IBM-supplied runtime libraries and utilities
- Additional locales, including:
 - th_TH.TIS-620
 - Ja_JP.IBM-943
 - Zh_CN.GBK
 - Zh_TW.big5
- Documentation for OS/400 PASE runtime, shells, and utilities in the IBM iSeries Information Center at: http://publib.boulder.ibm.com/pubs/html/as400/ v5r1/ic2924/info/rzalf/rzalfintro.htm
- Header and export files for OS/400 PASE extensions are now packaged with 5722-SS1 option 33. This provides a single repository where files that are necessary to compile and link OS/400-specific changes to the application can be copied to an AIX workstation.
- 5.0.0.4 version of AIX C++ runtime
- 7.1.0.1 version of AIX FORTRAN runtime

2.3.2 OS/400 PASE usage

To install i2 products, some basic operational knowledge is required about the OS/400 PASE environment. The default PASE shell, /QOpenSys/usr/bin/sh, is the Korn shell. The Bourne and C shells are also available.

You can invoke OS/400 PASE in several ways:

- 5250 terminal session using CALL QP2TERM
- CL program using QP2TERM
- 5250 terminal session using CALL QP2SHELL
- CL program using QP2SHELL
- ILE application using the Qp2CallPase and Qp2RunPase APIs

2.3.2.1 Using QP2TERM

The PASE QP2TERM shell is an interactive terminal shell environment. It is useful during i2 product installation, development activity, or when debugging product problems. It is not suited for unattended or "lights-out" operation of the i2 products.

To start the PASE QP2TERM shell environment, from an OS/400 command line, call the QP2TERM program located in the QSYS library (Figure 8):
CALL QP2TERM

MAIN	AS/400 M	ain Menu		Suctom.	то
Select one of	the following:			System.	12
1. User t 2. Office 3. Genera 4. Files, 5. Progra 6. Commu 7. Define 8. Proble 9. Displa 10. Inform 11. Client	casks e tasks al system tasks libraries, and amming nications e or change the s em handling ay a menu nation Assistant c Access/400 task	folders ystem options s			
90. Sign o	off				
Selection or o ===> CALL QP2	command TERM				
F3=Exit F4=Pro F23=Set initia	ompt F9=Retrieve al menu	F12=Cancel	F13=Information Assista	ant	

Figure 8. Using CALL QP2TERM to invoke the interactive PASE terminal environment

You then see the OS/400 PASE terminal shell started as shown in Figure 9.



Figure 9. OS/400 PASE interactive terminal or shell

The default shell prompt is written to the panel once the terminal shell is ready. Notice the dollar sign (\$) character or prompt familiar to an AIX system. If you see the pound sign (#) character instead of the dollar sign (\$) character, then you are signed onto the iSeries server as the QSECOFR security officer. You can invoke a full set of utilities with standard output and standard error written and scrolled in the terminal shell. You can also start applications.

AIX commands and PASE applications may be initiated from here. The example in Figure 10 shows using:

- The pwd command to see the path name of the working directory you are in
- The cd command to change the current directory
- The 1s command to display or list the contents of the current directory

/QOpenSys/usr/bin/-sh					
<pre>\$ > pwd /home/I2OWNER \$ > cd /opt/i2/TradeMatr. \$ > la</pre>	ix/5_0_1/link/0S400_450				
COPYRIGHT JDPA.jar back.sh core custom flatfile.txt jre122 \$	libDPA.a libjvm.a liborb.a libxerces-c1_0.a models previous_releases reports	rhythmlink.jar rl_engine_odbc rl_engine_oracle rl_engine_oracle8 rl_engine_stripped rl_oracle8	rl_ rlt scp sta sys tao		
===> F3=Exit F6=Print F9= F13=Clear F17=Top F18	Retrieve F11=Truncate/Wrap =Bottom F21=CL command	F12=Disconnect entry			

Figure 10. Sample output from a PASE QP2TERM interactive terminal shell

Notice that the F21 function key provides access to an OS/400 command line while in the PASE environment where you can enter OS/400 commands. For an example, see the Work with Active Jobs (WRKACTJOB) command in Figure 11.

	/QOpenSys/usr/bin/sl	n	
<pre>\$ > cd /home/I2OWNER \$ > pwd /home/I2OWNER \$ > cd /opt/i2/TradeMatrix/! \$ > la</pre>	5_0_1/link/OS400_450		
<pre>> Is COPYRIGHT JDPA.jar back.sh core custom flatfile.txt jre122 \$</pre>	libDPA.a libjvm.a liborb.a libxerces-c1_0.a models previous_releases reports	rhythmlink.jar rl_engine rl_engine_odbc rl_engine_oracle rl_engine_oracle8 rl_engine_stripped rl_oracle8	rl_ rlt scp sta sys tao
: : : ===> WRKACTJOB : F4=Prompt F9=Retrieve	Comman e F12=Cancel	nd	

Figure 11. Using the F21 key while in a PASE QP2TERM shell to issue the WRKACTJOB command

This is a nice feature or function because if you exit the PASE QP2TERM shell to run an OS/400 command, any application started in the PASE QP2TERM shell

ends and all history information shown in the shell is lost. When you use the F21 function key, you can "pop out" (switch) to run an OS/400 command and then return to where you were previously.

Function key F9 allows you to retrieve previously run commands to avoid rekeying a long command string, just like on an OS/400 command line. You can use the Page Up and Page Down keys to move the panel content forward and backward or up and down as opposed to the more command used in the traditional UNIX shell environments. Press the F3 function key, the F12 function key, or type exit. Then press Enter to exit the PASE QP2TERM shell environment.

The default is for OS/400 PASE jobs to run in the QINTER subsystem (or whatever subsystem your interactive job starts in). The QP2TERM program evokes a QPSHELL job. When an OS/400 PASE application is started, a QP2FORK job is evoked from the QPSHELL job. QP2FORK may also evoke other QP2FORK jobs. This is shown in Figure 12.



Figure 12. Relationship between PASE QP2 Jobs

You can view job information using one of the following commands:

- WRKACTJOB SBS (QINTER)
- WRKSBSJOB SBS (QINTER)
- WRKUSERJOB

Figure 13 shows an example of using the WRKACTJOB SBS(QINTER) command. It shows the interactive job where CALL QP2TERM was issued, one job where the resulting QP2SHELL job is running, and a couple of QP2FORK jobs running (probably an i2 server engine).

	_				
Work with Active Jobs I2					
03/22/01 23:50:05					
CPU %: 18.9 Elapsed time: 00:00:27 Active jobs: 305					
Type options, press Enter.					
2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message					
8=Work with spooled files 13=Disconnect					
Opt Subsystem/Job User Type CDU & Function Status					
OINTER OSYS SBS .0 DECW					
QP2FORK I20WNER BCI .1 THDW					
QP2FORK I20WNER BCI 1.9 SELW					
QP2SHELL I2OWNER BCI .0 THDW					
Detter					
Bottom Bottom					
F3=Exit F5=Refresh F7=Find F10=Restart statistics					
F11=Display elapsed data F12=Cancel F23=More options F24=More keys					
	,				

Figure 13. WRKACTJOB command display showing PASE QP2 jobs

From the WRKACTJOB display, you can select option 5 to work with the jobs if additional information is required.

Each i2 product has a normal shutdown process that is documented in the specific chapter of this redbook for that product. While testing, you may need to shut down or stop a process immediately. While in a PASE QP2TERM shell, you can do this by using the System Request function key. This key varies with terminals, keyboards, and display emulators:

- When using *IBM Personal Communications*, right-click anywhere in the panel and press the SysRq key. A line appears at the bottom of the panel. Press Enter and you see the panel as shown in Figure 14. Select option 2 (End previous request) and press Enter again.
- On a *PC keyboard*, the System Request key sequence is to press and hold the Shift and Esc keys at the same time. A line appears at the bottom of the panel. Press Enter and you see the panel as shown in Figure 14. Select option 2 (End previous request) and press Enter again.
- On a *non-programmable terminal*, the System Request key sequence is to hold down the ALT key and then press the Print/Sys Req key at the same time. A line appears at the bottom of the panel. Press Enter and you see the panel as shown in Figure 14. Select option 2 (End previous request) and press Enter again.

See the reference manual for your particular terminal, keyboard, or display emulator if these combinations do not work for you.

System Request		
Select one of the following:	System:	: 12
 Display sign on for alternative job End previous request Display current job Display messages Send a message Display system operator messages Display work station user 		
80. Disconnect job		
90. Sign off		
Selection 2	F	Bottom
F3=Exit F12=Cancel (C) COPYRIGHT IBM CORP. 1980, 2000.		

Figure 14. System Request menu showing the ending of a previous request immediately

2.3.2.2 Using QP2SHELL

The PASE QP2SHELL callable program is an interactive shell environment where a command, application, or shell script can be called. To start a PASE QP2SHELL interactive shell, from an OS/400 command line, call the QP2SHELL program located in the QSYS library and pass as a parameter a command, application, or shell script. A panel appears with the results. Press Enter to return back to an OS/400 command line. Some examples of using QP2SHELL are:

- CALL PGM(QP2SHELL) PARM('/QOpenSys/bin/date')
- CALL PGM(QP2SHELL) PARM('/QOpenSys/bin/ls' '-l')
- CALL PGM (QP2SHELL) PARM ('/QOpenSys/bin/ls' '/')
- CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' + 'cat /opt/i2/TradeMatrix/5_0_1/link/os400_450/copyright')
- CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' 'cd /home/i2owner/;pwd;echo "Hello World"')
- CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' '/opt/i2/TradeMatrix/5_0_1/link/os400_450/.rl.sh')

Note

To process a shell script using QP2SHELL, you must first start the /QOpenSys/usr/bin/sh shell.

Figure 15 shows an example of the following command:

```
CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' 'cd /opt/i2/TradeMatrix/5_1_1/scp/os400_450;ls -l')
```

drwxrwsrwx	9	120WNER	0	73728 Dec 31 08:32 5.1_schema		
-rwxrwxrwx	1	120WNER	0	3573 Jul 06 2001 COPYRIGHT		
-rw-rw-rw-	1	120WNER	0	2111463498 Dec 28 18:26 core		
drwxrwsrwx	2	I20WNER	0	73728 Dec 31 08:31 custom		
drwxrwsrwx	4	120WNER	0	73728 Dec 31 08:30 df		
-rwxrwxrwx	1	I20WNER	0	38 Jun 28 2001 fpout.511_i18n		
-rwxrwxrwx	1	120WNER	0	4967514 Jan 31 2001 liborb_r.a		
-rwxrwxrwx	1	I20WNER	0	6210554 Jun 22 2001 lpopt		
-rwxrwxrwx	1	120WNER	0	588022 Jun 22 2001 netgopt		
drwxrwsrwx	8	120WNER	0	73728 Dec 31 08:32 oil		
drwxrwsrwx	2	120WNER	0	69632 Dec 31 08:33 pdf		
drwxrwsrwx	2	120WNER	0	45056 Dec 31 08:29 reports		
drwxrwsrwx	3	120WNER	0	65536 Dec 31 08:31 scp		
-rwxrwxrwx	1	120WNER	0	9264979 Jun 27 2001 scp_batch		
-rwxrwxrwx	1	120WNER	0	55699516 Jun 27 2001 scp_engine		
-rwxrwxrwx	1	120WNER	0	123 Aug 14 09:28 start_scp		
drwxrwsrwx	6	120WNER	0	77824 Dec 31 08:31 web		
Press ENTER	to	o end ter	min	al session.		
===>						
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top						
F18=Bottom F19=Left F20=Right F21=User Window						

Figure 15. Sample output from a PASE QP2SHELL interactive shell

2.3.3 Qshell overview

This section explains Qshell (QSH) that is available on the iSeries server. It provides a UNIX-like interface for AIX commands.

QSH is based on the POSIX 1003.2 standard and X/Open CAE specification for Shell and Utilities. It has many features that make it like the Korn shell (ksh), and it is upwardly compatible with the Bourne shell (sh). Qshell Interpreter is option 30 of OS/400 (5769-SS1 or 5722-SS1). It includes the Qshell interpreter (or QSH), along with built-in and regular utilities that are run in the Qshell environment.

Note

Qshell is an EBCDIC shell. PASE QP2TERM and QP2SHELL are ASCII, so do not try and run any of the i2 servers or work with any i2 data while in Qshell.

With Qshell, you can:

- Run commands from either an interactive session or a script file.
- Write shell scripts that can be run without modification on other systems.
- Work with files in any file system supported by the Integrated File System.
- Run interactive threaded programs that do thread-safe I/O to and from an interactive session.
- Write your own utilities to extend the capabilities provided by QSH.

A built-in utility is one that QSH can run directly without having to search for it. A regular utility is a separate program object that QSH finds in the path.

Built-in utilities (base Qshell support) provide the ability to:

- Define aliases
- · Work with parameters and variables
- Run commands
- Manage jobs
- · Work with files and directories
- Write scripts
- · Read and write input and output
- Develop Java programs

Table 5 lists the built-in utilities provided by the Qshell Interpreter.

Table 5. Qshell built-in utilities

ajar	exec	logger	test
alias	exit	logname	trap
basename	export	ls	true
break	expr	mkdir	touch
cat	false	mv	umask
cd	find	print	unalias
chgrp	getconf	print	uname
chmod	getjobid	pwd	unset
chown	getopts	pwdx	uniq
clrtmp	grep	read	wait
colon	hash	readonly	whence
command	head	return	
continue	hostname	rm	
ср	id	rmdir	
date	jobs	set	
dirname	kill	shift	
dot	let	sleep	
echo	liblist	system	
env	local	tail	
eval	ln	tee	

The regular utilities provide the ability to:

- Work with files and directories
- · Build and install applications
- Manipulate data

Table 6 lists the regular utilities provided by the Qshell Interpreter.

Table 6. Qshell regular utilities

ar cc	file make	sort split
cmp	od	tr
compress	pax	uncompress
cut	sed	WC

For more information on Qshell, visit the PartnerWorld for Developers Qshell Web site at: http://www.iseries.ibm.com/developer/qshell/index.html

Prior to V4R5M0, PRPQ Qshell Utilities (5799-XEH) needed to be ordered for complete Qshell support. Starting with V4R5M0, the utilities that were shipped in the Qshell Utilities PRPQ are now in Qshell Interpreter option 30.

2.3.4 Qshell usage

If you need to use the i2 Active Data Warehouse Data Loader function, you must know some basic information about Qshell. To start the Qshell environment, from an OS/400 command line, issue either of the following Start QSH commands:

QSH STRQSH

An example is shown in Figure 16.

MAIN	AS/400 Main I	Menu		Curct om.	т2
Select one of the fo	llowing:			System.	12
 User tasks Office tasks General syst Files, libra Programming Communication Define or ch Problem hand Display a me Information Client Acces 	em tasks ries, and folde ns ange the system ling nu Assistant optic s/400 tasks	ers n ons			
90. Sign off Selection or command					
===> QSH					
F3=Exit F4=Prompt F23=Set initial menu	F9=Retrieve	F12=Cancel	F13=Information A	Assistant	,

Figure 16. Using the QSH command to invoke Qshell from an OS/400 command line

Press Enter, and you see the QSH Command Entry panel (Figure 17). Using Qshell is very similar to using the PASE QP2TERM environment.

QSH Command Entry
\$
E2-Exit E4-Drint E0-Detricity E12-Diagonnoct
FI3=Clear F17=Top F18=Bottom F21=CL command entry

Figure 17. Qshell interactive terminal or shell

Make sure you use the F3 function key to exit Qshell. If you do not, then the next time you try to start a PASE shell in your current job, you receive error message

CPF9898, Qp0zStartTerminal error. rc = 3029. To recover from this error, go back to Qshell using the QSH or STRQSH commands and then exit using the F3 key.

2.3.5 PASE and Qshell differences

Table 7 highlights some of the differences between Qshell and OS/400 PASE.

Table 7. Qshell and PASE differences

Qshell	PASE
EBCDIC runtime	ASCII runtime
64-bit address space	32-bit address space on V4R5M0 32-bit or 64-bit address space on V5R1M0
Tags-active mode (16-byte tagged MI pointers	Tags-inactive mode (4-byte untagged pointers)
Smaller subset of UNIX utilities	Based on AIX 4.3.3
Started via command QSH or STRQSH	Started via calling a program (QP2TERM or QP2SHELL) or an API

2.3.6 UNIX versus iSeries server commands

Table 8 lists a few common UNIX commands used in displaying and manipulating files in the shell environments, the iSeries server equivalent, and the option from the Work with Object Links (WRKLNK) command if available. You can go to the Files, Libraries, and Folders menu using the following command:

GO MENU (DATA)

Then select option 5.

The Integrated File System shows a list of common commands broken down into directory, object, and security groups. For more information on the Integrated File System on the iSeries server, see *Integrated File System Introduction*, SC41-5711, or the File Systems and Management section in the iSeries Information Center at:

http://publib.boulder.ibm.com/html/as400/v5r1/ic2924/index.htm

Table 8. UNIX and iSeries server file and directory commands comparison

UNIX/QSH/PASE	iSeries server	iSeries WRKLNK
cd	CD, CHDIR, CHGCURDIR	Option 11 - Change current directory
mkdir	CRTDIR, MD, MKDIR	
pwd	DSPCURDIR	
ls tail head	WRKLNK, DSPLNK, DSPF <directory>, EDTF <directory> <control> B (for bottom) <control> T (for top)</control></control></directory></directory>	Option 5 - Display Option 2 - Edit
cat	DSPF, EDTF	Option 5 - Display Option 2 - Edit

UNIX/QSH/PASE	iSeries server	iSeries WRKLNK	
ls -l	DSPF EDTF DSPAUT	Option 8 - Display attributes Option 9 - Work with authority Option 13 - Change directory attributes	
vi, Emacs, ez	EDTF	Option 2 - Edit	
ср	CPY, COPY	Option 3 - Copy	
mv	MOV, MOVE	Option 10 - Move	
ren	REN, RNM	Option 7 - Rename	
rm rmdir	DEL, ERASE, RMVLINK RD, RMDIR, RMVDIR	Option 4 - Remove	
chmod chown chgrp	CHGAUT, WRKAUT CHGOWN CHGPGP	Option 9 - Work with authority	
backup restore	SAV RST		
mount/ In mount	ADDLNK ADDMFS, MOUNT		

For example, since an editor is not available in the PASE environment by default, you can use the native Edit File (EDTF) command to edit flat files or stream files on the iSeries server. You can also use the Work with Object Links (WRKLNK) command by selecting option 2 to edit the file and then the Edit File command runs.

Other useful commands to move data between flat files or stream files and a native OS/400 database file member are listed here:

- Copy From Import File (CPYFRMIMPF)
- Copy From Stream File (CPYFRMSTMF)
- Copy To Import File (CPYTOIMPF)
- Copy To Stream File (CPYTOSTMF)

Table 9 provides a list of common UNIX commands and the iSeries server counterpart.

UNIX/QSH/PASE	iSeries server
ps	DSPJOB WRKJOB WRKACTJOB WRKACTJOB SBS (<subsystem>) WRKUSRJOB USER(<user name="">) WRKSBMJOB SBMFROM(<user name="">) WRKSBSJOB SBS(<subsystem>)</subsystem></user></user></subsystem>
kill <pid> kill -9 <pid></pid></pid>	ENDJOB JOB(<job name="">) OPTION(*IMMED) ENDJOBABN JOB(<job name="">)</job></job>
<program></program>	CALL PGM(<library name="" program="">) PARM('<parm1>')</parm1></library>

Table 9. A comparison of common UNIX and iSeries server commands

UNIX/QSH/PASE	iSeries server		
<program> &</program>	SBMJOB CMD(<program>)</program>		
exit	SIGNOFF		
passwd	CHGPWD		
ftp	FTP		
telnet	TELNET		
ping	PING, VFYTCPCNN		
qplplus	STRSQL, RUNSQLSTM		

See *CL Reference*, SC41-5722, for more information on Control Language (CL) commands on the iSeries server. If you know the function that you want a command to perform (for example, create (CRT), delete (DLT), or display (DSP)), you can go to a menu of available commands that start with that function by using:

```
GO MENU (CMD<function>)
```

For create commands, you use:

GO MENU (CMDCRT)

Another way to look up commands is to use the Select Command (SLTCMD) command. For example, either of the following formats work:

```
SLTCMD CMD(CRT*)
CRT*
```

2.4 iSeries server setup

This section describes the prerequisite setup on the iSeries server. Review and implement the steps in this section before you install i2 products on the iSeries server.

The setup includes the following tasks:

- · Creating an i2 user profile and home directory
- Verifying or changing a system value for the correct time
- · Setting an environment variable for the correct time
- Verifying or changing QBATCH job queue entries (OS/400 V4R5M0 or LODRUN installed products only)
- Verifying or creating TCP/IP host and domain information

2.4.1 User profile creation

We recommend that, before any i2 products are installed on the iSeries server, you create a separate user profile to own the objects that are created or restored.

To create a user profile, use the Create User Profile (CRTUSRPRF) command and press the F4 function key to prompt the command. You must have *SECADM special authority to create user profiles.

Figure 18 shows an example of the completed parameters for the CRTUSRPRF command.

Note

An existing profile with *SECOFR user class authority may also be used. However, we do not recommend using the QSECOFR user profile.

~	
Create Use	er Profile (CRTUSRPRF)
Type choices, press Enter.	
User profile	120WNERNamePASSWORDName, *USRPRF, *NONE*NO*NO, *YES*ENABLED*ENABLED, *DISABLED*SECOFR*USER, *SYSOPR, *PGMR*SYSVAL*SYSVAL, *BASIC, *INTERMED*CRIDFTName, *CRIDFT*NONEName, *LIBL, *CURLIBMAINName, *LIBL, *CURLIB*NO*NO, *PARTIAL, *YESUserid for 12Administration
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	Bottom F10=Additional parameters F12=Cancel F24=More keys

Figure 18. CRTUSRPRF command details for creating an i2 user profile called I2OWNER

Fill in the User profile parameter with your name choice. In our example, we specified I20WNER, which is what we use throughout this redbook. Fill in the User password parameter with your choice. We recommend that you do not use the same name as the user profile name. For the User class parameter, type *SECOFR and optionally fill in a text description. Press Enter. You could also use the following command:

CRTUSRPRF USRPRF(I2OWNER) PASSWORD(<PASSWORD>) USRCLS(*SECOFR) TEXT('Userid for i2 Administration')

You should see the completion message User Profile I20WNER created.

Note

You may want to review your security requirements and change this profile to a password of *NONE or to a lower user class once the installation is complete.

UNIX user IDs typically have a corresponding user home directory that should be created on the iSeries server. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within a PASE QP2TERM shell:

MKDIR DIR('/home/I2OWNER')

Press Enter and you should see a completion message stating that the directory was created.

If you want to verify that the directory was created, you can use the Edit File (EDTF) command, for example:

EDTF STMF('/home/')

An example is shown in Figure 19.

Directory: /home/				
Position to: New File :	Record	.: 10	of 3	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
QDCE	*DIR	QDCE	03/19/01 22:06	03/19/01 22:06
SUNDT	*DIR	SUNDT	03/19/01 22:06	03/23/01 16:11
I20WNER	*DIR	120WNER	03/25/01 23:28	03/25/01 23:28
				Bottom
F3=Exit F12=Cancel (C) COPYRIC	F16=Sort HT IBM CORP	F17=Position . 1980, 2000.	n to F22=Displa	ay entire field

Figure 19. Using the EDTF command to verify that the /home/I2OWNER directory was created

2.4.2 Date and time services

PASE runtime supports most of the same interfaces as AIX runtime for date and time services, except that PASE does not currently provide support to set the system date or time. These are set using standard OS/400 interfaces. This may include setting system values QDATE and QTIME using a command like Work with System Value (WRKSYSVAL), for example:

WRKSYSVAL SYSVAL(*DATTIM)

2.4.2.1 Verifying system value QUTCOFFSET

The system time is returned by PASE runtime functions, such as "gettimeofday is UTC" (Universal Time Coordinated). You must ensure that the system value Coordinated Universal Time Offset (QUTCOFFSET) is set correctly before starting a PASE application.

PASE runtime uses the environment variable TZ to convert UTC to local time, or assume local time is UTC if the TZ variable is not set. OS/400 does not currently store time zone information. Therefore, you should set the environment variable PASE_TZ at the system level. This way, all jobs that call program QP2SHELL to run a PASE program use an appropriate default time zone (see 2.4.2.2, "Setting environment variable PASE_TZ" on page 37).

QUTCOFFSET is the iSeries system value that indicates the difference in hours and minutes between UTC, also known as Greenwich Mean Time (GMT), and the current system (local) time. This is the number of hours and minutes you need to add or subtract from local time to obtain the UTC. This value is five characters long. The first character is a plus (+) or minus (-) sign. The next two characters specify hours ranging from 00 through 24. The last two characters specify minutes ranging from 00 through 59 (if it is less than 24 hours). In the case of our system in Rochester, Minnesota, we are in Central Standard Time (CST). Therefore, the system value needs to be set at -06:00 indicating our time zone is six hours less than, or behind, GMT. If your location is currently observing daylight savings time, then the system value need to be changed accordingly, for example to -05:00 in our case. Table 10 shows the QUTCOFFSET values for the four United States time zones.

	Eastern Time Zone	Central Time Zone	Mountain Time Zone	Pacific Time Zone
Daylight Savings Time	-04:00	-05:00	-06:00	-07:00
Standard Time	-05:00	-06:00	-07:00	-08:00

Table 10. Daylight savings time versus standard time for system value QUTCOFFSET

The easiest way to view and change system values is to use the Work with System Value (WRKSYSVAL) command, for example:

WRKSYSVAL SYSVAL (QUTCOFFSET)

After you press Enter, the example shown in Figure 20 appears.

Work with Sy	vstem Values
Position to Subset by Type	System: I2 Starting characters of system value F4 for list
Type options, press Enter. 2=Change 5 =Display System	
Option Value Type Description 5 QUTCOFFSET *DATTIM Coordinate	on ed universal time offset Bottom
Command ===>	
F3=Exit F4=Prompt F5=Refresh F9=F F12=Cancel	Retrieve F11=Display names only

Figure 20. WRKSYSVAL showing the QUTCOFFSET system value

Type option 5 next to the system value and press Enter to display it. See the example in Figure 21.

```
Display System Value

System value . . . . : QUTCOFFSET

Description . . . . : Coordinated universal time offset

Offset . . . . . . : -05:00 -24:00 to +24:00

Press Enter to continue.

F3=Exit F12=Cancel
```

Figure 21. QUTCOFFSET Coordinated universal time offset system value

If the system value is set at +00:00, it is at the default or shipped value and needs to be changed unless you are in the GMT zone. You can do this by using option 2 shown in Figure 20.

2.4.2.2 Setting environment variable PASE_TZ

The environment variable PASE_TZ, which stands for PASE Time Zone, needs to be set for the correct time to display within PASE. To see if it is already set on your system, you can use the Work with Environment Var (WRKENVVAR) command.

The command has *JOB and *SYS options to show job or system (global) level environment variables. *JOB environment variables are only active for the current job. The *SYS options are active for all jobs on the system permanently. PASE_TZ should be set at the system level.

The Add Environment Variable (ADDENVVAR) command or option 1 from the WRKENVVAR command output adds an environment variable consisting of a character string in the form "environment variable name=environment variable value".

- Note -

You must have *JOBCTL special authority to use these commands to add, change, or remove system level environment variables.

To see system level environment variables, use the WRKENVVAR command and press the F4 function key to prompt the command. Change the Level parameter from *JOB to *SYS as shown in Figure 22. Then press Enter.

й	Nork with Env	vironment Var	(WRKENVVAR)
Type choices, press Er	nter.		
	Additic	nal Parameter	rs
Level		*SYS	*JOB, *SYS
F3=Exit F4=Prompt	F5=Refresh	F12=Cancel	Bottom F13=How to use this display
LZ4=INDIE VGÅR			

Figure 22. WRKENVVAR command prompt changing level to *SYS

Or you can simply issue the following command:

WRKENVVAR LEVEL(*SYS)

If you don't see PASE_TZ listed, then select option 1 to add an environment variable, type PASE_TZ as shown in Figure 23, and press Enter.

	Work with Environme	nt Vars (*SYS)
Type 1=	pe options, press Enter. 1=Add 2=Change 4=Remove 5=Display	details 6=Print
Opt	ot Name Value	
1	PASE_TZ	
		Bottom
Para ===>	rameters or command	
F3=E F12= (C)	=ExitF4=PromptF5=Refresh.2=CancelF16=PrintlistF17=Top.2)COPYRIGHTIBMCORP.1980,2000.	F9=Retrieve F11=Display CCSIDs MasBottom F22=Display entire field

Figure 23. Using the WRKENVVAR command to add the PASE_TZ environment variable

Fill in the appropriate time zone value on the Initial value parameter. For our system in Central Standard Time (CST), the correct value is CST6CDT, which indicates Central Standard Time, 6 hours behind UTC time, and Central Daylight Time. Possible valid values in the United States are:

- EST5EDT (Eastern)
- CST6CDT (Central)
- MST7MDT (Mountain)
- PST8PDT (Pacific)

Make sure that the Level parameter is set to *SYS. If you issue the ADDENVVAR command from a command line, then you must use the F10 function key to bring up the level parameter. An example is shown in Figure 24.

Add Environment Variable (ADDENVVAR)
Type choices, press Enter.
Environment variable > 'PASE_TZ'
Initial value 'CST6CDT'
Additional Parameters
Level > *SYS *JOB, *SYS
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More keys

Figure 24. Using ADDENVVAR to add the PASE_TZ system level environment variable

Press Enter to add the environment variable. To verify that the time was set correctly, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

Then call the date program as shown in the example in Figure 25.

/QOpenSys/usr/bin/-sh
\$ > date Sum Mar 25 23:51:49 CST 2001 \$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry



2.4.3 QBATCH subsystem (OS/400 V4R5M0 or LODRUN installations)

For the i2 software releases supported on OS/400 V4R5M0 or the ones that use LODRUN for product installation, the subsystem QBATCH needs to be running for

the i2 installation programs to work. In addition to the subsystem running, enough job queue entries must be available to complete the installation. To verify that the subsystem is up and running and the number of job queue entries, you can use the Work with Subsystem Description (WRKSBSD) command, for example:

WRKSBSD SBSD (QBATCH)

Press Enter. Then select option 5 to display the subsystem description as shown in Figure 26.

Work with Subsystem Descriptions			
Type options, press Enter. 1=Create 2=Change 4=Delete 5=Display 8=Work with subsystem 9=Start subsystem 10=End subsystem	m jobs		
Opt Subsystem Library Text			
5 QBATCH QSYS Batch Subsystem			
Parameters for options 1, 2, 5, 8 and 10 or command			
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display nam F12=Cancel F16=Repeat position to F17=Position to	es only		

Figure 26. Display subsystem description option for QBATCH

Press Enter. The Display Subsystem Description menu appears (Figure 27).

I	Display Subs	system Descript:	ion	Or each one	T0
Subsystem description: Status: ACTIVE	QBATCH	Library:	QSYS	system:	12
Select one of the follow 1. Operational attu 2. Pool definitions 3. Autostart job er 4. Work station nar 5. Work station typ 6. Job queue entrice 7. Routing entries 8. Communications er 9. Remote location 10. Prestart job entrice	wing: ributes ntries me entries ee entries es entries name entries tries	25			
Selection or command ===> 6				More	• • •
F3=Exit F4=Prompt F5	9=Retrieve	F12=Cancel			

Figure 27. Displaying the QBATCH subsystem description

First, check whether the subsystem has a status of *active*. If it does not, you can use the Start Subsystem (STRSBS) command to start QBATCH, for example:

STRSBS SBSD (QBATCH)

Once the subsystem is active, select option 6 and press Enter to display job queue entries. An example is shown in Figure 28.

			Display	7 Jol	o Que	eue 1	Entr:	ies			C1 70	nt om .	T2
Subsy	stem descrip	tion: QBA	TCH	St	tatus	3:	ACT:	IVE			Буз	scall:	12
Seq	Job		Max			Mai	x by	Pric	ority	7			
Nbr	Queue	Library	Active	1	2	3	4	5	6	7	8	9	
10	QBATCH	QGPL	6	*	*	*	*	*	*	*	*	*	
20	QS36EVOKE	QGPL	*NOMAX	*	*	*	*	*	*	*	*	*	
50	QTXTSRCH	QGPL	*NOMAX	*	*	*	*	*	*	*	*	*	
												Bot	tom
Press F3=Ex	Enter to co it F12=Car	ontinue. ncel											

Figure 28. Displaying job queue entries for QBATCH subsystem before changing to *NOMAX

If the Max Active field shows *NOMAX for the QBATCH job queue, no changes are necessary. Otherwise, record the number of Max Active jobs currently set since you will change the value temporarily for the installation. In our example, the number of Max Active jobs is 6.

Press Enter to exit this panel. Type the Change Job Queue Entry (CHGJOBQE) command and press the F4 function key to prompt the command. Fill in the Subsystem description parameter (QBATCH), Job queue parameter (QBATCH), and Maximum active jobs parameter (*NOMAX) as shown in Figure 29. Then press Enter.

Change Job	Queue Entry	(CHGJOBQE)
Type choices, press Enter.		
Subsystem description	QBATCH	Name
Library	*LIBL	Name, *LIBL, *CURLIB
Job queue	QBATCH	Name
Library	*LIBL	Name, *LIBL, *CURLIB
Maximum active jobs	*NOMAX	0-1000, *SAME, *NOMAX
Sequence number	*SAME	1-9999, *SAME
Max active priority 1	*SAME	0-99, *SAME, *NOMAX
Max active priority 2	*SAME	0-99, *SAME, *NOMAX
Max active priority 3	*SAME	0-99, *SAME, *NOMAX
Max active priority 4	*SAME	0-99, *SAME, *NOMAX
Max active priority 5	*SAME	0-99, *SAME, *NOMAX
Max active priority 6	*SAME	0-99, *SAME, *NOMAX
Max active priority 7	*SAME	0-99, *SAME, *NOMAX
Max active priority 8	*SAME	0-99, *SAME , *NOMAX
Max active priority 9	*SAME	0-99, *SAME, *NOMAX
		Bottom
F3=Exit F4=Prompt F5=Refresh	F12=Cancel	F13=How to use this display
F24=More keys		

Figure 29. Using the CHGJOBQE command to change the QBATCH job queue entry to *NOMAX

Or you can simply issue the following command:

CHGJOBQE SBSD (QBATCH) JOBQ (QBATCH) MAXACT (*NOMAX)

From the Display Subsystem Description menu shown in Figure 27, select option 6 to display the number of job queue entries again to ensure it changed to *NOMAX. See the example in Figure 30.

Display Job Queue Entries							Or each one		то				
Subsy	stem descrip	otion: QBA	TCH	St	tatus	3:	ACT:	IVE			Syr	scent:	12
Seq	Job		Max			Ma:	x by	Pric	ority	7			
Nbr	Queue	Library	Active	1	2	3	4	5	6	7	8	9	
10	QBATCH	QGPL	*NOMAX	*	*	*	*	*	*	*	*	*	
20	QS36EVOKE	QGPL	*NOMAX	*	*	*	*	*	*	*	*	*	
50	QIXTSRCH	QGPL	*NOMAX	*	*	*	*	*	*	*	*	*	
												Bot	tom
Press Enter to continue.													
F3=Ex	it F12=Car	ncel											

Figure 30. Displaying job queue entries for the QBATCH subsystem after changing to *NOMAX

Once the installation is complete, you can change the job queue entry (Maximum active jobs parameter) back to the original number using the Change Job Queue Entry (CHGJOBQE) command, for example:

CHGJOBQE SBSD (QBATCH) JOBQ (QBATCH) MAXACT (6)

An example is shown in Figure 31.

Change Job Que	ue Entry (CH	GJOBQE)
Type choices, press Enter.		
Subsystem description	OBATCH	Name
Library	~ *LIBL	Name, *LIBL, *CURLIB
Job queue	QBATCH	Name
Library	*LIBL	Name, *LIBL, *CURLIB
Maximum active jobs	6	0-1000, *SAME, *NOMAX
Sequence number	*SAME	1-9999, *SAME
Max active priority 1	*SAME	0-99, *SAME, *NOMAX
Max active priority 2	*SAME	0-99, *SAME, *NOMAX
Max active priority 3	*SAME	0-99, *SAME, *NOMAX
Max active priority 4	*SAME	0-99, *SAME, *NOMAX
Max active priority 5	*SAME	0-99, *SAME, *NOMAX
Max active priority 6	*SAME	0-99, *SAME, *NOMAX
Max active priority 7	*SAME	0-99, *SAME, *NOMAX
Max active priority 8	*SAME	0-99, *SAME, *NOMAX
Max active priority 9	*SAME	0-99, *SAME, *NOMAX
		Bottom
F3=Exit F4=Prompt F5=Refresh	F12=Cancel	F13=How to use this display
F24=More keys		

Figure 31. Using CHGJOBQE to change the QBATCH job queue entry back to its original value

2.4.4 TCP/IP

TCP/IP information on the iSeries server is checked during the startup of the i2 server engines. TCP/IP is also the connection method for most GUI clients. Therefore, TCP/IP is required to be properly configured and running. A host table entry should exist for the iSeries server as well as the domain name configuration.

2.4.4.1 Verifying that TCP/IP is up and running

First, verify that TCP/IP is up and running on your iSeries server. You can quickly check this by using the Verify TCP/IP Connection (PING or VFYTCPCNN) command and specify the host name or IP address of your iSeries server. You can do this from an MS-DOS window on a PC or from the iSeries server itself, for example:

ping `1.23.45.67'

Several messages flash across the bottom of the panel: Verifying connection to host system 1.23.45.67 and PING reply x from 1.23.45.67 took 0 ms. 256 bytes. TTL 64. If the ping is unsuccessful, use the Work with TCP/IP Network Status (NETSTAT) command, and then select option 1 (Work with the TCP/IP interface status) to check the status of the interface. If TCP/IP is not active or running, start it by using the Start TCP/IP (STRTCP) command.

If you have Client Access/400 loaded on a PC, you can also use the CWBPING command to check TCP/IP and some TCP/IP servers, for example:

CWBPING 1.23.45.67

After you verify TCP/IP, you should then check to see that an FTP server is up and running. Enter the Work with TCP/IP Network Status (NETSTAT) command, and

then select option 3 (Work with TCP/IP connection status). You should see FTP control in a listen state. If an FTP server is not running, you can use the Start TCP/IP Server (STRTCPSVR) command, for example:

STRTCPSVR SERVER(*FTP)

2.4.4.2 Verifying host table entries

Continue by checking that a host table is configured for the iSeries server. You can use the Configure TCP/IP (CFGTCP) command to do this and select option 10 (Work with TCP/IP host table entries) from the Configure TCP/IP menu (Figure 32). Then press Enter.

CFGICP	Configure TCP/IP	Crat on .	
Select one of th	ne following:	system:	12
1. Work wit 2. Work wit 3. Change T 4. Work wit 5. Work wit	TCP/IP interfaces TCP/IP routes TCP/IP attributes TCP/IP port restrictions TCP/IP remote system information		
10. Work with	The TCP/IP host table entries		
12. Change T	CCP/IP domain information		
20. Configur	re TCP/IP applications		
21. Configur 22. Configur	re point-to-point TCP/IP		
Selection or com ===> 10	mand		
F3=Exit F4=Pro	mpt F9=Retrieve F12=Cancel		J

Figure 32. CFGTCP main menu: Option 10 (Work with TCP/IP host table entries)

A host table entry is required for i2 on the iSeries server. You should see a host table entry like the example in Figure 33.

	Worl	with TCP/IP Host	t Table Entrie	es	vstem: I2
Type	options, press l Add 2=Change	Enter. 4=Remove 5=Dis	olav 7=Renar	ne	1
	Internet	Hogt			
Opt	Address	Name			
	1.23.45.67	12 12.DOMAIN.IBM.C	OM		
	127.0.0.1	LOOPBACK LOCALHOST			
F3=E	xit F5=Refresh	F6=Print list	F12=Cancel	F17=Position to	Bottom

Figure 33. Work with TCP/IP Host Table Entries display showing a valid host table entry

If you do not see one, then you need to add one. You can do this by using option 1 from the Work with TCP/IP Host Table Entries panel shown in Figure 33, or by using the Add TCP/IP Host Table Entry (ADDTCPHTE) command (Figure 34). Press Enter.

Add TCP/IP Host Table Entry (ADDTCPHTE)
Type choices, press Enter.
Internet address > '1.23.45.67' Host names: Name > I2
Name
+ for more values Text 'description'
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 34. Using the ADDTCPHTE command to add a TCP/IP host table entry

You can also simply issue the following command:

ADDTCPHTE INTNETADR('1.23.45.67') HOSTNAME((I2) (I2.DOMAIN.IBM.COM))

You should see a completion message Internet address entry 1.23.45.67 added to host table.

See your network administrator or *TCP/IP Configuration and Reference*, SC41-5360, for more information.

Note

It is extremely important that host table and domain information is correctly configured before the installation of i2 products. It is also important that it is not changed after installation. A full domain version of the host name is needed (for example, I2.DOMAIN.IBM.COM). If TCP/IP changes are made after installation, then all i2 license keys on the system will become invalid.

2.4.4.3 Verifying TCP/IP domain information

You also need to configure domain information. Press the F3 function key to return to the Configure TCP/IP panel and select option 12 (Change TCP/IP domain information) as shown in Figure 35, or issue the Change TCP/IP Domain (CHGTCPDM) command. Press Enter.

CFGTCP	Configure TCP/IP	Guatom.	\ د ت				
Select one o	Select one of the following:						
1. Worł 2. Worł 3. Char 4. Worł 5. Worł	k with TCP/IP interfaces k with TCP/IP routes nge TCP/IP attributes k with TCP/IP port restrictions k with TCP/IP remote system information						
10. Work with TCP/IP host table entries 11. Merge TCP/IP host table 12. Change TCP/IP domain information							
20. Configure TCP/IP applications 21. Configure related tables 22. Configure point-to-point TCP/IP							
Selection or ===> 12	r command						
F3=Exit F4	4=Prompt F9=Retrieve F12=Cancel						

Figure 35. CFGTCP main menu - option 12 (Change TCP/IP domain information)

The host name and domain name information is displayed (Figure 36). Verify that this information is complete for your system. If everything is valid, press the F3 or F12 function key to exit. If no domain information is available or it is incorrect, make the necessary changes and press Enter.

Change TCP/	IP Domain (CHGTCPDMN)
Type choices, press Enter.	
Host name	'I2'
Domain name	'I2.DOMAIN.IBM.COM'
Host name search priority	*I.OCAI. *REMOTE *I.OCAI. *SAME
Domain name server: Internet address	
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additional parameters F12=Cancel F24=More keys

Figure 36. Using the CHGTCPDMN command to change TCP/IP domain information

See your network administrator or *TCP/IP Configuration and Reference*, SC41-5360, for more information.

2.4.5 Requesting i2 software license keys from i2

i2 products require a license key to start the server engines. This section describes the process to request a license key from i2. Use one of the following ways to request license keys.

2.4.5.1 Web

The Web is the preferred and recommended way (priority service) to order license keys. Requests before 2:00 p.m. Central time are usually processed the same working day.

Web requests

To request license keys from the i2 support Web site, follow these steps:

- 1. Point your Web browser to either of the following sites:
 - http://support.i2.com
 - http://www.support.i2.com
- 2. If this is your first time visiting this Web site, click **Register**. Then enter the information requested. This takes around a day to process, so try to do this before you need to request passwords.
- 3. Once you receive a password from i2, type your e-mail address and password. Click Enter.
- 4. If you see a legal notice, read it and click the **I accept these conditions** button.
- 5. You may occasionally see a window that asks you to enter or confirm your personal information. Verify this and click the **Submit** button.
- Your company page now appears. Under the Quick Menu or Shipping sections on the left side of the panel, click **Request LicenseKey**.
- 7. Select an i2 product from the drop-down list and click the Go button.
- 8. A license key request form is now presented. The fields that you need to be most concerned about are:
 - Product: For which i2 product are you requesting the key? Examples include Demand Planner, Factory Planner, Link, or Supply Chain Planner.
 - Version: What is the version of the i2 product you are installing? For example, 5.0.1 or 5.2.
 - Server Platform: What is the server platform where the i2 product will be running? In our case, use the drop-down list to select AS/400.
 - **Client Platform**: What is the client platform where end users will connect to the server from? For example, Windows.
 - OS: What is the operating system on the server platform selected? In our case, since PASE is an AIX runtime, use the drop-down list to select AIX.
 - **OS Version**: What is the version of the operating system on the server platform selected? In our case, we should specify the version of OS/400, so enter V4R5M0 or V5R1M0.
 - Host ID: What is the host ID that the i2 products return when you try to run them without a valid license on the system? This is usually a 10-digit number like 0x4364b7eb or 1130674155.

- **Domain Name**: What is the TCP/IP domain name for the server where the i2 products will run? In our case, it is 12.DOMAIN.IBM.COM.
- **# of Users**: What number of users was purchased from i2? If you are not sure, enter a large enough number that you know will not be exceeded.
- **Comment**: This is where you can add additional comments or information that you think will be needed to handle your license key request. It would not hurt to restate some of the information that was provided above. Consider this example:

"I want a license key for Supply Chain Planner version 5.2 running on an AS/400 in an AIX runtime environment. My host ID is I2, my domain name is DOMAIN.IBM.COM, and this is for 10 users. Thank you."

When you are ready to send your request, click the **Submit** button at the bottom. Then, you see a support case number where your license key request can be tracked. Once the key is generated, the case is updated and you see an e-mail.

2.4.5.2 E-mail

Requests are processed the next working day.

Send an e-mail to software-services@i2.com Or support@i2.com. Include the following information:

- Customer name
- · Customer contact name, phone number, and e-mail address
- i2 product name and version
- · Server platform, operating system, and version
- · Host ID, domain name, number of users

2.4.5.3 Telephone

Requests are processed in two working days. The phone numbers to call are:

- US and Canada: 1-469-357-3456
- EMEA: 32-2-717-66-77
- **APAC**: 91-80-5581487-90
- Japan: 81-3-5783-1212
- Australia: 61-3-9832-7654

Chapter 3. i2 TradeMatrix Active Data Warehouse

This chapter describes the iSeries server installation procedures for the i2 TradeMatrix Active Data Warehouse products before the i2 Five.Two release.

For a description of the Active Data Warehouse product, see 1.1.2.1, "i2 Active Data Warehouse" on page 1. You can find installation information for i2 Five.Two in Chapter 10, "i2 Five.Two Active Data Warehouse" on page 435.

3.1 Active Data Warehouse installation using the LODRUN command

This section contains information on how to install Active Data Warehouse version 5.0p1 on the iSeries server using the Load and Run (LODRUN) command. Before LODRUN support was made available, a manual procedure was required for the installation. This procedure is outlined in 3.2, "Active Data Warehouse installation using the manual procedure" on page 73, and can be used for older versions of Active Data Warehouse.

As mentioned in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V4R4M0 (License Program 5769-SS1), with the Qshell Interpreter (Option 30), and DB2 Query Manager and SQL Development Kit for iSeries (5769-ST1). Installation of the Active Data Warehouse installation code requires approximately 100 MB of disk space. The SQL collection requires approximately 280 MB of disk space before customer data is added.

After you order Active Data Warehouse from i2, you receive a CD-ROM that contains everything you need to install the product.

The steps to install Active Data Warehouse are summarized here:

- 1. Install the Active Data Warehouse installation code from the CD-ROM.
- 2. Verify the existence of a local relational database directory entry.
- 3. Create an SQL collection or schema.
- 4. Change the job decimal format to *BLANK.
- 5. Run the ADWDDL command to create tables in the SQL collection.

3.1.1 Active Data Warehouse reference documentation

The following manuals are available on the iSeries server in the /opt/i2/TradeMatrix/5_0/ADW/OS400_450/doc directory after server installation. They are also on a PC in the C:\Rhythm\ADW\5.0\doc folder after client installation:

- *i2 TradeMatrix Active Data Warehouse Installation Manual Version 5.0* (adw_installation_instructions.pdf)
- *i2 TradeMatrix Active Data Warehouse Release Notes Version 5.0* (adw_release_notes.pdf)
- *i2 TradeMatrix Active Data Warehouse Utilities Manual Version 5.0* (adw_utilities_user_manual.pdf or adw50_utilities_manual\splash.htm)
- *i2 TradeMatrix Active Data Warehouse Record Manual Version 5.0* (adw50_record_manual\rm.html)

RHYTHM Data Migrator User Manual - Version 4.2 is located on a PC in the C:\Rhythm\ADW\5.0\migrator folder after client installation. And in the C:\Rhythm\ADW\5.0\ui\rde\adw\help folder, you can find Web-based help for installing the Active Data Warehouse user interface. You can access this by opening the installui.htm file.

Documentation is also available from the i2 support Web site (http://support.i2.com/). Log in and select the **Documentation** link.

3.1.2 Installing Active Data Warehouse installation code on iSeries

To install the Active Data Warehouse installation code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Active Data Warehouse code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, refer to 2.4.1, "User profile creation" on page 33.
- The Active Data Warehouse environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2/Rhythm/5_0/ADW/OS400_450. You can use Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2/Rhythm/5_0/ADW/')

Figure 37 shows the Edit File (EDTF) command prompted with the F4 function key.

Ec	dit File (EDTF)	
Type choices, press Enter.			
Stream file, or	> '/opt/i2/	Rhythm/5_0/ADW/'	
Data base file	*LIBL	Name, *LIBL, *CURLIB	
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	F13=How to use this display	

Figure 37. Edit File (EDTF) command prompt of /opt/i2/Rhythm/5_0/ADW/

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the Edit File (EDTF) command (option 9) to delete the Active Data Warehouse environment and start from the very beginning (Figure 38).
 - Continue with the installation defaults to overwrite the existing environment. Overwriting an existing directory is not recommended by i2.

 Specify a new target directory on the iSeries server during the installation procedure (see Figure 42 on page 54 where this can be defined). You may want to do this if you want multiple Active Data Warehouse environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: Position to New File :	/opt/i2/Rł ::	nythm/5_0/	ADW Record . :	1 of :	1
2=Edit 4=D	elete File	5=Display	6=Path Size	9=Recursive I	Delete
Opt Name 9 OS400_450)	Size *DIR	Owner I2OWNER	Changed 02/19/01 14:00	Used 02/19/01 14:08
					Bottom
F3=Exit	F12=Cancel (C) COPYRI	F16=Sort CHT IBM COR	F17=Position P. 1980, 2000	n to F22=Displa	ay entire field

Figure 38. Using EDTF to recursively delete an existing Active Data Warehouse environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, refer to 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Active Data Warehouse software in your iSeries CD-ROM drive.
- 7. Start the installation from an OS/400 command line by using the Load and Run (LODRUN) command. Press the F4 function key to prompt it. The Load and Run (LODRUN) panel (Figure 39) appears.

Select ***OPT** or the name of your optical drive for the Device parameter. Press Enter when you are ready to start the installation.

You could also simply issue the following command:

LODRUN DEV(*OPT)

	Load and Run (LODF	RUN)	
Type choices, press Enter.			
Device	*OPT Na	ame, *TAP, *DKT, *OPT	
		Bottom	
F3=Exit F4=Prompt F5=Re: F24=More keys	fresh F12=Cancel	F13=How to use this display	

Figure 39. Load and Run (LODRUN) prompt to start the Active Data Warehouse installation

The *OPT option assumes your optical device is named OPT01. If you are not sure, you can use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)

- 8. Once the installation is started, you see messages such as the following examples at the bottom of your panel:
 - Restoring software installation...
 - Copying Start/Stop menu files...
 - Running Installation Procedure...
- A panel appears that asks you to verify the CD-ROM path to the Active Data Warehouse code. QOPT is the optical file system, and ADW_5_0 is the label of the CD-ROM in the CD-ROM drive. This is shown in Figure 40. Press Enter to continue the installation.

I20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation AS/400 Platforms	2/20/01 13:44:18
Enter CDROM	path[/cdrom]:	
/qopt/ADW	_5_0	
Input chang	es and press enter	
F3=Exit F12=Cance	21	J

Figure 40. Confirming the CD-ROM path to Active Data Warehouse code

10. You now see a panel like the example in Figure 41 where you can review:

- The required disk space and space available on the iSeries server
- The i2 product and release level to be installed
- The OS/400 release level (V4R4M0 required)
- The default installation directory

The correct choices are filled in, so simply press Enter to continue the installation.

I20WNER ALLINFO	i2 Technologies, Inc. TradeMatrix Installation AS/400 Platforms		2/20/01 15:26:52
Yo	You are about to install TradeMatrix 5.0		
Disk space: Rea Select a product to ind 1. ADW	quired: 164 MB stall?	Available: 22,627 MB Select an OS/400 version? 1. OS400 V4R5M0	
Which Product? 1		Which OS Version? 1	
Install directory: /opt/i2/Rhythm/5_0 Make your choices and press Enter.			
F3=Exit			

Figure 41. Confirming the installation defaults

11. The next panel (Figure 42) looks similar to the previous one, with the only selectable option being the installation directory. The installation program builds the default directory where the Active Data Warehouse environment is placed based on the selections made in Figure 41. This is where you can specify a different directory if you want multiple versions of the Active Data Warehouse environment on the same system.

The installation program checks to see if the target directory already exists on the system. You can accept the default and overwrite the files in the directory if it already exists. If the target directory is not available, it is created as shown in Figure 42. Press Enter to continue with the installation.

```
T2OWNER
                         i2 Technologies, Inc.
                                                                  2/20/01
ALLINFO2
                                                                 15:27:29
                          TradeMatrix Installation
                           AS/400 Platforms
                   You are about to install TradeMatrix 5.0
                  Required: 164 MB
                                       Available: 22,627 MB
Disk space:
Select a product to install? Select an OS/400 version?
  1. ADW
                                        1. OS400 V4R5M0
  Which Product? 1
                                        Which OS Version? 1
Install directory: /opt/i2/Rhythm/5_0/ADW/0S400_450
Target directory does not exist. To create it press Enter.
F3=Exit
```

Figure 42. Confirming the default/specifying a new Active Data Warehouse installation directory

12. The installation program now initiates a Control Language Program (CLP), and the panel in Figure 43 is shown. At this point, the installation program uncompresses and restores the program files.



Figure 43. Installation status: Restoring program files

13.As long as the installation status panels continue to appear and the less than (<) and greater than (>) characters move, there is no need to press any key until the panel in Figure 44 appears. The installation program prompts for the generation of an environment setup script that you want to do. Leave y for Yes, and press Enter to continue the installation.

I 20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation AS/400 Platforms	2/20/01 15:30:28
Do you wa	ant to generate an environment setup $script(Y/N)$	Y
F3=Exit F12=Ca	ancel	

Figure 44. Generating an environment setup script

14.After the environment setup script file is created, the installation is complete. Then you see the panel in Figure 45. Press Enter to return to an OS/400 command line.

120WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation AS/400 Platforms	2/20/01 15:30:28
	Installation Completed	
	Installation finished. No errors were detected.	
	Press Enter to continue.	

Figure 45. Active Data Warehouse installation completed panel

15. The installation invoked many background jobs. You can quickly check to make sure they completed normally by looking at your message queue using the Display Messages (DSPMSG) command:

DSPMSG MSGQ(I20WNER)

An example is shown in Figure 46. If everything looks good, you can use the F13 key to remove them all or the F11 key to remove them one at a time.

Display Messages					
Queue : I20WNER	System:	I2 *DSPMSG			
Library : QUSRSYS	Library :				
Severity : 00	Delivery :	*NOTIFY			
Type reply (if required), press	Enter.				
Job 055284/I2OWNER/QP0ZSPWP co	mpleted normally on 02/20/01 at	15:28:06.			
Job 055285/I2OWNER/QP0ZSPWP co	mpleted normally on 02/20/01 at	15:28:06.			
Job 055287/I2OWNER/QP0ZSPWP co	mpleted normally on 02/20/01 at	15:30:17.			
JOB 055288/120WNER/QP0ZSPWP CO	mpleted normally on 02/20/01 at	15:30:18.			
JOD 055282/120WNER/ADRGMFIL CO	mpleted normally on 02/20/01 at	15:30:19.			
JOD 055291/120WNER/QP02SPWP CO	mpleted normally on 02/20/01 at	15:30:21.			
JOD US5292/IZOWNER/QPUZSPWP CO	mpleted normally on 02/20/01 at	15:30:21.			
JOD U55294/IZOWNER/QPUZSPWP CO	mpieled normally on 02/20/01 at	15:30:22.			
JOD 055289/120WINER/ADCPSIATUS	completed normally on 02/20/01	at 15:30:22.			
		Dather			
E2-Excit E11-Domotro	2 morgano E12-0	Bollom			
FIZ-Demotre all FII-Relidve	a message FIZ=C	lancer			
TIJ-MENDVE ATT FIG=RENDVE	all encept unansweren F24=N	TOTE KEYS			

Figure 46. Display Messages (DSPMSG) for I2OWNER

16.After the installation completes, a log file is written to the root (/) directory of the IFS in the form /trdmtx-install-log.mm-dd-yy.hh:mm:ss.ADW. The log file can be used to diagnose installation problems.

To display the log file, use the Edit File (EDTF) command:

EDTF STMF('/')

Then type option 5 next to the log file. A sample log file is shown in Figure 47.

```
Browse : /trdmtx-install-log.02-20-01.15:26:52.ADW
             1 of
                     820 by 18
                                               Column:
                                                         1 of 59 by 131
Record . :
Control :
····+···1···+···2···+···3···+···4···+···5···+···6···+···7···+···
 DisplayALLINFORec().
  FillTargetDir().
  FillTargetDir().
    ProdSelected.
    ArchSelected.
    tmpbuff=/opt/i2/Rhythm/5_0/ADW/OS400_450.
Dir value is NULL.
Dir NOT Opened.
non existing dir://opt/i2/Rhythm/5_0/ADW/OS400_450.
  TargetDir=.
  TargetDir=/opt/i2/Rhythm/5 0/ADW/OS400 450.
  cCopyFiles() - Before Customize.Setup( ADW ).
cCustomize.Setup( "ADW" ).
  CDInfoCurProd=ADW.
  CurProdU=ADW.
  CurProdL=adw.
  cCopyFiles() - After Customize.Setup(ADW).
RunCreateLibCL:
         F10=Display Hex F12=Cancel F15=Services F16=Repeat find
F3=Exit
           (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 47. Sample /trdmtx-install-log file generated during product installation

17.A library called ADW is created and only used as part of the installation. You can delete it by using the Delete Library (DLTLIB) command:

DLTLIB LIB (ADW)

Or, you can use it to contain Active Data Warehouse files and programs.

18.If you want to see the results of the Active Data Warehouse installation, you can use the Edit File (EDTF) command to view the contents of the directory /opt/i2/Rhythm/5_0/ADW/OS400_450:

EDTF STMF('/opt/i2/Rhythm/5_0/ADW/OS400_450')

An example is shown in Figure 48.

Directory: /opt/i2/Rhyth Position to: New File :	m/5_0/ADW/0 Record	\$400_450 .: 1 of	£ 10	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete
Opt Name	Size	Owner	Changed	Used
ADW_5_0	4K	120WNER	10/05/00 14:42	10/05/00 14:42
COPYRIGHT	8K	120WNER	10/05/00 14:42	10/05/00 14:42
common	*DIR	120WNER	10/05/00 14:42	10/05/00 14:42
ddl	*DIR	120WINER	10/05/00 14:43	10/05/00 14:43
loader	*DIR	120WNER	10/05/00 14:43	10/05/00 14:43
migrator	*DIR	120WINER	10/05/00 14:44	10/05/00 14:44
ui	*DIR	120WNER	10/05/00 14:45	10/05/00 14:45
<on_instructions.pdf< td=""><td>256K</td><td>120WINER</td><td>10/05/00 14:47</td><td>10/05/00 14:47</td></on_instructions.pdf<>	256K	120WINER	10/05/00 14:47	10/05/00 14:47
doc	*DIR	120WINER	10/05/00 14:48	10/05/00 14:48
custom	*DIR	120WNER	02/20/01 15:30	02/20/01 15:30
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field

Figure 48. Using EDTF to display the Active Data Warehouse directory after installation

3.1.3 Verifying the existence of a local relational database directory entry

Before you create an Active Data Warehouse SQL collection or schema on your iSeries server and populate it using a source file of SQL statements (what i2 calls a Data Definition Language (DDL)), verify that a host relational database name is declared on your system. You can check this by using the Work with RDB Directory Entry (WRKRDBDIRE) command. The relational database name is typically the same as the system name.

You need to ensure that you have at least one directory entry that specifies the local (*LOCAL) system, or that the relational database is located on that system. You can specify *LOCAL for only one entry in the relational database directory since there is only one database on the system. See the example in Figure 49.

Work with Relational Database Directory Entries					
Positic	Position to				
Type op 1=Add	tions, press Enter. 1 2=Change 4=Remo	ove 5=Display details	6=Print details		
Option	Relational Database	Remote Location	Text		
	12	*LOCAL			
F3=Exit (C) COPY	F5=Refresh F6=Pı RIGHT IBM CORP. 1980	rint list F12=Cancel), 2000.		Bottom	

Figure 49. Using the WRKRDBDIRE command to verify relational database directory entries
If you do not have an entry where the remote location reads *LOCAL, create one. Use the Display Network Attributes (DSPNETA) command to obtain the value for your default local location (Figure 50). This value is the name that you should use as your relational database name.

		$ \longrightarrow $
Display Network Attributes		
Current system name	Syste I2 USIEMZQ I2 I2 BLANK *ENDNODE *NONE *NONE 200 128 *LCINETID *ANY	m: I2
Press Enter to continue.		More
F3=Exit F12=Cancel		

Figure 50. Using the DSPNETA command to see what the iSeries server's default local location is

Note

If a value is present for the pending system name, use that value. This means that the system name is going to be changed from the current system name to the pending system name at the next IPL (reboot) of the iSeries server.

To add a relational database directory entry, use the Work with RDB Directory Entry (WRKRDBDIRE) command and select option 1, or use the Add RDB Directory Entry (ADDRDBDIRE) command directly. The relational database name is usually the default local location name found with the DSPNETA command. The remote location name or address should be *LOCAL:

ADDRDBDIRE RDB(I2) RMTLOCNAME(*LOCAL) TEXT ('Rochester MN')

When *LOCAL is specified, the Type parameter or attribute is ignored (see Figure 51). Press Enter.

```
Add RDB Directory Entry (ADDRDBDIRE)
Type choices, press Enter.
Relational database . . . . .
                                 12
Remote location:
 Name or address . . . . . . .
                                 *LOCAL
                                 *SNA
                                               *SNA, *IP
  Туре..
Text.
                                 Rochester MN
                                                                    Bottom
        F4=Prompt F5=Refresh F12=Cancel
                                             F13=How to use this display
F3=Exit
F24=More keys
```

Figure 51. Using the ADDRDBDIRE command to add a relational database directory entry

After you press Enter, you should see a completion message Relational database directory entry added. You can use the WRKRDBDIRE command to verify that it was added. Your panel should look like the example in Figure 49 on page 58.

3.1.4 Creating an SQL collection or schema

You need to create an SQL collection or schema on your iSeries server into which you can install the Active Data Warehouse tables or database. You can use the Start SQL Interactive Session (STRSQL) command to perform this if you have DB2 Query Manager and SQL Development Kit for iSeries (Licensed Program Product (LPP) 5769-ST1/5722-ST1) on your system.

To create an SQL collection using the STRSQL command, follow these steps:

- Issue the Start SQL Interactive Session (STRSQL) command and press Enter. You can use the F4 function key to prompt the command if you want to change properties like using the Naming convention (NAMING) parameter to change from the system naming convention (library-name/file-name) to the SQL naming convention (collection-name.table-name).
- 2. On the Enter SQL Statements panel, notice the first line that tells you which database you are currently working in:

Current connection is to relational database I2.

Now you can type the SQL statement that you want to run and press Enter. Since you need to create a collection, use the CREATE COLLECTION statement and then specify the desired name of the collection. We used ADW50P1 so that it would be easy to tell that this was for Active Data Warehouse and at the 5.0p1 release level, for example:

CREATE COLLECTION ADW50P1

Interactive SQL is *not* case sensitive, so you do not have to use uppercase characters like we used.

If the collection name you want already exists on the system and you want it to be replaced, then you have to first drop the collection and then create the new collection. For example, use:

DROP COLLECTION <collection name>

Then use:

CREATE COLLECTION <collection name>

An example of creating a collection is shown in Figure 52.

C	Enter SQI	Statements	
Type SQL statement, p Current connecti > CREATE COLLEC Collection ADW50	ress Enter. on is to relation TION ADW50P1 P1 created.	al database I2.	
===>			
F3-Frit F4-Dromot	F6-Incert line	F9-Petrieve F10-Conv line	Bottom
F12=Cancel	F13=Services	F24=More keys (C) COPYRIGHT IBM CORP. 1982,	2000.

Figure 52. Creating an SQL collection using the STRSQL command

You can use the F4 function key to prompt SQL commands for help in creating an SQL statement. Like other iSeries server panels, you can view previously typed statements and sent messages by pressing the Page Down (Roll Up) and Page Up (Roll Down) keys.

You can copy a statement to the current line by placing the cursor on the statement you want to copy and press the F9 (Retrieve) function key, or to just copy the last statement you entered, press the F9 function key without moving the cursor. You can then edit and run the copied statement.

Function key F13 (Services) displays the Interactive SQL Session Services menu and allows you to change current session attributes or properties, along with other options.

 Creating a collection on the iSeries server creates a library by the same name and populates it with approximately 17 SQL catalog views as shown in Figure 53. To view the contents of a collection, you can use an SQL statement such as:

SELECT * FROM ADW50P1/SYSTABLES

Press the F19 and F20 function keys to move the display left and right to see the entire SQL results.

Display Data				
	Data width			
Position to line	Shift to column			
+1+2+3+4.	+5+6+7+8			
TABLE NAME	TABLE OWNER			
_	—			
SYSCHKCST	I20WNER			
SYSCOLUMNS	I20WNER			
SYSCST	I20WNER			
SYSCSTCOL	I20WNER			
SYSCSTDEP	I20WNER			
SYSINDEXES	120WNER			
SYSKEYCST	I20WNER			
SYSKEYS	120WNER			
SYSPACKAGE	I20WNER			
SYSREFCST	120WNER			
SYSTABLES	I20WNER			
SYSTRIGCOL	I20WNER			
SYSTRIGDEP	I20WNER			
SYSTRIGGERS	120WNER			
SYSTRIGUPD	120WNER			
SYSVIEWDEP	I20WNER			
SYSVIEWS	I20WNER			
******* End of data *******				
	Bottom			
F3=Exit F12=Cancel F19=Left	F20=Right F21=Split F22=Wid			

Figure 53. Viewing the contents of a newly created SQL collection using the STRSQL command

- 4. Press the F3 or F12 function key to exit the Display Data panel, and then press the F3 or F12 function key to exit the Enter SQL Statements panel. On the Exit Interactive SQL panel, you can select from one of the following options:
 - Option 1 to leave interactive SQL and save your session, including all SQL statements run
 - Option 2 to leave interactive SQL without saving your session
 - Option 3 to return back to the Enter SQL Statements panel
 - Option 4 to save the current session in a source file as defined in the Change Source File display when Enter is pressed

Option 1 is the default and is the most common choice.

5. You can also display the contents of the library (collection) from an OS/400 command line using the Display Library (DSPLIB) command (Figure 54):

DSPLIB LIB(ADW50P1)

Display Library					
LibraryADW50P1Number of objects19TypePRODASP of library1Create authority*SYSVAL1					
Type options, press Enter. 5=Display full attributes 8=Display service attributes					
Opt Object QSQJRN0001 QSQJRN SYSCHKCST SYSCOLUMNS SYSCST SYSCSTOL SYSCSTOL SYSCSTOEP SYSINDEXES SYSKEYCST SYSKEYS SYSPACKAGE	Type *JRNRCV *JRN *FILE *FILE *FILE *FILE *FILE *FILE *FILE *FILE *FILE	Attribute LF LF LF LF LF LF LF LF LF LF	Size 110592 8192 28672 57344 53248 45056 40960 69632 73728 57344 77824	Text COLLECTION - created COLLECTION - created SQL catalog view SQL catalog view	
F3=Exit F12=Cancel F17=Top F18=Bottom (C) COPYRIGHT IEM CORP. 1980, 2000.					

Figure 54. Displaying the SQL collection/library ADW50P1 using the DSPLIB command

Notice that there are actually two extra objects in the library compared to what we saw in Figure 53. This is because the system also starts journaling for the collection, so a journal (*JRN) and journal receiver (*JRNRCV) are created.

3.1.5 Changing the job decimal format to *BLANK

We discovered problems when trying to run the Active Data Warehouse SQL scripts or DDLs. This occurred because our iSeries server job did not have the decimal format set to *BLANK. The decimal format specifies the decimal point character and the type of zero suppression, and *BLANK means that a period (.) is used for the decimal format with zero suppression. You can use the Display Job (DSPJOB) command and then select option 2 (Display job definition attributes) to verify what your current job is using (Figure 55).

	Display Job D	efinition Attribut	es	
Job: QPADEV000N	User: I20WN	ER Number:	System: 025140	12
Job date	g , , , , , , , , , , , , , , , , , , ,		01/29/2002 *MDY / : *BLANK 00000000 *RQD ' *KEEP *NORMAL *NORMAL	
Device recovery action Time slice end pool .	n		*DSCMSG *NONE	
Press Enter to contin F3=Exit F5=Refresh	ue. F12=Cancel	F16=Job menu		More

Figure 55. Using the DSPJOB command to verify a job's decimal format

If your job is not set to use *BLANK, use the Change Job (CHGJOB) command to set this:

CHGJOB DECFMT (*BLANK)

3.1.6 Running ADWDDL to create tables in the SQL collection

The DDLs or SQL scripts needed to populate the SQL collection were installed into the /opt/i2/Rhythm/5_0/ADW/OS400_450/ddl/ directory on the iSeries server. The suffixes for the script names are "_B" and "_H", which indicate that they are base and history tables.

For the base tables script, the iSeries server could not open the whole file. Therefore, i2 divided the DDL400_B.sql file into three parts with the suffixes "_B1", "_B2", and "_B3." The same is true for the DDL400_H.sql file that was divided into two parts with the suffixes of "_H1" and "_H2". This means that there are five DDLs to create Active Data Warehouse tables on the iSeries server:

- **DDL400_B1.sql**: This script is used to CREATE all the base tables and indexes. This script does not CREATE a table if it already exists. This has the first 150 CREATE TABLE statements, CREATE INDEX statements, and LABEL ON COLUMN statements.
- DDL400_B2.sql: This script is a continuation of the process for the B1 script.
- DDL400_B3.sql: This script creates all the foreign key's on related tables and indexes.
- **DDL400_H1.sql**: This script is used to CREATE the first 150 history tables and primary keys. It does not CREATE a table if it already exists.
- DDL400_H2.sql: This script is a continuation of the process for the H1 script.

These DDLs can be run manually as described in 3.2, "Active Data Warehouse installation using the manual procedure" on page 73. The LODRUN installation

program created two objects in library QGPL that can be used to run all of the DDLs in an automated procedure. The first object is a command called Create ADW Database (ADWDDL) and the second is a program called ADWINST that is used by the ADWDDL command. You can use the Work with Objects (WRKOBJ) command to verify that they are on your system:

WRKOBJ OBJ (QGPL/ADW*)

An example is shown in Figure 56.

Work with Objects						
Type options, press Enter. 2=Edit authority 3=Copy 4=Delete 5=Display authority 7=Rename 8=Display description 13=Change description						
OptObjectTypeLibraryAttributeTextADWINST*PGMQGPLCLPInstall ADW 5.0ADWDDL*CMDQGPL						
Parameters for options 5, 7 and 13 or command						
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display names and types F12=Cancel F16=Repeat position to F17=Position to						

Figure 56. WRKOBJ command display of ADWINST and ADWDDL in library QGPL

Once it is verified that the objects are present, from an OS/400 command line, type ADWDDL and press the F4 function key to prompt the command. See the example in Figure 57.

	Create ADW Database	(ADWDDL)
Type choices, press Ente:	r.	
Collection : DDL directory :	 '/opt/i2/Rł	Character value nythm/5_0/ADW/OS400_450'
F3=Exit F4=Prompt F5=1 F24=More keys	Refresh F12=Cancel	F13=How to use this display

Figure 57. Create ADW Database (ADWDDL) command

For the Collection parameter, provide the name of the collection that was created on the system (in our case, ADW50P1) or the name of the collection where you want the Active Data Warehouse tables to be created. For the DDL directory parameter, provide the directory path where the DDLs are located. If you selected the defaults during product installation, it is the /opt/i2/Rhythm/5_0/ADW/OS400_450/ddl directory. See Figure 58.

```
Create ADW Database (ADWDDL)

Type choices, press Enter.

Collection : . . . . . . . . . . . . . . ADW50P1 Character value

DDL directory : . . . . . . . . . /opt/i2/Rhythm/5_0/ADW/OS400_450/ddl

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display

F24=More keys
```

Figure 58. Create ADW Database (ADWDDL) command parameters filled in

Press Enter to run the command. This is a long running procedure. Various completion messages appear every once in awhile at the bottom of your panel.

3.1.7 Active Data Warehouse collection content verification

After the Create ADW Database (ADWDDL) command completes, verify that the Active Data Warehouse collection on your iSeries server was populated successfully and that it is complete. There are a few different ways to do this. For example, you can look for errors in the job log where the ADWDDL command ran, check spooled files for SQL statement errors, and use STRSQL to look at the tables in the SQL collection. This section describes how to perform each of these tasks.

3.1.7.1 Checking a job log

One possible place to check for errors is in the job log for the user that ran the Create ADW Database (ADWDDL) command. To examine a job log, follow these steps:

- 1. If you are currently signed on as the user that ran the ADWDDL command (I2OWNER in our case), you can use the Display Job Log (DSPJOBLOG) command with no additional parameters.
- 2. Press the F10 function key (Display detailed messages) to see all messages.
- 3. Press function key F18 (Bottom) to go to the bottom of the job log, which is shown in Figure 59.

Display All Messages I2 System: Job . . : OPADEV001D 120WNER Number . . . : 388447 User . . : Multiple or duplicate referential constraints exist. File XIE1F00014 in ADW50P1 shares access path. File XIE3P00007 in ADW50P1 shares access path. File XIE4P00003 in ADW50P1 shares access path. Multiple or duplicate referential constraints exist. 20300 - SNDPGMMSG MSGID(CPF9898) MSGF(QCPFMSG) MSGDTA('Completed: All DDL400_B*.SQL files processed') Completed: All DDL400 B*.SQL files processed. 21100 - RUNSQLSTM SRCFILE (ADW50P1/QDDLSRC) SRCMBR (DDL400 H1) COMMIT (*NONE) NAMING(*SQL) DFTRDBCOL(ADW50P1) 21700 - RUNSQLSTM SRCFILE (ADW50P1/QDDLSRC) SRCMBR (DDL400 H2) COMMIT (*NONE) NAMING(*SQL) DFTRDBCOL(ADW50P1) 24400 - RETURN >> dspjoblog Bottom Press Enter to continue. F3=Exit F5=Refresh F12=Cancel F17=Top F18=Bottom

Figure 59. Displaying the job log for the user that ran the ADWDDL command

4. Page up and down to view all of the messages. Look for any that appear to be errors. To see more detailed information for a message, move your cursor over the message and press function key F1.

- Note

If errors are logged, investigate the error and take the appropriate corrective action.

5. If the job that ran the ADWDDL command is no longer active and job logging was set to save job logs, then use the Work with User Jobs (WRKUSRJOB) command. For the User whose jobs to display parameter, provide the name of the user that ran the ADWDDL command:

WRKUSRJOB USER (120WNER)

Then select option 5 (Work with) next to the desired job, option 4 (Work with spooled files), and then option 5 (Display) next to spooled file QPJOBLOG to view it.

3.1.7.2 Checking spooled files

When the DDLs are run from the Create ADW Database (ADWDDL) command, the OS/400 Run SQL Statements (RUNSQLSTM) command is used. This produces a spooled file with the results of the SQL statements run.

To view run SQL statement spooled files, follow these steps:

1. If you are currently signed on as the user that ran the ADWDDL command (I2OWNER in our case), you can use the Work with Spooled Files (WRKSPLF) command with no additional parameters.

If you are not signed on as the same user, use the F4 function key to prompt the Work with Spooled Files (WRKSPLF) command. For the Select files for:

User parameter, provide the name of the user that ran the ADWDDL command:

WRKSPLF SELECT (120WNER)

See the example in Figure 60.

Work with All Spooled Files							
Type options, press Enter. 1=Send 2=Change 3=Hold 4=Delete 5=Display 6=Release 7=Messages 8=Attributes 9=Work with printing status							
			Device or			Total	Cur
Opt	File	User	Queue	User Data	Sts	Pages	Page Copy
	QPJOBLOG	I20WNER	120WNER	QPADEV001D	RDY	1	1
	QPJOBLOG	120WNER	120WNER	QPADEV001D	RDY	1	1
	QPJOBLOG	120WNER	120WNER	QPADEV001D	RDY	1	1
5	DDL400 B1	I20WNER	120WNER	SQL	RDY	573	1
	DDL400 B2	I20WNER	120WNER	SQL	RDY	797	1
	DDL400 B3	120WNER	120WNER	SQL	RDY	122	1
	DDL400 H1	I20WNER	120WNER	SQL	RDY	547	1
	DDL400 H2	I20WNER	120WNER	SQL	RDY	757	1
	QPDSPLIB	I20WNER	120WNER		RDY	26	1
							Bottom
Parameters for options 1, 2, 3 or command							
===>		-					
F3=E	xit F10=Vi	.ew 4 F11=V	iew 2 F12=	-Cancel F22	=Print	ers F	24=More keys

Figure 60. Spooled files for user I2OWNER after the ADWDDL command was run

2. Note that a spooled file was created for each of the five DDLs. Select option 5 (Display) next to DDL400_B1 to view it (Figure 61).

Display Spooled File	
File : DDL400 B1	Page/Line
ControlB	Columns
Find	
*+1+2+3+4+5+6+	.7+8
5769SS1 V4R5M0 010525 Run SQL Statements DDL400_B1 01/29/0	02 10:21:55
Source fileADW50P1/QDDLSRC	
MemberDDL400_B1	
Commit*NONE	
Naming*SQL	
Generation level10	
Date format*JOB	
Date separator*JOB	
Time format*HMS	
Time separator*JOB	
Default collectionADW50P1	
IBM SQL flagging*NOFLAG	
ANS flagging*NONE	
Decimal point*JOB	
Sort sequence*JOB	
Language ID*JOB	
Printer file*LIBL/QSYSPRT	
Source file CCSID	
Job CCSID	
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys	

Figure 61. Displaying Run SQL Statements spooled file DDL400_B1

3. Type B for bottom on the Control option line and press Enter. An example is shown in Figure 62.

	Displa	y Spooled File	
File :	DDL400 B1		Page/Line
Control	в		Columns
Find			
*+1+2	+	+5+.	6+7+8
SQL7965 0 20508	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20511	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20514	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20517	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20520	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20523	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20526	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7965 0 20529	Position 1 LABEL ON	I for FORCS00001	in ADW50P1 completed.
SQL7954 0 20532	Position 1 Index XI	E1FORCST_DIST cr	reated in ADW50P1 on
	table FORCS00001 in	ADW50P1.	
	Message S	Summary	
Total Info War	ning Error Sev	vere Terminal	
5613 5613	0 0	0 0	
00 level severity er	rors found in source	2	
* *	* * * END OF I	ISTING *	* * * *
	I2		
5769SS1 V4R5M0 01052	5 Run SQL Statem	ents DDL400_	B1 01/29/02 10:21:55 Page
Record *+ 1 .	+ 2+ 3 .	+ 4+	5+ 6+ 7 .
	I2		
			Bottom
F3=Exit F12=Cancel	F19=Left F20=Ri	.ght F24=More k	ieys

Figure 62. Displaying the bottom of the Run SQL Statements spooled file DDL400_B1

- 4. The bottom of the spooled file contains a message summary section where the count of Info, Warning, Error, Severe, and Terminal errors are listed. Notice that in Figure 62, there are only informational messages logged (no Warning, Error, Severe, or Terminal messages). This indicates the successful execution of the RUNSQLSTM command for this SQL script or DDL.
- 5. Repeat this process for all five of the DDL spooled files listed on the WRKSPLF command results panel (Figure 60).

```
Note
If errors are logged, investigate the error and take the appropriate corrective
action.
```

3.1.7.3 Checking the tables in the SQL collection

You can use the Start SQL Interactive Session (STRSQL) command to look at the tables in an Active Data Warehouse SQL collection if you have LPP DB2 Query Manager and SQL Development Kit for iSeries (5769-ST1 or 5722-ST1) on your system.

To look at tables in an SQL collection using the STRSQL command, follow these steps:

- Issue the Start SQL Interactive Session (STRSQL) command and press Enter. You can use the F4 function key to prompt the command if you want to change properties like using the Naming convention (NAMING) parameter to change from the system naming convention (library-name/file-name) to the SQL naming convention (collection-name.table-name).
- 2. On the Enter SQL Statements panel, type the SQL statement that you want to run and press Enter. Since you want to view tables in the Active Data Warehouse collection, use a statement such as:

SELECT * FROM ADW50P1/SYSTABLES

ADW50P1 was the collection we created in 3.1.4, "Creating an SQL collection or schema" on page 60. Interactive SQL is not case sensitive, so you do not have to use uppercase characters like we used. See the example in Figure 63.

	Enter SQL	Statements		
Type SQL statement, p Current connecti > SELECT * FROM AD SELECT statement	ress Enter. on is to relation W50P1/SYSTABLES run complete.	al database I2		
===>				
				Bottom
F3=Exit F4=Prompt	F6=Insert line	F9=Retrieve	F10=Copy line	
riz=cancer	LTD=DETAICER	(C) COPYRIGH	T IBM CORP. 1982,	2000.

Figure 63. Viewing tables in an SQL collection using the STRSQL command

You can use the F4 function key to prompt SQL commands for help creating an SQL statement. Like other iSeries server panels, you can view previously typed statements and messages sent by pressing the Page Down (Roll Up) and Page Up (Roll Down) keys. You can copy a statement to the current line by placing the cursor on the statement you want to copy and press the F9 (Retrieve) function key. Or to copy the last statement you entered, press the F9 function key without moving the cursor. You can then edit and run the copied statement. The F13 (Services) function key displays the Interactive SQL Session Services menu and allows you to change current session attributes or properties, along with other options.

Press function keys F19 and F20 to move the display left and right to see the entire SQL results (Figure 64).

	Display Data			
			Data width .	
Position to line		Shif	Et to column	
+1+2+3+4+			6+7	+ 8
TABLE NAME		TABLE OF	WNER	
_				
ADW_CTRL		120WNER		
ADW CTRL H		I20WNER		
ADW HIST		120WNER		
ADW H HIST DEF		I20WNER		
ADW_H_TABLE_DEF		I20WNER		
ADW H SEL CRIT		120WNER		
ADW H HIST DEF H		I20WNER		
ADW_H_TABLE_DEF_H		120WNER		
ADW_H_SEL_CRIT_H		I20WNER		
ADW_MESG_LOG		120WNER		
ADW_MESG_LOG_H		I20WNER		
ADW_NET_CHG		I20WNER		
ADW_NET_CHG_DEF		I20WNER		
ADW_NET_CHG_MAP		I20WNER		
ADW_NET_CHG_H		I20WNER		
ADW_NET_CHG_DEF_H		I20WNER		
ADW_NET_CHG_MAP_H		I20WNER		
ADW_S_CRIT		I20WNER		
				More
F3=Exit F12=Cancel	F19=Left	F20=Right	F21=Split	F22=Wid

Figure 64. Viewing the contents of a populated SQL collection using the STRSQL command

- 3. Compare the results in Figure 64 (populated collection) with the results in Figure 53 on page 62 (newly created collection). Press the F3 or F12 function key to exit the Display Data panel.
- 4. Another helpful SQL statement to run and see the amount of tables in an SQL collection is:

SELECT COUNT(*) FROM ADW50P1/SYSTABLES

ADW50P1 was the collection we created in 3.1.4, "Creating an SQL collection or schema" on page 60. Interactive SQL is not case sensitive, so you do not have to use uppercase characters like we used. See the example in Figure 65.

		Display I	Data		
Position	Position to line			Shift to column	 1
+ COUNT (1				
******	815 End of data ****	****			
F3=Exit	F12=Cancel	F19=Left	F20=Right	F21=Split	Bottom F22=Wid

Figure 65. Viewing the count of tables in a populated SQL collection using the STRSQL command

- 5. Press the F3 or F12 function key to exit the Display Data panel, and then press either function key again to exit the Enter SQL Statements panel. On the Exit Interactive SQL panel, you can select from one of the following options:
 - Option 1 to leave interactive SQL and save your session, including all SQL statements that were run.
 - Option 2 to leave interactive SQL without saving your session.
 - Option 3 to return back to the Enter SQL Statements panel.
 - Option 4 to save the current session in a source file as defined in the Change Source File display when Enter is pressed.

Option 1 is the default and is the most common choice.

6. You can also display the contents of the library (collection) from an OS/400 command line using the Display Library (DSPLIB) command:

DSPLIB LIB(ADW50P1)

See the example in Figure 66.

Display Library					
Library : ADW50P1 Type : PROD Create authority : *SYSVAL			Number of objec ASP of library	rts . : 1247 : 1	
Type options, press Enter. 5=Display full attributes 8=Display service attributes					
Opt Object QSQJRN0001 QSQJRN ADW_CTRL ADW_CTRL_H ADW_HIST ADW_H00001 ADW_H00002 ADW_H00003 ADW_H00004	Type *JRNRCV *JRN *FILE *FILE *FILE *FILE *FILE *FILE	Attribute PF PF PF PF PF PF PF	Size 293855232 118784 192512 180224 188416 192512 335872 331776 180224	Text COLLECTION - created COLLECTION - created	
ADW_H00005 ADW_H00006 F3=Exit F12=Ca	*FILE *FILE ncel F17	PF PF 7=Top F18=Bot	180224 180224	More	
(C) COPYRIGHT IB	M CORP. 19	980, 2000.			

Figure 66. Displaying the SQL collection/library ADW50P1 using the DSPLIB command

7. Compare the results in Figure 66 (populated collection) with the results in Figure 54 on page 63 (newly created collection).

3.2 Active Data Warehouse installation using the manual procedure

This section explains how to install Active Data Warehouse Version 4.3.1 on the iSeries server using a manual process that was needed before LODRUN support was made available. You can also use this process for older versions of Active Data Warehouse. For newer versions of Active Data Warehouse, you can use the LODRUN command, which is a more automated installation process. This is explained in 3.1, "Active Data Warehouse installation using the LODRUN command" on page 49.

As mentioned in 2.1, "iSeries server requirements" on page 11, the iSeries must be running OS/400 V4R4M0 (License Program 5769-SS1), with the Qshell Interpreter (Option 30), and DB2 Query Manager and SQL Development Kit for iSeries (5769-ST1). The installation of the Active Data Warehouse installation code requires approximately 2.5 MB of disk space. The SQL collection requires approximately 280 MB of disk space before customer data is added.

After you order Active Data Warehouse from i2, you receive a CD-ROM that contains everything you need to install the product.

The steps to install Active Data Warehouse are summarized here:

- 1. Extract the DDL files from the Active Data Warehouse CD-ROM to a PC.
- 2. Create a unique user profile.
- 3. Verify the existence of a local relational database directory entry.
- 4. Create an SQL collection or schema.
- 5. Change the current library to the name of the SQL collection.

- 6. Create a source physical file.
- 7. Change job decimal format to *BLANK.
- 8. Transfer the DDL files from a PC to the iSeries server.
- 9. Use the RUNSQLSTM command to run the DDLs to create tables in the SQL collection.

3.2.1 Extracting DDL files from the Active Data Warehouse CD-ROM

First you need to install the Active Data Warehouse product onto a PC running Microsoft Windows 95, Windows 98, Windows NT, or Windows 2000. This allows the required iSeries server Active Data Warehouse DDL source components to be retrieved. We used a PC running Windows NT.

To extract the DDLs from the CD-ROM, follow these steps:

- 1. Place the CD-ROM containing the Active Data Warehouse software in the CD-ROM drive of a client PC.
- 2. The Active Data Warehouse setup program should start automatically and prompt you with a setup program installation window. If not, you can manually execute SETUP.EXE from the Windows NT folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the Windows NT folder.
 - c. Double-click SETUP.EXE.

Or you can follow these steps:

- a. Click Start-> Run.
- b. Type:

(drive):\NT\SETUP.EXE

Here (drive) is the drive letter assigned to your CD-ROM.

- c. Press Enter.
- 3. Follow the instructions in each window presented until the installation of Active Data Warehouse is completed.

3.2.2 iSeries server preparation

Before you send the extracted DDLs to the iSeries server, you must prepare the iSeries server for the installation of the Active Data Warehouse product. To prepare the iSeries server for Active Data Warehouse, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Active Data Warehouse code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, refer to 2.4.1, "User profile creation" on page 33.
- 3. Decide on a name to use for your SQL collection and a matching user profile (only needed when installing using this manual procedure).

Be aware that the names of the collection and the user profile to be created must be the same. We recommend that you choose a meaningful name; we

used ADW431 since we are installing Version 4.3.1 of the Active Data Warehouse product.

4. Use the Create User Profile (CRTUSRPRF) command to create a user profile with a user class of *SECOFR:

CRTUSRPRF USRPRF(ADW431) PASSWORD(<password>) USRCLS(*SECOFR) TEXT('i2 Active Data Warehouse installation user profile')

You should see the completion message User profile ADW431 created.

- 5. After the user profile is created, sign off of the iSeries server and then sign back on using the newly created user profile. All further steps are done under the new user profile.
- 6. Go to 3.1.3, "Verifying the existence of a local relational database directory entry" on page 58, and follow the steps to verify that there is a *LOCAL relational database directory entry. In our case, it was the same name as the iSeries server or I2.
- 7. Go to 3.1.4, "Creating an SQL collection or schema" on page 60, and follow the steps to create an SQL collection. We created one called ADW431 since we are installing version 4.3.1 of the Active Data Warehouse product.
- 8. You now need to change your current library to the newly created collection. There are two ways to do this:
 - Change the current library parameter specified in the ADW431 user profile. This can be done using the Change User Profile (CHGUSRPRF) command:

CHGUSRPRF USRPRF (ADW431) CURLIB (ADW431)

You should see the completion message User profile ADW431 changed. You can use the Display User Profile (DSPUSRPRF) command to verify that the current library is set to ADW431.

This change does not take effect until the next time that the ADW431 user profile signs on, so you have to sign off and back on to activate the change.

• Use the Change Current Library (CHGCURLIB) command to have this change take effect immediately:

CHGCURLIB CURLIB (ADW431)

You should see the completion message Current library changed to ADW431. You can use the Display Library List (DSPLIBL) command to verify that ADW431 is now your current library.

9. Create a source physical file in the collection (library) that was created in step 7 on page 75. To do this, use the Create Source Physical File (CRTSRCPF) command. We recommend that you use QDDLSRC as the name of the file:

CRTSRCPF FILE(ADW431/QDDLSRC) TEXT('i2 Active Data Warehouse DDL source file')

You should see the completion message File QDDLSRC created in library ADW431.

- Note

It is not necessary to create the source physical file with members at this time. The source members are added to the file when the extracted DDL source components are transferred from a PC to the iSeries server.

10.Go to 3.1.5, "Changing the job decimal format to *BLANK" on page 63, and follow the steps to make sure that your iSeries server job has decimal format set to *BLANK.

3.2.3 Transferring the DDL source files to the iSeries server

Now you need to copy or transfer the extracted DDL source files from your PC to the iSeries server. There are different ways to accomplish this task. For example, you can map a network drive, use Client Access Operations Navigator to drag files from a PC to the iSeries server, or use File Transfer Protocol (FTP), which is what we used.

To transfer files from a PC to an iSeries server using FTP, follow these steps:

- 1. The Active Data Warehouse installation program should have placed the DDL source files in the C:\Rhythm\ADW\4.3.1\ddl directory if you didn't change the installation defaults. The names of the DDL files are:
 - DDL400B1.SQL
 - DDL400B2.SQL
 - DDL400B3.SQL
 - DDL400H1.SQL
 - DDL400H2.SQL

A Windows Explorer view of the files on a PC is shown in Figure 67.

Exploring - C:\Rhythm\ADW\4.3.1\ddl					
Eile Edit View Iools Help					
dd 🗨 🗈	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	s X	Pa 5- 55	1	
All Folders	Contents of 'C:\Rhythm\A	DW\4.3.1\	dd'		
🗟 Desktop 🔺	Name	Size	Туре	Modified	Attributes
🚊 🗐 My Computer	alt_db2_431.sql	38KB	SQL File	5/19/00 5:46 AM	A
🗄 🖅 3½ Floppy (A:)	alt_db2_h_431.sql	22KB	SQL File	5/19/00 5:46 AM	Α
🖻 🧊 Itso (C:)	🚮 alt_ddl400_431.sql	35KB	SQL File	5/19/00 5:46 AM	Α
Adobeapp	alt_ddl400_h_431	20KB	SQL File	5/19/00 5:46 AM	Α
Books	alt_oracle_431.sql	39KB	SQL File	5/19/00 5:46 AM	Α
	alt_oracle_h_431.sql	24KB	SQL File	5/19/00 5:46 AM	Α
	alt_sql_server_431	32KB	SQL File	5/19/00 5:46 AM	Α
	alt_sql_server_h_4	22KB	SQL File	5/19/00 5:46 AM	Α
	DB2_B.sql	567KB	SQL File	5/19/00 5:46 AM	Α
	🔂 DB2_H.sql	351KB	SQL File	5/19/00 5:46 AM	Α
E Pstonts	DDL400_B1.SQL	385KB	SQL File	5/19/00 5:46 AM	Α
	DDL400_B2.SQL	670KB	SQL File	5/19/00 5:46 AM	Α
Recycled	🕀 DDL400_B3.SQL	173KB	SQL File	5/19/00 5:46 AM	Α
🖻 🛗 Bhythm	DDL400_H1.SQL	397KB	SQL File	5/19/00 5:46 AM	A
📄 💼 Adw	DDL400_H2.SQL	631KB	SQL File	5/19/00 5:46 AM	А
ė. 💼 4.3.1	💥 load_precedence	941KB	Netscape Hypertext	5/19/00 5:46 AM	Α
🗀 common	oracle_B.SQL	586KB	SQL File	5/19/00 5:46 AM	Α
	Garacle_H.SQL	385KB	SQL File	5/19/00 5:46 AM	Α
🕀 💼 doc	■ README.txt	5KB	Text Document	5/19/00 5:46 AM	A
🗄 🧰 loader	SQL_Server_B.sql	512KB	SQL File	5/19/00 5:46 AM	A
🕀 🧰 migrator	SQL_Server_H.sql	374KB	SQL File	5/19/00 5:46 AM	A
📕 🔍 🚬 🖽 🛄 ui	Tablespace_Guid	4KB	Text Document	5/19/00 5:46 AM	A
sdwork					
5 object(s) selected 2.20MB					

Figure 67. A Windows Explorer view of the Active Data Warehouse DDL source files

- 2. Open an MS-DOS command prompt window on the PC by clicking **Start-> Programs-> Accessories-> Command Prompt**.
- 3. Use the cd command to change to the directory where the DDL source files are located, which is C:\Rhythm\ADW\4.3.1\ddl:

cd C:\Rhythm\ADW\4.3.1\ddl

4. Connect to the iSeries server using FTP:

ftp i2

- 5. Enter your iSeries server user ID, which is ADW431 in this example.
- 6. Enter the password for your iSeries server user ID.
- 7. Use the pwd command to verify that you are in the library that is the same name as the user profile that you signed on as, ADW431 in our case.

If necessary, use the $_{\rm cd}$ command to change to the correct library name: $_{\rm cd}$ ADW431

8. Use the put command to transfer the DDL source files from the PC to the QDDLSRC source physical file located in the Active Data Warehouse collection:

put ddl400 bl.sql qddlsrc.ddl400 bl

- Repeat step 8 for each of the remaining DDL source files listed in step 1 on page 76.
- 10.Exit FTP using the quit command.

An example is shown in Figure 68.

C: $>cd \quad \text{ADW} 4.3.1 \ ddl$

```
C:\Rhythm\ADW\4.3.1\ddl>ftp I2
Connected to i2.domain.ibm.com.
220-QTCP at 12.DOMAIN.IBM.COM.
220 Connection will close if idle more than 5 minutes.
User (i2.domain.ibm.com: (none)): adw431
331 Enter password.
Password:
230 ADW431 logged on.
ftp> pwd
257 "ADW431" is current library.
ftp> put ddl400 b1.sql qddlsrc.ddl400 b1
200 PORT subcommand request successful.
150 Sending file to member DDL400_B1 in file QDDLSRC in library ADW431.
250 File transfer completed successfully.
ftp: 376380 bytes sent in 4.88Seconds 77.17Kbytes/sec.
ftp> put ddl400 b2.sql qddlsrc.ddl400 b2
200 PORT subcommand request successful.
150 Sending file to member DDL400 B2 in file QDDLSRC in library ADW431.
250 File transfer completed successfully.
ftp: 829908 bytes sent in 13.79Seconds 60.18Kbytes/sec.
ftp> put ddl400_b3.sql qddlsrc.ddl400_b3
200 PORT subcommand request successful.
150 Sending file to member DDL400 B3 in file QDDLSRC in library ADW431.
250 File transfer completed successfully.
ftp: 197916 bytes sent in 3.79Seconds 52.28Kbytes/sec.
ftp> put ddl400 h1.sql qddlsrc.ddl400 h1
200 PORT subcommand request successful.
150 Sending file to member DDL400 H1 in file QDDLSRC in library ADW431.
250 File transfer completed successfully.
ftp: 385123 bytes sent in 6.50Seconds 59.26Kbytes/sec.
ftp> put ddl400 h2.sql qddlsrc.ddl400 h2
200 PORT subcommand request successful.
150 Sending file to member DDL400 H2 in file QDDLSRC in library ADW431.
250 File transfer completed successfully.
ftp: 795162 bytes sent in 13.45Seconds 59.12Kbytes/sec.
ftp> quit
221 QUIT subcommand received.
C:\Rhythm\ADW\4.3.1\ddl>
```

Figure 68. Using FTP from a PC to place the DDL source files on the iSeries server

11.To verify that the file transfers were successful, you can use the Display File Description (DSPFD) command. Specify the source physical file QDDLSRC and library ADW431 for the File parameter and *MBRLIST for the Type parameter:

DSPFD FILE (ADW431/QDDLSRC) TYPE (*MBRLIST)

An example is shown in Figure 69.

Display Spooled File		
File : QPDSPFD	Page/Line	1/
Control	Columns	1
Find		
*+1+2+3+4+5+6	+7+	8
2/07/02 Display File Description		
DSPFD Command Input		
File	SRC	
Library	131	
Type of information	ULIST	
File attributes	L	
System	1	
File Description Header		
File	SRC	
Library	131	
Type of file Phys	sical	
File type	1	
Auxiliary storage pool ID 01		
Member List		
Source Creation Last Change		De
Member Size Type Date Date Time	Records	Re
DDL400_B1 1613824 02/07/02 02/07/02 13:53:52	15085	
Text:		
DDL400_B2 3186688 02/07/02 02/07/02 13:54:28	33047	
	More	∋
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys		
		,

Figure 69. Using DSPFD to view the member list for source physical file ADW431/QDDLSRC

12. The list of members in the source physical file is located at the bottom of the display (Figure 70), so you can either page down or type B on the control line and press Enter.

		Displa	ay Spooled	l File)
File :	QPDSPFD					Page/Lin	e 1/
Control	В					Columns	T
*+1+	2 + 3	+.	4+		+6	+7	+8
Auxiliary stora	age pool ID .			. :	01		
Member List							
		Source	Creation	Last (Change	_	De
Member	Size	Type	Date	Date	Time	Records	Re
DDL400_B1	1613824		02/07/02	02/07/02	13:53:52	15085	
l'ext:	210000		00/07/00	00/07/00	12 54 20	22045	
DDLAUU_BZ	3186688		02/07/02	02/07/02	13:54:28	33047	
DDI 400 B3	434176		02/07/02	02/07/02	13.54.40	4543	
Text:	101170		02/07/02	02/07/02	13.31.10	1010	
DDL400 H1	1613824		02/07/02	02/07/02	13:54:57	15063	
Text:							
DDL400_H2	3186688		02/07/02	02/07/02	13:55:17	30835	
Text:							
Total number of	members		:	:	5		
Total number of	members not	availa	ble :	:	0		
Total records			:	:	98573		
Total deleted re	ecords		:	:	0		
Total of member	sizes		:	:	10035200		
							Bottom
F3=Exit F12=Can	cel F19=Lef	t F2	0=Right	F24=More	keys		,

Figure 70. Using DSPFD to view the member list for source physical file ADW431/QDDLSRC

13. Review the list and make sure that the five DDL source files were transferred.

3.2.4 Creating the tables in the Active Data Warehouse collection

Now that the DDL source files or SQL scripts needed to populate the SQL collection are on the iSeries server, you can use the Run SQL Statements (RUNSQLSTM) command to execute the DDLs. Each member of the QDDLSRC source physical file consists of an SQL script (a series of sequential SQL executable statements). The script can be run to create the tables, views, and indexes necessary to create the Active Data Warehouse collection.

You can run RUNSQLSTM interactively from an OS/400 command line or in batch using the Submit Job (SBMJOB) command. This activity can also be done through the use of a simple CL program that you create and then run interactively or submit to batch.

3.2.4.1 Interactive execution of the DDL source members

You can interactively run the RUNSQLSTM command for each of the five DDL source files. When you do, you have to wait for each command to complete before executing the next command.

- Note -

The DDL source members in QDDLSRC must be executed one after another in a specified order. Do not attempt to run the DDL source members at the same time using multiple interactive sessions or multiple Submit Job (SBMJOB) commands.

To run the DDLs interactively, follow these steps:

- 1. Make sure that you are signed onto the iSeries server with the user profile that is the same name as the SQL collection. In our case, it is ADW431.
- 2. Use the Run SQL Statements (RUNSQLSTM) command to execute the first DDL source file DDL400_B1.
 - a. For the Source file parameter, specify QDDLSRC in library ADW431.
 - b. For the Source member parameter, specify the DDL name DDL400_B1.
 - c. For the Naming parameter, specify *SQL so that the SQL naming convention (collection-name.table-name) is used.
 - d. Make sure that the Commitment control parameter is set to *CHG, because this forces a rollback if the execution of the DDL source member is terminated abnormally.

An example of the RUNSQLSTM command prompted with the F4 function key is shown in Figure 71.

Run SQL Statements (RI	INSQLSTM)
Type choices, press Enter.	
Source file	Name Name, *LIBL, *CURLIB Name *CHG, *ALL, *CS, *NONE *SYS, *SQL
F3=Exit F4=Prompt F5=Refresh F10=Addition F13=How to use this display F24=More kee	Bottom onal parameters F12=Cancel eys

Figure 71. Prompted RUNSQLSTM command to run DDL400_B1 in ADW431/QDDLSRC

- 3. Use the Run SQL Statements (RUNSQLSTM) command to run each of the five DDL source files or members in the following execution order:
 - a. DDL400_B1

```
RUNSQLSTM SRCFILE (ADW431/QDDLSRC) SRCMBR (DDL400_B1) NAMING (*SQL)
```

b. DDL400_B2

```
RUNSQLSTM SRCFILE (ADW431/QDDLSRC) SRCMBR (DDL400_B2) NAMING (*SQL)
```

c. DDL400_B3

RUNSQLSTM SRCFILE (ADW431/QDDLSRC) SRCMBR (DDL400_B3) NAMING (*SQL)

d. DDL400_H1

RUNSQLSTM SRCFILE (ADW431/QDDLSRC) SRCMBR (DDL400_H1) NAMING (*SQL)

e. DDL400_H2

RUNSQLSTM SRCFILE (ADW431/QDDLSRC) SRCMBR (DDL400_H2) NAMING (*SQL)

- Note

If you choose to use the Submit Job (SBMJOB) command to run the DDL source files or members, be sure to submit the Run SQL Statements (RUNSQLSTM) commands to a job queue where the maximum active jobs attribute is set to 1. This attribute setting of the job queue forces the single threaded execution of the RUNSQLSTM commands.

4. After you run all five DDLs, go to 3.1.7, "Active Data Warehouse collection content verification" on page 66, to verify that the tables were created successfully.

3.2.4.2 Batch/program execution of the DDL source members

Population of the SQL collection can also be accomplished by using a simple CL program. This program can be run from an OS/400 command line or it can be run through the Submit Job (SBMJOB) command. Putting the Run SQL Statements (RUNSQLSTM) commands into a CL program ensures that the commands run sequentially or single-threaded when submitted as a batch job, regardless of the batch job queue maximum active attribute setting.

To create a CL program and run it as a batch job, follow these steps:

- 1. Make sure that you are signed onto the iSeries server with the user profile that is the same name as the SQL collection. In our case, it is ADW431.
- 2. Use the Add Physical File Member (ADDPFM) command to add a member to the QDDLSRC source physical file located in the ADW431 SQL collection.
 - a. For the Physical file parameter, specify file QDDLSRC in library ADW431.
 - b. For the Member parameter, specify the name of the file member being added to the physical file. In our case we used DDL EXEC.
 - c. For the Source type parameter, specify CLP because you want to create a CL program.

Prompt with the F4 function key. See the example in Figure 72. Press Enter.

Add Physical File Member	(ADDPFM)
Type choices, press Enter.	
Physical file	Name Name, *LIBL, *CURLIB Name ata Warehouse DDL execution CL p
Additional Parameters	5
Expiration date for member *NONE Share open data path *NO Source type > CLP	Date, *NONE *NO, *YES Name, *NONE
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	Bottom F13=How to use this display

Figure 72. Prompted ADDPFM command to add member DDL_EXEC to ADW431/QDDLSRC

You could also simply run the following command:

ADDPFM FILE(ADW431/QDDLSRC) MBR(DDL_EXEC) TEXT('i2 Active Data Warehouse DDL execution CL program') SRCTYPE(CLP)

You should see the completion message Member DDL_EXEC added to file QDDLSRC in ADW431.

- To edit the DDL_EXEC source member and add the CL program source code to it, you can use the Start Source Entry Utility (STRSEU) command. This command is available with LPP Application Development ToolSet/400 (5769-PW1) on OS/400 V4R5M0 or WebSphere Development Studio (5722-WDS) on OS/400 V5R1M0. Or you can use the Edit File (EDTF) command that is a part of the base operating system. In our case, we used the Edit File (EDTF) command.
 - a. For the Data base file parameter, specify file QDDLSRC in library ADW431.
 - b. For the File member parameter, specify the name of the file member that was added to the physical file which in our case was DDL_EXEC.

Use the F4 function key to prompt the EDTF display as shown in Figure 73. Press Enter.

Edit File (EDTF)	
Type choices, press Enter.	
Stream file, or	
Data base file > QDDLSRC Library > ADW431 File member > DDL_EXEC	Name Name, *LIBL, *CURLIB Name, *FIRST
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	Bottom F13=How to use this display

Figure 73. Using the Edit File command to edit the ADW431/QDDLSRC DDL_EXEC CL program

You could also simply run the following command:

EDTF FILE (ADW431/QDDLSRC) MBR (DDL_EXEC)

4. You can now edit the file. For more blank lines to work with in the file, type Ixx for Insert xx lines in the prefix area under the word CMD and press Enter. You need at least seven lines, so you can use I6 to add six additional new lines as shown in Figure 74.

```
Edit File: ADW431/QDDLSRC (DDL EXEC)
           1 of
Record :
                          1 by 10
                                                       Column :
                                                                13
                                                                        92 by
Control :
CMD ..+...2...+...3...+...4...+...5...+...6...+...7...+...8...+...
     ***********Beginning of data*************
16
     **************End of Data***********************
F2=Save F3=Save/Exit F12=Exit F15=Services
                                              F16=Repeat find
                                                                F17=Repeat ch
           (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 74. Using I6 to insert six additional blank lines in file ADW431/QDDLSRC DDL_EXEC

5. Now that you have enough lines, add the following text (case is not important):

pgm runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_b1) naming(*sql) runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_b2) naming(*sql) runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_b3) naming(*sql) runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_h1) naming(*sql) runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_h2) naming(*sql) endpgm

An example is shown in Figure 75.

```
Edit File: ADW431/QDDLSRC(DDL EXEC)
                                                         Column : 13
                                                                           92 by
Record : 1 of 7 by 10
Control :
\texttt{CMD} \ ..+\ldots 2\ldots +\ldots 3\ldots +\ldots 4\ldots +\ldots 5\ldots +\ldots 6\ldots +\ldots 7\ldots +\ldots 8\ldots +\ldots
    ************Beginning of data*************
  pgm
  runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400 b1) naming(*sql)
  runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400 b2) naming(*sql)
  runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400 b3) naming(*sql)
  runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400 h1) naming(*sql)
  runsqlstm srcfile(adw431/qddlsrc) srcmbr(ddl400_h2) naming(*sql)
   endpam
    F2=Save F3=Save/Exit F12=Exit F15=Services
                                                F16=Repeat find
                                                                   F17=Repeat ch
```

Figure 75. Using Edit File to add the RUNSQLSTM commands to ADW431/QDDLSRC DDL_EXEC

- 6. Press the F3 function key twice to save and exit.
- 7. To compile the CL program, use the Create CL Program (CRTCLPGM) command. For the Program parameter, specify the CL program that you just created, which was DDL_EXEC, in library ADW431. For the Source file parameter, specify the file QDDLSRC in library ADW431.

An example of the CRTCLPGM command prompted with the F4 function key is shown in Figure 76. Press Enter.

Create CL	Program (CRTCLPGM)
Type choices, press Enter.	
Program	DDL_EXEC Name ADW431 Name, *CURLIB QDDLSRC Name ADW431 Name, *LIBL, *CURLIB *PGM Name, *PGM 'i2 Active Data Warehouse DDL execution CL p
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	Bottom F10=Additional parameters F12=Cancel F24=More keys

Figure 76. Using the CRTCLPGM command to compile the ADW431/QDDLSRC DDL_EXEC program

You could also simply run the following command:

CRTCLPGM PGM(ADW431/DDL_EXEC) SRCFILE(ADW431/QDDLSRC) TEXT('i2 Active Data Warehouse DDL execution CL program')

You should see the completion message Program DDL_EXEC created in library ADW431.

If for any reason you cannot successfully create the CL program, review spooled file DDL_EXEC that is created during the compilation process. The bottom of the spooled file contains a message summary section that can help you determine the reason for any errors.

8. To run the DDL_EXEC CL program interactively, call it from an OS/400 command line:

CALL PGM(ADW431/DDL_EXEC)

Your display session remains input inhibited until the CL program completes.

To submit the CL program to batch, use the Submit Job (SBMJOB) command.

- a. For the Command to run parameter, specify the call that would be used to run the CL program interactively or CALL PGM(ADW431/DDL_EXEC).
- b. For the Job name parameter, specify DDL_EXEC so that the job is easier to recognize.

An example of the SBMJOB command prompted with the F4 function key is shown in Figure 77. Press Enter.

Subm	it Job (SBMJOB)	
Type choices, press Enter.		
Command to run	CALL PGM (ADW4:	31/DDL_EXEC)
Job name	DDL_EXEC	Name, *JOBD
Job description	*USRPRF	Name, *USRPRF Name, *LIBL, *CURLIB
Job queue	*JOBD	Name, *JOBD Name, *LIBL, *CURLIB
Output priority (on OUTQ)	*JOBD	1-9, *JOBD 1-9, *JOBD
Frint device	*COKKENI	Name, *CURRENT, *USRPRF
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additional F24=More keys	More l parameters F12=Cancel

Figure 77. Using the SBMJOB command to call program ADW431/DDL_EXEC

You could also simply run the following command:

SEMJOB CMD (CALL PGM (ADW431/DDL_EXEC)) JOB (DDL_EXEC)

You should see the completion message Job 414798/ADW431/DDL_EXEC submitted to job queue QBATCH in library QGPL.

9. To check the status of your submitted batch job, use one of the following commands:

WRKSBMJOB SBMFROM(*USER) WRKSBSJOB SBS(QBATCH) WRKACTJOB SBS(QBATCH) Figure 78 shows an example of using the WRKSBMJOB SBMFROM(*USER) command.

Work with Submitted Jobs	I2 02/11/02 08:46:39				
Submitted from *USER					
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message 8=Work with spooled files					
Opt Job User TypeStatus DDL_EXEC ADW431 BATCH ACTIVE	Function PGM-DDL_EXEC				
Parameters or command	Bottom				
F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11 F12=Cancel F17=Top F18=Bottom	=Display schedule data				

Figure 78. Using WRKSBMJOB SBMFROM(*USER) to monitor DDL_EXEC batch job status

- 10. The status of the job is ACTIVE until it completes. You may see additional status indicators while the job is running. After the job completes, the status changes to OUTQ.
- 11.After you run the CL program (which ran all five DDLs), go to 3.1.7, "Active Data Warehouse collection content verification" on page 66, to verify that the tables were created successfully.

Chapter 4. i2 TradeMatrix Demand Planner

This chapter describes the iSeries server installation procedures for the i2 TradeMatrix Demand Planner products before the i2 Five.Two release. It includes sections on how to start, stop, and operate the Demand Planner, Demand Planner - Administrator and Demand Analyzer environments.

For a description of the different Demand Planner products, see 1.1.2.2, "i2 Demand Planner" on page 2. You can find installation information for i2 Five.Two in Chapter 11, "i2 Five.Two Demand Planner" on page 449.

4.1 Installation procedure

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Demand Planner, Demand Planner - Administrator and Demand Analyzer 5.1.1 on an iSeries server. As explained in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V4R5M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Demand Planner code requires approximately 65 MB of disk space.

After you order Demand Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Demand Planner are summarized here:

- 1. Install the Demand Planner and VisiBroker code from the CD-ROM.
- 2. Install the Demand Planner clients.
- 3. Get a sample database.

4.1.1 Demand Planner reference documentation

The following manuals are available on the Demand Planner CD-ROM in the \DOCS directory:

- *i2 TradeMatrix Demand Planner Web Client Analysis Workbench User Manual* - Version 5.1 (aw_user.pdf)
- i2 TradeMatrix Demand Planner Release Notes Version 5.1.1 (dp_notes.pdf)
- i2 TradeMatrix Demand Planner User Manual Version 5.1.1 (dp_user.pdf)
- *i2 TradeMatrix Demand Planner Administrator User Manual Version 5.1.1* (dp-administrator_user.pdf)
- i2 TradeMatrix Demand Analyzer Version 5.1.1 (dz_user.pdf)
- *i2 TradeMatrix Demand Planner Web Client Scenario Workbench User Manual* - *Version 5.1* (sw_user.pdf)

The *i2 TradeMatrix SCM WebUI Manual - Version 5.1.1* (scm_webui.pdf) manual is available on the Demand Planner CD-ROM. It is located in the \DP_WEBUI\NT\COMMONUI\DOCS and \DP_WEBUI\UNIX\COMMONUI\DOCS directories.

On a PC in the C:\i2tradematrix\DP\5.1.1\Client\Docs (Demand Planner) and C:\i2tradematrix\DP\5.1.1\admin\docs (Demand Administrator) folders after client

installation, Web-based help is available for the Demand Planner/Administrator user interfaces. You can access this by opening the cnts.htm file. You'll find the following documents:

- i2 TradeMatrix Demand Planner Help Version 5.1.1
- i2 TradeMatrix Demand Planner Administrator Help Version 5.1.1

You can also locate documentation on the i2 support Web site (http://support.i2.com). Log in and then click the **Documentation** link.

4.1.2 Installing Demand Planner server code on the iSeries server

To install the Demand Planner server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Demand Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Demand Planner execution environment is placed, by default, into the /opt/i2/TradeMatrix/5_1_1/dm/OS400_450 iSeries Integrated File System (IFS) directory. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/')

Figure 79 shows the EDTF command after prompting with the F4 function key.

Edit File (EDI	(F)
Type choices, press Enter.	
Stream file, or > '/opt/i2/1	TradeMatrix/5_1_1/dm/'
Data base file	Name Name, *LIBL, *CURLIB
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	F13=How to use this display

Figure 79. Edit File (EDTF) command prompt of /opt/i2/TradeMatrix/5_1_1/dm/

- 4. If the directory structure already exists, you can select from among three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Demand Planner environment and start from the very beginning. This is shown in Figure 80.
 - Continue with the installation defaults to overwrite the existing environment. However, i2 Technologies recommends that you do not overwrite an existing directory.

 Specify a new target directory on the iSeries server during the installation procedure (see Figure 84 on page 91 where this can be defined). You may want to do this if you want multiple Demand Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.



Figure 80. Using EDTF to recursively delete an existing Demand Planner environment

- 5. Before you begin, ensure that your iSeries server is set up correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Demand Planner software in your iSeries CD-ROM drive.
- 7. Start the installation from an OS/400 command line by using the Load and Run (LODRUN) command and press the F4 function key to prompt it. The panel shown in Figure 81 appears.

Select *OPT or the name of your optical drive for the Device parameter. Press Enter when you are ready to start the installation.

You could also just issue the following command:

LODRUN DEV (*OPT)

	Load and Run	(LODRUN)			
Type choices, press Enter.					
Device	*OPT	Name, *TAP,	*DKT,	*OPT	
					Bottom
F3=Exit F4=Prompt F5=Refi F24=More keys	resh F12=Ca	ncel F13=How	to use	this disp	lay

Figure 81. Load and Run (LODRUN) prompt to start the Demand Planner installation

The *OPT option assumes your optical device is named OPT01. If you are not sure, you can use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)

- 8. Once the installation starts, you see messages such as the following examples at the bottom of your panel:
 - Restoring software installation...
 - Copying Start/Stop menu files...
 - Running Installation Procedure...
- 9. A panel appears that asks you to verify the CD-ROM path to the Demand Planner code. QOPT is the optical file system and DP511 is the label of the CD-ROM in the CD-ROM drive. This is shown in Figure 82. Press Enter to continue the installation.

I20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	7/12/01 09:09:17
Enter CDRC /qopt/DP51	M path[/qopt/DP511]: L1	
Input char	nges and press ENTER	
F3=Exit F12=Car	ncel	

Figure 82. Confirming the CD-ROM path to Demand Planner code

- 10. You now see a panel like the example shown in Figure 83 where you can review:
 - The required disk space and space available on the iSeries server
 - The i2 product and release level to be installed
 - The OS/400 release level (V4R5M0 required)
 - The default installation directory

The installation program builds the default directory where the Demand Planner environment will be placed based on the selection made. This is where you can specify a different directory if you want multiple versions of the Demand Planner environment on the same system.

The installation program checks to see if the target directory already exists on the system. You can accept the default and overwrite the files in the directory if it already exists. If the target directory is not available, it is created as shown in Figure 83. Press Enter to continue the installation.

I2OWNER ALLINFO2	i2 Technolog TradeMatrix I iSeries P	gies, Inc. nstallation latform	7/12/01 09:10:23
	You are about to in	nstall TradeMatrix 5.1.1	
Disk space: Select a product t 1. dm	Required: 350 MB to install?	Available: 14,483 MB Select an OS/400 version?	
Which Product?	1	Which OS Version? 1	
Install directory: /opt/i2/TradeMatrix/5_1_1/dm/OS400_450 Target directory does not exist. To create it press Enter.			
F3=Exit			

Figure 83. Confirming the installation defaults

11.If you decided to change the default installation directory, the panel shown in Figure 84 appears. It looks similar to the previous panel, with the installation directory as the only selectable option. In our example, we changed the installation directory to dp instead of dm. Press Enter to continue with the installation.



Figure 84. Confirming the default/specifying a new Demand Planner installation directory

12. The installation program now initiates a Control Language Program (CLP) and the panel in Figure 85 appears briefly.

I20WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	7/12/01 09:11:13
	Performing initial setup tasks	
,	Proceeding with Installation. Please wait	

Figure 85. Installation status: Performing the initial setup tasks

13. The panel shown in Figure 86 appears. At this point, the installation program uncompresses and restores the program files.



Figure 86. Installation status: Restoring program files

14.After the program files are restored, the installation program automatically brings up the status panel shown in Figure 87. This indicates that the installation program is now restoring administrator files.

i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	7/12/01 09:12:27
Restoring Admin Files	
Job is processing. Please Wait. < >	
	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform Restoring Admin Files Job is processing. Please Wait.

Figure 87. Installation status: Restoring the administrator files

15.After the administrator files are restored, the status panel appears (Figure 88). This indicates that the installation program is now restoring the administrator DBF file.

I2OWNER STATUSB	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	7/12/01 11:15:14
	Copy Admin DBF File	
	Job is processing. Please Wait.	

Figure 88. Installation status: Copying administrator DBF file

16.As long as the installation status panels continue to appear and the less than (<) and greater than (>) characters move, do not press any keys until the panel in Figure 89 appears. The installation is now complete. Press Enter to return to an OS/400 command line.

I20WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	7/12/01 09:13:17
	Installation Completed	
	astallation finished No emergence detected	
	nstallation finished. No errors were detected.	
	Press Enter to continue.	

Figure 89. Demand Planner installation completed panel

17. The installation invoked many background jobs. You can quickly check to make sure they completed normally by looking at your message queue using the Display Messages (DSPMSG) command:

DSPMSG MSGQ(I20WNER)

An example is shown in Figure 90. If everything looks good, you can press the F13 key to remove them all or the F11 key to remove them one at a time.

Display Messages			
Queue : I2OWNER Program : Library : QUENESYS Library : Severity : 00 Delivery :	I2 *DSPMSG *NOTIFY		
Type reply (if required), press Enter.	00.11.16		
Job 068359/120WNER/QP0ZSPWP completed normally on 07/12/01 at Job 068361/120WNER/QP0ZSPWP completed normally on 07/12/01 at	09:11:17.		
Job 068362/I2OWNER/QP0ZSPWP completed normally on 07/12/01 at Job 068356/I2OWNER/DMPGMFIL completed normally on 07/12/01 at	09:12:08. 09:12:08.		
Job 068366/I2OWNER/QP0ZSPWP completed normally on 07/12/01 at	09:12:11.		
Job 068367/120WNER/QP0ZSPWP completed normally on 07/12/01 at Job 068369/120WNER/QP0ZSPWP completed normally on 07/12/01 at	09:12:11. 09:13:14.		
Job 068364/I2OWNER/DMADMSVR completed normally on 07/12/01 at Job 068373/I2OWNER/OP0ZSDWP completed normally on 07/12/01 at	09:13:14. 09:13:15		
Job 068374/I2OWNER/QP0ZSPWP completed normally on 07/12/01 at	09:13:16.		
Job 068376/I2OWNER/QP0ZSPWP completed normally on 07/12/01 at Job 068377/I2OWNER/QP0ZSPWP completed normally on 07/12/01 at	09:13:16. 09:13:17.		
Job 068371/I2OWNER/DMADMSVR completed normally on 07/12/01 at	09:13:17.		
F3=ExitF11=Remove a messageF12=CaF13=Remove allF16=Remove all except unansweredF24=Va	ancel ore keys		

Figure 90. Display Messages (DSPMSG) for I2OWNER

18.After the installation completes, a log file is written to the root (/) directory of the IFS in the form /trdmtx-install-log.mm-dd-yy.hh:mm:ss.dm. The log file can be used to diagnose installation problems. You can use the EDTF command:

EDTF STMF('/')

Then type option 5 next to the log file to display it. A sample log file is shown in Figure 91.
```
Browse : /trdmtx-install-log.07-12-01.09:10:23.dm
                                                          1 of 86 by 131
           1 of
                      184 by 18
                                                Column:
Record . :
Control :
....+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...
install.cpp: VERSION 2.00 12/20/00 DO.
DisplayALLINFORec().
  FillTargetDir().
    ProdSelected.
    ArchSelected.
    tmpbuff=/opt/i2/TradeMatrix/5_1_1/dm/OS400_450.
TargetDirExist():
  ctmp = >/opt/i2/TradeMatrix/5_1_1/dm/OS400_450<
  Dir value is NULL. Dir NOT Opened.
  stat() error on /opt/i2/TradeMatrix/5 1 1/dm/OS400 450: No such path or dire
  non existing dir:/opt/i2/TradeMatrix/5 1 1/dm/OS400 450.
  TargetDir=.
  TargetDir=/opt/i2/TradeMatrix/5 1 1/dm/OS400 450.
  cCopyFiles() - Selecting Customize for Product: DM .
  cCopyFiles() - Selcted Customize for Product: DM.
RunCreateLibCL:
  System call worked.
F3=Exit
         F10=Display Hex F12=Cancel
                                     F15=Services F16=Repeat find
            (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 91. Sample trdmtx-install-log file generated during product installation

19.A library called DM is created and is only used as part of the installation. You can delete it by using the Delete Library (DLTLIB) command:

DLTLIB LIB(DM)

- Or, you can use it to contain Demand Planner files and programs.
- 20.If you want to see the results of the Demand Planner installation, you can use the EDTF command to view the contents of the directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450')

An example is shown in Figure 92.

Directo	ry: /opt/i2/Trad	deMatrix/5_1	_1/dm/0S400_4	50	
Position	n to:	Record	l.: 10	of 10	
New File	e :				
2=Edit	4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Nam	A	Sizo	Quiner	Chanced	liced
ope nam	ntera	*DTP	TOWNER	$\frac{07}{12}$	07/12/01 09.56
bin	рсств		TOWNED	06/25/01 09.56	07/12/01 09.50
dat		*DIR	TOWNER	07/23/01 09.30	07/12/01 09.57
uat		*DIR *DIR	120WINER	07/27/00 17:16	07/12/01 09:57
din	1-	*DIR	120WINER	07/27/00 17:16	07/12/01 09:57
pta	a	*DIR	120WINER	0//2//00 1/:21	07/12/01 09:57
puse	ers	*DIR	120WNER	07/27/00 17:17	07/12/01 09:57
sch		*DIR	120WINER	07/27/00 17:16	07/12/01 09:57
stal	b	*DIR	120WINER	07/27/00 17:21	07/12/01 09:57
suse	ers	*DIR	120WINER	07/27/00 17:17	07/12/01 09:57
adm	in	*DIR	120WINER	07/12/01 09:13	07/12/01 09:57
					Bottom
F3=Exit	F12=Cancel	F16=Sort	F17=Position	n to F22=Displa	ay entire field

Figure 92. Using EDTF to display the Demand Planner directory after installation

Table 11 provides more information about the various Demand Planner server directories.

Table 11. Demand Planner server directory contents

Directory	Contents
bin	Client and server executables for Demand Planner, Demand Analyzer and the Demand Administrator Utilities, as well as *.cfg files.
dat	Demand Planner database files created by Demand Planner - Administrator.
fb	Extract Profile database files created by Demand Planner - Administrator.
inp	Files containing source data.
ptab	Global bookmarks, global models, table files, control files, and the time horizon file, as created by Demand Planner -Administrator.
comment	Enhanced comment files and attachment files.
pusers	A subdirectory for each Demand Planner user.
sch	Application Description Files (ADFs), script files. Typically, the working directory when using Demand Administrator utilities.
stab	Global bookmarks, global reports, table files, control files, and the time horizon file.
susers	A subdirectory for each Demand Analyzer user.
admin	Server and client executables for Demand Planner - Administrator.
adapters	ADW adapters.

4.1.3 Loading VisiBroker 3.3 from the installation CD-ROM

Demand Planner requires a VisiBroker 3.3 AIX library called *liborb_r.a*, which is shipped on the Demand Planner installation CD-ROM. You need to copy this to

the iSeries server along with other VisiBroker components that may be needed later on. This section explains how to do this. If you don't do this, when you try to start Demand Planner, you receive the following error:

exec(): 0509-036 Cannot load program planaxs because of the following errors: 0509-150 Dependent module liborb_r.a could not be loaded.

To load VisiBroker 3.3 and the other components, follow these steps:

1. Create a directory to hold the VisiBroker components. We used directory name /vbroker off the /opt directory during our installation. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

MKDIR DIR('/opt/vbroker')

You should see a completion message stating that the directory was created.

2. Look for the files liborb_r.a, gatekeeper, osagent, and osfind on the CD-ROM. They are located in the /vbroker/aix directory. You can either load the CD-ROM into a PC and FTP the files (in binary format) to the iSeries server, or load the CD-ROM into the iSeries CD-ROM drive and copy them directly. We recommend that you use the second option (this is what we used).

Use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command, and select option 8 (Work with directories) to view the contents of the CD-ROM.

Figure 93 shows an example of what appears.

Work with Optic	al Files			
Directory /VEROKER/AIX Volume DP511		S	ystem:	12
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print	7=Renar	ne		
Opt File Name	Size	Crea	ted	
GATEKE~1 LIBORB_R.A OSAGENT OSFIND	372 4963109 683329 3879039	02/18/98 08/11/99 02/17/99 02/17/99	01:00:00 15:45:00 01:00:00 01:00:00	
Parameters or command				BOLLOIII
===> F3=Exit F4=Prompt F5=Refresh F6=Prin F16=Repeat position to F17=Position to	t list	F9=Retriev F22=Displa	re F12=C Ay entire :	ancel name

Figure 93. Displaying the contents of the Demand Planner CD-ROM to see the VisiBroker files

Notice that when files have names longer than eight characters, the iSeries server truncates the name to six characters. It also uses the tilde (\sim) character and a number to distinguish files where the first six characters match. For example, *gatekeeper* translates to *gateke\sim1*. If this is too confusing, you can send the file using FTP to the iSeries server and the name will not truncate.

To copy the files directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/DP511/vbroker/aix/gateke~1') TODIR('/opt/vbroker') CPY OBJ('/qopt/DP511/vbroker/aix/liborb_r.a') TODIR('/opt/vbroker') CPY OBJ('/qopt/DP511/vbroker/aix/osagent') TODIR('/opt/vbroker') CPY OBJ('/qopt/DP511/vbroker/aix/osfind') TODIR('/opt/vbroker')

You should see completion messages stating that the objects were copied.

To verify that the VisiBroker components are now on the system, you can use the EDTF command to view the contents of the directory /opt/vbroker:

EDTF STMF('/opt/vbroker')

An example is shown in Figure 94.

Directory: /opt/vbroken Position to : New File :	Recon	d: 1	of 4	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive De	elete
Opt Name gateke~1 liborb_r.a osagent osfind	Size 8K 5,120K 768K 4,096K	Owner 120WNER 120WNER 120WNER 120WNER	Changed 02/18/98 01:00 08/11/99 15:45 02/17/99 01:00 02/17/99 01:00	Used 02/18/98 01:00 08/11/99 15:45 02/17/99 01:00 02/17/99 01:00
				Bottom
F3=Exit F12=Cancel (C) COPYRIC	F16=Sort SHT IBM CORP	F17=Positio	n to F22=Displ	ay entire field

Figure 94. Using the EDTF command to display the contents of the VisiBroker directory

4.1.4 Demand Planner/Demand Analyzer client installation

This section explains how to install Demand Planner and Demand Analyzer client code on a Windows NT/2000 PC. The installation of the Demand Planner/Analyzer client code requires approximately 32 MB of disk space. You can find supplemental information in the INS.TXT file in the CLIENT folder on the CD-ROM.

To install the Demand Planner and Demand Analyzer clients, follow these steps:

- 1. Place the CD-ROM containing the Demand Planner software in the CD-ROM drive of a client PC.
- The Demand Planner/Analyzer client setup program does not automatically start. You have to manually execute SETUP.EXE from the CLIENT folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the CLIENT folder and double-click **SETUP.EXE**.

Or you can follow these steps:

- a. Click Start-> Run.
- b. Type:

(drive):\CLIENT\SETUP.EXE

Here (drive) is the drive letter assigned to your CD-ROM.

c. Press Enter.

This process is shown using Windows Explorer in Figure 95.

💐 D:\CLIENT					
File Edit View Favorites Tools Help					1
🗘 🖙 Back 🔹 🔿 👻 🛅 🥘 Search 🛛 🔁 Folders	Эні	story 🖺 🕄 🗙 🗠) ==-		
Address 🗋 D:\CLIENT 🔽 🔗 Go					
Folders	×	Name 🛆	Size	Туре	Modified
	-	📓 _INST32I.EX_	290 KB	EX_File	2/23/1999 6:45 AM
🕀 💼 PSM		ISDEL.EXE	27 KB	Application	10/27/1998 8:06 AM
Carlie Readibmw		SETUP.DLL	34 KB	Application Extension	9/29/1998 12:34 PM
🕀 🧰 Rhythm		SYS1.CAB	172 KB	WinZip File	7/5/2001 11:38 AM
😟 🛄 sdf		SYS1.HDR	5 KB	HDR File	7/5/2001 11:38 AM
sdwork		USER1.CAB	3 KB	WinZip File	7/5/2001 11:38 AM
Symbols		USER1.HDR	5 KB	HDR File	7/5/2001 11:38 AM
		COPYRIGHT.TXT	4 KB	Text Document	6/28/2001 1:14 PM
		DATA.TAG	1 KB	TAG File	7/5/2001 11:38 AM
		DATA1.CAB	28,930 KB	WinZip File	7/5/2001 11:50 AM
🖽 🦳 tradeMakris		DATA1.HDR	617 KB	HDR File	7/5/2001 11:50 AM
		INS.TXT	5 KB	Text Document	6/29/2001 7:13 AM
		ang.dat	23 KB	DAT File	1/12/1999 6:34 AM
Windows Undate Setup Files		LAYOUT.BIN	1 KB	BIN File	7/5/2001 11:50 AM
		S.DAT	1 KB	DAT File	7/27/1998 1:41 PM
×Series Information		SETUP.BMP	532 KB	Bitmap Image	9/12/2000 7:36 AM
⊟ <u>-</u>		SETUP.EXE	72 KB	Application	1/12/1999 7:42 AM
🗄 🛄 ADMIN		SETUP.INI	1 KB	Configuration Settings	7/5/2001 11:38 AM
		SETUP.INS	70 KB	Internet Communic	5/15/2001 5:07 AM
🕀 💼 DEMO		SETUP.LID	1 KB	LID File	7/5/2001 11:38 AM
🛅 DOCS					
🕀 🧰 DP_WEBUI					
E SERVER					
	-	<u>I</u>			
ype: Application Size: 72.0 KB				72.0 KB 📃 My	Computer

Figure 95. Windows Explorer view of Demand Planner client setup.exe program

3. On the Welcome window (Figure 96), click Next to continue.



Figure 96. Demand Planner client setup: Welcome window

- 4. Read the software license agreement, and click the Yes button to continue.
- Accept the default for the destination folder location (C:\i2tradematrix\DP\5.1.1), or change it as needed, and click the Next button.

 On the Select Components window (Figure 97), verify that the Planner box is selected to load i2 TradeMatrix Demand Planner and that the Analyzer box is selected to load i2 TradeMatrix Demand Analyzer. Click Next.

Select Components		×				
	Select the components you want to install, clea you do not want to install.	r the components				
	<u>C</u> omponents					
	🗸 Analyzer	5406 K				
	✓ Planner	14270 K				
	OLAP 32bit ODBC Driver	0 K				
	Description					
	Includes all files needed to run the i2 TradeMatrix Demand Planner Client Application.	Change,				
	Space Required:	23134 K				
	Space Available:	581279 K				
	< <u>B</u> ack <u>N</u> ext >	Cancel				

Figure 97. Demand Planner client setup: Select Components window

7. We recommend that you change the default program folder shown in Figure 98 from i2 TradeMatrix to i2 TradeMatrix Demand Planner 5.1.1. This makes it easier to find in the Windows Programs folder. Click **Next**.



Figure 98. Demand Planner client setup: Select Program Folder window

- 8. Select the appropriate language and click Next.
- 9. On the Start Copying Files window, click **Next** to start the actual installation. An indicator appears to show the progress of the file copying operation.
- 10.After all files are copied, the Setup Complete window appears. Click the **Finish** button to end the installation.

4.1.5 Demand Planner - Administrator client installation

This section explains how to install Demand Planner - Administrator client code on a Windows NT/2000 PC. The installation of the Demand Planner -Administrator client code requires approximately 20 MB of disk space. You can find supplemental information in the INS.TXT file in the ADMIN\CLIENT folder on the CD-ROM.

To install the Demand Planner - Administrator client, follow these steps:

- 1. Place the CD-ROM containing the Demand Planner software in the CD-ROM drive of a client PC.
- The Demand Planner Administrator client setup program does not automatically start. You have to manually fun SETUP.EXE from the ADMIN\CLIENT folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the ADMIN\CLIENT folder and double-click SETUP.EXE.

Or you can follow these steps:

- a. Click Start-> Run.
- b. Type:

(drive):\ADMIN\CLIENT\SETUP.EXE

Here (drive) is the drive letter assigned to your CD-ROM.

c. Press Enter.

This is shown using Windows Explorer in Figure 99.

D:\ADMIN\CLIENT					
File Edit View Favorites Tools Help					
🖙 Back 🔹 🔿 👻 🔂 🔞 Search 🛛 🔂 Fold	ers 🎯 His	story 🖹 🖺 🗙 🗹	ז 📰 ד		
Address 🗀 D:\ADMIN\CLIENT					• 🗟
olders	×	Name 🛆	Size	Туре	Modified
READIBMW	-	🛃 _INST32I.EX_	290 KB	EX_File	2/23/1999 6:45 A
吏 🦲 Rhythm		ISDEL.EXE	27 KB	Application	10/27/1998 8:06
🕀 🛄 sdf		SETUP.DLL	34 KB	Application Extension	9/29/1998 12:34
sdwork		SYS1.CAB	172 KB	WinZip File	7/5/2001 10:37 /
Symbols		SYS1.HDR	5 KB	HDR File	7/5/2001 10:37 /
		USER1.CAB	3 KB	WinZip File	7/5/2001 10:37 /
🕀 🛄 temp		JUSER1.HDR	5 KB	HDR File	7/5/2001 10:37/
		COPYRIGHT.TXT	4 KB	Text Document	6/28/2001 1:01
		DATA.TAG	1 KB	TAG File	7/5/2001 10:37/
		DATA1.CAB	7,091 KB	WinZip File	7/5/2001 10:38/
		DATA1.HDR	56 KB	HDR File	7/5/2001 10:38/
Windows Undate Setup Files		INS.TXT	4 KB	Text Document	7/11/2001 5:58
		🗒 LANG.DAT	23 KB	DAT File	1/12/1999 6:34
×Series Information		AYOUT.BIN	1 KB	BIN File	7/5/2001 10:38
⊟ dp 5 1 1 (D:)		🗒 OS.DAT	1 KB	DAT File	7/27/1998 1:41
		SETUP.BMP	532 KB	Bitmap Image	9/12/2000 7:36/
		SETUP.EXE	72 KB	Application	1/12/1999 7:42 /
🗄 🧰 SERVER		SETUP.INI	1 KB	Configuration Settings	7/5/2001 10:37
CLIENT		SETUP.INS	58 KB	Internet Communic	4/27/2001 5:53/
🔁 🚞 DEMO		SETUP.LID	1 KB	LID File	7/5/2001 10:37 /
🔁 DOCS					
🕀 🛄 DP_WEBUI					
E SERVER					
I → UBROKER	_				

Figure 99. Windows Explorer view of Demand Planner - Administrator client setup.exe program

3. On the Welcome window (Figure 100), click the **Next** button to continue.



Figure 100. Demand Planner - Administrator client setup: Welcome window

- 4. Read the software license agreement, and click the Yes button.
- Accept the default for the destination folder location (C:\i2tradematrix\DP\5.1.1), or change it as needed, and click Next.
- 6. On the Select Components window (Figure 101), verify that the **Demand** Administrator Client and Event Viewer boxes are selected. Click Next.

Select Components		×
	Select the components you want to install, clea you do not want to install. <u>C</u> omponents	ar the components
	Demand Administrator Client	10117 K
	☑ Event Viewer	9460 K
	- Description	
	Includes all files needed to run the Demand Administrator Client Application.	Change
	Space Bequired:	19578 K
	Space Available:	580802 K
	< <u>B</u> ack <u>N</u> ext >	Cancel

Figure 101. Demand Planner - Administrator client setup: Select Components window

7. We recommend that you change the default program folder shown in Figure 102 from i2 TradeMatrix to i2 TradeMatrix Demand Planner 5.1.1. This makes it easier to find in the Windows Programs folder. Click **Next**.



Figure 102. Demand Planner - Administrator client setup: Select Program Folder window

- 8. On the Start Copying Files window, click **Next** to start the actual installation. An indicator displays to show the progress of the file copying operation.
- 9. After all files are copied, the Setup Complete window appears. Click **Finish** to end the installation.

Table 12 provides more information about the various Demand Planner client directories.

Directory	Contents
client	Demand Planner, Demand Analyzer and PRO client executable files, system DLLs, fyicont.exe, and third-party DLLs for communication and networking.
client\docs	Demand Planner help files.
client\prodocs	Demand Planner - PRO help files.
client\dzdocs	Demand Analyzer help files.
userdlls	Demand Planner user function DLLs.
admin	Demand Planner - Administrator client executable and Event Viewer.
admin\docs	Demand Planner - Administrator help files.

Table 12. Demand Planner client directory contents

4.1.6 Transferring a sample database from a PC to the iSeries server

To test the functionality of the Demand Planner server, you need a sample database. One is not provided with the installation of Demand Planner on the iSeries server. Therefore, you have to obtain one from i2 or an i2 consultant if you want to completely bring up or test the server. This section takes you through the procedure to transfer a sample database to the iSeries server once one is obtained.

To transfer a sample database from a PC to an iSeries server, follow these steps:

 There are different ways to transfer files between a PC and an iSeries server, like mapping a network drive, using Operations Navigator to drag files from a PC to the iSeries server, or using File Transfer Protocol (FTP), which is what we used.

To transfer files from a PC to an iSeries server using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC where the Demand Planner database is located.
- b. Use the cd command to change to the directory where the database is located:

cd C: $\i c n formation dp$ information

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WNER in this example.
- e. Enter the password for your iSeries server user ID.
- f. We recommend that you place the sample database off the base Demand Planner directory structure. Use the cd command to change to the iSeries server directory (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450):

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450

g. Change to binary mode:

bin

h. The name of our database is *cola501.tar.Z*, which is a compressed tar file. Transfer the database to the iSeries server using the FTP put command:

put cola501.tar.Z

i. Exit FTP using the quit command.

See the example in Figure 103.

C: $\$ differentiation dp information

C:\i2 information\DP Information>ftp i2 Connected to i2.domain.ibm.com. 220-QTCP at I2. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com: (none)): **I20WNER** 331 Enter password. Password: 230 I2OWNER logged on. ftp> cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450 250-NAMEFMT set to 1. 250 "/opt/i2/TradeMatrix/5_1_1/dm/OS400_450" is current directory. ftp> **bin** 200 Representation type is binary IMAGE. ftp> put cola501.tar.Z 200 PORT subcommand request successful. 150 Sending file to /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola501.tar.Z 250 File transfer completed successfully. ftp: 2410039 bytes sent in 1.72Seconds 1398.75Kbytes/sec. ftp> quit 221 QUIT subcommand received. C:\i2 information\DP Information>

Figure 103. Using FTP from a PC to place the sample database on the iSeries server

2. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the /opt/i2/TradeMatrix/5_1_1/dm/OS400_450 directory:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450

4. Verify that the sample database is on the server and its size using the ls -l command:

ls -l cola501*

5. Since the file has a .Z extension, we know that it was compressed using the compress command. To uncompress the tar file, use the uncompress command:

uncompress cola501.tar.Z

6. Use the ls -1 command to see the uncompressed size of the file:

ls -1 cola501*

An example of the commands from steps three through 6 is shown in Figure 104.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450
  $
> pwd
  /opt/i2/TradeMatrix/5_1_1/dm/OS400_450
> 1s -1 cola501*
 total 5120
  -rwxrwxrwx 1 I20WNER 0
                                  2410039 Aug 27 11:05 cola501.tar.Z
  Ś
> uncompress cola501.tar.Z
> 1s -1 cola501*
 total 34816
                                 17408000 Aug 27 11:05 cola501.tar
  -rwxrwxrwx 1 I20WNER
                          0
 $
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                    F18=Bottom
                                   F21=CL command entry
```

Figure 104. Using the uncompress command to uncompress the sample database

 Notice that the .Z extension is dropped from the file name. The .tar extension means that this object is a tar file. To extract the contents from the tar file, use the tar -xvf command:

tar -xvf cola501.tar

See the example in Figure 105.

```
/QOpenSys/usr/bin/-sh
> ls -l cola501*
                                    17408000 Aug 06 09:51 cola501.tar
 -rwxrwxrwx 1 I20WNER
                           0
  Ś
> tar -xvf cola501.tar
 x cola/comment
 x cola/comment/cmntm y.dbf, 98 bytes, 1 media blocks.
 x cola/comment/cmntm y.cdx, 4608 bytes, 9 media blocks.
 x cola/comment/cmntd y.dbf, 418 bytes, 1 media blocks.
 x cola/comment/cmntd y.cdx, 3072 bytes, 6 media blocks.
etc...
 x cola/susers/final/cg_exts.cdx, 3072 bytes, 6 media blocks.
 x cola/susers/final/cg_extt.dbf, 226 bytes, 1 media blocks.
 x cola/susers/final/cg_extt.cdx, 3072 bytes, 6 media blocks.
 x cola/susers/final/custgrp.dbf, 226 bytes, 1 media blocks.
  x cola/susers/final/custgrp.cdx, 4608 bytes, 9 media blocks.
  Ś
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 105. Using the tar command to extract the sample database from the tar file

8. You now have a cola subdirectory on your system off the base Demand Planner directory structure. You can use the EDTF command to view the contents of the cola subdirectory:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola')

See the example shown in Figure 106.

Directory: /opt/i2/Trad	leMatrix/5_1	_1/dm/0S400_45	0/cola	
Position to :	Record	d: 10	f 10	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete
Oct. Mana		0	Chammed	IImo d
Opt Name	Size	Owner	Changed	Used
comment	*DIR	I20WNER	08/18/00 17:23	08/27/01 11:52
dat	*DIR	I20WNER	08/10/00 18:40	08/27/01 11:52
dim1dim2.dat	32K	120WNER	08/17/00 11:48	08/27/01 11:52
fb	*DIR	120WNER	08/10/00 18:40	08/27/01 11:52
inp	*DIR	I20WNER	08/18/00 15:42	08/27/01 11:52
ptab	*DIR	I20WNER	08/27/01 11:52	08/27/01 11:52
pusers	*DIR	I20WNER	08/27/01 11:52	08/27/01 11:52
sch	*DIR	I20WNER	05/11/01 11:25	08/27/01 11:52
stab	*DIR	I20WNER	08/10/00 19:02	08/27/01 11:52
susers	*DIR	I20WNER	08/27/01 11:52	08/27/01 11:52
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field
(C) COPYRIG	HT IBM CORP.	. 1980, 2000.		

Figure 106. Using the EDTF command to display the contents of the cola subdirectory

4.1.6.1 Upgrading a database from one release to another

Demand Planner databases are release-specific. If you try to use one on a different release than for what it was created, you receive errors like the following examples:

Incorrect Database Version Unable to initialize Data Base xxx Error in record format of configuration file xxx.cfg uninitialized Codebase

You can use the i2 Upgrade utility to upgrade an existing Demand Planner/Demand Analyzer database to the newest version. It makes the necessary modifications to various files in the ptab directory. The syntax is:

upgrade tables_path [old_version_#] [new_version_#] [Y]

Table 13 provides more information about the parameters.

Table 13. Upgrade utility parameters and descriptions

Parameter	Description				
tables_path	The path to the directory containing the control and tables files.				
[old_ver_#]	The number of the currently installed version of Demand Planner or Demand Analyzer. This parameter is optional. Note : The version number must contain the periods (.) to be recognized.				
[new_ver_#]	The number of the version to which you intend to upgrade. This parameter is optional. Note: The version number must contain the periods (.) to be recognized.				

Parameter	Description
[Y]	Insertion of this optional parameter eliminates the prompt that asks if you want to proceed without first taking a backup of the database.

The Upgrade utility is case-sensitive. Therefore, any letters in the version numbers must be entered in lowercase, for example:

upgrade ../ptab/ 5.0.1 5.1.1 upgrade ../ptab/ Y

To upgrade a database from one release to another, follow these steps:

1. Verify the existence of the executable called *Upgrade* in the bin subdirectory of the base Demand Planner directory. You can use the EDTF command to do this:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin')

See the example in Figure 107.

Dire Posi	Directory: /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin Position to : Record : 1 of 17								
2=Ed	lit 4=	Delete File	5=Display 6=Path Size		9=Recursive Delete				
Opt	Name		Size	Owner	Changed		Used		
	addlan	g	1,280K	I20WNER	07/05/01	09:27	08/06/01	09:34	
	areal		256K	I20WNER	07/05/01	09:27	08/06/01	09:34	
	bcnt		512K	120WNER	07/05/01	09:27	08/06/01	09:34	
	conver	t	256K	120WNER	07/05/01	09:27	08/06/01	09:34	
	planax	s	7,680K	I20WNER	07/05/01	09:28	08/27/01	13:40	
	edump		384K	I20WNER	07/05/01	09:27	08/06/01	09:36	
	fronte	nd	16K	120WNER	07/05/01	09:27	08/06/01	09:36	
	mdbu		384K	120WNER	07/05/01	09:27	08/06/01	09:36	
	objset	up	768K	120WNER	07/05/01	09:27	08/06/01	09:36	
	plock	-	896K	120WNER	07/05/01	09:28	08/06/01	09:36	
	psubs		256K	120WNER	07/05/01	09:28	08/06/01	09:36	
	schuti	1	16K	I20WNER	07/05/01	09:29	08/06/01	09:36	
	slsaix	s	1.280K	I20WNER	07/05/01	09:29	08/06/01	09:36	
	upgrad	e	384K	120WNER	07/05/01	09:29	08/09/01	10:40	
	usrloq	out	32K	120WNER	07/05/01	09:29	08/06/01	09:36	
	cmigra	te	256K	120WNER	07/05/01	09:27	08/06/01	09:36	
							I	Bottom	
F3=E	xit	F12=Cancel	F16=Sort	F17=Position	to F22=	=Displa	y entire f	field	

Figure 107. Using the EDTF command to verify that executable Upgrade is available

2. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

3. Use the cd command to change to the directory where you were trying to run Demand Planner (usually the sch subdirectory):

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

4. Run the Upgrade executable along with the location of the ptab directory and the letter Y (uppercase). You must also tell the system where to find the upgrade executable since it is in a different directory structure.

One option is to specify the full qualified directory path (for example, /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin). Another option is to navigate the directory structure of the two directories (../../) from where you currently are (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch) and then specify the bin subdirectory, for example:

../../bin/upgrade ../ptab/ Y

This updates the table structures of the database and makes it compliant with the 5.1.1 release.

See the example in Figure 108.

/QOpenSys/usr/bin/-sh									
\$ > cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch \$									
<pre>> pwu /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch \$</pre>									
>//bin/upgrade/ptab/ Y upgrade Version No : 5.1.1									
Copyright 2001 i2 Technologies, Inc. All rights reserved.									
This software may only be installed on authorized client and server machines as defined in and in accordance with the terms of the License Agreement between 12 Technologies and the Licensee.									
Copying records 8									
/ptab/users.dbf structure has been successfully modified Copying records									
/ptab/clinst_g.dbf structure has been successfully modified Copying records									
<pre>/ptab/clinst_p.dbf structure has been successfully modified /ptab/geoscope created successfully /ptab/prdscope created successfully</pre>									
Successful Upgrade from 5.0.1 to 5.1.1 \$									
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry									

Figure 108. Using Upgrade to upgrade a Demand Planner database from one release to another

After Upgrade is run, the upgrade.err file is created in the current directory. It contains summary information of the upgrade process. You can use the Edit File or $_{cat}$ commands to view the contents of upgrade.err:

cat upgrade.err

5. You must also copy the contents of the ptab directory from the newer release (5.1.1 in this case) to the ptab directory of the sample database to make the error libraries the most current (for example, nlm.*, winerr.*, and the server side dlls). You can use the cp command to copy the directory. Again, instead of specifying full directory path names, you can reference them based on the directory you are currently in (/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch):

cp ../../ptab/* ../ptab/

You can now start the Demand Planner server using the upgraded 5.1.1 database.

4.2 Operating the Demand Planner environment

This section explains how to:

- Start the Demand Planner server
- Check if the server is running
- Shut down the server
- · Automate the starting and stopping of a server using CL programs
- Run multiple servers at the same time

The Demand Planner server runs in the PASE environment. Therefore, it must be started and run from there. There are two different ways to start a Demand Planner server in PASE:

- Using the PASE terminal environment (QP2TERM) to start the server as a foreground (interactive) or background process
- Using the QP2SHELL callable program to start the server as a foreground (interactive) or background process

4.2.1 QP2TERM to start and stop the Demand Planner server

You can start and stop the Demand Planner server from an interactive PASE terminal session. The PASE QP2TERM shell is an interactive shell environment and is useful during development activity or when debugging Demand Planner server problems. It is not suited for unattended or "lights-out" operation of the Demand Planner server.

To start the Demand Planner server using QP2TERM, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

 Set certain environment variables and call the Demand Planner planaxs program with the required information. Before you start the Demand Planner servers, some environment variables must be set. These variables are required to initialize CORBA communications with other i2 components, such as the Demand Planner Web Client and Analyzer for Demand Planner.

The planaxs executable requires two parameters:

• Database configuration file name

 Server name declared in the service table (or TCP/IP port number if defined in the service table)

Because this is a lot of information, we recommend that you use a startup shell script to start the Demand Planner server. This saves you from having to retype the setting of the environment variables and call the program name with all parameters each time.

To create a custom startup shell script, follow these steps:

a. Use the echo command to create an empty file:

```
echo > start_dp
```

b. Use the chmod command to give the file execute authority:

chmod +x start_dp

See the example shown in Figure 109.

```
/QOpenSys/usr/bin/-sh
$
cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
pwd
/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
echo > start_dp
$
chmod +x start_dp
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 109. Using a PASE QP2TERM shell to create start_dp

c. Use the EDTF command to modify start_dp:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/start_dp')

The following line should appear first in the script:

#!/QOpenSys/usr/bin/ksh

This tells the system to run the commands or programs in the script in a Korn shell (ksh), which is found in directory /QOpenSys/usr/bin. This is the same shell that is used when CALL QP2TERM is issued.

d. Call the VisiBroker Object Services Agent (OSAgent) program as a background process (discussed more in 4.2.1.2, "Starting the Demand Planner server as a background process" on page 116). OSAgent is a CORBA system tool that provides a dynamic distributed naming and directory service. It is used by Demand Planner. It runs on UDP port 14000.

If you don't start OSAgent, the following messages appear continuously when you start Demand Planner:

VisiBroker: Unable to locate agent. Will try every 15 seconds to locate agent

DSUser:: Unable to contact agent. Make sure there is an agent running on this network

You can use the Object Services Find (OSFind) program to find the number of OSAgent processes running on the network as well as the exact machine they are running on.

Figure 110 shows an example of OSFind not finding and then finding an OSAgent.

/QOpenSys/usr/bin/-sh							
<pre>\$ > cd /opt/vbroker \$ > osfind VisiBroker: Unable to locate agent. Will try every 15 seconds to locate agent DSUser:: Unable to contact agent. Make sure there is an agent running on this n</pre>							
<pre>osfind: There are no agents running in your domain. \$ > osfind osfind: Found 2 agents at port 14000 </pre>							
HOST: I2 HOST: I2							
osfind: There are no OADs running on in your domain.							
osfind: There are no Object Implementations registered with OADs.							
osfind: There are no manually started Object Implementations. $\$$							
===>							
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry							

Figure 110. Using VisiBroker OSFind to look for OSAgent processes running on the network

To start OSAgent as a background process, call the program with a fully qualified directory path and add the ampersand (&) character at the end:

/opt/vbroker/osagent &

You can add the -v option to OSAgent to specify verbose mode. This mode displays informational and diagnostic (debugging) messages as the agent is running.

You can add the -p option followed by a unique UDP port name to OSAgent to override the setting of OSAGENT_PORT if you want to run on a different port other than 14000 for some reason.

e. Add to the PATH environment variable the directory where you placed the VisiBroker objects. This was specified in 4.1.3, "Loading VisiBroker 3.3 from the installation CD-ROM" on page 96. We used */opt/vbroker*:

export PATH=/opt/vbroker:\${PATH}

f. Set the LIBPATH environment variable to the directory where you placed the VisiBroker liborb_r.a object. This was specified in 4.1.3, "Loading

VisiBroker 3.3 from the installation CD-ROM" on page 96. We used */opt/vbroker*:

export LIBPATH=/opt/vbroker:\${LIBPATH}

g. Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch. If the start_dp script is called from this directory, then this line is not really needed. However, we want to call this script from anywhere on the system:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

h. Call planaxs with the database configuration file name and the server name declared in the service table (or TCP/IP port number if defined in the service table).

A sample database is not provided with the installation of Demand Planner on the iSeries server. Therefore, you have to obtain one from i2 or an i2 consultant if you want to completely bring up or test the server. We used one located in /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola that we loaded in 4.1.6, "Transferring a sample database from a PC to the iSeries server" on page 103. The subdirectory sch contains the database configuration file cola.cfg and the server name declared in the service table is planner.

We also have to tell the system where to find the planaxs executable that we installed from CD-ROM. It is

/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin. One option is to specify the fully qualified directory path. Another option is to navigate the directory structure of the two directories (../../) from where the script is currently running from (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch) and then specify the bin subdirectory:

../../bin/planaxs cola.cfg planner

An example startup shell script is shown in Figure 111. Press the F3 function key twice to save and exit.

Edit File Record : Control :	e: /opt/i2/Trad 1 of	leMatrix/5_1 2 by	_ 1/dm/OS400_45 0 10)/cola/sch/st Col	art_dp umn :	1	59 by		
<pre>Record : 1 of 2 by 10 Column : 1 59 by Control : CMD+1+2+3+4+5+6+7+ *************************</pre>									
F2=Save	F3=Save/Exit	F12=Exit	F15=Services	F16=Repeat	find	F17=Re	peat ch		

Figure 111. Using the EDTF command to update the start_dp script

4.2.1.1 Starting the Demand Planner server as a foreground process

You can run the Demand Planner server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, you cannot issue any other commands or program calls. You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground process, call it and press Enter.

Figure 112 shows an example of:

- Changing to the Demand Planner sample database directory within QP2TERM
- Starting the VisiBroker OSAgent program as a background process (described more in 4.2.1.2, "Starting the Demand Planner server as a background process" on page 116)
- Manually setting the PATH and LIBPATH environment variables
- Calling planaxs with the correct parameters

/QOpenSys/usr/bin/-sh								
<pre>\$ cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch \$ /opt/vbroker/osagent & [1] 11670 \$ export PATH=/opt/vbroker:\${PATH} \$ export LIBPATH=/opt/vbroker:\${LIBPATH} \$ </pre>								
Trying to bind to Port Number : 55000 [planner] TCP/IP initialized successfully (Listen Thread Created) i2 TradeMatrix Demand Planner Server ready TCP/IP initialized successfully i2 TradeMatrix Demand Planner Server Version No : 5.1.1 Copyright 2001 i2 Technologies, Inc. All rights reserved. This software may only be installed on authorized client and server machines as defined in and in accordance with the terms of the License Agreement between i2 Technologies and the Licensee.								
Session Manager is ready. Waiting for Interrupt to Exit ===>								
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry								

Figure 112. Demand Planner server running as a foreground process

The Demand Planner server is now up and running on port 55000 (the default port). Notice that you don't see the dollar sign (\$) character after the last line. This means that this QP2TERM session is locked until the Demand Planner server is ended.

— Note -

If you see the pound sign (#) character instead of the dollar sign (\$) character, then you are signed onto the iSeries server as QSECOFR. We are assuming that I2OWNER is being used and that the user profile sees dollar signs.

You can stop the Demand Planner server by using the kill command from another terminal session and specifying the process ID (PID) of the process to end:

kill PID

You can use ps command to determine the Demand Planner server's PID.

To stop the Demand Planner server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators.

- When using *IBM Personal Communications*, right-click anywhere in the panel and press the SysRq key. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.
- On a *PC keyboard*, the System Request function key sequence is to press and hold the Shift and Esc keys at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and press Enter again.
- On a *non-programmable terminal*, the System Request function key sequence is to hold down the ALT key and then press the Print/Sys Req key at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.

See the reference manual for your particular terminal, keyboard, or display emulator if these combinations do not work for you.

Once you do this, you see the dollar sign (\$). This indicates that the QP2TERM session is free again and available for other requests. An example is shown in Figure 113.

/QOpenSys/usr/bin/-sh									
and server machines as defined in and in accordance with the terms of the License Agreement between i2 Technologies and the Licensee.									
Session Manager is ready.									
Waiting for Interrupt to Exit									
Interrupt received, exiting Received signal (2) Returning from suspendService VisiBroker: Unable to locate agent. Will try every 15 seconds to locate agent Unloading the server End of CORBA Session uninitialized Codebase \$									
===>									
F3=ExitF6=PrintF9=RetrieveF11=Truncate/WrapF13=ClearF17=TopF18=BottomF21=CL command entry									

Figure 113. Demand Planner server foreground process ended using the System Request key

4.2.1.2 Starting the Demand Planner server as a background process

You can run the Demand Planner server as a background process, which is like a batch process that does not lock the QP2TERM session. Since the process runs in the background, other commands or program calls can be issued. You do not have to start multiple QP2TERM sessions from multiple iSeries signons, because you can start multiple background processes from one QP2TERM session.

To start a program or shell script as a background process, call it with the ampersand (&) character at the end and press Enter.

Figure 114 shows an example of changing to the Demand Planner sample database directory within QP2TERM and then calling the start_dp startup shell script (the same as entering the commands one after the other) as a background process.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  $
> start_dp &
         11929
  [1]
  $ Compression length : 64000
 Trying to bind to Port Number : 55000 [ Default Port ]
  TCP/IP initialized successfully (Listen Thread Created)
  i2 TradeMatrix Demand Planner Server ready
  TCP/IP initialized successfully
  i2 TradeMatrix Demand Planner Server Version No : 5.1.1
  Copyright 2001 i2 Technologies, Inc. All rights reserved.
 This software may only be installed on authorized client
  and server machines as defined in and in accordance with
  the terms of the License Agreement between i2 Technologies
  and the Licensee.
  Session Manager is ready.
  Waiting for Interrupt to Exit
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom F21=CL command entry
```

Figure 114. Calling the start_dp script as a background process

The Demand Planner server is now up and running on the default port 55000. Notice that you see the dollar sign (\$) character available right after you called the script. This means that this QP2TERM session is not locked and other commands or program calls can be issued.

If you see the error message \$ No such file or directory /QOpenSys/usr/bin/sh: /dev/null: cannot open, then you need to create the file /dev/null on your system. You can do this by using the touch command:

touch /dev/null

Background processes now work. This is only a problem with OS/400 V4R5M0 and was fixed in OS/400 V5R1M0. Figure 115 shows the error and using touch to create the file /dev/null.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450
 $
> start_dp &
 [1]
         1254
 $ No such file or directory
  /QOpenSys/usr/bin/sh: /dev/null: cannot open
> ls /dev
 QASP01
                 jva-stdin-null qsh-stdin-null
  Ś
> touch /dev/null
> ls /dev
               jva-stdin-null null
 QASP01
                                                 qsh-stdin-null
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 115. Using touch to create the /dev/null file needed for background processes

You can also change the planaxs program string within the start_dp script to run as a background process, for example:

../../bin/planaxs cola.cfg planner &

Figure 116 shows an example of calling the start_dp startup shell script as a foreground process. The planaxs program is set to run as a background process.

	/QOpenSys/usr/bin/-sh									
>	\$ start_dp \$ Compression length : 64000									
	Trying to bind to Port Number : 55000 [planner]									
	TCP/IP initialized successfully (Listen Thread Created) i2 TradeMatrix Demand Planner Server ready TCP/IP initialized successfully i2 TradeMatrix Demand Planner Server Version No : 5.1.1									
	Copyright 2001 i2 Technologies, Inc. All rights reserved.									
	This software may only be installed on authorized client and server machines as defined in and in accordance with the terms of the License Agreement between i2 Technologies and the Licensee.									
	Session Manager is ready.									
	Waiting for Interrupt to Exit									
==	==>									
F3 F1	B=Exit F6=Print F9=Retrieve F11=Truncate/Wrap G3=Clear F17=Top F18=Bottom F21=CL command entry									

Figure 116. Calling the start_dp script with planaxs run as a background process

The Demand Planner server is now up and running on the default port 55000. The dollar sign (\$) character indicates that this QP2TERM session is not locked and other commands and program calls can be issued. Notice that Figure 114 on page 117 and Figure 116 look almost identical and the result is the same for both.

Once you submit a script or program as a background process, it cannot be ended by the System Request function key. Use the process overview (ps) command to obtain a list of the running processes and their process identifiers (PIDs) running in the system. An example of using ps -ef is shown in Figure 117.

```
/QOpenSys/usr/bin/-sh
     This software may only be installed on authorized client
     and server machines as defined in and in accordance with
     the terms of the License Agreement between i2 Technologies
     and the Licensee.
     Session Manager is ready.
     Waiting for Interrupt to Exit
> ps -ef
                 UID PID PPID C STIME TTY TIME CMD
       I20WNER 12383 12382 0 14:47:30
                                                                                                            - 0:00 /QOpenSys/usr/bin/-sh -i

        IZOWNER
        IZOS
        <thIZOS</th>
        IZOS
        IZOS
        <
                                                                                                             - 0:00 /vbroker/aix/osagent
                                                                                                    - 0:00 ../../bin/planaxs cola.cfg plan
       I20WNER 12390 12383 0 14:50:09 - 0:00 ps -ef
     $
===>
F3=Exit
                                F6=Print
                                                              F9=Retrieve
                                                                                                    F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom
                                                                                                    F21=CL command entry
```

Figure 117. Using ps -ef to see the Demand Planner server background process running

Notice that the Demand Planner server is running with PID 12389. There are three ways to end a background process like this:

- Press the F3 function key to exit the PASE QP2TERM shell terminal session. Use caution because this ends all other background processes started from this session.
- Use the kill command to end the process (kill 12389 in our example).
- The recommended way is to use the UsrLogOut utility and one of these options:
 - stopwait
 - stopnowait
 - stopcritical

The full syntax is:

usrlogout pid config_path [stopwait/stopnowait/stopcritical/queryusers]

Table 14 provides more information about the UsrLogOut utility parameters.

Table 14. UsrLogOut utility parameter descriptions

Parameter	Description
pid	The Process ID of the Demand Planner server.
config_path	Path to the configuration file. Do not include the file name.
[stopwait stopnowait stopcritical queryusers]	 stopwait: Logs off all current users and prevents any new users from connecting to the server. Waits for any database operation currently in progress to complete and then brings the Demand Planner server down. stopnowait: Checks for any database operation in progress. If it finds one, usrlogout shuts itself down without affecting the Demand Planner server. If no database operation is in progress, usrlogout logs off all users and brings down the Demand Planner server. stopcritical: Logs off all users and brings down the server, interrupting any database operation. queryusers: Shows all users currently connected to the Demand Planner server.

After you end a background process, you can use the ps command to verify that it ended. An example of ending the Demand Planner server using usrlogout and using ps -ef to verify this is shown in Figure 118.

```
/QOpenSys/usr/bin/-sh
> pwd
  /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  $
> ps -ef
      UID PID PPID C STIME TTY TIME CMD
  I20WNER 12383 12382 0 14:47:30 - 0:00 /QOpenSys/usr/bin/-sh -i
  I20WNER 12388 1 0 14:49:56
                                       - 0:00 /vbroker/aix/osagent
  I20WNER 12389 1 0 14:49:56
                                       - 0:00 ../../bin/planaxs cola.cfg planner
  I2OWNER 12390 12383 0 14:50:09 - 0:00 ps -ef
  Ś
> ../../bin/usrlogout 12389 /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch stopwait
 UsrLogOut Version No : 5.1.1
  Copyright 2001 i2 Technologies, Inc. All rights reserved.
  This software may only be installed on authorized client
  and server machines as defined in and in accordance with
  the terms of the License Agreement between i2 Technologies
  and the Licensee.
  Interrupt received, exiting
 Returning from suspendService
 Unloading the server
 Number of users logged out : 0.
 End of CORBA Session ...
  uninitialized Codebase
  Ś
> ps -ef
  UID PID PPID C STIME TTY TIME CMD
I2OWNER 12383 12382 0 14:47:30 - 0:00 /QOpenSys/usr/bin/-sh-i
I2OWNER 12388 1 0 14:49:56 - 0:00 /vbroker/aix/osagent
                                       - 0:00 /vbroker/aix/osagent
  I20WNER 12392 12383 0 14:50:29
                                        - 0:00 ps -ef
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 118. Using UsrLogOut to end the Demand Planner server and monitoring using ps -ef

Instead of typing the long UsrLogOut string every time you want to end the Demand Planner server, we recommend that you place this into a shell script that you can simply call.

To create a Demand Planner shutdown shell script, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. Use the echo command to create an empty file:

echo > end_dp

4. Use the chmod command to give the file execute authority:

chmod +x end_dp

Figure 119 shows an example of steps two through four.

/QOpenSys/usr/bin/-sh
\$ > cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch \$
> pwd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch \$
<pre>> echo > end_dp \$</pre>
> chmod +x end_dp \$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 119. Using a PASE QP2TERM shell to create end_dp

5. Use the EDTF command to modify it:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/end_dp')

6. Call the UsrLogOut utility with the PID that the Demand Planner server is running under and the desired operation. The PID is different each time you start a Demand Planner server, and you may want to use different operations like queryusers or stopwait. Therefore, we recommend that you do not hardcode them in the program.

Figure 120 shows an example program that can be used to pass into the program the current PID found from ps -ef and the desired input operation.

Press the F3 function key twice to save and exit.

Edit File: /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch/end dp Record : 1 of 26 by 10 Column : 67 by 126 1 Control : #!/QOpenSys/usr/bin/ksh # end dp By Daniel R Sundt - IBM 09/05/2001 # Americas Advanced Technical Support (ATS) Solutions Center - i2 # This script will accept a Process ID (PID) \$1 and an # input operation \$2 and use the i2 TradeMatrix Demand Planner # UsrLogOut utility to perform the input operation. Valid input # operations are stopwait, stopnowait, stopcritical, or queryusers. # Help displayed if called with no parameters if [\$# -lt 1] then echo "USAGE: \$0 <PID> <input operation>" echo "EXAMPLE: end_dp 12345 stopwait" exit fi # Error displayed if not called with both parameters if [\$# -ne 2]; then echo "Please enter in all parameters" exit fi # Call UsrLogOut utility with passed in PID and input operation /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin/usrlogout \$1 /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change F19=Left F20

Figure 120. Using the EDTF command to update the end_dp script with the call to the UsrLogOut utility

4.2.2 QP2TERM to start and stop Demand Planner - Administrator server

You can start and stop the Demand Planner - Administrator server from an interactive PASE terminal session. The PASE QP2TERM shell is an interactive shell environment and is useful during development activity or when debugging Demand Planner - Administrator server problems. It is not suited for unattended or "lights-out" operation of the Demand Planner - Administrator server.

To start the Demand Planner - Administrator server using QP2TERM, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. Set certain environment variables and call the Demand Planner - Administrator admaixs program with the required information.

Before you start a Demand Planner - Administrator server, some environment variables must be set. These variables are required to initialize CORBA communications with other i2 components, such as the Demand Planner Web Client and Analyzer for Demand Planner. The admaixs executable requires one parameter – a configuration file name.

Because this is a lot of information, we recommend that you use a startup shell script to start the Demand Planner - Administrator server. This saves you from having to retype the setting of the environment variables and calling the program name with parameters each time.

To create a custom startup shell script, follow these steps:

a. Use the echo command to create an empty file:

echo > start_dp_admin

b. Use the chmod command to give the file execute authority:

chmod +x start_dp_admin

See the example shown in Figure 121.

```
/QOpenSys/usr/bin/-sh
$
> cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> pwd
/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> echo > start_dp_admin
$
> chmod +x start_dp_admin
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 121. Using a PASE QP2TERM shell to create start_dp_admin

c. Use the EDTF command to modify start_dp_admin:

```
EDTF
```

STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/start_dp_admin')

The following line should appear first in the script:

#!/QOpenSys/usr/bin/ksh

This tells the system to run the commands or programs in the script in a Korn shell (ksh), which is found in /QOpenSys/usr/bin directory. This is the same shell that is used when CALL QP2TERM is issued.

d. Call the VisiBroker Object Services Agent (OSAgent) program as a background process (discussed more in 4.2.1.2, "Starting the Demand Planner server as a background process" on page 116). OSAgent is a CORBA system tool that provides a dynamic distributed naming and directory service. It is used by Demand Planner - Administrator. It runs on UDP port 14000. If you don't start OSAgent, the following messages appear continuously when you start Demand Planner - Administrator:

VisiBroker: Unable to locate agent. Will try every 15 seconds to locate agent

DSUser:: Unable to contact agent. Make sure there is an agent running on this network

You can use the Object Services Find (OSFind) program to find the number of OSAgent processes running on the network as well as the exact machine they are running on. An example of OSFind not finding and then finding an OSAgent is shown in Figure 110 on page 112.

To start OSAgent as a background process, call the program with a fully qualified directory path, add the ampersand (&) character at the end, and press Enter:

/opt/vbroker/osagent &

The -v option can be added to OSAgent to specify verbose mode which displays informational and diagnostic messages as the agent is running.

e. Add to the PATH environment variable the directory where you placed the VisiBroker objects. This was specified in 4.1.3, "Loading VisiBroker 3.3 from the installation CD-ROM" on page 96. We used */opt/vbroker*:

export PATH=/opt/vbroker:\${PATH}

f. Set the LIBPATH environment variable to the directory where you placed the VisiBroker liborb_r.a object. This was specified in 4.1.3, "Loading VisiBroker 3.3 from the installation CD-ROM" on page 96. We used /opt/vbroker:

export LIBPATH=/opt/vbroker:\${LIBPATH}

g. Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch. If the start_dp_admin script is called from this directory, then this line is not needed. We want to call this script from anywhere on the system:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

h. Call admaixs with the configuration file name.

A sample database is not provided with the installation of Demand Planner on the iSeries server. Therefore, you have to obtain one from i2 or an i2 consultant if you want to completely bring up or test the server. We use one located in /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola that we loaded in 4.1.6, "Transferring a sample database from a PC to the iSeries server" on page 103. The subdirectory sch contains the configuration file fyiserv.cnf.

We also have to tell the system where to find the admaixs executable that we installed from CD-ROM. It is

/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/admin. One option is to specify the fully qualified directory path. Another option is to navigate the directory structure for the two directories (../../) from where the script is currently running from (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch) and then specify the admin subdirectory:

../../admin/admaixs fyiserv.cnf

Figure 122 shows an example startup shell script. Press the F3 function key twice to save and exit.



Figure 122. Using the EDTF command to update the start_dp_admin script

4.2.2.1 Starting the Administrator server as a foreground process

You can run the Demand Planner - Administrator server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, you cannot issue any other commands or program calls. You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground session, call it and press Enter.

Figure 123 shows an example of changing to the Demand Planner sample database directory within QP2TERM and then calling the start_dp_admin startup shell script as a foreground process.

```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  $
> start_dp_admin
          i2 TradeMatrix Demand Planner - Administrator Version 5.1.1
                               AIX
                    Copyright(c) 2001 i2 Technologies
  Type .../../admin/admaixs -help for usage
  By default, server will perform In memory loading.
 Demand Administrator User Security option is enabled.
  Server is ready to receive requests through CORBA.
  ServiceManager is ready to receive requests through CORBA.
  i2 TradeMatrix Demand Planner - Administrator.
 Bound to port 64000
 Number of users logged in: 0
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom
                                    F21=CL command entry
```

Figure 123. Demand Planner - Administrator server running as a foreground process

The Demand Planner - Administrator server is now up and running on port 64000 (the default port). Notice that you don't see the dollar sign (\$) character after the last line. This means that this QP2TERM session is locked until the Demand Planner - Administrator server is ended.

You can stop the Demand Planner - Administrator server by using the kill command from another terminal session and specifying the Process ID (PID) of the process to end, for example:

kill PID

You can use the ${\tt ps}$ command to determine the Demand Planner - Administrator server's PID.

To stop the Demand Planner - Administrator server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators as explained on page 115.

Once you do this, you see the dollar sign (\$), which indicates that the QP2TERM session is free again and available for other requests. An example is shown in Figure 124.

/QOpenSys/usr/bin/-sh									
Type//admin/admaixs -help for usage									
By default, server will perform In memory loading. Demand Administrator User Security option is enabled. Server is ready to receive requests through CORBA. ServiceManager is ready to receive requests through CORBA.									
i2 TradeM Bound to Number of Received Received Disconnec VisiBroke Terminati: \$	i2 TradeMatrix Demand Planner - Administrator. Bound to port 64000 Number of users logged in: 0 Received signal (2) Received an interrupt to bring down the server. Disconnected all users. VisiBroker: Unable to locate agent. Will try every 15 seconds to locate agent Terminating the CORBA thread. S								
===>									
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry						

Figure 124. Demand Planner - Administrator server foreground process ended: System Request key

4.2.3 QP2TERM to start and stop the Demand Analyzer server

To use Demand Analyzer (sometimes abbreviated DZ), verify first that you have populated directories called *stab* and *susers* in your database. These are similar to the *ptab* and *pusers* directories used by the Demand Planner server. You can use the EDTF command to view the contents of these subdirectories (Figure 125):

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/stab')

Directory: /	opt/i2/Trad	deMatrix/5	1 :	1/dm/05400	450/0	cola/sta	ab		
Position to : Record : 1 of 79									
New File :									
2=Edit 4=Delete File 5=Display 6=Path Size 9=Rec				Recursiv	re Delet	te			
Opt Name		Size	Ow	ner	Chang	ged	Us	ed	
SALES.UP		4	4K	120WNER	0	8/10/00	18:40	09/06/01	09:54
cg_cat.d	bf	8	ЗK	I20WNER	0	8/18/00	16:41	09/17/01	15:16
cg_cat.c	dx	5	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
cg_exts.	dbf	8	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
cg_exts.	cdx	5	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
cg_extt.	dbf	8	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
cg_extt.	cdx	8	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
custgrp.dbf custgrp.cdx dim1.dbf dim2.dbf		8	ЗK	120WNER	0	8/18/00	16:41	09/17/01	15:16
		10	5K	120WNER	0	8/18/00	16:41	09/17/01	15:16
		8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	14:00
		8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	14:00
dimensn.	dbf	8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	15:16
dimensn.	cdx	10	5K	120WNER	0	9/17/01	14:00	09/17/01	15:16
dimnames	.dbf	8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	15:16
dimnames	.cdx	8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	15:16
time.dbf		8	ЗK	120WNER	0	9/17/01	14:00	09/17/01	15:16
time.cdx		10	5K	120WNER	0	9/17/01	14:00	09/17/01	15:16
								Mo	ore
F3=Exit F	12=Cancel	F16=Sort		F17=Positi	on to	5 F22	=Displa	y entire t	field

Figure 125. Using the EDTF command to display the contents of the stab subdirectory

If stab is empty, then you need to run the Convert executable located in the main Demand Planner bin directory to create a Demand Analyzer database. The syntax of Convert is:

Convert <Ptab Path> <Stab Path>

To create a Demand Analyzer database, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

 Call Convert with the directory path to the ptab subdirectory and the stab subdirectory. We use the sample database that we loaded in 4.1.6, "Transferring a sample database from a PC to the iSeries server" on page 103. It is located in /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola.

You also have to tell the system where to find the Convert executable that we installed from CD-ROM. It is in /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin. Specify the fully qualified directory paths. Or navigate the directory structure of the two directories (../../) from where the script is currently running (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch), specify the bin subdirectory, navigate the directory structure of one directory (../) from where the script is currently running.

../../bin/convert ../ptab/ ../stab/
Figure 126 shows Convert running against the Cola sample database.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
 Ś
> ../../bin/convert ../ptab/ ../stab/
 Convert Version No : 5.1.1
  Copyright 2001 i2 Technologies, Inc. All rights reserved.
 This software may only be installed on authorized client
 and server machines as defined in and in accordance with
  the terms of the License Agreement between i2 Technologies
 and the Licensee.
  Files needed :
  system.dbf
 data.dbf
 Copying dim1.dbf from PTAB to STAB
 Copying dim2.dbf from PTAB to STAB
  Copying dimensn.dbf from PTAB to STAB
 Copying dimensn.cdx from PTAB to STAB
 Copying dimnames.dbf from PTAB to STAB
 Copying dimnames.cdx from PTAB to STAB
etc...
 Copying winerr.dbf from PTAB to STAB
  *****************
 Creating absdata.fyi
 Adding tags to absdata.fyi
  ******
  ******
 Adding fields to system.dbf
  ****************
 Creating data.fyi
 Adding tags to data.fyi
  Copying records from data.dbf to data.fyi
  ******
  Skipping creation of book_det.dbf
  ******
  Skipping creation of book cat.dbf
  *****
  Skipping creation of rpt_det.dbf
  ******
  Skipping creation of rpt_cat.dbf
  ******
  skipping creation of file grptcat.dbf
  skipping creation of file grptdet.dbf and its index file.
  skipping creation of file gbookcat.dbf
  skipping creation of file gbookdet.dbf and its index file.
  skipping creation of file cg cat.dbf and its index file.
  skipping creation of file custgrp.dbf and its index file.
  skipping creation of file cg_extt.dbf and its index file.
  skipping creation of file cg_exts.dbf and its index file.
  *****
  $
===>
           F6=Print
F3=Exit
                     F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                     F18=Bottom F21=CL command entry
```

Figure 126. Using Convert to create a Demand Analyzer database

- 4. If you created the Demand Planner database of type Both (Demand Planner and Demand Analyzer), you must go back into Demand Planner -Administrator, remove the database, and then add it back in as Both. This is done from the Open Database window (Figure 170 on page 168).
- 5. If you did not see any users in the susers subdirectory, then you need to use Demand Planner Administrator to create some:
 - a. Open the database.
 - b. Select the Users tab.
 - c. Go to the Demand Analyzer folder and then add users.

You are now ready to start Demand Analyzer. You can start and stop the Demand Analyzer server from an interactive PASE terminal session. The PASE QP2TERM shell is an interactive shell environment. It is useful during development activity or when debugging Demand Analyzer server problems. It is not suited for unattended or "lights-out" operation of the Demand Analyzer server.

To start the Demand Analyzer server using QP2TERM, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch

- 3. Call the Demand Analyzer slsaixs program with the required information. The slsaixs executable requires two parameters:
 - The path to the stab subdirectory
 - The server name declared in the service table (or TCP/IP port number if defined in the service table)

Because this is a lot of information, we recommend that you use a startup shell script to start the Demand Analyzer server. This saves you from having to retype the calling of the program name with parameters each time.

To create a custom startup shell script, follow these steps:

a. Use the echo command to create an empty file:

echo > start_dp_analyzer

b. Use the chmod command to give the file execute authority:

chmod +x start_dp_analyzer

See the example in Figure 127.

```
/QOpenSys/usr/bin/-sh
$
> cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> pwd
/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> echo > start_dp_analyzer
$
> chmod +x start_dp_analyzer
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 127. Using a PASE QP2TERM shell to create start_dp_analyzer

c. Use the EDTF command to modify start_dp_analyzer:

```
EDTF
STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/start_dp_analyzer')
```

The following line should appear first in the script:

#!/QOpenSys/usr/bin/ksh

This tells the system to run the commands or programs in the script in a Korn shell (ksh), which is found in the /QOpenSys/usr/bin directory. This is the same shell that is used when CALL QP2TERM is issued.

d. Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, they are in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch. If the start_dp_analyzer script is called from this directory, then this line is not needed, but we want to call this script from anywhere on the system:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

e. Call slsaixs with the path to the stab subdirectory and the server name declared in the service table (or TCP/IP port number if defined in the service table).

A sample database is not provided with the installation of Demand Planner on the iSeries server. You have to obtain one from i2 or an i2 consultant if you want to completely bring up or test the server. We use one located in /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola that we loaded in 4.1.6, "Transferring a sample database from a PC to the iSeries server" on page 103.

To tell the system where to find the slsaixs executable that we installed from CD-ROM (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/bin). One option is to specify the fully qualified directory paths. Another option is to navigate the directory structure for two directories (../../) from where the script is currently running (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch), specify the bin subdirectory, navigate the directory structure of one

directory (../) from where the script is currently running, and specify the stab subdirectory:

../../bin/slsaixs ../stab/

The server name is defined by creating a service table entry using the Add Service Table Entry (ADDSRVTBLE) command. This is shown in more detail in 4.2.6, "Running multiple Demand Planner servers" on page 155.

- i. For the Service parameter, specify the server name that you want to use. In our example, we use analyzer.
- ii. For the Port parameter, specify the TCP/IP port that you want to use. In our example, we use 45000 because that is the default port.
- iii. For the Protocol parameter, specify the protocol that the service will use. In our example, we use a lowercase tcp for TCP/IP.
- iv. For the Text description parameter, you can add in an optional text description for the service entry:

ADDSRVTBLE SERVICE('analyzer') PORT(45000) PROTOCOL('tcp') TEXT('Entry for i2 TradeMatrix Demand Analyzer')

You should see a completion message Service entry added to table.

The full command to start the Demand Analyzer server is:

../../bin/slsaixs ../stab/ analyzer

Figure 128 shows an example startup shell script. Press the F3 function key twice to save and exit.



Figure 128. Using the EDTF command to update the start_dp_analyzer script

4.2.3.1 Starting the Demand Analyzer server as a foreground process

You can run the Demand Analyzer server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, you cannot issue any other commands or program calls.

You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground session, call it and press Enter. Figure 129 shows an example of changing to the Demand Planner sample database directory within QP2TERM and then calling the start_dp_analyzer startup shell script as a foreground process.

/QOpenSys/usr/bin/-sh					
<pre>\$ > cd /opt/i2/TradeMatrix/5_1_1/dm/0S400_450/cola/sch \$ > start_dp_analyzer i2 TradeMatrix Demand Analyzer Server Version No : 5.1.1</pre>					
Copyright 2001 i2 Technologies, Inc. All rights reserved.					
This software may only be installed on authorized client and server machines as defined in and in accordance with the terms of the License Agreement between i2 Technologies and the Licensee.					
Trying with port : 45000 TCP/IP initialized successfully i2 TradeMatrix Demand Analyzer Server ready					
===>					
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry					

Figure 129. Demand Analyzer server running as a foreground process

The Demand Analyzer server is now up and running on port 45000 (the default port). Notice that you don't see the dollar sign (\$) character after the last line. This means that this QP2TERM session is locked until the Demand Analyzer server is ended.

You can stop the Demand Analyzer server by using the kill command from another terminal session. Specify the Process ID (PID) of the process to end:

kill PID

You can use the ps command to determine the Demand Analyzer server's PID.

To stop the Demand Analyzer server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators as explained on page 115. Once you do this, you see the dollar sign (\$), which indicates that the QP2TERM session is free again and available for other requests. An example is shown in Figure 130.

```
/QOpenSys/usr/bin/-sh
 This software may only be installed on authorized client
 and server machines as defined in and in accordance with
 the terms of the License Agreement between i2 Technologies
 and the Licensee.
 Trying with port : 45000
 TCP/IP initialized successfully
 i2 TradeMatrix Demand Analyzer Server ready
 Client is not logged in.
 Interrupt received, exiting
 calling thr continue
 called thr continue
 Returning from suspendService
 Before delete service
 Ś
===>
F3=Exit
           F6=Print
                      F9=Retrieve
                                    F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom
                                    F21=CL command entry
```

Figure 130. Demand Analyzer server foreground process ended (System Request key)

If you see the error message when you try to use slsaixs, you are missing AIX library libtli.a in directory /usr/lib:

exec(): 0509-036 Cannot load program ../../bin/slsaixs because of the following errors: 0509-150 Dependent module libtli.a(shr.o) could not be loaded

You can verify this by using the 1s command and specifying /usr/lib/libtli.a:

ls /usr/lib/libtli.a

This results in 1s: 0653-341 The file /usr/lib/libtli.a does not exist. This problem was fixed in i2 Five.Two. In the meantime, you need to contact i2 Support and request that they send you this AIX library. Once you receive it, place it in /usr/lib, and slsaixs will work as expected.

4.2.4 QP2SHELL to start and stop the Demand Planner server

You can also start and stop the Demand Planner server in the PASE environment from an OS/400 command line. To do this, use the QP2SHELL callable program and pass a startup shell script or program as a parameter.

To start the Demand Planner server using QP2SHELL and the start_dp script, use the following command:

CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' '/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch/start dp')

Figure 131 shows an example of the panel that appears when you use the F4 function key to prompt the QP2SHELL program call to execute the start_dp startup shell script.

Call Program (CALL) Type choices, press Enter. Program > QP2SHELL Name Name, *LIBL, *CURLIB Library *T.TBL > '/QOpenSys/usr/bin/sh' Parameters + for more values > '/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola /sch/start dp' Bottom F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F3=Exit F24=More keys

Figure 131. Using CALL QP2SHELL to start the Demand Planner server using start_dp

— Note

To process a shell script using QP2SHELL, the /QOpenSys/usr/bin/sh shell has to be started first.

Once you press Enter to execute the program call, this starts the Demand Planner server as a foreground or interactive process (on the default port 55000) that locks your display session until it is ended. You can call QP2SHELL multiple times this way if you have multiple iSeries signons.

Since your display session is locked, one way to verify that the server is running is to bring up another display session. Then use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status). Or use the NETSTAT OPTION (*CNN) command and look for the server name declared in the service table (or TCP/IP port number if defined in the service table).

In our example, the server name "planner" is not defined yet, so you only see the port number which is 55000. Also note that VisiBroker OSAgent is running under port 14000. See the example in Figure 132.

	Work with TCP/IP Connection Status					
				System:	12	
Local internet	address		: *ALL	-		
Type options, p	ress Enter.					
4=End 5=Dis	plav details					
1- <u>11</u> 10 5- <u>D15</u>	pray accario					
Remote	Remote	Local				
Opt Address	Port	Port	Idle Time	State		
*	*	9868	003.08.21	Ligton		
*	*	14000	000.01.04			
+		16676	000.01.04	T i st on		
^ .+	^ .+	10076	005:06:31	Listen		
*	*	40026	005:09:32	Listen		
*	*	40027	007:28:07	Listen		
*	*	40098	005:09:31	Listen		
*	*	44025	002:05:33	Listen		
*	*	44036	007:20:26	Listen		
*	*	50026	007:25:58	Listen		
*	*	50027	007:25:59	Listen		
*	*	55000	000:04:33	Listen		
					More	
F5=Refresh F1	1=Display byte o	counts F13	B=Sort by col	umn		
F14=Display por	t numbers F22=	Display ent	ire field	F24=More kevs		
Probraj por		212pidy cit				

Figure 132. Using NETSTAT *CNN to see Demand Planner server port 55000 running

Another way to verify this is to use the ps command from another display session as shown in Figure 133:

```
ps -ef
```

/							/QOpenSys/usr/bin/sh
\$							
> ps	-ef						
	UID	PID	PPID	C	STIME	TTY	TIME CMD
12	20WNER	1131	1	0 1	6:51:58	-	0:00 /QOpenSys/usr/bin/sh
/opt/	/i2/Tra	adeMa	trix/5	1 1/	/dm/05400) 450/cc	ola/sch/start dp
12	OWNER	1132	1131	0 1	6:52:02	- i-	0:00 /opt/vbroker/osagent
12	OWNER	1133	1131	01	6:52:03	_	7:16//bin/planaxs cola.cfg planner
12	20WNER	1191	1190	0 1	7:00:25	-	0:00 /OOpenSvs/usr/bin/sh -i
12	OWNER	1192	1191	0 1	7:00:30	-	0:00 ps -ef
Ś							
т							
===>							
			·	Dete		m	to Atom TO Discourses
F3=E2		-6=Pr:	INC F9	=Retr	neve Fil	l=irunca	ate/wrap F12=Disconnect
F13=0	lear l	F17=T0	op Fl	8=Bot	tom F21	L=CL con	mand entry

Figure 133. Using ps -ef from another display session

Notice that there are two processes running:

- One for the call to the start_dp shell script
- One where the Demand Planner server is running

This means that there are two separate processes to stop. There are three ways to end them:

• Use the System Request function key to end your locked display where you did the QP2SHELL call (PID 1131). This key varies with terminals, keyboards, and display emulators as explained on page 115. Then you need to use the kill command from a PASE QP2TERM shell environment to end the Demand Planner server (PID 1133):

kill 1133

• Use the kill command to end both processes:

```
kill 1131
kill 1133
```

• The recommended way is to use the UsrLogOut utility and stopwait, stopnowait, or stopcritical. The full syntax is:

usrlogout pid config_path [stopwait/stopnowait/stopcritical/queryusers]

Since we created the end_dp shell script in Figure 120 on page 124, we use that to end the processes, both at the same time (a benefit to using the UsrLogOut utility (end_dp shell script)).

After you end the Demand Planner server, you can use the ps command to verify that it ended. An example of ending the Demand Planner server using end_dp and using ps -ef to verify this is shown in Figure 134.

```
/QOpenSys/usr/bin/-sh
  $
> ps -ef
   UID PID PPID C STIME TTY TIME CMD
I2CWNER 1131 1 0 16:51:58 - 0:00 /QOpenSys/usr/bin/sh
/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch/start dp

      I2OWNER 1132 1131
      0
      16:52:02
      -
      0:00 /opt/vbroker/osagent

      I2OWNER 1133 1131
      0
      16:52:03
      -
      7:16
      ../../bin/planaxs cola.cfg planner

        I20WNER 1191 1190
        0 17:00:25
        - 0:00 /QOpenSys/usr/bin/sh -i

        I20WNER 1192 1191
        0 17:00:30
        - 0:00 ps -ef

  Ś
> /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/end_dp 1133 stopwait
 UsrLogOut Version No : 5.1.1
 Copyright 2001 i2 Technologies, Inc. All rights reserved.
 This software may only be installed on authorized client
 and server machines as defined in and in accordance with
 the terms of the License Agreement between i2 Technologies
  and the Licensee.
 Number of users logged out : 0.
  Ś
> ps -ef
       UID PID PPID C STIME TTY TIME CMD
   I20WNER 1132 1131 0 16:52:02 - 0:00 /opt/vbroker/osagent
   I2OWNER 1191 11900 17:00:25I2OWNER 1194 11910 17:01:49
                                               - 0:00 /QOpenSys/usr/bin/sh -i
- 0:00 ps -ef
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 134. Using end_dp shell to end Demand Planner server, monitoring using ps -ef

To see the progress messages from the server after the server has ended, or to look for errors, use the Work with Spooled Files (WRKSPLF) command for the user that issued the call:

WRKSPLF SELECT (I20WNER)

You then need to look for a spooled file called QPRINT. If the server is still running, this file is in an open (OPN) status and cannot be viewed. If the file is in a ready (RDY) status, then you can select option 5 to view the file. Figure 135 shows an example of the contents of QPRINT after a Demand Planner server started and ended normally.

Display Spooled File		
File : QPRINT	Page/Line	1/6
Control	Columns	1 - 130
Find		
*+1+2+3+4+5+	6+7.	+
Compression length : 64000		
Trying to bind to Port Number : 55000 [planner]		
TCP/IP initialized successfully (Listen Thread Created)		
i2 TradeMatrix Demand Planner Server ready		
0 client connections.		
TCP/IP initialized successfully		
i2 TradeMatrix Demand Planner Server Version No : 5.1.1		
Copyright 2001 i2 Technologies, Inc. All rights reserved.		
This software may only be installed on authorized client		
and server machines as defined in and in accordance with		
the terms of the License Agreement between i2 Technologies		
and the Licensee.		
Waiting for Interrupt to Exit		
Interrupt received, exiting		
Returning from suspendService		
Unloading the server		
End of CORBA Session		
uninitialized Codebase		
		More
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys	3	

Figure 135. Using WRKSPLF to view the contents of QPRINT after using a Demand Planner server

4.2.5 Automating the Demand Planner servers using CL programs

The PASE QP2TERM shell environment is fine when you want to manually start and stop Demand Planner servers. However, most customers want to automate this process. This section shows you how to create CL programs to do this using QP2SHELL.

4.2.5.1 Starting the Demand Planner server

To start the Demand Planner server, follow these steps:

- 1. Create a startup shell script since the Demand Planner startup program name and parameters can become quite lengthy. We use one called start_dp, or you can create a different one.
- 2. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the startup shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627. Figure 136 shows an example program that you can use called DP_START.

```
Columns . . . :
             1 80
                           Edit
                                                   12/12SOURCE
SEU==>
                                                     DP START
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...
     0001.00
               PGM
0002.00
              MONMSG
                       MSGID(CPF0000)
0003.00
              CALL
                       PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' +
                         '/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/col+
0004.00
0005.00
                        a/sch/start dp')
               ENDPGM
0006.00
     F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel
F16=Repeat find
                F24=More keys
           (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 136. Creating a CL program called DP_START to start the Demand Planner server

3. After you create and compile the program, start the Demand Planner server by calling the program:

call i2/dp_start

In our case, *i2* was the name of the library the program was created in, and *DP_START* was the name of the program. An example is shown in Figure 137.

MAIN	AS/400 Main Menu		
Select one of the following:		System: 12	
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the system tasks Problem handling Display a menu Information Assistant of Client Access/400 tasks Sign off Selection or command ===> call i2/dp_start 	Folders ystem options		
F3=Exit F4=Prompt F9=Retrie F23=Set initial menu	eve F12=Cancel	F13=Information Assistant	

Figure 137. Starting the Demand Planner server from CL program DP_START

4. As explained in 4.2.4, "QP2SHELL to start and stop the Demand Planner server" on page 136, the Demand Planner server starts on the default port of 55000 as a foreground or interactive process. It locks your display session until it is ended.

Since your display session is locked, one way to verify that everything starts correctly is to bring up another display session using any of these options:

- Use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status).
- Use the following command and look for port 55000:

NETSTAT OPTION (*CNN)

• Bring up another display session and use the ps command.

When you are ready to end the Demand Planner server, the recommended way is to use the UsrLogOut utility and stopwait, stopnowait, or stopcritical. The full syntax is:

usrlogout pid config_path [stopwait/stopnowait/stopcritical/queryusers]

Since the end_dp shell script was created in Figure 120 on page 124, you can use that to end the processes. You can then use the ps -ef command to verify that it ended.

5. After you create the CL program to start the Demand Planner server, you can easily create another CL program to submit this as a batch job so an interactive session is not locked while the Demand Planner server is running. Figure 138 shows an example program that you can use called STRDPBCH.

Columns : 1	80 Edit	I2/I2SOURCE
		6 1 7
THI	** Deginning of data ****************************	· · · · · · · · · · · · · · · · · · ·
0001 00	POM	
0002.00	MONING MSGTD (CPF0000)	
0003.00	SEMJOB (MD (CALL PGM (12/DP START)) JOB (DE	255000) +
0004.00	JOBD (*LIBL/QBATCH)	,
0005.00	ENDPGM	
*******	***** End of data *******************************	*****
F3=Exit F5=Refresh	F9=Retrieve F10=Cursor F11=Toggle F1	2=Cancel
F16=Repeat find	F24=More keys	
(C) (COPYRIGHT IBM CORP. 1981, 2000.	

Figure 138. Creating a CL program called STRDPBCH to start Demand Planner as a batch job

Notice that we called the batch job DP55000 so it would be easy to see which server was running and on which port it was running. We also used QBATCH for the job description and subsystem, but you could use another one.

6. After you create and compile the program, start the Demand Planner server by calling the program:

call i2/strdpbch

In our case, *i2* is the name of the library in which the program was created and *STRDPBCH* was the name of the program. Figure 139 shows an example.

MAIN	AS/400 Main Menu	l Caratana	T0
Select one of the following:		System:	12
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the Problem handling Display a menu Information Assistant Client Access/400 task 	d folders system t options sks		
90. Sign off			
Selection or command ===> call i2/strdpbch			
F3=Exit F4=Prompt F9=Ret: F23=Set initial menu	rieve F12=Cancel	F13=Information Ass	sistant

Figure 139. Starting the Demand Planner server as a batch job from CL program STRDPBCH

7. As explained in 4.2.4, "QP2SHELL to start and stop the Demand Planner server" on page 136, the Demand Planner server starts on the default port 55000 as a foreground or interactive process. This time it does not lock your display session.

You can use the <code>NETSTAT OPTION(*CNN)</code> command and look for port 55000. Or from another display session, use the <code>ps</code> command to verify that everything started correctly.

You can also look at the submitted batch job using one of the following commands:

WRKSEMJOBSEMFROM(*USER)WRKSESJOBSES(QBATCH)WRKACTJOBSES(QBATCH)

Figure 140 shows an example of using the WRKACTJOB SBS (QBATCH) command. Notice that there is one job for the startup shell script, one QP2FORK job where OSAgent is running, and one QP2FORK job where the Demand Planner server (planaxs executable) is running.

	Wo	rk with 2	Active	e Jobs	00/07/01	I2
CPU %: 21.4 E	lapsed time:	: 00:00	00:00	Active jobs	: 365	12:13:03
Type options, press 2=Change 3=Hold 8=Work with spool	s Enter. 1 4=End 5 .ed files 1	5=Work wi 13=Discoi	ith nnect	6=Release 7=1 	Display mes	sage
Opt Subsystem/Job QBATCH DP55000 DP55000 DP55000	User QSYS I2OWNER I2OWNER I2OWNER	Type (SBS BCH BCI BCI	CPU % .0 .0 .0	Function PGM-DP_START PGM-QP2FORK PGM-QP2FORK	Status DEQW THDW SELW THDW	
Bottom Parameters or command						
===> F3=Exit F5=Refree F11=Display elapsed	sh F7=I 1 data F12:	Find =Cancel	F10= F23=	Restart statis -More options	tics F24=More 1	keys

Figure 140. Using WRKACTJOB to check on the Demand Planner server running in QBATCH

8. End the Demand Planner server when you are ready as explained in step 4. Note that the jobs running in QBATCH also end automatically.

4.2.5.2 Shutting down the Demand Planner server

To shut down the Demand Planner server, follow these steps:

1. Use the UsrLogOut utility and stopwait, stopnowait, or stopcritical. The full syntax is:

usrlogout pid config_path [stopwait/stopnowait/stopcritical/queryusers]

Use the end_dp shell script created in Figure 120 on page 124 to end the processes. A benefit of using the UsrLogOut utility instead of manually ending processes with the kill command, or using the System Request function key if there is an interactive process, is that it ends all processes for you at the same time.

2. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the end_dp shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627. Figure 141 shows an example program that you can use called DP_END.

```
Edit
                                                        I2/I2SOURCE
Columns . . . :
               1 80
SEU==>
                                                           DP END
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
      0001.00
                 PGM PARM(&P1 &P2)
0002.00
                 DCL
                          VAR(&P1) TYPE(*CHAR) LEN(10)
0003.00
                 DCL
                          VAR(&P2) TYPE(*CHAR) LEN(15)
                DCL
                          VAR(&P3) TYPE(*CHAR) LEN(10) VALUE(X'00')
0004.00
                CHGVAR VAR(&P1) VALUE(&P1 *TCAT &P3)
0005.00
0006.00
               MONIMSG MSGID (CPF0000)
0007.00
                 CALL
                          PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' +
0008.00
                           '/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/col+
0009.00
                            a/sch/end_dp' &P1 &P2)
0010.00
                 ENDPGM
         F3=Exit F5=Refresh F9=Retrieve F10=Cursor
                                        F11=Toggle
                                                   F12=Cancel
F16=Repeat find F24=More keys
             (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 141. Creating a CL program called DP_END to end the Demand Planner server

This program takes in two parameters (&P1 and &P2), which are the current PIDs found from the ps command, and the desired end option. Then the program passes these parameters to the end_dp shell script. We had to null-terminate character string constant arguments for the PID to pass to the shell script correctly. Variable &P3 is used to contain the NULL (x'00) character and then appended to the end of variable &P1.

3. After you create and compile the program, you can end the Demand Planner server by calling the program with the required parameters:

call i2/dp_end PARM('184' STOPWAIT)

In our case, *i2* was the name of the library the program was created, *DP_END* was the name of the program, *184* is the process ID (PID) of the Demand Planner (planaxs) server, and *STOPWAIT* is how we want to end the Demand Planner server. See the example in Figure 142.

MAIN	AS/400 Main Menu	System, T2
Select one of the following:		System. 12
 User tasks Office tasks General system tasks Files, libraries, and f Programming Communications Define or change the sy Problem handling Display a menu Information Assistant of Client Access/400 tasks 	Folders ystem options	
90. Sign off		
Selection or command ===> call i2/dp_end PARM('12	84' STOPWAIT)	
F3=Exit F4=Prompt F9=Retrie F23=Set initial menu	eve F12=Cancel F13=Informa	tion Assistant

Figure 142. Ending the Demand Planner server from a CL program called DP_END

4. You can use the ps -ef command to verify that the Demand Planner server ended. Or, you can use a command, such as WRKACTJOB SBS (QBATCH), to verify that the jobs running in QBATCH ended if you started the Demand Planner server this way.

4.2.5.3 Finding a process ID (PID) from an OS/400 command line

To find out the process ID (PID) of a running program, you can use the ps command from within QP2TERM or by using QP2SHELL. Then then have to search through the list for the program name you are interested in. You can use the grep utility with ps to filter the output for only certain program names. Consider the following examples:

ps -e | grep planaxs CALL QP2SHELL ('/QOpenSys/usr/bin/ksh' '-c' 'ps -e | grep planaxs')

We created a shell script and matching CL program to show the PID for the program name we are interested in. To create them, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the directory where you want to create the shell script. This could be the Demand Planner directory where the necessary configuration or data files are located. In our case, this is in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. Use the echo command to create an empty file:

echo > find_pid

4. Use the chmod command to give the file execute authority:

```
chmod +x find_pid
```

Figure 143 shows an example of steps two through four.



Figure 143. Using a PASE QP2TERM shell to create find_pid

5. Use the EDTF command to modify find_pid:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/find_pid')

Use the ps command to obtain a list of running process IDs. Then use the grep utility to filter the list to only the program name you are interested in (passed into the script as a parameter). Next use the awk pattern matching program to format that information and present it to a user in a readable form.

See the example in Figure 144. Press the F3 function key twice to save and exit.

```
Edit File: /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/find_pid
Record :
            1 of
                      32 by 10
                                                Column: 1 69 by 126
Control :
CMD ....+...1....+...2...+...3...+...4...+...5...+...6...+...7...+...
. . . . +
   ***********Beginning of data************
  #!/QOpenSys/usr/bin/ksh
  # find pid By Daniel R Sundt - IBM 09/10/2001
  # Americas Advanced Technical Support (ATS) Solutions Center - i2
  # This script will accept a program or executable name $1 and use
  # ps along with awk to display the PID for the program name provided.
  # Help displayed if called with no parameters
  if [ $# -lt 1 ]
     then
  echo "USAGE: $0 <program name>"
   echo "EXAMPLE: find pid planaxs"
     exit
  fi
  #
  # Change to directory where this program is
  cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  # Find the process ID (PID) for the program name provided
  # and write this information to a file for awk
  ps -e | grep $1 > ps_output
  # Create the format file needed by awk
  echo '{printf " The %s PID is %s r", $4, $1}' > awk_inst
  #
  # Run awk
  awk -f awk inst ps output
  #
  # Remove temporary files used by this program
  rm awk inst
  rm ps output
   F2=Save F3=Save/Exit F12=Exit F15=Services
                                                F16=Repeat find
F17=Repeat change
                  F19=Left
                             F20
```

Figure 144. Using the EDTF command to update the find_pid script with the call to ps and awk

6. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the find_pid shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 145 shows an example program that you can use called FIND_PID.

```
1 80
                             Edit
                                                     12/12SOURCE
Columns . . . :
SEU==>
                                                       FIND PID
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
     0001.00
                PGM PARM(&P1)
0002.00
                DCL
                         VAR(&P1) TYPE(*CHAR) LEN(15)
0003.00
                DCL
                         VAR(&P2) TYPE(*CHAR) LEN(5) VALUE(X'00')
               CHGVAR
                        VAR(&P1) VALUE(&P1 *TCAT &P2)
0004.00
               MONMSG
0005.00
                        MSGID(CPF0000)
0006.00
                CALL
                        PGM(OP2SHELL) PARM('/OOpenSys/usr/bin/sh' +
0007.00
                          '/opt/i2/TradeMatrix/5 1 1/dm/OS400 450/col+
0008.00
                          a/sch/find_pid' &P1)
                ENDPGM
0009.00
      F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Togqle
                                                F12=Cancel
F16=Repeat find F24=More keys
            (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 145. Creating a CL program called FIND_PID to find program process IDs

This program takes in one parameter (&P1), which is the program name that you want a process ID for. It then passes this to the find_pid shell script. We had to null-terminate character string constant arguments for the program name to pass to the shell script correctly. Variable &P2 is used to contain the NULL (x'00) character, and then this is appended to the end of variable &P1.

7. After you create and compile the program, you can find a process ID for a program by calling the program with the required parameter:

call i2/find pid 'planaxs'

In our case, *i2* was the name of the library the program was created, *FIND_PID* was the name of the program, and *planaxs* was the program name for which we wanted a process ID. Figure 146 shows an example.

MAIN	AS/400 Main Menu	Gizetom, I2
Select one of the following:		ByBCCIII. 12
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the system tasks Problem handling Display a menu Information Assistant of Client Access/400 task 	folders ystem options s	
90. Sign off		
Selection or command ===> call i2/find_pid 'pla	naxs'	
F3=Exit F4=Prompt F9=Retrie F23=Set initial menu	eve F12=Cancel F13=Informa	ation Assistant

Figure 146. Finding a process ID for a program from a CL program called FIND_PID

8. To see the result of the CL program, use the Work with Spooled Files (WRKSPLF) command for the user that issued the call:

WRKSPLF SELECT (120WNER)

You then need to look for a spooled file called QPRINT. Figure 147 shows an example of the contents of QPRINT after using FIND_PID to look for the process ID for the Demand Planner server planaxs program name.

	Display Spooled	File	
File : QPRINI			Page/Line
Find			Corumns
*+1+2+.		.+5+6+	
The planaxs PID is 352			
	I2		
			Bottom
F3=Exit F12=Cancel F19	-Left F20-Right	F24=More keys	LOCCON
	5	-	

Figure 147. Using WRKSPLF to view the contents of QPRINT after using FIND_PID

4.2.5.4 Killing a process ID from an OS/400 command line

To kill or end a running process, you can use the $_{PS}$ command from within QP2TERM. Or you can use QP2SHELL to find the Process ID (or the FIND_PID program created in 4.2.5.3, "Finding a process ID (PID) from an OS/400 command line" on page 147), and then use the kill command:

kill 352 CALL QP2SHELL ('/QOpenSys/usr/bin/kill' '352') We created a shell script and matching CL program to kill or end the PID for a program name we are interested in. To create them, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the directory where you want to create the shell script. This could be the Demand Planner directory where the necessary configuration or data files are located, which in our case is in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. Use the echo command to create an empty file:

echo > kill_pid

4. Use the chmod command to give the file execute authority:

chmod +x kill_pid

Figure 148 shows an example of steps two through four.

```
/QOpenSys/usr/bin/-sh
$
> cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> pwd
/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
$
> echo > kill_pid
$
> chmod +x kill_pid
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 148. Using a PASE QP2TERM shell to create kill_pid

5. Use the EDTF command to modify kill_pid:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/kill_pid')

Use the kill command to end the program name you are interested in based on its process ID (the PID passed into the script as a parameter). An example is shown in Figure 149. Press the F3 function key twice to save and exit.

```
Edit File: /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/kill_pid
Record :
            1 of 19 by 10
                                               Column: 1 73 by 126
Control :
CMD ....+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...
....+....9....+..
  **********Beginning of data***********
  #!/QOpenSys/usr/bin/ksh
  # kill pid By Daniel R Sundt - IBM 09/10/2001
  # Americas Advanced Technical Support (ATS) Solutions Center - i2
  # This script will accept a process ID (PID) $1 and optionally
  # a signal $2 and use the kill command to end the PID.
  # Help displayed if called with no parameters
  if [ $# -lt 1 ]
     then
  echo "USAGE: $0 <PID> <optional end option>"
   echo "EXAMPLE: kill pid 207"
   echo "EXAMPLE: kill_pid 207 -9"
     exit
  fi
  #
  # Kill the PID with an optional signal
  kill $2 $1
   F2=Save F3=Save/Exit F12=Exit
                                F15=Services
                                              F16=Repeat find
F17=Repeat change F19=Left F20
```

Figure 149. Using EDTF to update the kill_pid script with the call to the kill command

6. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the kill_pid shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627. Figure 150 shows an example program that you can use called KILL_PID.

```
1 80
                                      Edit
                                                                                    12/12SOURCE
Columns . . . :
SEU==>
                                                                                       KILL PID
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
        PGM PARM(&P1 &P2)
0001.00

      FGT: FART(&P1 & P2)

      DCL
      VAR(&P1) TYPE (*CHAR) LEN(10)

      DCL
      VAR(&P2) TYPE (*CHAR) LEN(5)

      DCL
      VAR(&P3) TYPE (*CHAR) LEN(5) VALUE(X'00')

      CHGVAR
      VAR(&P1) VALUE(&P1 *TCAT &P3)

      CHGVAR
      VAR(&P2) VALUE(&P1 *TCAT &P3)

      MONMSG
      MSGID(CCPF0000)

      CHU
      DCU(DCCUTUE)

0002.00
0003.00
0004.00
0005.00
0006.00
0007.00
                      CALL FGM (QP2SHELL) PARM ('/QOpenSys/usr/bin/sh' +
0008.00
                                     '/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/col+
0009.00
0010.00
                                      a/sch/kill pid' &P2 &P1)
0011.00
                        ENDPGM
         F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel
F16=Repeat find F24=More keys
                  (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 150. Creating a CL program called KILL_PID to kill or end program process IDs

This program takes in two parameters (&P1 and &P2), which are the process IDs that you want to kill or end, and an optional signal like -9. It then passes parameters to the kill_pid shell script. We had to null-terminate character string constant arguments for the program name to pass to the shell script correctly. Variable &P3 is used to contain the NULL (x'00) character and then appended to the end of variables &P1 and &P2.

7. After you create and compile the program, you can kill a process ID for a program by calling the program with the required parameters:

call i2/kill_pid PARM('737' '')
call i2/kill pid PARM('737' '-9')

In our case, *i2* was the name of the library the program was created, *KILL_PID* was the name of the program, *737* is the process ID to kill, and *-9* is the absolute signal. Figure 146 shows an example.

MAIN	AS/400 Main Menu	Gustem, T2
Select one of the following:		System. 12
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the s Problem handling Display a menu Information Assistant Client Access/400 task 	folders ystem options s	
90. Sign off		
Selection or command ===> call i2/kill_pid PARM('737' '-9')	
F3=Exit F4=Prompt F9=Retri F23=Set initial menu	eve F12=Cancel F13=Informa	tion Assistant

Figure 151. Killing a process ID for a program from the KILL_PID CL program

8. You can use the ps -ef command to verify that the process ID was ended or the find_pid program created in 4.2.5.3, "Finding a process ID (PID) from an OS/400 command line" on page 147. Or you can use a command, such as WRKACTJOB SBS (QBATCH), to verify that the jobs running in QBATCH ended if you started the Demand Planner server this way.

4.2.6 Running multiple Demand Planner servers

When you start a Demand Planner server, you can accept the default port number 55000, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Demand Planner servers on one system at the same time.

To start the Demand Planner Server on a different port, follow these steps:

- 1. Create a service table entry for the "planner" server name used when starting the Demand Planner server. This defines the TCP/IP port number to use.
 - a. Use the Configure TCP/IP (CFGTCP) command to bring up the Configure TCP/IP main menu (Figure 152).
 - b. Select option 21.
 - c. Configure the related tables.
 - d. Press Enter.

CFGTCP	Configure TCP/IP		
Select one	e of the following:	System:	12
1. Wo 2. Wo 3. Ch 4. Wo 5. Wo	ork with TCP/IP interfaces ork with TCP/IP routes nange TCP/IP attributes ork with TCP/IP port restrictions ork with TCP/IP remote system information		
10. Wo 11. Me 12. Ch	ork with TCP/IP host table entries erge TCP/IP host table nange TCP/IP domain information		
20. Ca 21. Ca 22. Ca	onfigure TCP/IP applications onfigure related tables onfigure point-to-point TCP/IP		
Selection ===> 21	or command		
F3=Exit	F4=Prompt F9=Retrieve F12=Cancel		

Figure 152. Configure related tables option from Configure TCP/IP menu

2. From the Configure Related Tables menu, select option 1 (Work with service table entries) as shown in Figure 153. Press Enter.

Configure Related Tables	Ctrat on .	T0
Select one of the following:	system:	⊥Z
 Work with service table entries Work with protocol table entries Work with network table entries 		
Selection or command ===> 1		
F3=Exit F4=Prompt F9=Retrieve F12=Cancel		

Figure 153. Work with service table entries option from Configure Related Tables menu

3. From the Work with Service Table Entries menu, select option 1 (Add) on the first blank line as shown in Figure 154. Press Enter.

Work with s	ervice Table Entries
Type options, press Enter. 1=Add 4=Remove 5=Display	System: I2
Opt Service 1	Port Protocol
as-admin-http as-admin-http as-admin-https as-admin-https as-central as-central-s as-central-x as-database as-database-s as-database-x as-database-x as-dtaq	2001 tcp 2001 udp 2010 tcp 2010 udp 8470 tcp 9470 tcp 32470 spx 8471 tcp 9471 tcp 32471 spx 8472 tcp
Parameters for options 1 and 4 or ===>	command
F3=Exit F4=Prompt F5=Refresh F17=Top F18=Bottom	F6=Print list F9=Retrieve F12=Cancel

Figure 154. Adding a service table entry from Work with Service Table Entries menu

This brings up the Add Service Table Entry (ADDSRVTBLE) command prompt (Figure 155):

- a. For the Service parameter, specify the server name that you want to use. In our example, we used planner.
- b. For the Port parameter, specify the TCP/IP port that you want to use. To use the default port, you would specify 55000. In our example, we used 11000 because we want the Demand Planner server to run on a non-standard port.
- c. For the Protocol parameter, specify the protocol that the service will use. In our example, we used lowercase t_{CP} for TCP/IP.
- d. For the Text description parameter, you can add in an optional text description for the service entry.

Press Enter.

You could also simply use the following command:

ADDSRVTBLE SERVICE('planner') PORT(11000) PROTOCOL('tcp') TEXT('Entry for i2 TradeMatrix Demand Planner')

You should see the completion message Service entry added to table.

Add Service Table Entry (ADDSRVTBLE) Type choices, press Enter. Service	
Type choices, press Enter. Service	
Service	
	lanner'
Bo F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More keys	Bottom ncel

Figure 155. Add Service Table Entry (ADDSRVTBLE) command details

4. Page down the list of service table entries until you see the one that you created (planner in our case). See Figure 156.

Ment with Contrine Weble Detwice						
	WOLK WICH S	Service Table Hitr	Les Curr	tom, T2		
Type (options, press Enter.		byb			
1=Ac	dd 4=Remove 5=Display					
	1 1					
Opt s	Service	Port	Protocol			
1	news	144	tcp			
1	news	144	udp			
1	nicname	43	tcp			
1	nicname	43	udp			
1	ntp	123	tcp			
1	ntp	123	udp			
]	planner	11000	tcp			
1	pop3	110	tcp			
l	pop3	110	udp			
(qota	17	tcp			
C	qota	1/	uap	Marca		
More						
ratalle	ecers for operons I and 4 or	Commania				
E3-EX.	it F4-Promot F5-Refresh	F6-Print list	F9-Retrieve	F12-Cancel		
FJ=FALL F4=FIOUPL FJ=RELIESH F0=FIHL HISL F9=RELHEVE FIZ=CAUCEL						

Figure 156. Viewing planner service table entry from Work with Service Table Entries menu

- 5. To start Demand Planner using port 11000, follow these steps:
 - a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, this is in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch: cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

c. Call the startup shell script start_dp:

```
start_dp
```

See the example in Figure 157.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
> start dp
 Compression length : 64000
 Trying to bind to Port Number : 11000 [ planner ]
  TCP/IP initialized successfully (Listen Thread Created)
  i2 TradeMatrix Demand Planner Server ready
  TCP/IP initialized successfully
  i2 TradeMatrix Demand Planner Server Version No : 5.1.1
  Copyright 2001 i2 Technologies, Inc. All rights reserved.
 This software may only be installed on authorized client
  and server machines as defined in and in accordance with
  the terms of the License Agreement between i2 Technologies
  and the Licensee.
  Session Manager is ready.
 Waiting for Interrupt to Exit
===>
F3=Exit
            F6=Print
                      F9=Retrieve
                                    F11=Truncate/Wrap
          F17=Top
                       F18=Bottom
F13=Clear
                                     F21=CL command entry
```

Figure 157. Starting the Demand Planner server with a non-default port number

6. If you use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status), or use the NETSTAT OPTION (*CNN) command, look for the server name declared in the service table (or TCP/IP port number if defined in the service table). In our example, the server name "planner" was defined and used, so this is what shows up in NETSTAT.

You have to look up the service table entry to verify what TCP/IP port is brought up. This is 11000 in our example. This differs from Figure 132 on page 138, which was before we created the "planner" service name and where you see the actual port number. Also note that the VisiBroker OSAgent is still running under port 14000. An example is shown in Figure 158.

Work with TCP/IP Connection Status						
System: I2						
Type options, press En	iter.					
3=Enable debug 4=E	ind 5=Dis	play detail	s 6=Disab	le debug		
8=Display jobs						
Remote	Remote	Local				
Opt Address	Port	Port	Idle Time	State		
*	*	as-netp >	024:27:46	Listen		
*	*	as-mtc >	024:27:46	Listen		
*	*	as-sign >	024:27:46	Listen		
*	*	planner	000:00:25	Listen		
*	*	14000	000:00:25	*UDP		
*	*	domain	024:29:05	Listen		
*	*	domain	024:29:05	*UDP		
*	*	500	024:27:51	*UDP		
*	*	1698	024:27:52	Listen		
*	*	1698	024:27:53	*UDP		
*	*	500	024:27:51	*UDP		
*	*	500	024:27:51	*UDP		
					More	e
F5=Refresh F11=Display byte counts F13=Sort by column						
F14=Display port numbers F22=Display entire field F24=More keys						

Figure 158. Using NETSTAT *CNN to see Demand Planner server port planner (11000) running

Now that you know how to create a service table entry and map it to a TCP/IP port, you could:

- Create custom service table entries (server names) for each port you want to start
- · Create multiple startup shell scripts with the different server names
- Create a script where you pass in the server name as a parameter when starting the server

4.2.7 Running multiple Demand Planner - Administrator servers

When you start a Demand Planner - Administrator server, you can accept the default port number 64000, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Demand Planner - Administrator servers on one system at the same time. This is done by adding the PORTNO parameter to the Demand Planner - Administrator configuration file.

You can specify an actual TCP/IP port number (PORTNO = 11000). Or you can create a service table entry such as the one shown in Figure 155 on page 158 and specify that instead (PORTNO = planner). You could create custom configuration files for each port you want to start. Or, you can create a script where you pass in the port number as a parameter to update the configuration file.

Figure 159 shows an example of using the EDTF command to add the PORTNO parameter to the fyiserv.cnf configuration file so the Demand Planner - Administrator server starts and runs on port number 11000.

– Note

A space must precede and follow the "=" sign with every parameter.

```
Edit File: /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/fyiserv.cnf
Record :
           1 of
                     8 by 10
                                            Column :
                                                          59 b
                                                     1
Control :
***********Beginning of data************
  PORTNO = 11000
  ERRFILE = dpaderr.txt append
  ERRDIR = /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  LOADMEM = 64
  CTRLDIR = /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/admin/
  CTRLINMEM = ON
  CORBA = ON
  ACCESSCHK = ON
   F2=Save F3=Save/Exit F12=Exit F15=Services
                                      F16=Repeat find
                                                    F17=Repeat c
```

Figure 159. Changing fyiserv.cnf to start Demand Planner - Administrator on a different port

To start Demand Planner - Administrator using port 11000 after setting the PORTNO parameter in the configuration file fyiserv.cnf, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the Demand Planner directory where the necessary configuration or data files are located. In our case, this is in the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

Call the startup shell script start_dp_admin:

start_dp_admin

See the example in Figure 160.

/Q0penSys/us	sr/bin/-sh
i2 TradeMatrix Demand Planner AIX Copyright(c) 2001 :	r - Administrator Version 5.1.1 i2 Technologies
Type//admin/admaixs -help for us	sage
By default, server will perform In me Demand Administrator User Security op Server is ready to receive requests t ServiceManager is ready to receive re	emory loading. ption is enabled. chrough CORBA. equests through CORBA.
i2 TradeMatrix Demand Planner - Admir Bound to port 11000 Number of users logged in: 0	nistrator.
===>	
F3=Exit F6=Print F9=Retrieve F1 F13=Clear F17=Top F18=Bottom F2	11=Truncate/Wrap 21=CL command entry

Figure 160. Starting the Demand Planner - Administrator server with a non-default port number

4.2.8 Running multiple Demand Analyzer servers

When you start a Demand Analyzer server, you can specify the default port number 45000, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Demand Analyzer servers on one system at the same time.

To start the Demand Analyzer server on a different port, follow the same steps as the Demand Planner server as described in 4.2.6, "Running multiple Demand Planner servers" on page 155. This entails changing the port number in the service table entry used to start the server, which in our case was called *analyzer*.

4.2.9 Starting the Demand Planner client

Once a Demand Planner server is started on a port, you need to start the Demand Planner client from a PC. You can read how to install the client in 4.1.4, "Demand Planner/Demand Analyzer client installation" on page 98.

To start the Demand Planner client, follow these steps:

- Start the Demand Planner client program from a PC. Click Start-> Programs-> i2 TradeMatrix Demand Planner 5.1.1-> i2 TradeMatrix Demand Planner. If this is something you are going to start often, you may want to create a shortcut to this program and put it on your PC desktop.
- 2. Once you execute this program, a login information window appears where you need to specify:
 - The host name or TCP/IP address (Host Name/Address parameter) of the iSeries server where the Demand Planner server is running.

- The port number (Server Name parameter) of the Demand Planner server on the iSeries server (the default is 55000).
- The user name (Login parameter) for the user trying to connect to the Demand Planner server.
- The password (Password parameter) for the user trying to connect to the Demand Planner server. A password may not be required depending on the installation.
- The name of the database (Database Name parameter) that you want to connect to.

This information is stored in the plancInt.ini file on the client PC in the directory C:\WINDOWS or C:\WINNT, and it will be used in the future.

Figure 161 shows an example of the Demand Planner client login information window.

i2 1	FradeMatrix Demand	Planner Sign In	×	
	- Parameters Host Name/Address:	12		
	Server Name:	55000		
	Server Port:			
	Login:	USER1		
	Password:			
	Database Name:	cola		
	Edit Password	OK Cancel		

Figure 161. Demand Planner client login information window

 Once you specify a host, port, user, and database name, click OK to continue. A window (Figure 162) appears showing the client trying to connect to the server.



Figure 162. Demand Planner client connecting to server status window

4. If the connection from client to server is established, the main Demand Planner window (Figure 163) appears.

💋 i2 TradeMatrix Demand Planner					- 🗆 ×
File View Window Tools Help					
▶≈■ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$					
Not Restoring Default BookMark	USER1	1 National	1 All Products	Apr 98	

Figure 163. Demand Planner client window after successful connection to a server

At this point, your Demand Planner environment is up and running.

Figure 164 shows an example of the Product dimension, Geography dimension, Graph objects, and SpreadSheet for the DietPeachT 16oz Product, in the Philadelphia Territory, for the early 1998 time frame. This was stored and opened

<mark>ស្</mark>វៀi2 TradeMatrix Demand Planner [Demo Bookmark] _ 8 File Search Substitute View Window Tools Help X 🔣 🖬 🕅 • <u>- 🗆 ×</u> M Product Jan 98 Feb 98 Display Code Refresh Standard Product View Unit Sales 121 Product Allprod Subgroup Dollar Sales 121 107 Group Equivalent Units 0.00 0.00 1 All Products 1 Soft Drinks 4 Natural Iced Tea Eq Units Conv Factor N/A N/A comment 21 PeachTea 16oz 2 Iced Teas 5 Lemon Iced Tea Price \$ 94.00 \$ 86.00 22 DietPeachT 16oz 3 Juices 6 Peach Iced Tea Avg Selling Price 0.00 0.00 \$ \$ Unit Cost 0 0 Service Level 0 0 0.00 0.00 Safety Stock Level On Hand Inv 108 93 Service Level DC N/A N/A Event A FKFS N/A N/A Seasonality Ind 79 76 👿 Graph _ 0 <u>- 🗆 ×</u> Standard Geographic View 🔻 🔽 Display Code 121.00 Refresh Unit Sales -¢ Q Jul 97 Sep 97 Nov 97 \square National District (Region Jan 98 1 National 1 East A Northeast 0.24 0.22 B New England 2 Central 02 New York City 0.19 3 West C Mid-Atlantic 03 Trenton 0.16 D Southeast 0.14 0.11 0.08 0.05 0.03 0 0.01 USER1 01 Philadelphia 22 DietPeachT Apr 98

as a bookmark called Demo Bookmark. Compare this with the Demand Planner - Administrator client window shown in Figure 171 on page 168.

Figure 164. Demand Planner client window showing the Demo Bookmark

If there is a problem connecting to the Demand Planner server (for example, you specified an incorrect host name or there isn't a server running on the port specified), windows appear like the examples in Figure 165 and Figure 166.

Clear the Demand Planner client error windows by clicking **OK**. Verify the information provided in Figure 161 on page 163, start the server if needed as described in 4.2.1, "QP2TERM to start and stop the Demand Planner server" on page 110, or 4.2.4, "QP2SHELL to start and stop the Demand Planner server" on page 136. Then start the client again. In addition, you may be able to analyze Demand Planner server log files for additional information. This is explained in 4.2.12.1, "Demand Planner server log files" on page 173.

exit	×
Unable to get a host address. PCTCP Error	# 11001
ОК	

Figure 165. Demand Planner connect failed window



Figure 166. Demand Planner connect failed window

4.2.10 Starting the Demand Planner - Administrator client

Once the Demand Planner - Administrator server is started on a port, you need to start the Demand Planner - Administrator client from a PC. You can read how to install the client in 4.1.5, "Demand Planner - Administrator client installation" on page 101.

To start the Demand Planner - Administrator client, follow these steps:

- Start the Demand Planner Administrator client program from a PC by going to Start-> Programs-> i2 TradeMatrix Demand Planner 5.1.1-> i2 TradeMatrix Demand Planner - Administrator Client. If this is something you are going to start often, you may want to create a shortcut to this program and put it on your PC desktop.
- 2. Once you execute this program, a login information window appears where you need to specify:
 - The host name or TCP/IP address (Host Name/Address parameter) of the iSeries server where the Demand Planner Administrator server is running.
 - The port number (Server Name parameter) of the Demand Planner Administrator server on the iSeries server (the default is 64000).
 - The user name (Login parameter) for the user trying to connect to the Demand Planner Administrator server (the default is ADMIN). This is *not* case sensitive.
 - The password (Password parameter) for the user trying to connect to the Demand Planner Administrator server (the default is admin). This *is* case sensitive.

This information is stored in file rhythm_client.ini on the client PC in the C:\WINDOWS or C:\WINNT directory, and it will be used in the future.

Figure 167 shows an example of the Demand Planner - Administrator client login information window.

i2 TradeMatrix Demand	Planner - Administrator Lo 🔋 🗙
Host Name/Address:	12
Server Name:	64000
Login:	ADMIN
Password:	жжжж
Connec	t Close

Figure 167. Demand Planner - Administrator client login information window
Once you specify a host, port, user, and password, click the Connect button to continue. A window (Figure 162) appears showing the client trying to connect to the server.



Figure 168. Demand Planner - Administrator client connecting to a server status window

4. If the connection from client to server is established, the main Demand Planner - Administrator window (Figure 169) appears.



Figure 169. Demand Planner - Administrator client window after successful connection to a server

At this point, your Demand Planner - Administrator environment is up and running. To look at the sample database, follow these steps:

- 1. Go to Database-> Open Database.
- 2. If you see a database, highlight it with your cursor and click the **Open** button (see Figure 170). If you don't see any databases, click the **Add** button. In the small window that appears, you must specify:
 - **Database Name**: The name that you want to call the database. We used "Cola" since that was the name of the tar file.
 - Database Schema Path: This must be the absolute path to the sch subdirectory of the database on the iSeries server. In our example, it is /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch.
 - **Database Type**: Choose **Demand Planner** if the database does not have Analyzer enabled. Otherwise select **Both** (Planner & Analyzer).

When everything is filled out, click the **OK** button.

)pen Database					? X
DataBase Name	DataBase Type	Demand Plann	Demand Analy	DataBase Status	
Cola	Demand Plan	/opt/i2/trade	/opt/i2/trade	Data Loaded	
Add	Remove	Destroy	Open	Done	ļ

Figure 170. Demand Planner - Administrator open database window

3. The database is now displayed. You can work with the Geography, Product, Time, and Data dimensions by selecting the **Dimension** tab, or work with users by selecting the **User** tab.

Figure 171 shows an example of the view you see when you click **Product-> Standard Product View** on the left panel, when you click **Levels In Dimension->Product** in the top panel, and when you click **All Products-> Iced Teas-> Peach Iced Tea-> DietPeachT 16 oz** in the bottom panel. Compare this with the Demand Planner client window in Figure 164 on page 165.



Figure 171. Demand Planner - Administrator client window showing structure for DietPeachT 16oz

If there is a problem connecting to the Demand Planner - Administrator server (for example, you specified an incorrect host name or there isn't a server running on the port specified), windows appear like the examples shown in Figure 172 or Figure 173.

Clear the Demand Planner - Administrator client error windows by clicking **OK**. Verify the information provided in Figure 167 on page 166, and start the server if needed as described in 4.2.2, "QP2TERM to start and stop Demand Planner -Administrator server" on page 124. Then start the client again.

You may be able to analyze Demand Planner - Administrator server log files for additional information, which is described in 4.2.12.2, "Demand Planner - Administrator server log file" on page 177.

i2 Trade№	2 TradeMatrix Demand Planner - Administrator				
8	Server Error : Unable to get a host address. PCTCP Error # 11001				
	OK				

Figure 172. Demand Planner - Administrator connect failed window

i2 Trade№	1atrix Demand Planner - Administrator 🛛 🔀	
8	Server Error : Unable to connect to server. Error # 10061	
	ОК	

Figure 173. Demand Planner - Administrator connect failed window

4.2.11 Starting the Demand Analyzer client

Once a Demand Analyzer server is started on a port, you need to start the Demand Analyzer client from a PC. You can read how to install the client in 4.1.4, "Demand Planner/Demand Analyzer client installation" on page 98.

To start the Demand Analyzer client, follow these steps:

- Start the Demand Analyzer client program from a PC by going to Start->
 Programs-> i2 TradeMatrix Demand Planner 5.1.1-> i2 TradeMatrix

 Demand Analyzer. If this is something you are going to start often, you might want to create a shortcut to this program and put it on your PC desktop.
- 2. Once you execute this program, a login information window appears where you need to specify:
 - The host name or TCP/IP address (Host Name/Address parameter) of the iSeries server where the Demand Analyzer server is running.
 - The port number (Service Name parameter) of the Demand Analyzer server on the iSeries server (the default is 45000).
 - The user name (Login As parameter) for the user trying to connect to the Demand Analyzer server. This is *not* case sensitive.

• The password (Password parameter) for the user trying to connect to the Demand Analyzer server (maximum eight characters). This *is* case sensitive. A password may not be required depending on the installation.

This information is stored in the slscInt.ini file on the client PC in the C:\WINDOWS or C:\WINNT directory. It will be used in the future.

Figure 174 shows an example of the Demand Analyzer client login information window.

i2 Tra	deMatrix Demand A	nalyzer - Sign In	X
	Parameters		
	Host Name/Address:	12	
	Service Name:	50000	
	Login As:	user1	
	Password:		
	Edit Password	OK Cancel	

Figure 174. Demand Analyzer client login information window

3. Once you specify a host, port, user, and password, click the **OK** button to continue. A window (Figure 175) appears showing the client trying to connect to the server.



Figure 175. Demand Analyzer client connecting to server status window

4. If the connection from client to server is established, the main Demand Analyzer window (Figure 176) appears.



Figure 176. Demand Analyzer client window after successful connection to a server

At this point, your Demand Analyzer environment is up and running.

To look at the sample database, follow these steps:

- 1. Go to Window-> Geography or Window-> Product.
- This shows you the geography or product dimensions. You can click the Hierarchy toolbar button to select different views. Or, you can click Options->Author or Options->Reader to see the information presented in different modes.

Figure 177 shows an example of:

- Going into Author mode
- Bringing up the Geography and Product dimensions
- Clicking Iced Teas-> Peach Iced Tea in Product to see DietPeachT 16 oz
- Clicking East-> Northeast in Geography to see Philadelphia
- Creating a report called Unit Sales that shows unit sales for the first quarter of 1998, and then the months of January, February, and March of 1998
- · Creating a graph based on the Unit Sales report
- Tiling everything horizontally

Compare this with the Demand Planner client window shown in Figure 164 on page 165 and the Demand Planner - Administrator client window shown in Figure 171 on page 168.



Figure 177. Demand Analyzer client window showing structure for DietPeachT 16oz

If there is a problem connecting to the Demand Analyzer server (for example, you specified an incorrect host name or there isn't a server running on the port specified), windows appear like the examples shown in Figure 178 or Figure 179.

Clear the Demand Analyzer client error windows by clicking **OK**. Verify the information provided in Figure 174 on page 170, and start the server if needed as described in 4.2.3, "QP2TERM to start and stop the Demand Analyzer server" on page 129. Then start the client again.

In addition, you may be able to analyze Demand Analyzer server log files for additional information, which is described in 4.2.12.3, "Demand Analyzer server log file" on page 180.

EXIT
Unable to get a host address. PCTCP Error # 11001
ОК

Figure 178. Demand Analyzer connect failed window

Login Error	×
Unable to connect to server. Check Server Name/Address	s
ок	

Figure 179. Demand Analyzer connect failed window

4.2.12 Server and client logging considerations

If you have problems running a Demand Planner, Demand Planner -Administrator, or Demand Analyzer server, it can be helpful to create and analyze log files of server and client activity. These log files record detailed activity data and error messages. This section explains how to work with log files both on the server and on the client.

4.2.12.1 Demand Planner server log files

Demand Planner server activity displays on your panel if you start Demand Planner with the PASE QP2TERM shell. If you encounter problems involving the Demand Planner server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

The Demand Planner server looks for a file named planner.cfg in the directory where the Demand Planner server database configuration file resides (directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch in our case). This file can contain many parameters. The two parameters related to error logging are:

- **ErrorLog**: If the ErrorLog parameter is set to 1, error logging is enabled and a file called planner.log is created in the ptab directory. If it is set to 0, error logging is turned off. If this parameter is not present in planner.cfg, the default setting is 0.
- Logtext: The logtext parameter indicates whether error logging will be in the traditional planner.log style or in the format supported by the Event Viewer utility. If it is set to 1, a file called *planlog.txt* is created in the ptab directory. This file, which is in the same format as the one exported by the Event Log option in Demand Planner, can be imported by the Event Viewer.

An example of using these logging parameters in the planner.cfg file is:

```
ErrorLog = 1
Logtext = 1
```

— Note

A space must precede and follow the equal (=) sign with every parameter.

You can use the EDTF command to view or modify file planner.cfg:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/planner.cfg')

An example is shown in Figure 180. Press the F3 function key twice to save and exit.

```
Edit File: /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch/planner.cfg
Record :
         1 of
                   5 by 10
                                         Column :
                                                 1
                                                     59 b
Control :
************Beginning of data************
  complen = 64000
  ErrorLog = 1
  Logtext = 1
  corba interface = 1
   F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find
                                                F17=Repeat c
        (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 180. Using the EDTF command to add the ErrorLog and Logtext parameters to planner.cfg

Once these are set, the Demand Planner server creates and updates the files planner.log and planlog.txt in the ptab subdirectory.

To view these Demand Planner server log files, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the ptab subdirectory. In our case, this is the cola database ptab subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/ptab:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/ptab

3. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view the log files:

cat planner.log cat planlog.txt

An example is shown in Figure 181 and Figure 182.

```
/QOpenSys/usr/bin/-sh
  $
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/ptab
  $
> cat planner.log
 i2 TradeMatrix Demand Planner DataBase cola Started.
 USER1 logged in.
 USER1 logged out.
 Error Code : 249, Client terminated.
  , Server Error
  i2 TradeMatrix Demand Planner DataBase cola shut down.
  $
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom F21=CL command entry
```

Figure 181. Displaying the contents of the Demand Planner server log file planner.log using cat

```
/QOpenSys/usr/bin/-sh
  Ŝ
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/ptab
  $
> cat planlog.txt
 Event No. :
                               1
 Date [mm/dd/yyyy]: 09/12/2001
 Time [hh:mm:ss]: 11:37:16
 Operation : Database Initialization
 User Name: ADMINDetails: i2 TradeMatrix Demand Planner DataBase cola Started.
  Event No.
                  :
                               2
 Date [mm/dd/yyyy]: 09/12/2001
 Time [hh:mm:ss]: 11:37:29
 Operation:LoginUser Name:USER1Details:USER1 logged in.
  Event No. :
                               3
 Date [mm/dd/yyyy]: 09/12/2001
 Time [hh:mm:ss]: 11:37:40
 Inne[III:37:40Operation:LogoutUser Name:USER1Details:USER1logged out.
                 ;
 Event No.
                            4
 Date [mm/dd/yyyy]: 09/12/2001
 Time [hh:mm:ss]: 11:37:40
Operation : User Messages
User Name : USER1
Details : Error Code : 249, Client terminated.
, Server Error
 Event No. : 5
 Date [mm/dd/yyyy]: 09/12/2001
 Time [hh:mm:ss]: 11:38:17
 Operation: Database CloseUser Name: ADMINDetails: 12 TradeMatrix Demand Planner DataBase cola shut down.
  Ś
===>
F3=Exit
             F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 182. Displaying the contents of the Demand Planner server log file planlog.txt using cat

Another way to view planlog.txt is within the Demand Planner client itself by clicking **Window-> Create Window-> View Event Log**. You see the messages for the current connection (Figure 183). You can click the **<<Previous** button near the bottom of the window to go back. Make sure you select the **Show Event Details** box to see more information for the messages.

vent Viev	wer				×	
Find—		pop /dd/uuuu bb			Close	
🖲 Dal	te & Time: 🛛	09/12/2001 11:	37:40	< Previous	Settings	
ООр	eration:	Allocation End		Next>>	Export	
O Use	er:	GROUP1			Purge All	
					Purge All Prior	
	Date	Time	User Name	Operation		
1	09/12/2001	11:37:16	ADMIN	Database Initiali:		
2	09/12/2001	11:37:29	USER1	Login		
3	09/12/2001	11:37:40	USER1	Logout		
4	09/12/2001	11:37:40	USER1	User Messages		
5	09/12/2001	11:38:17	ADMIN	Database Close		
6	09/12/2001	12:20:27	ADMIN	Database Initialia		
7	09/12/2001	12:22:07	USER1	Login		
🗸 Show	Event Details					
Error Code : 249, Client terminated.						

Figure 183. Viewing the Demand Planner server event log planlog.txt

Each time you use the Demand Planner server, these files increase in size. They will become quite large after some time. You may want to update your startup shell script to copy and then remove these files each time the server starts. The backup copy is handy when you want to compare examples of working and non-working Demand Planner servers, such as when you start having problems with the server but didn't have any the last time it was started.

4.2.12.2 Demand Planner - Administrator server log file

Demand Planner - Administrator server activity displays on your panel if you start Demand Planner - Administrator with the PASE QP2TERM shell. If you encounter problems involving the Demand Planner - Administrator server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

The Demand Planner - Administrator configuration file (*.cnf) in the directory where the Demand Planner server database resides (directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch in our case) can contain many parameters. The two parameters related to error logging are:

• ERRFILE: Specify the name of the error file. If no file name is specified, error.log is used as the default file name. This can be followed by the optional parameter APPEND or OVERWRITE. If nothing is specified, OVERWRITE is used as the default mode. • **ERRDIR**: Specify the directory in which the error file will be created. The current directory is the default directory.

Here is an example of using these logging parameters in the configuration file (fyiserv.cnf in our case):

```
ERRFILE = dpaderr.txt append
ERRDIR = /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch
```

- Note

A space must precede and follow the equal (=) sign with every parameter.

You can use the EDTF command to view or modify file fyiserv.cnf:

EDTF STMF('/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch/fyiserv.cnf')

An example is shown in Figure 184. Press the F3 function key twice to save and exit.



Figure 184. Using the EDTF command to add the ERRFILE and ERRDIR parameters to fyiserv.cnf

Once these are set, the Demand Planner - Administrator server creates and updates the dpaderr.txt file in the /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch directory.

To view the Demand Planner - Administrator server log file, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the sch subdirectory. In our case, this is the cola database sch subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch: cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view the log file:

cat dpaderr.txt

An example is shown in Figure 185.

/QOpenSys/usr/bin/-sh	
<pre>\$ cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch s cat dpaderr.txt Wed Sep 12 12:42:48 2001 Server is ready to receive requests through CORBA.</pre>	
Wed Sep 12 12:42:48 2001 ServiceManager is ready to receive requests through CORBA.	
Wed Sep 12 12:42:48 2001	
i2 TradeMatrix Demand Planner - Administrator. Bound to port 64001 Number of users logged in: 0	
Wed Sep 12 12:45:00 2001 User logged in: ADMIN Number of users logged in: 1	
Wed Sep 12 12:45:12 2001 Disconnecting user: ADMIN	
Wed Sep 12 12:45:12 2001 Number of users logged in: 0	
Wed Sep 12 12:45:15 2001 Received an interrupt to bring down the server.	
Wed Sep 12 12:45:15 2001 Disconnected all users.	
Wed Sep 12 12:45:45 2001 Terminating the CORBA thread.	
\$	
===>	
F3=ExitF6=PrintF9=RetrieveF11=Truncate/WrapF13=ClearF17=TopF18=BottomF21=CL command entry	

Figure 185. Displaying the Demand Planner - Administrator server log file dpaderr.txt using cat

Each time you use the Demand Planner - Administrator server, this file increases in size. It will become quite large after some time. You may want to update your startup shell script to copy and then remove this file each time the server starts. The backup copy is handy when you want to compare examples of working and non-working Demand Planner - Administrator servers, such as when you start having problems with the server but didn't have any the last time it was started.

4.2.12.3 Demand Analyzer server log file

Demand Analyzer server activity displays on your panel if you start Demand Analyzer with the PASE QP2TERM shell. If you encounter problems involving the Demand Analyzer server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

Demand Analyzer looks for a configuration file called *sales.cfg* in the Demand Analyzer tables subdirectory (stab) off the directory where the Demand Planner server database resides (/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola).

This configuration file can contain two parameters, with the one related to error logging being ErrorLog. If it is set to 1, Demand Analyzer logs all errors into a file named saleslog.txt. If the ErrorLog parameter is set to 0, or it is not in the sales.cfg file, or if file sales.cfg is not found, no errors are logged.

Here is an example of using this logging parameter in the sales.cfg configuration file:

ErrorLog = 1

— Note

A space must precede and follow the equal (=) sign with every parameter.

This creates and updates the saleslog.txt file in the stab subdirectory.

To set up logging for the Demand Analyzer server, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the stab subdirectory. In our case, this is the cola database stab subdirectory off the base Demand Planner directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/stab:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/stab

 Use the echo command to create file sales.cfg and place the string ErrorLog = 1 into it:

echo ErrorLog = 1 > sales.cfg

4. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to verify the contents of the sales.cfg file:

cat sales.cfg

- 5. Start the Demand Analyzer server, connect a client to the server, work with Demand Analyzer, and then disconnect the client.
- You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to see the contents of log file saleslog.txt:

cat saleslog.txt

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/stab
  Ś
> echo ErrorLog = 1 > sales.cfg
  Ś
> cat sales.cfg
 ErrorLog = 1
  $
> ../sch/start dp analyzer
 i2 TradeMatrix Demand Analyzer Server Version No : 5.1.1
  Copyright 2001 i2 Technologies, Inc. All rights reserved.
  This software may only be installed on authorized client
  and server machines as defined in and in accordance with
  the terms of the License Agreement between i2 Technologies
  and the Licensee.
  Trying with port : 45000
 TCP/IP initialized successfully
  i2 TradeMatrix Demand Analyzer Server ready
  Client is not logged in.
  1 User(s) are logged in.
  0 User(s) are logged in.
  Interrupt received, exiting
  calling thr continue
 Returning from suspendService
  called thr continue
  called thr continue
 Returning from suspendService
 Before delete service
  Ś
> cat saleslog.txt
 Date :- Tuesday, 25 September 2001, time :- 12:46:40. i2 TradeMatrix Demand Analyzer server started.
 Date :- Tuesday, 25 September 2001, time :- 12:47:21. User USER1 logged in.
 Date :- Tuesday, 25 September 2001, time :- 12:47:34. User USER1 logged out.
 Date :- Tuesday, 25 September 2001, time :- 12:47:41. i2 TradeMatrix Demand Analyzer server shut down.
  Ś
===>
           F6=Print F9=Retrieve F11=Truncate/Wrap
F3=Exit
F13=Clear F17=Top
                     F18=Bottom F21=CL command entry
```

Figure 186. Setting up logging for the Demand Analyzer server using a PASE QP2TERM shell

Each time you use the Demand Analyzer server, saleslog.txt is cleared and then rebuilt, so you might want to update your startup shell script to copy saleslog.txt to another file before the server starts. The backup copy is handy when you want to compare examples of working and non-working Demand Analyzer servers, such as when you start having problems with the server but didn't have any the last time it was started.

4.2.12.4 Capturing all server console messages (OS/400 V5R1M0 only)

Not all messages displayed when running a server interactively (the server console) are recorded in an error log. If you want to log all error messages or capture every message sent to the display while a server is running, you can start the server using the nohup (no hang up) option. This is used with the ampersand (&) character to start the server as a background process. Unlike a normal background process, the system does not end the command or program when you log or exit out of PASE (for example, use F3 to exit out of QP2TERM). You need OS/400 V5R1M0 or later for nohup support. The syntax of nohup is:

nohup <command or program to run/parameters> &

If you want to start the Demand Planner - Administrator server using nohup, you change the call to admaixs to:

nohup ../../admin/admaixs fyiserv.cnf &

If you are modifying a startup shell script like start_dp_admin, don't forget to use nohup for the VisiBroker OSAgent if it is also started in the script:

nohup /opt/vbroker/osagent &

When a process is started using nohup, the system creates and updates a file called nohup.out in the directory where it was issued. This contains all of the output from the process.

To view nohup.out, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to the directory where the nohup call was issued. In our case, this is the cola database sch subdirectory off the base Demand Planner directory

/opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch:

cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450/cola/sch

3. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view file nohup.out:

cat nohup.out

An example is shown in Figure 187.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450/cola/sch
  $
> start dp admin
  $ Sending nohup output to nohup.out.
> cat nohup.out
          i2 TradeMatrix Demand Planner - Administrator Version 5.1.1
                               ATX
                    Copyright (c) 2001 i2 Technologies
  Type .../../admin/admaixs -help for usage
  By default, server will perform In memory loading.
  Demand Administrator User Security option is enabled.
  Server is ready to receive requests through CORBA.
  ServiceManager is ready to receive requests through CORBA.
  i2 TradeMatrix Demand Planner - Administrator.
  Bound to port 64000
  Number of users logged in: 0
  User logged in: ADMIN
  Number of users logged in: 1
  $
            F6=Print F9=Retrieve F11=Truncate/Wrap
F3=Exit
F13=Clear F17=Top
                       F18=Bottom F21=CL command entry
```

Figure 187. Viewing nohup.out using cat from within PASE QP2TERM

Each time you use nohup, the nohup.out file increases in size, so it becomes quite large after some time. You may want to update your startup shell script to copy and then remove this file each time the server starts. The backup copy is handy when you want to compare examples of working and non-working servers, such as when you start having problems with the server but didn't have any problems the last time it was started.

Since a process started using nohup is essentially a background process that is not tied to an interactive PASE QP2TERM/QP2SHELL shell, you can use the kill command to end the process or processes or a utility like UsrLogOut.

Figure 188 shows an example of using ps -ef to list active processes and then kill to end the VisiBroker OSAgent (osagent) and the Demand Planner - Administrator server (admaixs).

```
/QOpenSys/usr/bin/-sh
   $
> ps -ef
   UID PID PPID C STIME TTY TIME CMD

I20WNER 583 1 0 12:15:50 - 0:00 /opt/vbroker/osagent

I20WNER 584 1 0 12:15:51 - 1:58 ../../admin/admaixs fyiserv.cnf

I20WNER 588 135 0 12:25:26 - 0:00 /QOpenSys/usr/bin/-sh -i

I20WNER 589 588 0 12:25:29 - 0:00 ps -ef
   $
> kill 584
   $
> kill 583
   $
> ps -ef
    UID PID PPID C STIME TTY TIME CMD
I2OWNER 588 135 0 12:25:26 - 0:00 /QOpenSys/usr/bin/-sh -i
I2OWNER 590 588 0 12:26:05 - 0:00 ps -ef
   $
===>
F3=Exit
                    F6=Print
                                       F9=Retrieve
                                                               F11=Truncate/Wrap
F13=Clear
                   F17=Top
                                       F18=Bottom
                                                               F21=CL command entry
```



Chapter 5. i2 TradeMatrix Factory Planner

This chapter describes the iSeries server installation procedures for the i2 TradeMatrix Factory Planner products before the i2 Five. Two release. It includes sections on how to start, stop, and operate the Factory Planner environment.

For a description of the Factory Planner product, see 1.1.2.3, "i2 Factory Planner" on page 5. You can find installation information for i2 Five.Two in Chapter 12, "i2 Five.Two Factory Planner" on page 501.

5.1 Installation procedure

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Factory Planner 5.0.1 on an iSeries server. As mentioned in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V4R5M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Factory Planner code requires approximately 100 MB of disk space.

After you order Factory Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Factory Planner are summarized here:

- 1. Install the Factory Planner code from CD-ROM.
- 2. Run the rhythm_server program.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2, based on the host ID.
- 5. Activate the license key.
- 6. Install the Factory Planner client.

5.1.1 Factory Planner reference documentation

The following manuals are available on the iSeries server in the /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/unix/pdf directory after server installation. They are available on a PC in the C:\Rhythm\FP\5.0.1\doc folder after client installation:

- i2 TradeMatrix Factory Planner Manual Version 5.0.1 (FP_Manual.pdf)
- *i2 TradeMatrix Factory Planner Release Notes Version 5.0.1* (release_notes.pdf)

You can also find documentation on the i2 support Web site (http://support.i2.com). Log in and then select the **Documentation** link.

5.1.2 Installing Factory Planner server code on the iSeries server

To install the Factory Planner server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Factory Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use

throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.

 The Factory Planner execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2/TradeMatrix/5_0_1/FP/OS400_450. You can use the Edit File (EDTF) command to check whether this directory structure exists on your system:

EDTF STMF('/opt/i2/TradeMatrix/5 0 1/FP/')

Figure 189 shows the EDTF command when prompted with the F4 function key.

Ed	it File (EDTF)			
Type choices, press Enter.				
Stream file, or	> '/opt/i2/Tra	adeMatrix/5_0_1/FP/'		
Data base file Name Library *LIBL Name, *LIBL, *CURLIB				
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	F13=How to use this display		

Figure 189. Edit File (EDTF) command prompt of /opt/i2/TradeMatrix/5_0_1/FP/

- 4. If the directory structure already exists, you can select from three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Factory Planner environment and start from the beginning. This is shown in Figure 190.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 194 on page 190 shows where to define this). You may want to do this if you want multiple Factory Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: Position to New File :	/opt/i2/Trad	leMatrix/5_0	_ 1/FP Record . :	1 of	1
2=Edit 4=D	elete File	5=Display	6=Path Size	9=Recursive Del	ete
Opt Name 9 OS400_45	0	Size *DIR	Owner I2OWNER	Changed 02/19/01 14:00	Used 02/19/01 14:08
					Bottom
F3=Exit	F12=Cancel (C) COPYRI	F16=Sort GHT IBM COR	F17=Position P. 1980, 2000	n to F22=Displa	ay entire field

Figure 190. Using EDTF to recursively delete an existing Factory Planner environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Factory Planner software in your iSeries CD-ROM drive.
- 7. Start the installation from an OS/400 command line by using the Load and Run (LODRUN) command and press the F4 function key to prompt it. The panel shown in Figure 191 appears.

Select *OPT or the name of your optical drive for the Device parameter. Press Enter when you are ready to start the installation.

Or you can simply issue the following command:

LODRUN DEV (*OPT)



The *OPT option assumes your optical device is named OPT01. If you are not sure, use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE (*DEV) CFGD (*OPT)

8. Once the installation is started, you see messages such as the following examples at the bottom of your panel:

- Restoring software installation...
- Copying Start/Stop menu files...
- Running Installation Procedure...
- 9. A panel appears that asks you to verify the CD-ROM path to the Factory Planner code. QOPT is the optical file system, and FP_5_0_1 is the label of the CD-ROM in the CD-ROM drive. This is shown in Figure 192. Press Enter to continue the installation.

I20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/20/01 16:38:05
Enter CDRC /qopt/FP	DM path[/qopt/FP_5_0_1]: _5_0_1	
Input char	nges and press ENTER	
F3=Exit F12=Car	ncel	

Figure 192. Confirming the CD-ROM path to Factory Planner code

10. You see a panel like the example in Figure 193. On this panel, you can review:

- The required disk space and space available on the iSeries server
- The i2 product and release level to be installed
- The OS/400 release level (V4R5M0 required)
- The default installation directory

The correct choices are filled in, so simply press Enter to continue the installation.

I20WNER	i2 Technolo	gies, Inc.	2/20/01
ALLINIO	iSeries Platform		10.39.10
	You are about to i	nstall TradeMatrix 5.0.1	
Disk space: Select a product t	Required: 70 MB	Available: 20,985 MB Select an OS/400 version?	
1. FP		1. OS400 V4R5M0	
Which Product?	1	Which OS Version? 1	
Install directory:	/opt/i2/TradeMatrix	2/5 0 1	
Make your choices	and press Enter.	, - <u>-</u>	
F3=Exit			

Figure 193. Confirming the installation defaults

11. The next panel (Figure 194) looks similar to the previous one. The only selectable option is the installation directory. The installation program builds the default directory where the Factory Planner environment will be placed based on the selection made in Figure 193. This is where you can specify a different directory if you want multiple versions of the Factory Planner environment on the same system.

The installation program checks to see if the target directory already exists on the system. You can accept the default and overwrite the files in the directory if it already exists. If the target directory is not available, it is created as shown in Figure 194. Press Enter to continue with the installation.

```
120WNER
                             i2 Technologies, Inc.
                                                                            2/20/01
ALLINF02
                           TradeMatrix Installation
                                                                           16:39:53
                               iSeries Platform
                     You are about to install TradeMatrix 5.0.1
Disk space:Required: 70 MBAvailable: 20,985 MBSelect a product to install?Select an OS/400 version?
                                              1. OS400 V4R5M0
   1. FP
   Which Product? 1
                                              Which OS Version? 1
Install directory: /opt/i2/TradeMatrix/5 0 1/FP/OS400 450
 Target directory does not exist. To create it press Enter.
F3=Exit
```

Figure 194. Confirming the default/specifying a new Factory Planner installation directory

12.The installation program now initiates a Control Language Program (CLP), and the panel in Figure 195 briefly appears.



Figure 195. Installation status: Performing initial setup tasks

13. The panel shown in Figure 196 appears. At this point, the installation program uncompresses and restores the program files.

I20WNER STATUSB	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/20/01 16:40:12
	Restoring Program Files	
	Job is processing. Please Wait.	

Figure 196. Installation status: Restoring program files

14.After the program files are restored, the installation program automatically brings up the status panel shown in Figure 197. This indicates that the installation program is now restoring document and miscellaneous files.



Figure 197. Installation status: Restoring document and miscellaneous files

15.As long as the installation status panels continue to be shown and the less than (<) and greater than (>) characters move, there is no need to press any key until the panel shown in Figure 198 appears. The installation program prompts for the generation of an environment setup script that you want to do. Leave x for Yes, and press Enter to continue the installation.

-			
I20WNER ENVSETUP	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform		2/20/01 16:45:21
Do) you want to generate an environment setup script (Y/N)	Y	
F3=Exit	F12=Cancel		

Figure 198. Generating an environment setup script

16.After the environment setup script file is created, the installation is complete. You then see the panel in Figure 199. Press Enter to return to an OS/400 command line.

I20WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/20/01 16:45:54
	Installation Completed	
	Installation finished. No errors were detected. Press Enter to continue.	

Figure 199. Factory Planner installation completed panel

17. The installation invoked many background jobs. You can quickly check to make sure they completed normally by looking at your message queue using the Display Messages (DSPMSG) command:

DSPMSG MSGQ (I20WNER)

An example is shown in Figure 200. If everything looks good, you can use the F13 key to remove them all or the F11 key to remove them one at a time.

<u></u>				
(Display	Messages		·
		-	System:	12
Queue : :	I20WNER	Program .	:	*DSPMSG
Library :	QUSRSYS	Library	:	
Severity :	00	Delivery	:	*NOTIFY
'lype reply (if requi	red), press Enter.			
Job 055421/I20WNER,	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:40:09.
Job 055422/120WNER,	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:40:09.
Job 055424/I2OWNER	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:41:05.
Job 055419/120WNER,	/FPPGMFIL completed	l normally on 02	2/20/01 at	16:41:06.
Job 055431/I2OWNER	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:44:34.
Job 055432/120WNER,	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:44:34.
Job 055434/120WNER	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:45:15.
Job 055429/120WNER,	/FP completed norma	11y on 02/20/01	1 at 16:45:	:16.
Job 055438/120WNER,	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:45:18.
Job 055439/120WNER,	/QP0ZSPWP completed	l normally on 02	2/20/01 at	16:45:18.
Job 055441/I2OWNER	/QP0ZSPWP completed	normally on 02	2/20/01 at	16:45:19.
Job 055436/120WNER,	/FPCPSTATUS complet	ed normally on	02/20/01 a	at 16:45:20.
				Bottom
F3=Exit	F11=Remove a messa	ge	F12=Ca	ancel
F13=Remove all	F16=Remove all exc	ept unanswered	F24=Mc	ore keys

Figure 200. Display Messages (DSPMSG) for I2OWNER

18.After the installation completes, a log file is written to the root (/) directory of the IFS in the form */trdmtx-install-log.mm-dd-yy.hh:mm:ss.FP.* You can use the log file to diagnose installation problems. You can use the EDTF command:

EDTF STMF('/')

Then type option 5 next to the log file to display it. A sample log file is shown in Figure 201.

```
Browse : /trdmtx-install-log.02-20-01.16:39:10.FP
                                                             1 of 86 by 131
Record . :
               1 of
                        169 by 18
                                                   Column:
Control :
....+...1....+...2...+...3...+...4...+...5...+...6...+...7...+...
 *********Beginning of data**********
 install.cpp: VERSION 2.14 02/07/01 DO.
time: 02-20-01.16:39:10, process: Open Log File DisplayALLINFORec().
   FillTargetDir().
   FillTargetDir().
     ProdSelected.
     ArchSelected.
    tmpbuff=/opt/i2/TradeMatrix/5_0_1/FP/OS400_450.
 TargetDirExist():
   ctmp = >/opt/i2/TradeMatrix/5 0 1/FP/OS400 450<
   Dir value is NULL. Dir NOT Opened.
   stat() error on /opt/i2/TradeMatrix/5 0 1/FP/OS400 450: No such path or
   non existing dir:/opt/i2/TradeMatrix/5_0_1/FP/OS400_450.
   TargetDir=.
   TargetDir=/opt/i2/TradeMatrix/5 0 1/FP/OS400 450.
   cCopyFiles() - Selecting Customize for Product: FP
   cCopyFiles() - Selcted Customize for Product: FP.
time: 02-20-01.16:40:, process: RunCreateLibCL()
F3=Exit
                                                      F16=Repeat find
         F10=Display Hex F12=Cancel F15=Services
            (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 201. Sample trdmtx-install-log file generated during product installation

19.A library called FP is created and only used as part of the installation. You can delete it by using the Delete Library (DLTLIB) command:

DLTLIB LIB(FP)

Or, you can use it to contain Factory Planner files and programs.

20.If you want to see the results of the Factory Planner installation, you can use the EDTF command to view the contents of the directory /opt/i2/TradeMatrix/5_0_1/FP/OS400_450:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/FP/OS400_450')

An example is shown in Figure 202.

Directory: /opt/i2/Tra Position to: New File :	deMatrix/5_0_ Record	1/FP/OS400_4 .: 1 c	50 of 12	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name COPYRIGHT batch_client cbc_server cdm ds_spec_file i18n rhythm_server std_spec_file data_dictionaries rec_man.ps unix qustom	Size 8K 2,304K 2,560K *DIR 8K *DIR 12,288K 64K *DIR 3,072K *DIR *DIR	Owner 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER	Changed 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 01/24/01 11:39 02/20/01 16:44 01/22/01 00:00 02/20/01 16:44	Used 02/20/01 16:40 02/20/01 16:40 02/20/01 16:40 02/20/01 16:41 02/20/01 16:41 02/20/01 16:41 02/20/01 16:41 02/20/01 16:44 02/20/01 16:44 02/20/01 16:44
				Bottom
F3=EXIC F12=Cancel	F16=SOTT	FI/=POSITIO	i to F22=Displa	ay entire field

Figure 202. Using EDTF to display the Factory Planner directory after installation

5.1.3 Obtaining a host ID and license key

When you attempt to run the Factory Planner server (rhythm_server) without a license key on the system, or the license key you have is not valid, you receive an error that gives you the host identifier (or host ID) for your system so you can request a valid license key from i2. This section explains how to start the server and obtain the host ID.

To start the Factory Planner server, run the rhythm_server program in the PASE QP2TERM environment by following these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/FP/OS400_450 directory:

cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450

3. Run the rhythm_server program:

rhythm_server

An example is shown in Figure 203.



Figure 203. License key error with host ID information after calling the rhythm_server program

Since the license key is missing at this time, an error message is displayed with host ID information. Record the host ID from here and request a license key from i2 support as described in 2.4.5, "Requesting i2 software license keys from i2" on page 47.

Press the F3 function key to exit the PASE QP2TERM environment and return to an OS/400 command line.

5.1.4 Activating the license key

After you receive the license key from i2, it has to be activated. You can manually create the license key file and place the license key in it (explained below). Or, you can use the license parameter on the rhythm_server executable to do this.

To create a license key file with a license key in it, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

- Factory Planner expects the license key to be placed in a file called rhythm_server.lic located in directory /u/rhythm/. To create the directory, follow these steps:
 - a. Use the cd command to change to the root (/) directory:

cd /

b. Use the mkdir command to create the u directory:

mkdir u

c. Use the cd command to change to the u directory:

cd u

d. Use the mkdir command to create the rhythm directory:

mkdir rhythm

e. Use the cd command to change to the mkdir directory:

cd rhythm

3. Use the echo command to put the license key into the file and create the file at the same time:

echo {provide your license key here} > rhythm_server.lic

The license key has to be entered exactly as it was supplied from i2. This means all uppercase characters and with dashes (-) every four characters.

4. Use the cat command to verify that the file was created and that license key information was placed into it correctly:

cat rhythm_server.lic

An example is shown in Figure 204.

/QOpenSys/usr/bin/sh
<pre>> cd / \$ s mkdir u</pre>
\$ > cd u
\$ > mkdir rhythm
> cd rhythm \$
<pre>> echo 7W79-5996-T8KN-J9SG-5FNR > rhythm_server.lic \$ s cat rhythm_server_lic</pre>
7W79-5996-T8KN-J9SG-5FNR \$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 204. Creating rhythm_server.lic and inserting a license key in it

5. If you need to insert a different license key later on, use the rm command to delete the file:

rm rhythm server.lic

Then you can use the echo command to put the new key in. You can also use the EDTF command to edit the license key file:

EDTF STMF('/u/rhythm/rhythm_server.lic')

An example of using the EDTF command is shown in Figure 205. Press the F3 function key twice to save and exit.



Figure 205. Editing the rhythm_server.lic file to change Factory Planner license key information

– Note

You should keep a backup copy of the rhythm_server.lic file or the /u/rhythm subdirectory since it contains license key information.

5.1.5 Factory Planner client installation

This section explains how to install Factory Planner client code on a Windows NT/2000 PC. The installation of the Factory Planner client code requires approximately 50 to 150 MB of disk space depending on the options selected.

To install the Factory Planner client, follow these steps:

- 1. Place the CD-ROM containing the Factory Planner software in the CD-ROM drive of a client PC.
- The Factory Planner client setup program should automatically start and prompt you with the welcome window as shown in Figure 207. If it does not, you can manually execute SETUP.EXE from the Windows NT folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the Windows NT folder and double-click SETUP.EXE.

Or you can follow these steps:

- a. Click Start->Run.
- b. Type:

 $(drive): \NT \SETUP. EXE$

Here (drive) is the drive letter assigned to your CD-ROM.

c. Press Enter.

Figure 206 shows this using Windows Explorer.

🔯 D:\NT							
File Edit View Favorites Tools Help							
(← Back • → • 61 @ Search Controllers @ History P3 P3 × 20 E8 •							
Folders X		Size	Туре	Modified			
notessal 🔺	SCM		File Folder	2/12/2001 9:05 AM			
PCAS400	WEBUI		File Folder	2/12/2001 9:05 AM			
E PKWARE	INST32I.EX_	290 KB	EX_ File	1/15/2001 1:09 PM			
Program Files	ISDEL.EXE	27 KB	Application	1/15/2001 1:09 PM			
pSeries information	SETUP.DLL	34 KB	Application Extension	1/15/2001 1:09 PM			
PSFONTS	Q_SYS1.CAB	172 KB	WinZip File	1/15/2001 1:09 PM			
	🔊 _SYS1.HDR	4 KB	HDR File	1/23/2001 11:58 AM			
	📮_USER1.CAB	1 KB	WinZip File	1/23/2001 11:58 AM			
READIBMW	USER1.HDR	5 KB	HDR File	1/15/2001 1:09 PM			
	COPYRGHT.000	4 KB	000 File	1/23/2001 11:48 AM			
sdwork	COPYRGHT.TXT	4 KB	Text Document	1/23/2001 11:48 AM			
Swa	DATA.TAG	1 KB	TAG File	1/23/2001 11:48 AM			
	DATA1.CAB	45,851 KB	WinZip File	1/15/2001 1:09 PM			
	DATA1.HDR	212 KB	HDR File	1/15/2001 1:09 PM			
	FPINST.TXT	602 KB	Text Document	1/23/2001 11:53 AM			
		23 KB	DAT File	1/15/2001 1:09 PM			
	I ANGLIAGE TXT	0 KB	Text Document	1/15/2001 1:09 PM			
		1 KB	BIN File	1/23/2001 11:53 AM			
		1 KB	DAT File	1/23/2001 11/53 AM			
Windows Undate Setup Files		6 523 KB	Application	1/15/2001 1:09 PM			
		532 KB	Bitman Image	1/15/2001 1:09 PM			
FP 5 0 1 (D;)		72 KB	Application	1/15/2001 1:09 PM			
		72 KD	Configuration Settings	1/22/2001 11/56 AM			
🛛 🗍 Т-🗅 SCM 🛛 🗖	SETUD INS	70 49	Toterpet Communic	1/15/2001 1:00 PM			
WEBUI		70 KB	LTD Ela	1/22/2001 11/26 AM			
		I KB	TOLCIA	1/23/2001 11:56 AM			
Type: Application Size: 72.0 KB	Type: Application Size: 72.0 KB 📃 My Computer 🥢						

Figure 206. Windows Explorer view of Factory Planner client setup.exe program

3. On the Welcome window (Figure 207), click the Next button to continue.



Figure 207. Factory Planner client setup: Welcome window

- 4. Read the software license agreement, and click Yes.
- 5. Accept the default for the destination folder location (C:\Rhythm\FP\5.0.1), or change it as needed, and click **Next**.
- 6. Select the appropriate language, and click Next.

7. On the Component Selection window (Figure 208), at a minimum, select only the Factory Planner Client and Help Files check boxes. Select the Factory Planner Server box only if you want to run Factory Planner as a server on the PC. You can also select it if you want a sample data set that we use in the following section. Click the Next button to continue.

Component Selection		×
	Select the components you want to install	
	Factory Planner Client Batch Client Factory Planner Server Help Files CDM/ADW Adapters	34094 K 1284 K 7943 K 27597 K 0 K ▼ Change
	Space Required: Space Available:	70918 K 910279 K
	< <u>B</u> ack <u>N</u> ext >	Cancel

Figure 208. Factory Planner client setup: Component Selection window

- 8. Accept the default for the program folder (i2 TradeMatrix Factory Planner 5.0.1), or change it as needed, and click **Next**.
- 9. On the Enter Factory Planner Client Connection Settings window (Figure 209), you can predefine the host name of the iSeries server and the port number to be used by the Factory Planner client.

The default port for Factory Planner is 6163. If you fill these in now, they appear as defaults whenever you start the client, but they can be changed. These fields may be left blank and manually filled in when the client starts. Click **Next** and continue with the rest of the installation.

Enter Factory Planner C	ient Conne Enter the want the an icon o you can s Server	server and port of the Factory Planner Server that you Client to connect to. These will be used when creating r shortcut menu item. If you do not specify them here, specify them when you run rhythm_client.	[
	Port	6163	
		< <u>Back N</u> ext > Cancel	

Figure 209. Factory Planner client setup: Connection Settings window

5.1.6 Transferring a sample dataset from a PC to the iSeries server

The installation of Factory Planner on the iSeries server provides a sample dataset in the IFS directory /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/ cdm/cdm_5.0/sample_model that can be used to start and test the Factory Planner server.

A sample dataset is also installed on a client PC if you chose the option to install a Factory Planner server. This is shown in Figure 208. This section goes through the procedure to transfer that dataset to the iSeries server. You can also use this procedure to transfer other datasets to the iSeries server.

To transfer a sample dataset from a PC to an iSeries server, follow these steps:

 If you installed a Factory Planner server on your PC and chose the default for the directory structure, the sample dataset is available in the directory C:\Rhythm\FP\5.0.1\Samples\sample_model. You can use Windows Explorer to verify that the sample dataset is on the PC by going to Start-> Programs-> Accessories-> Windows Explorer. Then navigate to the C:\Rhythm\FP\5.0.1\Samples\sample_model folder as shown in Figure 210.

् दः\Rhythm\FP\5.0.1\Samples\s	ample_m	odel			_ [] ;
File Edit View Favorites Too	ls Help				10
🔄 🔄 Back 🔹 🔿 👻 🔂 🎯 Search	Polde	rs 🎯 History 🛛 🖓 🦉	X 🔊 💷 -		
Address 🗀 C:\Rhythm\FP\5.0.1\Sam	ples\sample	_model			▼ 🖗 60
Folders	×	Name 🛆	Size	Туре	Modified
🗄 🙆 Rhythm	-	bill_of_materials	2 KB	File	12/18/2000 1:49 PM
庄 🗀 ADW		🖻 demand_order_data	2 KB	File	12/18/2000 1:49 PM
📄 📄 📴 FP		ds_spec_file	3 KB	File	1/15/2001 12:00 AM
÷- 🧰 5.0		🖻 due_date_cycle_t	3 KB	File	12/18/2000 1:49 PM
i⊡ • 🛄 5.0.1		operation_resour	1 KB	File	12/18/2000 1:49 PM
bin		🖻 part_number_data	1 KB	File	12/18/2000 1:49 PM
⊡ cdm		🖻 resource_data	1 KB	File	12/18/2000 1:49 PM
		🖻 routing_data	1 KB	File	12/18/2000 1:49 PM
		🖻 shift_data	1 KB	File	12/18/2000 1:49 PM
		🖻 short_order_anal	1 KB	File	12/18/2000 1:49 PM
		🖻 spec_file	1 KB	File	12/18/2000 1:49 PM
E Bythmink	IOGO1	🛋 start_time	1 KB	File	12/18/2000 1:49 PM
		🖻 std_spec_file	32 KB	File	1/15/2001 12:00 AM
FI-C SCP		🖻 tr_spec_file	2 KB	File	12/18/2000 1:49 PM
- 🙆 sdwork		🖻 unassigned_inven	1 KB	File	12/18/2000 1:49 PM
🛅 swd		🖻 unit_of_measure	1 KB	File	12/18/2000 1:49 PM
🛅 Symbols		🖻 use_effectivity_r	1 KB	File	12/18/2000 1:49 PM
🗀 TechSmith		🖻 variable_capacity	1 KB	File	12/18/2000 1:49 PM
🕀 🧰 temp		🛋 vendor_data	1 KB	File	12/18/2000 1:49 PM
🕀 🧰 THINKPAD					
⊕ 🛄 vbroker					
E ViaVoice	-				
	Þ	•			
9 object(s) (Disk free space: 889 MB)				43.5 KB	🖳 My Computer

Figure 210. Windows Explorer view of C:\Rhythm\FP\5.0.1\Samples\sample_model

2. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM

3. We recommend that you place the sample dataset into a directory somewhere off the Factory Planner directory structure. We started from directory /opt/i2/TradeMatrix/5_0_1/FP/ and created directory sample_model. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/FP directory:

cd /opt/i2/TradeMatrix/5_0_1/FP/

4. Directory sample_model can be created with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within a PASE QP2TERM shell:

mkdir sample_model

An example is shown in Figure 211.
```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5 0 1/FP/
  $
> pwd
  /opt/i2/TradeMatrix/5_0_1/FP
  Ś
> 1s
 OS400 450
  Ś
> mkdir sample_model
  Ś
> ls
 OS400 450
                sample model
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 211. Using the PASE QP2TERM shell to create directory sample_model

5. Copy or transfer the dataset from your PC to the iSeries server. There are different ways to accomplish this task, such as mapping a network drive or using Operations Navigator to drag files from a PC to the iSeries server, or by using File Transfer Protocol (FTP), which is what we used.

To transfer files from a PC to an iSeries server using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC where you installed the Factory Planner client. Click Start-> Programs-> Accessories-> Command Prompt.
- b. Use the cd command to change to the directory where the dataset is located, which is C:\Rhythm\FP\5.0.1\Samples\sample_model:

cd C:\Rhythm\FP\5.0.1\Samples\sample_model

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WNER in our example.
- e. Enter the password for your iSeries server user ID.
- f. Use the cd command to change to the iSeries server directory where the dataset will be placed, which is /opt/i2/TradeMatrix/FP/5_0_1/sample_model:

cd /opt/i2/TradeMatrix/FP/5 0 1/sample model

g. Change to binary mode:

bin

h. Turn prompting support off so you don't have to press Enter to send each file to the iSeries server:

prompt

i. Transfer the entire dataset to the iSeries server using the FTP $_{\tt mput}$ * command.

j. Exit FTP using the quit command.

An example is shown in Figure 212.

C:\>cd \rhythm\fp\5.0.1\samples\sample model

```
C:\Rhythm\FP\5.0.1\Samples\sample model>ftp i2
Connected to i2.domain.ibm.com.
220-OTCP at i2.domain.ibm.com.
220 Connection will close if idle more than 5 minutes.
User (i2.domain.ibm.com: (none)): I20WNER
331 Enter password.
Password:
230 I2OWNER logged on.
ftp> cd /opt/i2/TradeMatrix/5_0_1/FP/sample_model
250-NAMEFMT set to 1.
250 "/opt/i2/tradematrix/5 0 1/fp/sample model" is current directory.
ftp> bin
200 Representation type is binary IMAGE.
ftp> prompt
Interactive mode Off .
ftp> mput *
200 PORT subcommand request successful.
150 Sending file to /opt/i2/tradematrix/5 0 1/fp/sample model/bill of materials
250 File transfer completed successfully.
ftp: 1789 bytes sent in 0.02Seconds 89.45Kbytes/sec.
200 PORT subcommand request successful.
etc...
150 Sending file to /opt/i2/tradematrix/5 0 1/fp/sample model/vendor data
250 File transfer completed successfully.
ftp: 239 bytes sent in 0.00Seconds 239000.00Kbytes/sec.
ftp> quit
221 QUIT subcommand received.
C:\Rhythm\FP\5.0.1\Samples\sample model>
```

Figure 212. Using FTP from a PC to place the Factory Planner sample dataset on the iSeries server

6. To verify that the sample dataset is now on the iSeries server, you can use the EDTF command:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/FP/sample_model')

An example is shown in Figure 213.

Directory: /opt/i2/TradeMatrix/5_0_1/FP/sample_model					
Position to:	Record	.: 10	f 19		
New File :					
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive De	lete	
				_	
Opt Name	Size	Owner	Changed	Used	
<l_of_materials_dat< td=""><td>ta 8K</td><td>120WNER</td><td>03/30/01 13:03</td><td>03/30/01 13:03</td></l_of_materials_dat<>	ta 8K	120WNER	03/30/01 13:03	03/30/01 13:03	
demand_order_data	8K	120WNER	03/30/01 13:03	03/30/01 13:03	
ds_spec_file	8K	I20WNER	03/30/01 13:03	03/30/01 13:03	
due_date_cycle_time	es 8K	I20WNER	03/30/01 13:03	03/30/01 13:03	
<tion_resources_dat< td=""><td>ta 8K</td><td>120WNER</td><td>03/30/01 13:03</td><td>03/30/01 13:03</td></tion_resources_dat<>	ta 8K	120WNER	03/30/01 13:03	03/30/01 13:03	
part_number_data	8K	120WNER	03/30/01 13:03	03/30/01 13:03	
resource_data	8K	120WNER	03/30/01 13:03	03/30/01 13:03	
routing_data	8K	120WNER	03/30/01 13:03	03/30/01 13:03	
shift_data	8K	I20WNER	03/30/01 13:03	03/30/01 13:03	
short_order_analys:	is 8K	I20WNER	03/30/01 13:03	03/30/01 13:04	
spec_file	8K	I20WNER	03/30/01 13:03	03/30/01 13:04	
start_time	8K	I20WINER	03/30/01 13:04	03/30/01 13:04	
std spec file	64K	I20WNER	03/30/01 13:04	03/30/01 13:04	
tr_spec_file	8K	I20WNER	03/30/01 13:04	03/30/01 13:04	
<gned dat<="" inventory="" td=""><td>ta 8K</td><td>I20WNER</td><td>03/30/01 13:04</td><td>03/30/01 13:04</td></gned>	ta 8K	I20WNER	03/30/01 13:04	03/30/01 13:04	
unit of measure	8K	120WINER	03/30/01 13:04	03/30/01 13:04	
<pre><ement pre="" routings="" use<=""></ement></pre>	ed 8K	120WINER	03/30/01 13:04	03/30/01 13:04	
<ty bucket="" dat<="" size="" td=""><td>ta 8K</td><td>I20WNER</td><td>03/30/01 13:04</td><td>03/30/01 13:04</td></ty>	ta 8K	I20WNER	03/30/01 13:04	03/30/01 13:04	
vendor data	8K	I20WNER	03/30/01 13:04	03/30/01 13:04	
—					
				Bottom	
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	ay entire field	

Figure 213. Using the EDTF command to verify that the sample dataset is on the iSeries server

5.2 Operating the Factory Planner environment

This section explains how to:

- Start the Factory Planner server
- Check whether the server is running
- Shut down the server
- · Automate the starting and stopping of a server using CL programs
- Run multiple servers at the same time

The Factory Planner server runs in the OS/400 PASE environment. Therefore, it must be started and run from there. There are two different ways to start a Factory Planner server in OS/400 PASE:

- Using the OS/400 PASE terminal environment (QP2TERM) to start the server as a foreground (interactive) or background process
- Using the QP2SHELL callable program to start the server as a foreground (interactive) or background process

5.2.1 QP2TERM to start and stop the Factory Planner server

You can start and stop the Factory Planner server from an interactive PASE terminal session. The PASE QP2TERM shell is an interactive shell environment. It is useful during development activity or when debugging Factory Planner server problems. It is not suited for unattended or "lights-out" operation of the Factory Planner server.

To start the Factory Planner server using QP2TERM, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the Factory Planner environment directory. The default directory is /opt/i2/TradeMatrix/5_0_1/FP/OS400_450:

cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450

3. Call the Factory Planner rhythm_server program with the required parameters. Factory Planner does not require any environment variables to be set before calling rhythm_server. However, it requires a dataset directory and there are many optional parameters (progress, port, and so on). Because of this, we recommend that you use a startup shell script to start the Factory Planner server. This saves you from having to retype the program name, directory path, and all parameters each time.

To create a custom startup shell script, follow these steps:

a. Use the echo command to create an empty file:

echo > start_fp

b. Use the chmod command to give the file execute authority:

chmod +x start_fp

An example is shown in Figure 214.

/QOpenSys/usr/bin/sh
\$
> cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/
\$
> pwd
/opt/i2/TradeMatrix/5_0_1/FP/OS400_450
\$
> echo > start_fp
\$
> chmod +x start_fp
\$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 214. Using a PASE QP2TERM shell to create start_fp

c. Use the EDTF command to modify start_fp:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/start_fp')

d. You can use rhythm_server with the shipped sample dataset installed in the iSeries server as part of product installation:

rhythm_server -dir /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -custom_dir /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -progress Or you can use the sample dataset that was sent from a PC to the iSeries server using FTP in 5.1.6, "Transferring a sample dataset from a PC to the iSeries server" on page 201:

rhythm_server -dir /opt/i2/TradeMatrix/5_0_1/FP/sample_model -progress

An example is shown in Figure 215. Press the F3 function key twice to save and exit.



Figure 215. Using the EDTF command to update the start_fp script

5.2.1.1 Starting the Factory Planner server as a foreground process

You can run the Factory Planner server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, no other commands or program calls can be issued. You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground process, call it and press Enter.

Figure 216 shows an example of changing to the Factory Planner environment directory within QP2TERM and then calling the start_fp startup shell script as a foreground process.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/
  Ś
> start fp
  Reading defaults from file: /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/rhythm
  Timezone is 21600 and is defined by the system.
  Daylight Savings Time is in effect.
 Building Factory Model...
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/spec file
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/sample spec file
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/cdm std spec file
  500 1000 1500 2000
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/plan data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/engine parameters dat
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/unit of measure conv
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/0S400 450/cdm/cdm 5.0/sample model/buckets pattern data
  Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/facility_item_data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/item master data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/buckets pattern data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/buckets pattern data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/buckets pattern data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/resource detail data
  Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/operation_data
  Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm 5.0/sample model/operation resource gr
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/bill of material com
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/item bom routing dat
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/demand data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/demand shipment data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/demand line item dat
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/on hand level data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/vendor sourcing data
  Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/shift data
  Finished building factory model.
  Running Part Buffer Inventory Assignment Phase
  Inventory Preprocessing:
  Depth First Problem Fixing.
 Running Planned Start Time Phase
  This server is version 5.0.1
 Handling requests from UI clients on port 6163
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```



The Factory Planner server is now up and running on the default port 6163. Notice that you don't see the dollar sign (\$) character after the last line. This means that this QP2TERM session is locked until the Factory Planner server is ended. – Note

If you see the pound sign (#) character instead of the dollar sign (\$) character, then you are signed onto the iSeries server as QSECOFR. We assume that I2OWNER is used and that user profile will see dollar signs.

You can stop the Factory Planner server by using the kill command from another terminal session and specifying the Process ID (PID) of the process to end:

kill PID

The process overview (ps) command can be used to determine the Factory Planner server's PID.

To stop the Factory Planner server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators.

- When using *IBM Personal Communications*, right-click anywhere in the panel and press the SysRq key. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.
- On a *PC keyboard*, the System Request function key sequence is to press and hold the Shift and Esc keys at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and press Enter again.
- On a *non-programmable terminal*, the System Request function key sequence is to hold down the ALT key and then press the Print/Sys Req key at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.

See the reference manual for your particular terminal, keyboard, or display emulator if these combinations do not work for you.

Once you do this, you see the dollar sign (\$). This indicates that the QP2TERM session is free again and available for other requests. An example is shown in Figure 217.

/Q0penSys/usr/bin/sh				
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/demand_shipment_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/demand_line_item_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/on_hand_level_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/vendor_sourcing_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/vendor_sourcing_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/shift_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/shift_data Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/shift_data				
Inventory Preprocessing:				
Depth First Problem Fixing.				
Running Planned Start Time Phase				
This server is version 5.0.1 Handling requests from UI clients on port 6163 \$				
===>				
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry				

Figure 217. Factory Planner server foreground process ended using the System Request function key

5.2.1.2 Starting the Factory Planner server as a background process You can also run the Factory Planner server as a background process. This is like a batch process that does not lock the QP2TERM session. Since the process runs in the background, other commands or program calls can be issued. You do not have to start multiple QP2TERM sessions from multiple iSeries signons, because you can start multiple background processes from one QP2TERM session.

To start a program or shell script as a background process, call it with the ampersand (&) character at the end and press Enter.

Figure 218 shows an example of changing to the Factory Planner environment directory within QP2TERM and then calling the start_fp startup shell script as a background process.

¢	/QOpenSys/usr/bin/sh					
\$ > cd /opt/	i2/TradeMat	rix/5_0_1/FP/08	5400_450/			
ې > start_f	ъ &					
[1] \$ Readin Timezone Daylight Building	620 g defaults is 21600 au Savings Tir Factory Moo	from file: /opt nd is defined k ne is in effect del	t/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5 by the system.			
Reading Reading Reading 500 100	file /opt/i2 file /opt/i2 file /opt/i2 0 1500 2000	2/TradeMatrix/5 2/TradeMatrix/5 2/TradeMatrix/5	5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s 5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s 5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/c			
Reading Reading Reading Reading	file /opt/i2 file /opt/i2 file /opt/i2 file /opt/i2	2/TradeMatrix/5 2/TradeMatrix/5 2/TradeMatrix/5 2/TradeMatrix/5	5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/p 5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/e 5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/u 5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/b			
===>						
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry			

Figure 218. Using a PASE QP2TERM shell to start the start_fp script as a background process

The Factory Planner server is now up and running on the default port 6163. Notice that the dollar sign (\$) character appears right after you call the script. This means that this QP2TERM session is not locked and other commands or program calls can be issued.

If you see the error message \$ No such file or directory /QOpenSys/usr/bin/sh: /dev/null: cannot open, then you need to create the file /dev/null on your system. You can do this using the touch command:

touch /dev/null

The background processes now work.

An example of the error and using touch to create the file /dev/null is shown in Figure 219.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5 0 1/FP/OS400 450
 $
> start_fp &
 [1]
         1254
 $ No such file or directory
  /QOpenSys/usr/bin/sh: /dev/null: cannot open
> ls /dev
 QASP01
                 jva-stdin-null qsh-stdin-null
  Ś
> touch /dev/null
> ls /dev
               jva-stdin-null null
 QASP01
                                                 qsh-stdin-null
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 219. Using touch to create the /dev/null file needed for background processes

You can also change the rhythm_server program string within the start_fp script to run as a background process:

rhythm_server -dir

/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -custom_dir /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -progress &

Figure 220 shows an example of changing to the Factory Planner environment directory within QP2TERM. It also shows calling the start_fp startup shell script as a foreground process, but with the rhythm_server program set to run as a background process.

/QOpenSys/usr/bin/sh)
<pre>\$ cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/ \$ start_fp \$ Reading defaults from file: /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5 Timezone is 21600 and is defined by the system. Daylight Savings Time is in effect.</pre>	5
Building Factory Model Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/c 500 1000 1500 2000 Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/g Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/e Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/e Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/e	
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/k Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/f)
===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry)

Figure 220. Starting the start_fp script with rhythm_engine run as a background process

The Factory Planner server is now up and running on the default port 6163, and because you see the dollar sign (\$) character available, this means that this QP2TERM session is not locked and other commands and program calls can be issued. Notice that Figure 218 on page 211 and Figure 220 look almost identical and that the result is the same for both.

Once you submit a script or program as a background process, it cannot be ended by the System Request function key. Use the ps command to obtain a list of the running processes and their process identifiers (PIDs) running in the system.

An example of using ps -ef is shown in Figure 221.

```
/QOpenSys/usr/bin/sh
  Finished building factory model.
 Running Part Buffer Inventory Assignment Phase
 Inventory Preprocessing:
 Depth First Problem Fixing.
 Running Planned Start Time Phase
 This server is version 5.0.1
 Handling requests from UI clients on port 6163
> ps -ef
     UID PID PPID C STIME TTY TIME (MD
  I2OWNER 626 595 0 14:20:13 - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 628 1 0 14:20:20
                                - 0:00 rhythm server -dir /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/
  I2OWNER 635 626 0 14:40:39 - 0:00 ps -ef
  Ś
===>
         F6=Print F9=Retrieve F11=Truncate/Wrap
F3=Exit
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 221. Using ps -ef to see the Factory Planner server background process running

Notice that the Factory Planner server is running with PID 628. There are three ways to end a background process like this:

- Press the F3 function key to exit the PASE QP2TERM shell terminal session. Use caution because this ends all other background processes started from this session.
- Use the kill command to end the process, which is kill 628 in our example.
- The recommended way is to use the shutdown option available with the batch_client. The full syntax is:

batch client -requests shutdown

After you end a background process, you can use the ps command to verify that it ended. An example of ending the Factory Planner server using batch_client and using ps -ef to verify this is shown in Figure 222.

```
/QOpenSys/usr/bin/sh
> ps -ef
       UID PID PPID C STIME TTY TIME CMD

        I2OWNER 626 595
        0 14:20:13
        - 0:00 /QOpenSys/usr/bin/sh -i

        I2OWNER 628
        1 0 14:20:20
        - 0:00 rhythm_server -dir /opt/i2/TradeMatr

  I20WNER 635 626 0 14:40:39 - 0:00 ps -ef
  $
> batch client -requests shutdown
  This client is version 5.0.1
  This client is using port 6163
  Connected to server.
  SUCCESS: shutdown: Command Complete
  $
> ps -ef
       UID PID PPID C STIME TTY TIME CMD
   I20WNER 626 595 0 14:20:13
                                      - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 637 626 0 14:55:57
                                      - 0:00 ps -ef
  $
===>
F3=Exit
            F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 222. Using batch_client to end the Factory Planner server and monitoring using ps -ef

Instead of typing the long batch_client string every time you want to end the Factory Planner server, place this into a shell script that you can call.

To create a Factory Planner shutdown shell script, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 2. Use the cd command to change to the Factory Planner directory:

cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/

- 3. Use the echo command to put the batch_client string into a file called end_fp: echo batch_client -requests shutdown > end_fp
- 4. Use the chmod command to give the file execute authority:

chmod +x end_fp

Figure 223 shows an example of steps two through four.



Figure 223. Using a PASE QP2TERM shell to create end_fp

5.2.2 QP2SHELL to start and stop the Factory Planner server

You can also start and stop the Factory Planner server in the PASE environment from an OS/400 command line. To do this, use the QP2SHELL callable program and pass a startup shell script or program as a parameter.

To start the Factory Planner server using QP2SHELL and the start_fp script, you can use the following command:

```
CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh'
'PATH=/opt/i2/TradeMatrix/5_0_1/FP/OS400_450'
'/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/start_fp')
```

Notice that you have to set the PATH environment variable (for example, PATH=/opt/i2/TradeMatrix/5_0_1/FP/OS400_450) for the start_fp shell script to find the rhythm_server executable. You could also change the start_fp shell script by qualifying the path to the rhythm_server executable (for example, /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/rhythm_server). Then PATH is not needed.

Figure 224 shows an example of the panel that appears when you use the F4 function key to prompt the QP2SHELL program call to execute the start_fp startup shell script.

Call Program (CALL) Type choices, press Enter. > QP2SHELL Name Program . Name, *LIBL, *CURLIB Library *LIBL Parameters . . . > '/QOpenSys/usr/bin/sh' > 'PATH=/opt/i2/TradeMatrix/5 0 1/FP/OS400 450 + for more values > '/opt/i2/TradeMatrix/5_0 1/FP/OS400_450/star t_fp' Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 224. Using CALL QP2SHELL to start the Factory Planner server using the start_fp shell script

```
- Note
```

To process a shell script using QP2SHELL, the /QOpenSys/usr/bin/sh shell has to be started first.

Once you press Enter to execute the program call, this starts the Factory Planner server as a foreground or interactive process (on the default port 6163) that locks your display session until it is ended. You can call QP2SHELL multiple times this way if you have multiple iSeries signons.

Since your display session is locked, one way to verify that the server is running is to bring up another display session. Then use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status). Or use the NETSTAT OPTION (*CNN) command and look for port 6163. See the example in Figure 225.

Work with TCP/IP Connection Status						
Sys	tem: I2					
Type options, press Enter.						
3=Enable debug 4=End 5=Display decalls 6=Disable debug						
0=DISPIAY JODS						
Remote Remote Local						
Opt Address Port Port Idle Time State						
* * as-svrmap 024:50:36 Listen						
* * lpd 116:25:11 Listen						
* * telnet- > 116:23:20 Listen						
* * 1503 045:14:24 Listen						
* * 1516 045:14:29 Listen						
* * 1533 033:45:33 Listen						
* * 5001 116:23:29 *UDP						
* * 5018 045:14:03 *UDP						
* * 5021 045:14:03 *UDP						
* * as-mgtc > 025:52:08 Listen						
* * 5841 040:25:51 Listen						
* * 6163 000:00:05 Listen						
	More					
F5=Refresh F11=Display byte counts F13=Sort by column						
F14=Display port numbers F22=Display entire field F24=More keys						

Figure 225. Using NETSTAT *CNN to see Factory Planner server port 6163 running

Another way to verify this is to use the ps command from another display session as shown in Figure 226:

ps -ef

```
/QOpenSys/usr/bin/-sh
 Ś
> ps -ef
      UID PID PPID C STIME TTY TIME OMD
  I20WNER 595 1 0 16:27:41 - 0:04 /QOpenSys/usr/bin/sh PATH=/opt/i2/TradeMatrix/5 0 1/fp/0S400
/opt/i2/TradeMatrix
  I20WNER 690 595 0 16:27:41
                                - 0:00 rhythm server -dir
/opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model -
  120WNER 696 679 0 16:36:09
                               - 0:00 /QOpenSys/usr/bin/-sh -i
  120WNER 697 696 0 16:36:12
                                 - 0:00 ps -ef
 Ŝ
===>
F3=Exit
         F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom
                                 F21=CL command entry
```

Figure 226. Using ps -ef from another display session to see the start_fp shell and Factory Planner server processes running

Notice that two processes are running:

- One for the call to the start_fp shell script
- One where the Factory Planner server is running

This means that there are two separate processes to stop. There are three ways to end them:

 Use the System Request function key to end your locked display where you did the QP2SHELL call (PID 595). This key varies with terminals, keyboards, and display emulators as explained on page 209. Then you need to use the kill command from a PASE QP2TERM shell environment to end the Factory Planner server (PID 690).

• Use the kill command to end both processes:

```
kill 595
kill 690
```

• The recommended way is to use the shutdown option available with the batch_client client. The full syntax is:

batch_client -requests shutdown

A benefit to using batch_client is that it ends both processes for you at the same time.

After you end the Factory Planner server, you can use the ps command to verify that it ended.

An example of ending the Factory Planner server using batch_client and using ps -ef to verify this is shown in Figure 227.

/QOpenSys/usr/bin/sh Ś > ps -ef UID PID PPID C STIME TTY TIME CMD I20WNER 595 1 0 16:27:41 - 0:04 /QOpenSys/usr/bin/sh PATH=/opt/i2/TradeMatrix/5_0_1/fp/OS400 /opt/i2/TradeMatrix I2OWNER 690 595 0 16:27:41 - 0:00 rhythm server -dir /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model -I2OWNER 696 679 0 16:36:09 - 0:00 /QOpenSys/usr/bin/sh -i - 0:00 ps -ef I2OWNER 697 696 0 16:36:12 Ś > batch client -requests shutdown This client is version 5.0.1 This client is using port 6163 Connected to server. SUCCESS: shutdown: Command Complete Ś > ps -ef UID PID PPID C STIME TTY TIME CMD I20WNER 696 679 0 16:36:09 - 0:00 /QOpenSys/usr/bin/sh -i I20WNER 701 696 0 16:39:25 - 0:00 ps -ef \$ ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 227. Using batch_client to end the Factory Planner server and monitoring using ps -ef

To see the progress messages from the server after the server has ended, or to look for errors, you can use the Work with Spooled Files (WRKSPLF) command for the user that issued the call:

WRKSPLF SELECT (120WNER)

You then need to look for a spooled file called QPRINT. If the server is still running, this file is in an open (OPN) status and cannot be viewed. If the file is in a ready (RDY) status, then you can select option 5 to view the file.

Figure 228 shows an example of the contents of QPRINT after a Factory Planner server was started and ended normally.

Display Spooled File
File : QPRINT Page/Line 1/6
Control
Find
*+1+2+3+4+5+6+7+8
Reading defaults from file: /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/s
Timezone is 21600 and is defined by the system.
Daylight Savings Time is in effect.
Building Factory Model
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/spe
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/sam
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/cdm
500 1000 1500 2000
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/pla
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/eng
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/uni
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/buc
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/fac
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/ite
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/buc
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/buc
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/buc
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/res
Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/ope
More
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys

Figure 228. Using WRKSPLF to view the contents of QPRINT after using a Factory Planner server

5.2.3 Automating the Factory Planner servers using CL programs

The PASE QP2TERM shell environment is fine when you want to manually start and stop Factory Planner servers. However, most customers want to automate this process. This section shows you how to create CL programs to do this using QP2SHELL.

5.2.3.1 Starting the Factory Planner server

To start the Factory Planner server, follow these steps:

- 1. Create a startup shell script since the Factory Planner startup program name and parameters can become quite lengthy. We use one called *start_fp*, or you can create a different one.
- Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the startup shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 229 shows a program that you can use called FP_START.

```
Columns . . . :
              1 80
                       Browse
                                                      I2/I2SOURCE
SEU==>
                                                        FP START
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...
      0001.00
               PGM
0002.00
               MONMSG
                        MSGID(CPF0000)
0003.00
               CALL
                        PGM (QP2SHELL) PARM ('/QOpenSys/usr/bin/sh' +
                          'PATH=/opt/i2/TradeMatrix/5_0_1/FP/os400_45+
0004.00
0005.00
                          0'+
                          '/opt/i2/TradeMatrix/5 0 1/FP/OS400 450/sta+
0006.00
0007.00
                          rt_fp')
0008.00
                ENDPGM
         F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
                                               F12=Cancel
F16=Repeat find F24=More keys
            (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 229. Creating a CL program called FP_START to start the Factory Planner server

3. After you create and compile the program, start the Factory Planner server by calling the program:

call i2/fp_start

In our case, *i2* was the name of the library the program was created in, and *FP_START* was the name of the program. See the example in Figure 230.

MAIN	AS/4	100 Main Menu		Ň
Select one of the follo	owing:		System:	12
 User tasks Office tasks General system Files, librarie Programming Communications Define or change Problem handling Display a menu Information Ass Client Access/4 Sign off 	tasks es, and folde ge the system g sistant optic 400 tasks	ers n ons		
Selection or command ===> call i2/fp_start				
F3=Exit F4=Prompt F F23=Set initial menu	?9=Retrieve	F12=Cancel	F13=Information Assi	stant

Figure 230. Starting the Factory Planner server from CL program FP_START

4. As explained in 5.2.2, "QP2SHELL to start and stop the Factory Planner server" on page 216, this starts the Factory Planner server on the default port

of 6163 as a foreground or interactive process. It locks your display session until it is ended.

Since your display session is locked, one way to verify that everything starts correctly is to bring up another display session:

- Use the Work with TCP/IP Network Sts (NETSTAT) command, and select option 3 (Work with TCP/IP connection status).
- Use the NETSTAT OPTION (*CNN) command, and look for port 6163.
- Bring up another display session and use the ps command.

When you are ready to end the Factory Planner server, the recommended way is to use the shutdown option available with the batch_client client:

batch_client -requests shutdown

You can then use the ps -ef command to verify that it ended.

5. After you create the CL program to start the Factory Planner server, you can easily create another CL program to submit this as a batch job so an interactive session is not locked while the Factory Planner server is running.

Figure 231 shows an example program that you can use called STRFPBCH.

Columns : 1	80 Browse		12/12SOURCE
SEU==>			STRFPBCH
FMT **+ 1+	2+ 3 .	+ 4+ 5+	6+ 7
*********	* Beginning of da	ta ************************************	*****
0001.00 F	PGM		
0002.00 M	IONMSG MSGID (C	PF0000)	
0003.00 S	BMJOB CMD (CAL	L PGM(I2/FP_START)) JOB	(FP6163) +
0004.00	JOBD (*LIBL/QBATCH)	
0005.00 E	INDPGM		
**********	**** End of data ·	******	*****
F3=Exit F5=Refresh F16=Repeat find (C) CC	F9=Retrieve F1 F24=More keys DPYRIGHT IBM CORP.	0=Cursor F11=Toggle 1981, 2000.	F12=Cancel

Figure 231. Creating a CL program called STRFPBCH to start Factory Planner as a batch job

Notice that we called the batch job FP6163 so it would be easy to see which server was running and on which port it was running. We also used QBATCH for the job description and subsystem, but you could use another one.

6. After you create and compile the program, start the Factory Planner server by calling the program:

call i2/strfpbch

In our case, *i2* was the name of the library in which the program was created and *STRFPBCH* was the name of the program. See the example in Figure 232.

MAIN	AS/400 Main Menu	
Select one of the following:		System: I2
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the s Problem handling Display a menu Information Assistant Client Access/400 task 	folders ystem options s	
90. Sign off		
Selection or command ===> call i2/strfpbch		
F3=Exit F4=Prompt F9=Retri F23=Set initial menu	eve F12=Cancel F13=Info	rmation Assistant

Figure 232. Starting the Factory Planner server as a batch job from CL program STRFPBCH

7. As shown in 5.2.2, "QP2SHELL to start and stop the Factory Planner server" on page 216, this starts the Factory Planner server on the default port 6163 as a foreground or interactive process. This time it does not lock your display session.

You can use the NETSTAT OPTION (*CNN) command and look for port 6163. Or from another display session, use the ps command to verify that everything started correctly. You can also look at the submitted batch job using one of the following commands:

WRKSBMJOB SBMFROM(*USER) WRKSBSJOB SBS(QBATCH) WRKACTJOB SBS(QBATCH)

Figure 233 shows an example of using the WRKACTJOB SBS (QBATCH) command. Notice that there is one job for the startup shell script and one QP2FORK job where the Factory Planner server (rhythm_server executable) is running.

Work with Active Jobs				
CPU %: 3.9 Elapsed time: 00:32:15 Active jobs:	255			
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Di 8=Work with spooled files 13=Disconnect	splay message			
Opt Subsystem/Job User Type CPU % Function QBATCH QSYS SBS .0 FP6163 I2OWNER BCH .0 PGM-FP_START FP6163 I2OWNER BCI .0 PGM-QP2FORK	Status DEQW THDW THDW			
Parameters or command				
F3=Exit F5=Refresh F7=Find F10=Restart statist F11=Display elapsed data F12=Cancel F23=More options	ics F24=More keys			

Figure 233. Using WRKACTJOB to check on the Factory Planner server running in QBATCH

8. When you are ready to end the Factory Planner server, we recommend you use the shutdown option available with the batch_client client:

batch_client -requests shutdown

You can then use the ps -ef command to verify that it ended. The jobs running in QBATCH end automatically.

5.2.3.2 Shutting down the Factory Planner server

To shut down the Factory Planner server, follow these steps:

1. The recommended way to shut down the Factory Planner server is to use the shutdown option available with the batch_client client. The full syntax is:

batch_client -requests shutdown

A benefit to using batch_client instead of manually ending processes with the kill command, or using the System Request function key if there is an interactive process, is that it ends all processes at the same time.

You could create a shell script to contain this batch_client string (such as the one shown in Figure 223 on page 216). Or you can use QP2SHELL to issue it directly. We show you how to do this in this section.

 Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call batch_client. For help with these steps, see C.1, "Basic tips and techniques" on page 627. Figure 234 shows an example program that you can use called FP_END.

```
Columns . . . :
              1 80
                       Browse
                                                  12/12SOURCE
SEU==>
                                                      FP END
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
     0001.00
               PGM
0002.00
               MONMSG
                       MSGID(CPF0000)
0003.00
               CALL
                       PGM(QP2SHELL) +
                        PARM('/opt/i2/TradeMatrix/5 0 1/FP/OS400 45+
0004.00
0005.00
                         0/batch_client' '-requests' 'shutdown')
0007.00
               ENDPGM
     F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel
F16=Repeat find F24=More keys
            (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 234. Creating a CL program called FP_END to end the Factory Planner server

3. After you create and compile the program, you can end the Factory Planner server by calling the program:

call i2/fp_end

In our case, *i2* was the name of the library the program was created and *FP_END* was the name of the program. Figure 235 shows an example.

MAIN	AS/4	00 Main Menu	Gratem	то
Select one of the follo	wing:		System:	12
 User tasks Office tasks General system Files, librarie Programming Communications Define or change Problem handlim Display a menu Information Asse Client Access/4 	tasks es, and folde ge the system g sistant optic 00 tasks	ers 1 ons		
90. Sign off				
Selection or command ===> call i2/fp_end				
F3=Exit F4=Prompt F F23=Set initial menu	'9=Retrieve	F12=Cancel	F13=Information Assis	stant

Figure 235. Ending the Factory Planner server from a CL program called FP_END

4. You can use the ps -ef command to verify that the Factory Planner server ended. Or, you can use a command, such as WRKACTJOB SBS (QBATCH), to verify that the jobs running in QBATCH ended if you started the Factory Planner server this way.

5.2.4 Running multiple Factory Planner servers

When you start a Factory Planner server, you can accept the default port number 6163, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Factory Planner servers on one system at the same time.

Figure 236 shows an example of using the EDTF command to add the -port parameter to the start_fp startup shell script to have the Factory Planner server start and run on port number 11000. You could create custom scripts for each port you want to start, or create a script where you pass in the port number as a parameter when calling the script.



Figure 236. Changing start_fp to start the Factory Planner server on a different port

To start Factory Planner using port 11000 after adding the -port parameter to rhythm_server in the start_fp startup shell script, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the main Factory Planner directory:

cd /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/

3. Call the startup shell script start_fp:

start_fp

An example is shown in Figure 237.

/QOpenSys/usr/bin/sh Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/d Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/d Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/o Reading file /opt/i2/TradeMatrix/5 0 1/FP/OS400 450/cdm/cdm 5.0/sample model/v Reading file /opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s Finished building factory model. Running Part Buffer Inventory Assignment Phase Inventory Preprocessing: Depth First Problem Fixing. Running Planned Start Time Phase This server is version 5.0.1 Handling requests from UI clients on port 11000 Ś ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 237. Starting and stopping the Factory Planner server with a non-default port number

4. To shut down the Factory Planner server on port 11000, from another session use the batch_client client with the -port parameter:

batch_client -requests shutdown -port 11000

Notice that the dollar sign (\$) character reappears after you use batch_client. See Figure 237.

5.2.5 Starting the Factory Planner client

Once a Factory Planner server is started on a port, you need to start the Factory Planner client from a PC. Section 5.1.5, "Factory Planner client installation" on page 198, explains how to install the client.

To start the Factory Planner client, follow these steps:

- Start the Factory Planner client program from a PC. Click Start-> Programs-> i2 TradeMatrix Factory Planner 5.0.1-> Factory Planner Client. If this is something you are going to start often, you may want to create a shortcut to this program and put it on your PC desktop.
- 2. Once you run this program, a login information window appears where you need to specify:
 - The host name (Host parameter) of the iSeries server where the Factory Planner server is running
 - The port number (Port parameter) of the Factory Planner server on the iSeries server (the default is 6163)

If you specified these parameters during client installation, then they are filled in for you. You can enter new values at any time. There is a box you can select to preserve the last used host name and port number. Figure 238 shows an example of the Factory Planner client login information window.

i2 TradeMatrix Factory Planner		×
CLogin Information:		
Host: i2	•	
Port: 6163	•	
Remember host and port		
OK Cancel		

Figure 238. Factory Planner client login information window

3. Once you specify a host and port, click the **OK** button to continue. A window (Figure 239) appears showing the client trying to connect to the server.



Figure 239. Factory Planner client connecting to server status window

4. If the connection from client to server is established, the main Factory Planner window (Figure 240) appears.



Figure 240. Factory Planner client window after successful connection to a server

At this point, your Factory Planner environment is up and running.

If there is a problem connecting to the Factory Planner server (for example, you specified an incorrect host name or there isn't a server running on the port specified), a window appears like the example in Figure 241.

Stop the Factory Planner client by clicking **OK**. Verify the information provided in Figure 238. Start the server if necessary as described in 5.2.1, "QP2TERM to start and stop the Factory Planner server" on page 205, or 5.2.2, "QP2SHELL to start and stop the Factory Planner server" on page 216. Then start the client again.

You may be able to analyze Factory Planner client log files for additional information, which is described in 5.2.6.2, "Factory Planner client log files" on page 232.



Figure 241. Factory Planner connect failed window

5.2.6 Server and client logging considerations

If you have problems running a Factory Planner server, it can be helpful to create and analyze log files of Factory Planner server and Factory Planner client activity. These log files record detailed activity data and error messages. This section explains how to work with log files both on the server and on the client.

5.2.6.1 Factory Planner server log files

Factory Planner server activity displays on your panel if you start Factory Planner with the PASE QP2TERM shell. The progress parameter on the rhythm_server executable adds additional information. If you encounter problems involving the Factory Planner server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

A log file is maintained by the Factory Planner server by using the stderr_log and stdout_log parameters on rhythm_server and specifying the name of existing log files:

```
rhythm_server -port 11000 -dir
/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -custom_dir
/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/cdm/cdm_5.0/sample_model -progress
-stderr_log /fp_log/err.dat -stdout_log /fp_log/out.dat
```

Before you can use these logging parameters, you have to manually create the log files. If you don't, the next time you start the server, you see the error message Could not open stdout log file.

To create and view Factory Planner server log files, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the mkdir command to create the directory for the log files if you want to use one that does not already exist:

mkdir /fp_log

3. Use the touch command to create the two log files:

touch /fp_log/err.dat
touch /fp_log/out.dat

An example of steps two and three is shown in Figure 242.

		/QOpenSys	s/usr/bin/sh
\$ > mkdir /f \$ > touch /f \$ > touch /f	p_log p_log/err.d p_log/out.d	at at	
\$ ===>	out.dat		
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry

Figure 242. Creating the Factory Planner server log files /fp_log/err.dat and out.dat

4. Add the stderr_log and stdout.log parameters to the rhythm_server executable, pointing them to the log files you created. We use the start_fp startup shell script to start Factory Planner, so you can use the EDTF command to modify it:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/FP/OS400_450/start_fp')

Press the F3 function key twice to save and exit.

5. Start the Factory Planner server. As soon as it starts, your files are updated. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view the log files:

cat err.dat cat out.dat

An example is shown in Figure 243 and Figure 244.



Figure 243. Displaying the contents of the Factory Planner server log file /fp_log/err.dat using cat

/Q0penS	ys/usr/bin/sh
\$	
> cat out.dat	
Logging started at APR.16.14.50.48	
Building Factory Model	
Timezone is 21600 and is defined by	the system.
Daylight Savings Time is in effect.	
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/s
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/c
500 1000 1500 2000	
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/p
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/e
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/u
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/b
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/f
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/i
Reading file /opt/i2/TradeMatrix/5_0	_1/FP/OS400_450/cdm/cdm_5.0/sample_model/b
===>	
F2-Fyit F6-Drint F9-Detrieve F	11-Trancate /Wran
F_{12} C_{12} F_{12} F_{12} C_{12} C	121-CL command entry
FIS=CLEAR FI/=10p FI8=BOLLOIII F.	

Figure 244. Displaying the contents of the Factory Planner server log file /fp_log/out.dat using cat

Each time you start the Factory Planner server, these files increase in size and they become quite large after some time. You may want to update your startup shell script to copy and then remove these files each time the server starts. The backup copy is handy when you want to compare examples of working and non-working Factory Planner servers, such as when you start having problems with the server but didn't have any the last time it was started.

5.2.6.2 Factory Planner client log files

If you have trouble connecting the Factory Planner client to a server or if i2 Customer Support requests additional information, you can analyze log files i2err.log and i2out.log that are automatically written to the root (typically C:\) directory on the client PC by the Factory Planner client program.

The example in Figure 245 shows the contents of the i2err.log file after the client fails to connect to a Factory Planner server running on port number 11000. In this case, no Factory Planner server was on that port running on the system specified. The recovery is to start a Factory Planner server with port number 11000 and try to connect the client again.

🗉 i2err.log - WordPad	
File Edit View Insert Format Help	
Can't connect to port 11000 on server i2	

Figure 245. Displaying the Factory Planner client log file i2err.log using WordPad

Chapter 6. i2 TradeMatrix and Five.Two Link

This chapter describes the iSeries server installation procedures for the i2 TradeMatrix Link and i2 Five.Two Link products. It includes sections on how to start, stop, and operate the Link environment. It also shows you the steps necessary to use Link to access an iSeries flat file, an iSeries SQL table using a Merant SequeLink ODBC data source, and an iSeries SQL table using CLI (i2 Five.Two only).

For a description of the Link product, see 1.1.2.4, "i2 Link" on page 6.

6.1 Installation procedure

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Link 5.0.1 on an iSeries server. As mentioned in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V4R5M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Link code requires approximately 200 MB of disk space.

i2 Five.Two Link installs the same as version 5.0.1. Therefore, a separate chapter on installation is not included for it. i2 Five.Two requires OS/400 V5R1M0.

After you order Link from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Link are summarized here:

- 1. Install Link and JRE122 code from the CD-ROM.
- 2. Define and run a startup shell script.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2, based on the host ID.
- 5. Activate the license key.
- 6. Install the Link client.

Note

Starting with the 5.0 release, i2 Technologies renamed their *RhythmLink* product to *i2 TradeMatrix Link*. Then, with the i2 Five.Two release, they dropped TradeMatrix from the name. You still see various references to Rhythm with the pre-Five.Two products and to TradeMatrix with the i2 Five.Two products. The references may be found in documentation, directory names, and object names.

6.1.1 Link reference documentation

The following manuals are available on the Link CD-ROM in the root (\) directory, on the iSeries server in the /opt/i2/TradeMatrix/5_0_1/link/OS400_450 directory after server installation. They are also available on a PC in the C:\Rhythm\RhythmLink\5.0.1 folder after client installation:

- i2 TradeMatrix Link Installation Manual Version 5.0.1 (tml_installation.pdf)
- *i2 TradeMatrix Link Implementation Manual Version 5.0.1* (tml_implementation.pdf)

- *i2 TradeMatrix Link Model Reference Manual Version 5.0.1* (tml_model_reference.pdf)
- i2 TradeMatrix Link Release Notes Version 5.0.1 (tml_release_notes.pdf)
- i2 TradeMatrix Link User Manual Version 5.0.1 (tml_user.pdf)

For i2 Five.Two, the documentation is on the iSeries server in the /opt/i2/Link/Five.Two directory after server installation. On a PC, it is in the C:\i2\Link\Five.Two directory after client installation. On a PC in the C:\i2\Link\Five.Two\help folder after client installation, there is Web-based help available for Link. You can access this by opening the helpset.htm file.

You can also find documentation on the i2 support Web site (http://support.i2.com). Log in and then select the **Documentation** link.

6.1.2 Installing Link server code on the iSeries server

To install the Link server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Link server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, refer to 2.4.1, "User profile creation" on page 33.
- The Link execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2/TradeMatrix/5_0_1/link/OS400_450. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/')

Figure 246 shows the EDTF command after prompting with the F4 function key. The directory is /opt/i2/Link/Five.Two/ for i2 Five.Two.

	Edit File (EDTF)			
Type choices, press Enter.				
Stream file, or				
Data base file	. *LIBL	Name Name, *LIBL, *CURLIB		
F3=Exit F4=Prompt F5=Refre F24=More keys	sh F12=Cancel	F13=How to use this display		

Figure 246. Edit File (EDTF) command prompt of /opt/i2/TradeMatrix/5_0_1/link/

4. If the directory structure already exists, you can select from one of three options to continue:

- Use the Recursive Deletion function of the EDTF command (option 9) to delete the Link environment and start from the very beginning. This is shown in Figure 247.
- Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
- Specify a new target directory on the iSeries server during the installation procedure (see Figure 251 on page 238 where you can define this). You may want to do this if you want multiple Link environments on the system such as for development, test/quality assurance, production, or "what if" cases.

Director	y: /opt/i2/Tra	deMatrix/5_0	_1/link		
Position	to:		Record . :	1 of	1
New File	:				
2=Edit	4=Delete File	5=Display	6=Path Size	9=Recursive I	Delete
Oat Name			0 mm	Cleanand	IImad
	450	SIZE	Owner.		USEC
9 05400_	_450	*DIR	120WINER	02/19/01 14:00	02/19/01 14:08
					Bottom
F3=Exit	F12=Cancel	F16=Sort	F17=Positio	n to F22=Displa	ay entire field
	(C) COPYRI	IGHT IBM COF	P. 1980, 2000		

Figure 247. Using EDTF to recursively delete an existing Link environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, refer to 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Link software in your iSeries CD-ROM drive.
- 7. Start the installation from an OS/400 command line by using the Load and Run (LODRUN) command and press the F4 function key to prompt it. The panel shown in Figure 248 appears.

Select *OPT or the name of your optical drive for the Device parameter. Press Enter when you are ready to start the installation.

You could also simply issue the following command:

LODRUN DEV (*OPT)

	Load and Run (LOI	RUN)		
Type choices, press Enter.				
Device	*OPT N	lame, *TAP, *DKT, *OPT		
F3=Exit F4=Prompt F5=Re F24=More keys	efresh F12=Cancel	Bottom F13=How to use this display		

Figure 248. Load and Run (LODRUN) prompt to start the Link installation

The *OPT option assumes your optical device is named OPT01. If you are not sure, you can use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE(*DEV) CFGD(*OPT)

- 8. Once the installation is started, you see messages such as the following examples at the bottom of your panel:
 - Restoring software installation...
 - Copying Start/Stop menu files...
 - Running Installation Procedure...
- 9. A panel (Figure 249) appears that asks you to verify the CD-ROM path to the Link code. QOPT is the optical file system, and LINK_5_0_1 is the label of the CD-ROM in the CD-ROM drive. Press Enter to continue the installation.

I20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/19/01 13:49:53
Enter CDROM /qopt/LIN	<pre>[path[/qopt/LINK_5_0_1] : K_5_0_1</pre>	
Input chang	es and press ENTER	
F3=Exit F12=Canc	el	

Figure 249. Confirming the CD-ROM path to Link code

10. You now see a panel like the example in Figure 250 where you can review:

- The required disk space and space available on the iSeries server
- The i2 product and release level to be installed
- The OS/400 release level (V4R5M0 required for pre-Five.Two versions, V5R1M0 for Five.Two)
- The default installation directory

I2OWNER i2 Technologies, Inc. 2/19/01 ALLINFO TradeMatrix Installation 13:52:21 ISeries Platform You are about to install TradeMatrix 5.0.1 Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0		-		
ALLINFO TradeMatrix Installation 13:52:21 iSeries Platform You are about to install TradeMatrix 5.0.1 Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1	I20WNER	i2 Technolog	gies, Inc.	2/19/01
iSeries Platform You are about to install TradeMatrix 5.0.1 Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1	ALLINFO	TradeMatrix Ir	nstallation	13:52:21
You are about to install TradeMatrix 5.0.1 Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1		iSeries Pl	atform	
You are about to install TradeMatrix 5.0.1 Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1		You are about to ir	stall TradeMatrix 5.0.1	
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Disk space: Required: 161 MB Available: 23,218 MB Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1				
Select a product to install? Select an OS/400 version? 1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1	Disk space:	Required: 161 MB	Available: 23,218 MB	
1. link 1. OS400 V4R5M0 Which Product? 1 Which OS Version? 1	Select a product t	o install?	Select an OS/400 version?	
Which Product? 1 Which OS Version? 1	1. link		1. OS400 V4R5M0	
Which Product? 1 Which OS Version? 1				
Which Product? 1 Which OS Version? 1				
Which Product? 1 Which OS Version? 1				
Which Product? 1 Which OS Version? 1				
	Which Product?	1	Which OS Version? 1	
		1 . 		
Install directory: /opt/i2/TradeMatrix/5_0_1	Install directory:	/opt/i2/TradeMatrix/	′5_0_1	
Make your choices and press Enter.	Make your choices	and press Enter.		
F3=Exit	F3=Exit			

The correct choices are filled in, so simply press Enter to continue the installation.

Figure 250. Confirming the installation defaults

11. The next panel (Figure 251) looks similar to the one in Figure 250, with the only selectable option being the installation directory. The installation program builds the default directory where the Link environment will be placed based on the selection you made on the panel shown in Figure 250. This is where you can specify a different directory if you want multiple versions of the Link environment on the same system.

The installation program checks to see if the target directory already exists on the system. You can accept the default and overwrite the files in the directory if it already exists. If the target directory is not available, it is created as shown in Figure 251. Press Enter to continue with the installation.

-			
I20WNER ALLINF02	i2 Technolog TradeMatrix I iSeries P	gies, Inc. nstallation latform	2/19/01 13:53:11
	You are about to in	nstall TradeMatrix 5.0.1	
Disk space: Select a product to 1. link	Required: 161 MB install?	Available: 23,218 MB Select an OS/400 version? 1. OS400 V4R5M0	
Which Product? 1		Which OS Version? 1	
Install directory: / Target directory d	opt/i2/TradeMat:	rix/5_0_1/link/0S400_450 create it press Enter.	
F3=Exit			

Figure 251. Confirming the default/specifying a new Link installation directory

12.Starting with Link 5.x, Java 1.2.x is required for the Link environment to run (Java 1.3.x with version Five.Two). The panel shown in Figure 252 displays this information.

You need to copy this from the Link CD-ROM manually into the PASE environment after the installation. This is described in 6.1.3, "Loading JRE 1.2.2 from the installation CD-ROM" on page 243.

I20WNER JAVACHK1	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/19/01 13:54:06		
	IMPORTANT NOTE			
The i2 TradeMatrix Li	nk engine now requires that Java 1.	2.X is installed.		
Please ensure that your environment has been installed and configured properly before running the i2 TradeMatrix Link engine.				
Is Ja	va 1.2.x already installed (Y/N) ?	Ν		
E2-Evit E12-Cancol				
F3=Exit F12=Cancel				

Figure 252. Link requirement for the Java 1.2.x important note
You can choose the default of \mathbb{N} for No and press Enter to see the panel in Figure 253 and then press Enter to continue. Or you can enter \mathbb{Y} for Yes and press Enter to bypass this panel.

I20WNER JAVACHK2	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/19/01 13:56:14
You can o but it wi and has h You may i The lates can be fo Please no this soft	continue to install i2 TradeMatrix Link, ill not run unless Java has been installed been added to your library path. install JRE 1.2.2 from the i2 TradeMatrix Link st version available at the time this CD was pa bund in the directory iSeries-misc on this CD. ote that you will need QSECOFR authority to ins tware.	CD. ackaged stall
	Press Enter to continue.	
F3=Exit F12=Ca	ancel	

Figure 253. JRE 1.2.2 installation information

13.The installation program now initiates a Control Language Program (CLP). The panel in Figure 254 appears. The installation program uncompresses and restores the program files.



Figure 254. Installation status: Restoring program files

14.After the program files are restored, the installation program automatically brings up the status panel (Figure 255). This indicates that the installation program is now restoring document and miscellaneous files.



Figure 255. Installation status: Restoring document and miscellaneous files

15.As long as the installation status panels continue to appear and the less than (<) and greater than (>) characters move, do not press any key until you see a panel like the example in Figure 256. The installation program prompts for the generation of an environment setup script that you want to do. Leave x for Yes, and press Enter to continue the installation.

I2OWNER ENVSETUP	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform		2/19/01 14:00:09
Do you want to	generate an environment setup script(Y/N)	Y	
F3=Exit F12=Cancel			

Figure 256. Generating an environment setup script

16.After the environment setup script file is created, the installation is complete. Then you see the Installation Completed panel (Figure 257). Press Enter to return to an OS/400 command line.



Figure 257. Link installation completed

17. The installation invoked many background jobs. You can quickly check to make sure they completed normally by looking at your message queue using the Display Messages (DSPMSG) command:

DSPMSG MSGQ(120WNER)

An example is shown in Figure 258. If everything looks good, use the F13 key to remove them all or the F11 key to remove them one at a time.

Display Messages					
		Syst	em:	12	
Queue :	I20WNER	Program	. :	*DSPMSG	
Library :	QUSRSYS	Library	. :		
Severity :	00	Delivery	. :	*NOTIFY	
-		-			
Type reply (if requi	red), press Enter.				
Job 054535/120WNER	/LIPGMFIL completed nor	mally on 02/19/	01 at	13:58:30.	
Job 054544/120WNER	/QPOZSPWP completed nor	mally on 02/19/	01 at	13:58:34.	
Job 054545/120WNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	13:58:34.	
Job 054547/I20WNER	/QPOZSPWP completed nor	mally on 02/19/	01 at	13:58:52.	
Job 054542/I2OWNER	/LINK completed normall	y on 02/19/01 a	t 13:5	58:52.	
Job 054551/I2OWNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	13:58:55.	
Job 054552/I2OWNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	13:58:55.	
Job 054554/120WNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	14:00:03.	
Job 054549/120WNER	/LINK completed normall	y on 02/19/01 a	t 14:0	00:03.	
Job 054561/I2OWNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	14:00:05.	
Job 054562/120WNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	14:00:06.	
Job 054564/I2OWNER	/QP0ZSPWP completed nor	mally on 02/19/	01 at	14:00:07.	
Job 054559/120WNER	/LICPSTATUS completed n	iormally on 02/1	9/01 a	at 14:00:07.	
				Bottom	
F3=Exit	F11=Remove a message		F12=C	ancel	
F13=Remove all	F16=Remove all except	unanswered	F24=M	ore keys	

Figure 258. Display Messages (DSPMSG) for I2OWNER

18.After the installation completes, a log file is written to the root (/) directory of the IFS in the form /trdmtx-install-log.mm-dd-yy.hh:mm:ss.link. You can use the log file to diagnose installation problems. Use the EDTF command:

EDTF STMF('/')

Select option 5 next to the log file to display it. A sample log file is shown in Figure 259.

```
Browse : /trdmtx-install-log.02-19-01.13:52:21.link
             1 of
                      214 by 18
                                                Column:
                                                          1 of 88 by 131
Record . :
Control :
....+...1...+....2....+....3...+...4....+....5...+....6...+....7...+...
 install.cpp: VERSION 2.14 02/07/01 DO.
time: 02-19-01.13:52:21, process: Open Log File DisplayALLINFORec().
   FillTargetDir().
   FillTargetDir().
     ProdSelected.
     ArchSelected.
     tmpbuff=/opt/i2/TradeMatrix/5_0_1/link/OS400_450.
 TargetDirExist():
   ctmp = >/opt/i2/TradeMatrix/5_0_1/link/OS400_450<
   Dir value is NULL. Dir NOT Opened.
   stat() error on /opt/i2/TradeMatrix/5 0 1/link/OS400 450: No such path or
   non existing dir:/opt/i2/TradeMatrix/5_0_1/link/0S400_450.
   TargetDir=.
   TargetDir=/opt/i2/TradeMatrix/5_0_1/link/OS400_450.
   cCopyFiles() - Selecting Customize for Product: LINK .
   cCopyFiles() - Selcted Customize for Product: LINK.
time: 02-19-01.13:54: Ø, process: LINK.StartUp()
F3=Exit
         F10=Display Hex F12=Cancel F15=Services F16=Repeat find
           (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 259. Sample trdmtx-install-log file generated during product installation

19.A library called LINK is created and used as part of the installation. You can delete it by using the Delete Library (DLTLIB) command:

DLTLIB LIB(LINK)

- Or, you can use it to contain Link files and programs.
- 20.If you want to see the results of the Link installation, you can use the EDTF command to view the contents of the directory /opt/i2/TradeMatrix/5_0_1/link/OS400_450:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450')

An example is shown in Figure 260. i2 Five. Two is located in the /opt/i2/Link/Five. Two directory.

Directory: /opt/i2/Trade	Matrix/5_0	1/link/0S400	_450	
Position to:	Record	.: 10	of 29	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Delet	e
Opt Name	Size	Owner	Changed	Used
rl_engine	21,504K	120WNER	01/08/01 20:44	02/19/01 13:57
rl_sap	11,264K	120WNER	01/08/01 20:44	02/19/01 13:57
liborb.a	4,608K	120WNER	01/08/01 20:44	02/19/01 13:57
libDPA.a	49,152K	120WNER	01/08/01 20:44	02/19/01 13:58
libxerces-c1_0.a	1,408K	120WINER	01/08/01 20:44	02/19/01 13:58
rhythmlink.jar	384K	120WINER	01/08/01 20:44	02/19/01 13:58
JDPA.jar	96K	120WINER	01/08/01 20:44	02/19/01 13:58
tao.jar	32K	120WNER	01/08/01 20:44	02/19/01 13:58
rltao.jar	32K	120WINER	01/08/01 20:44	02/19/01 13:58
COPYRIGHT	8K	120WINER	01/08/01 20:44	02/19/01 13:58
rl_engine_odbc	8K	120WNER	01/08/01 20:44	02/19/01 13:58
rl_engine_oracle	8K	I20WNER	01/08/01 20:44	02/19/01 13:58
rl_engine_oracle8	8K	I20WNER	01/08/01 20:44	02/19/01 13:58
rl_engine_stripped	8K	I20WNER	01/08/01 20:44	02/19/01 13:58
rl_oracle8	8K	120WNER	01/08/01 20:44	02/19/01 13:58
scp batch	17,408K	120WNER	01/08/01 20:45	02/19/01 13:58
<l notes.pdf<="" release="" td=""><td>256K</td><td>I20WNER</td><td>01/04/01 16:29</td><td>02/19/01 13:58</td></l>	256K	I20WNER	01/04/01 16:29	02/19/01 13:58
<model_reference.pdf< td=""><td>7,168K</td><td>I20WNER</td><td>01/03/01 15:48</td><td>02/19/01 13:58</td></model_reference.pdf<>	7,168K	I20WNER	01/03/01 15:48	02/19/01 13:58
tml_installation.pdf	384K	I20WNER	01/04/01 14:59	02/19/01 13:58
<_implementation.pdf	1,792K	I20WINER	01/03/01 14:27	02/19/01 13:58
previous_releases	*DIR	120WNER	12/05/00 10:40	02/19/01 13:58
tml_user.pdf	2,048K	I20WNER	01/03/01 14:41	02/19/01 13:58
system	*DIR	I20WNER	01/08/01 06:07	02/19/01 14:00
reports	*DIR	I20WNER	01/08/01 06:12	02/19/01 14:00
models	*DIR	120WNER	01/08/01 06:07	02/19/01 14:00
custom	*DIR	120WNER	02/19/01 14:00	02/19/01 14:00
version-status	8K	120WNER	02/19/01 14:00	02/19/01 14:00
.rl.sh	8K	120WNER	02/19/01 14:00	02/19/01 14:00
.rl.csh	8K	120WNER	02/19/01 14:00	02/19/01 14:00
				Bottan
F3=Exit F12=Cancel	F16=Sort	F17=Positio	n to F22=Display	entire field

Figure 260. Using the EDTF command to display the Link directory after installation

6.1.3 Loading JRE 1.2.2 from the installation CD-ROM

As was mentioned earlier, Link 5.x requires Java 1.2.x (or Java 1.3.x for version Five.Two), which has to be in the PASE environment. The Link 5.0.1 installation CD-ROM contains a Java Runtime Environment (JRE) Version 1.2.2 tar file that you need to copy to the iSeries server, untar it, and then move a file called libjvm.a to the base Link directory. This section explains how to perform these steps. If you don't do this, when you run a Link startup script, you receive the error Could not load program rl_engine: Dependent module libjvm.a could not be loaded.

For i2 Five.Two, follow the instructions as outlined here with the jre-ca130-20010615.tar file located on the CD-ROM to install the PASE JRE. Or, follow the steps described in 9.2, "Installing PASE-supported Java 1.3.0 code on an iSeries server" on page 417 (recommended).

To load JRE 1.2.2, follow these steps:

Create a directory to hold the tar file and its contents after it is untarred. We
used directory name jre122 during our installation. You can create the
directory with a Create Directory command, such as CRTDIR, MD, or MKDIR
from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

MKDIR DIR('/opt/i2/tradematrix/5_0_1/link/OS400_450/jre122')

You should see a completion message stating that the directory was created.

2. The file on the CD-ROM that you are looking for is called *jre122.tar*. It is located in the /iSeries-misc directory (may be truncated to /ISERIE_1). You can either load the CD-ROM into a PC and FTP the file (in binary format) to the iSeries server, or load the CD-ROM into the iSeries CD-ROM drive and copy it directly. We recommend you use the latter option (this is what we used).

Use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM.

Figure 261 shows an example of what appears.

```
Work with Optical Files
                                                               System:
                                                                        I2
Directory
                      /ISERIE 1
Volume . .
                      LINK 5 0 1
Type options, press Enter.
 3=Copy 4=Delete
                     5=Display
                                6=Print
                                          7=Rename
Opt File Name
                                            Size -----Created-----
    JRE122.TAR
                                        44851200 09/22/00 13:10:56
    LICENSE.TXT
                                           16711 09/28/00 16:36:26
    README
                                            1222 01/09/01 09:54:06
                                                                    Bottom
Parameters or command
===>
                                 F6=Print list F9=Retrieve F12=Cancel
F3=Exit
        F4=Prompt F5=Refresh
F16=Repeat position to F17=Position to
                                                F22=Display entire name
```

Figure 261. Displaying the contents of the Link installation CD-ROM to see the jre122.tar file

To copy the file directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/link_5_0_1/iserie_1/jre122.TAR') TODIR('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/jre122')

You should see a completion message stating that the object was copied.

3. After the tar file is on the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

4. Change to the directory where it is located:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450/jre122

5. Extract the tar file:

tar -xvf jre122.tar

Figure 262 shows an example of running the process and the results.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5 0 1/link/OS400 450/jre122
> ls
  jre122.TAR
> tar -xvf jre122.tar
 х.
 x ./jre
 x ./jre/lib
 x ./jre/lib/javaplugin.jar, 183345 bytes, 359 tape blocks
 x ./jre/lib/JavaPluginControlPanel, 253 bytes, 1 tape blocks
 x ./jre/lib/JavaPluginControlPanel.html, 655 bytes, 2 tape blocks
 x ./jre/bin/classic
 x ./jre/bin/classic/libjvm.a, 1296081 bytes, 2532 tape blocks
 x ./jre/bin/classic/Xusage.txt, 831 bytes, 2 tape blocks
 x ./jre/sh/rmiregistry, 1940 bytes, 4 tape blocks
 x ./jre/sh/tnameserv, 1940 bytes, 4 tape blocks
 x ./jre/packager.hsdev, 776 bytes, 2 tape blocks
 x ./COPYRIGHT, 994 bytes, 2 tape blocks
 x ./README.JRE122, 907 bytes, 2 tape blocks
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 262. Extracting the jre122.tar file in the PASE QP2TERM shell

 You can update the LIBPATH environment variable (described later) to point to the location of libjvm.a, which is

/opt/i2/TradeMatrix/5_0_1/link/OS400_450/jre122/jre/bin/classic. Or you can copy libjvm.a to the main Link /opt/i2/TradeMatrix/5_0_1/link/OS400_450/ directory, which is what we did. You can use the cp command from within the PASE QP2TERM shell to copy the file. Since you are currently in the jre122 directory, you can use the following command:

cp ./jre/bin/classic/libjvm.a /opt/i2/TradeMatrix/5_0_1/link/OS400_450

After you copy the file, you can use cd .../ to change or backup to the main Link directory, and then use ls libj* to show that libjvm.a is now in that directory. See the example in Figure 263.



Figure 263. Copying libjvm.a within a PASE QP2TERM shell

6.1.4 Obtaining a host ID and license key

When you attempt to run the Link server (rl_engine) without a license key on the system, or the license key you have is not valid, you receive an error that gives you the host identifier (or host ID) for your system so you can request a valid license key from i2. This section explains how to start the server and obtain the host ID. The two steps are:

- 1. Define a startup shell script.
- 2. Run the startup shell script to generate the host ID.

6.1.4.1 Defining a startup shell script

The Link server is usually started from a shell script that sets needed environment variables and then calls rl_engine. Two shell scripts (Korn shell script .rl.sh and C-shell script .rl.csh) are created during the installation as hidden files in the main Link directory, which is /opt/i2/TradeMatrix/5_0_1/link/OS400_450.

To work with the scripts, follow these steps:

 To view and edit these files, you can use the EDTF or Work with Object Links (WRKLNK) commands:

```
WRKLNK OBJ('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/*') DETAIL(*EXTENDED)
DSPOPT(*ALL)
```

Figure 264 shows the WRKLNK command prompted by using the F4 function key.

Figure 264. Work with Object Links (WRKLNK) command prompt of the main Link directory

Note that the Display option (DSPOPT) parameter must be set to *ALL to see hidden files. These are files that start with a period (.). Press Enter.

2. Select option 2 (Edit) to edit the .rl.sh script since the default PASE shell is the Korn shell. See Figure 265.

		Work with Objec	t Links	
Direc	ctory : /or	pt/i2/TradeMat	rix/5_0_1/3	link/0S400_450
Type 2=: 11=	options, press Enter. Edit 3=Copy 4=Rer =Change current direct	nove 5=Display ory	7=Rename	8=Display attributes
Opt 2	Object link .rl.csh .rl.sh custom liborb.a libxerces-c1_0.a libDPA.a models	Type DIR DIR SIMF DIR SIMF SIMF SIMF DIR	Attribute	Text
Paran ===>	neters or command			More
F3=Exit F4=Prompt F5=Refresh F22=Display entire field		efresh F9=Retri F23=More	eve F12=Car options	ncel F17=Position to

Figure 265. Typing the edit option in WRKLNK next to the .rl.sh startup shell script

Figure 266 shows the .rl.sh script.

Edit File: /opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh Record .: 1 of 18 by 10 Column: 1 of 101 by 126 Control :					
<pre>CND+1+2+3+4+5+6+7+8+9+0. ******************************</pre>					
I2_HOME=/opt/i2/TradeMatrix/5_0_1/link/OS400_450 export I2_HOME					
I2_DATA=/opt/i2/TradeMatrix/5_0_1/link/OS400_450/models/rhythmlink export I2_DATA					
PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450:\\$PATH					
LD_LIBRARY_PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450\${LD_LIBRARY_PATH:+":"}\${LD_LIBRARY_PATH:-""} export LD_LIBRARY_PATH ************End of Data***************					
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change F19=Left					

Figure 266. Using the EDTF command to change the contents of the default .rl.sh startup shell script

- 3. Use the Ixx line command to insert new lines (xx being the number of new lines that need to be inserted) before the I2_HOME line and after the export LD_LIBRARY_PATH line. We used I2 to insert two new lines.
- 4. Insert two new statements into the script as highlighted in Figure 267. The statements perform the following actions:
 - a. Set the LIBPATH environment variable. You can choose between two different formats of the export statement that are functionally equivalent:
 - Export and define the environment variable in one statement:

export LIBPATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450

• Define the environment variable and then export it in a separate export statement:

LIBPATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450 export LIBPATH

b. Activate the Link server with no parameters:

rl_engine

Edit File: /opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh Record .: 1 of 18 by 10 Column: 1 of 101 by 126 Control :					
<pre>CMD+1+2+3+4+5+6+7+8+9+0. ******************************</pre>					
export LIBPATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450					
I2_HOME=/opt/i2/TradeMatrix/5_0_1/link/OS400_450 export I2_HOME					
I2_DATA=/opt/i2/TradeMatrix/5_0_1/link/OS400_450/models/rhythmlink export I2_DATA					
PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450:\\$PATH export PATH					
LD_LIBRARY_PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450\${LD_LIBRARY_PATH:+":"}\${LD_LIBRARY_PATH:-""} export LD_LIBRARY_PATH					
rl_engine ******End of Data*****************					
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change F19=Left					

Figure 267. Updated Link startup shell script needed to generate the host ID for the license key request

5. Press the F3 function key twice to save and exit. Now the Link startup shell script is setup in the right manner to be invoked to record the host ID.

6.1.4.2 Creating a custom startup shell script (optional)

If you want to create a custom startup shell script or you don't want to change the shipped .rl.sh script, you can copy .rl.sh and make the necessary changes to the copy. In custom startup shell scripts, you could start Link servers on different ports or with different startup parameters.

To create a custom startup shell script, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 2. Use the cd command to change to the Link directory:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450/

3. Use the cp command to copy .rl.sh to another file:

cp .rl.sh start_link

4. Use the chmod command to give the file execute authority:

chmod +x start_link

5. Use the EDTF command to modify start_link:

EDTF STMF('/opt/i2/TradeMatrix/5 0 1/link/OS400 450/start link')

Figure 268 shows an example of steps two through four.

```
/QOpenSys/usr/bin/sh
$
> cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450
$
> cp .rl.sh start_link
$
> chmod +x start_link
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 268. Using a PASE QP2TERM shell to create a custom startup shell script called start_link

6.1.4.3 Running the startup shell script

Now that you have a startup shell script, you need to run it so that the system displays the host ID.

To start the Link server, run the .rl.sh (or custom) startup shell script in the PASE QP2TERM environment by following these steps:

- On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 2. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/link/OS400_450 directory:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450

3. Run the .rl.sh (or custom) startup shell script:

.rl.sh

An example is shown in Figure 269.

```
/QOpenSys/usr/bin/sh
$
cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450
$
.rl.sh
rl_engine version 5.0.1 of 01-01-08 [ASCII]
Copyright 1995-2000 i2 Technologies, Inc.
i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
Error: Unable to find a valid license for the host I2.DOMAIN.IBM.COM with host_id 0x4364b7eb.
Please contact i2 Technologies.
$
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 269. License key error with host ID information after running .rl.sh startup shell script

Since the license key is missing at this time, an error message is displayed with host ID information. Record the host ID from here and request a license key from i2 support as described in 2.4.5, "Requesting i2 software license keys from i2" on page 47.

Press the F3 function key to exit the PASE QP2TERM environment, and return to an OS/400 command line.

6.1.5 Activating the license key

After you receive the license key from i2, you have to activate it. You can manually create the license key file and place the license key in it. Or you can use the license parameter on the rl_engine executable to do this. This section explains the latter option.

To add license key information to the .rl.sh startup shell script, follow these steps:

1. Edit the startup shell script used previously to generate the host ID using the EDTF command:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh')

2. On the line where rl_engine is located, add the license parameter and license key data in the following format:

rl_engine +license {provide your license key here}

The license key has to be entered exactly as it was supplied from i2. This means use all uppercase characters, with dashes (-) every four characters. An example is shown in Figure 270.

Edit File: /opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh Record . : 1 of 18 by 10 Column: 1 of 101 by 126 Control : .					
<pre>CMD+1+2+3+4+5+6+7+8+9+ *************************</pre>					
export LIBPATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450					
I2_HOME=/opt/i2/TradeMatrix/5_0_1/link/OS400_450 export I2_HOME					
I2_DATA=/opt/i2/TradeMatrix/5_0_1/link/OS400_450/models/rhythmlink export I2_DATA					
PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450:\\$PATH export PATH					
LD_LIBRARY_PATH=/opt/i2/TradeMatrix/5_0_1/link/OS400_450\${LD_LIBRARY_PATH:+":"}\${LD_LIBRARY_PATH:-""} export LD_LIBRARY_PATH					
rl_engine +license 5CCR-5996-T8KN-J9SG-5FNR ************End of Data*******************					
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change F19=Left					

Figure 270. Using the EDTF command to edit the .rl.sh startup shell script to add license key information

Press the F3 function key twice to save and exit. Now the Link startup shell script is setup in the right manner to be invoked to start the Link server.

- 3. Start the Link server from the PASE QP2TERM environment by calling the .rl.sh (or custom) startup shell script by following these steps:
 - a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/link/OS400_450 directory:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450/

c. Run the .rl.sh (or custom) startup shell script:

.rl.sh

An example is shown in Figure 271.

```
/QOpenSys/usr/bin/sh
 > cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450
   $
 > .rl.sh
   rl engine version 5.0.1 of 01-01-08 [ASCII]
  Copyright 1995-2000 i2 Technologies, Inc.
  i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat using measure base
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat 45 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat using model access
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat 14 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/meta_model.dat using meta_model
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat 12 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat using user
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat 16 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat on
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat 197 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds.dat using control_kinds
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control kinds.dat 118 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat usin
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control parameters.dat 20 records
 RhythmLink Server handling requests from port 27333
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 271. Running the .rl.sh startup shell script with a valid license key

- 4. Stop the Link server by using the System Request function key. This key varies with terminals, keyboards, and display emulators:
 - When using *IBM Personal Communications*, right-click anywhere in the panel and press the SysRq key. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.
 - On a *PC keyboard*, the System Request function key sequence is to press and hold the Shift and Esc keys at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and press Enter again.
 - On a *non-programmable terminal*, the System Request function key sequence is to hold down the ALT key and then press the Print/Sys Req key at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.

See the reference manual for your particular terminal, keyboard, or display emulator if these combinations do not work for you.

5. The Link server created a text file named scp_engine.lic in the custom subdirectory when the license parameter was used, and then placed license key information in it. You can use the Work with Object Links (WRKLNK) command to view the contents of the custom directory: WRKLNK OBJ('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/custom/*')
DETAIL(*EXTENDED) DSPOPT(*ALL)

An example is shown in Figure 272.

Work with Object Links							
Directory : /opt/i2/TradeMatrix/5_0_1/link/05400_450/custom							
Type options, press Enter. 2=Edit 3=Copy 4=Remove 5=Display 7=Rename 8=Display attributes 11=Change current directory							
Opt Object link Type Attribute Text . DIR . DIR 5 scp_engine.lic STMF							
Parameters or command ===> F3=Exit F4=Prompt F5=Refresh F9=Retrieve F12=Cancel F17=Position to F22=Display entire field F23=More options	,						

Figure 272. WRKLNK display showing the scp_engine.lic file in the custom subdirectory

6. You can select option 5 to display the contents of scp_engine.lic to see that license key information was added to it. See the example in Figure 273.



Figure 273. Displaying the scp_engine.lic file to view Link license key information

7. As an alternative to using the license parameter on rl_engine, you could have created the scp_engine.lic file in the main Link or custom directories and then manually added license key information to it. The end result is the same.

Note

You should keep a backup copy of the scp_engine.lic file or the custom subdirectory since it contains license key information.

- 8. You now need to update your startup shell script with the following changes:
 - a. Remove the +license parameter next to rl_engine. This is no longer needed with the scp_engine.lic file now created with license key information. It can be left as is if desired. We removed it because we have other parameters to add and this helps keep the rl_engine line more readable.
 - b. Add the following parameters to rl_engine:
 - +diagnostic: Shows diagnostic messages when the Link server comes up.
 - +as400_startup_name {data source name}: Defines an ODBC data source name (for SequeLink connections only).
 - +as400_owner_separator /: Specifies the proper SQL format for the iSeries server (for SequeLink connections only).

You can use the EDTF command to make these changes:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh')

An example is shown in Figure 274. Press the F3 function key twice to save and exit.

```
Edit File: /opt/i2/TradeMatrix/5 0 1/link/OS400 450/.rl.sh
                                                                  1 of 101 by 126
                        18 by 10
Record . :
              1 of
                                                       Column:
Control :
\texttt{CMD} \dots + \dots 1 \dots + \dots 2 \dots + \dots 3 \dots + \dots 4 \dots + \dots 5 \dots + \dots 6 \dots + \dots 7 \dots + \dots 8 \dots + \dots 9 \dots + \dots 0
# LINK Environment Setup Script:
# /opt/i2/TradeMatrix/5 0 1/link/OS400 450/.rl.sh
# Generated by the LINK 5 0 1 Install.
# Changes in this file will effect the LINK setup, please do not alter
# unless instructed to do so by i2.
export LIBPATH=/opt/i2/TradeMatrix/5 0 1/link/0S400 450
I2 HOME=/opt/i2/TradeMatrix/5 0 1/link/OS400 450
export I2 HOME
I2 DATA=/opt/i2/TradeMatrix/5 0 1/link/OS400 450/models/rhythmlink
export I2 DATA
PATH=/opt/i2/TradeMatrix/5 0 1/link/OS400 450:\$PATH
export PATH
LD LIBRARY PATH=/opt/i2/TradeMatrix/5 0 1/link/OS400 450${LD LIBRARY PATH:+":"}${LD LIBRARY PATH:-""}
export LD LIBRARY PATH
rl engine +diagnostic as400 startup name i2 as400 owner separator /
```

Figure 274. Using the EDTF command to update the Link startup shell script .rl.sh with additional parameters

6.1.6 Link client installation

This section explains how to install Link client code on a Windows NT/2000 PC. The installation of the Link client code requires approximately 30 MB of disk space.

To install the Link client, follow these steps:

- 1. Place the CD-ROM containing the Link software in the CD-ROM drive of a client PC.
- 2. The Link client setup program should automatically start and prompt you with the welcome panel as shown in Figure 276. If it does not, you can manually execute SETUP.EXE from the Windows NT folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the Windows NT folder and then double-click **SETUP.EXE**.

Or you can follow these steps:

- a. Click Start->Run.
- b. Type:

```
(drive):\NT\SETUP.EXE
```

Here (drive) is the drive letter assigned to your CD-ROM

c. Press Enter.

Figure 275 shows this view using Windows Explorer.

D:\NT					
File Edit View Favorites Tools Help				1	
🗘 🗘 Back 🔹 🔿 🖌 🔂 🔯 Search 📴 Folde	rs 🕑 History 🔤 🖸	X n III-			
Address D:\NT	Address D:\NT				
Folders ×	Name 🔺	Size	Туре	Modified	
B- psfonts_old PSM PSM PRhythm Sdwork Sdwork Symols TechSnith temp TechSnith temp Vroker Vivoker Vivo	JRE12_1 MDAC MJAC JIST32I.EX JIST32I.EX JSDEL.EXE JSEL.PD.LL SYS1.HDR JSER1.HDR JSER1.HDR DATA.TAG DATA.TAG DATA1.CAB DATA1.HCR DATA1.CAB DATA1.HCR LANG.DAT LANG.DAT LAYOUT.BIN OS.DAT SETUP.BMP SETUP.INI SETUP.INI SETUP.INI SETUP.INI SETUP.INI SETUP.INI	290 KB 27 KB 34 KB 172 KB 4 KB 1,044 KB 5 KB 4 KB 1 KB 27,814 KB 1 KB 23 KB 1 KB 532 KB 72 KB 1 KB 60 KB 1 KB	File Folder File Folder EX_File Application Extension WinZip File HDR File WinZip File HDR File Text Document TAG File WinZip File HDR File DAT File DAT File DAT File DAT File Configuration Settings Internet Communic LID File	2/12/2001 5:16 AM 2/12/2001 5:16 AM 2/23/1999 5:45 AM 10/27/1998 7:06 AM 1/8/2001 12:46 PM 1/8/2001 12:46 PM 1/8/2001 12:46 PM 1/8/2001 12:46 PM 1/9/2001 4:56 AM 1/9/2001 4:56 AM 1/9/2001 4:58 AM 1/9/2001 4:58 AM 1/9/2001 4:58 AM 1/9/2001 4:58 AM 1/9/2001 4:58 AM 1/9/2001 4:58 AM	
Type: Application Size: 72.0 KB					

Figure 275. Windows Explorer view of Link client setup.exe program

3. On the Welcome window (Figure 276), click Next.



Figure 276. Link client setup: Welcome window

- Accept the default for the destination folder location (c:\Rhythm\RhythmLink\5.0.1), or change it as needed, and click the Next button to continue.
- 5. On the Select Components window (Figure 277), verify that only the **i2 TradeMatrix Link Client** check box is selected. The i2 TradeMatrix Link Engine Files are only needed if you want to run Link as a server on the PC. Click **Next**, and continue with the rest of the installation.



Figure 277. Link client setup: Select Components window

6.2 Operating the Link environment

This section explains how to:

- Start the Link server
- Check if the server is running
- · Shut down the server
- Automate the starting and stopping of a server using CL programs
- · Run multiple servers at the same time

The Link server runs in the OS/400 PASE environment. Therefore, it must be started and run from there. There are two different ways to start a Link server in OS/400 PASE:

- Using the OS/400 PASE terminal environment (QP2TERM) to start the server as a foreground (interactive) or background process
- Using the QP2SHELL callable program to start the server as a foreground (interactive) or background process

6.2.1 Using QP2TERM to start and stop the Link server

You can start and stop the Link server from an interactive PASE terminal session (see Figure 271 on page 253). The PASE QP2TERM shell is an interactive shell environment and is useful during development activity or when debugging Link server problems. It is not suited for unattended or "lights-out" operation of the Link server.

To start the Link server using QP2TERM, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the Link environment directory. The default directory is /opt/i2/TradeMatrix/5_0_1/link/OS400_450:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450

3. Link requires multiple environment variables to be set before calling rl_engine. We recommend that you use a startup shell script to start the Link server. You can use the shipped .rl.sh startup shell script or create a custom version. This was described in 6.1.4.1, "Defining a startup shell script" on page 246, and 6.1.4.2, "Creating a custom startup shell script (optional)" on page 249. Once you have one with all of the desired rl_engine parameters (diagnostic, port, and so on), call it to start the server.

6.2.1.1 Starting the Link server as a foreground process

You can run the Link server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, you cannot issue any other commands or program calls. You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground process, call it and press Enter.

Figure 278 shows an example of changing to the Link environment directory within QP2TERM and then calling the .rl.sh startup shell script as a foreground process.

```
/QOpenSys/usr/bin/sh
 > cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450
   Ś
 > .rl.sh
   rl engine version 5.0.1 of 01-01-08 [ASCII]
  Copyright 1995-2000 i2 Technologies, Inc.
  i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat using measure base
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat 45 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat using model access
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat 14 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/meta_model.dat using meta_model
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat 12 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat using user
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat 16 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat on
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat 197 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control kinds.dat using control kinds
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control kinds.dat 118 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat usin
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_parameters.dat 20 records
 RhythmLink Server handling requests from port 27333
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 278. The Link server running in the PASE QP2TERM interactive environment as a foreground process

The Link server is now up and running on the default port 27333. Notice that you don't see the dollar sign (\$) character after the last line, which means that this QP2TERM session is locked until the Link server is ended.

- Note -

If you see the pound sign (#) character instead of the dollar sign (\$) character, then you are signed onto the iSeries server as QSECOFR. We expect that I2OWNER is being used and that user profile sees dollar signs.

You can stop the Link server by using the kill command from another terminal session and specifying the Process ID (PID) of the process to end:

```
kill PID
```

The process overview (ps) command can be used to determine the Link server's PID.

To stop the Link server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators as explained on page 253.

Once you do this, you see the dollar sign (\$). This indicates that the QP2TERM session is free again and available for other requests. An example is shown in Figure 279.

```
/QOpenSys/usr/bin/sh
 Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure_base.dat using measure_base
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat 45 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat using model access
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat 14 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat using meta model
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat 12 records
 Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/user.dat using user
 Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/user.dat 16 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat using contro
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat 197 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control kinds.dat using control kinds
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control kinds.dat 118 records
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat using control
 Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat 20 records
 RhythmLink Server handling requests from port 27333
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 279. The Link server foreground process ended using the System Request function key

6.2.1.2 Starting the Link server as a background process

You can also run the Link server as a background process. This is like a batch process that does not lock the QP2TERM session. Since the process is running in the background, you can issue other commands or program calls. You do not have to start multiple QP2TERM sessions from multiple iSeries signons, because you can start multiple background processes from one QP2TERM session.

To start a program or shell script as a background process, call it with the ampersand (&) character at the end and press Enter.

Figure 280 shows an example of changing to the Link environment directory within QP2TERM and then calling the .rl.sh startup shell script as a background process.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5 0 1/link/OS400 450
  $
> .rl.sh &
        6741
  [1]
  $ rl_engine version 5.0.1 of 01-01-08 [ASCII]
  Copyright 1995-2000 i2 Technologies, Inc.
  i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
  Import: $12 HOME/system
  Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds
  User [unspecified] path: ""
 Reading /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.i
 Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_properties.imp
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 280. Starting the .rl.sh script as a background process

The Link server is now up and running on the default port 27333. Notice that you see the dollar sign (\$) character right after you called the script. This means that this QP2TERM session is not locked and other commands or program calls can be issued.

If you see error message \$ No such file or directory /QOpenSys/usr/bin/sh: /dev/null: cannot open, then you need to create the file /dev/null on your system. You can do this by using the touch command:

touch /dev/null

The background processes now work. Figure 281 shows an example of the error message and using touch to create the file /dev/null.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5 0 1/link/OS400 450
  $
> .rl.sh &
 [1]
         1254
 $ No such file or directory
  /QOpenSys/usr/bin/sh: /dev/null: cannot open
> ls /dev
 QASP01
                 jva-stdin-null qsh-stdin-null
  Ś
> touch /dev/null
> ls /dev
                 jva-stdin-null null
 QASP01
                                                 qsh-stdin-null
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 281. Using touch to create the /dev/null file needed for background processes

You can also change the rl_engine program string within the .rl.sh script to run as a background process:

rl_engine as400_startup_name i2_as400_owner_separator / +diagnostic &

Figure 282 shows an example of changing to the Link environment directory within QP2TERM and then calling the .rl.sh startup shell script as a foreground process, but with the rl_engine program set to run as a background process.

	/QOpenSys/usr/bin/sh
N N	<pre>\$ cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450 \$.rl.sh \$ rl_engine version 5.0.1 of 01-01-08 [ASCII]</pre>
	Copyright 1995-2000 i2 Technologies, Inc. i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
	<pre>Import: \$12_HOME/system Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds.imp User [unspecified] path: "" Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_parameters.imp Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_properties.imp Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure_base.imp</pre>
=:	==>
F: F:	B=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect L3=Clear F17=Top F18=Bottom F21=CL command entry

Figure 282. Starting the .rl.sh script with rl_engine run as a background process

The Link server is now up and running on the default port 27333. Because you see the dollar sign (\$) character available, the QP2TERM session is not locked and other commands and you can issue program calls. Notice that Figure 280 on page 261 and Figure 282 look almost identical and that the result is the same for both.

Once you submit a script or program as a background process, it cannot be ended by the System Request function key. Use the ps command to obtain a list of the running processes and their process identifiers (PIDs) running in the system. Figure 283 shows an example of using ps -ef.

/QOpenSys/usr/bin/sh

```
Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat using meta model
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat 12 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat using user
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat 16 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat using control p
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat 197 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control kinds.dat using control kinds
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds.dat 118 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat using control p
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_parameters.dat 20 records
  RhythmLink Server handling requests from port 27333
>ps -ef
      UID PID PPID C STIME TTY TIME CMD
   I2OWNER 4130 4095 0 16:51:42 - 0:00 /QOpenSys/usr/bin/sh -i
   I20WNER 4157 1 0 17:59:31
                                    - 0:00 rl engine as400 startup name i2 as400 owner sepa
  I20WNER 4158 4130 0 18:01:08
                                    - 0:00 ps -ef
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 283. Using ps -ef to see the Link server background process running

Notice that the Link server is running with PID 4157. There are three ways to end a background process like this:

- Press the F3 function key to exit the PASE QP2TERM shell terminal session. Use caution because this ends all other background processes that started from this session.
- Use the kill command to end the process, which is kill 4157 in our example.
- The recommended way is to use the shutdown option available with the scp_batch client. The full syntax is:

scp_batch [host <hostname>] port <portnumber> batch 'shutdown("now")'

If you are on the same system as the Link server is running, you can omit the host parameter and use:

scp batch port <portnumber> batch 'shutdown("now") '

After you end a background process, you can use the ${\tt ps}$ command to verify that it ended. Figure 284 shows an example of ending the Link server using ${\tt scp_batch}$ and using ${\tt ps}$ -ef to verify this.

```
/QOpenSys/usr/bin/sh
 RhythmLink Server handling requests from port 27333
> ps -ef
     UID PID PPID C STIME TTY TIME CMD
  I20WNER 4130 4095 0 16:51:42 - 0:00 /QOpenSys/usr/bin/sh -i
  I2OWNER 4157 1 0 17:59:31 - 0:00 rl_engine as400_startup_name
  I20WNER 4158 4130 0 18:01:08
                                 - 0:00 ps -ef
> scp batch port 27333 batch 'shutdown("now")'
 Warning: [Self Channel, User: I2OWNER] shutdown: now
 Ś
> ps -ef
     UID PID PPID C STIME TTY TIME (MD
  I20WNER 4130 4095 0 16:51:42 - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 4158 4130 0 18:14:23
                                  - 0:00 ps -ef
 Ŝ
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 284. Using scp_batch to end the Link server and monitoring using ps -ef

Instead of typing the long scp_batch string every time you want to end the Link server, a good idea is to put this into a shell script that you can just call.

To create a Link shutdown shell script, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the cd command to change to the Link directory:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450/

- 3. Use the echo command to place the scp_batch string into a file called *end_link*: echo scp batch port 27333 batch 'shutdown("now")' > end_link
- 4. Use the chmod command to give the file execute authority:

chmod +x end link

5. Use the EDTF command to correct end_link because the single quotes (') are dropped by the echo command:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/end_link')

Figure 285 shows an example of steps two through four.

/QOpenSys/usr/bin/sh Ś > cd /opt/i2/tradematrix/5 0 1/link/OS400 450 > echo scp batch port 27333 batch 'shutdown("now")' > end link Ś > cat end link scp batch port 27333 batch shutdown("now") Ŝ > chmod +x end_link Ś > cat end link scp batch port 27333 batch 'shutdown("now")' Ŝ ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 285. Using a PASE QP2TERM shell to create a shutdown shell script called end_link

6.2.2 Using QP2SHELL to start and stop the Link server

You can start and stop the Link server in the PASE environment from an OS/400 command line. To do this, use the QP2SHELL callable program and pass a startup shell script or program as a parameter.

To start the Link server using QP2SHELL and the .rl.sh script, you can use the following command:

```
CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh'
'/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh')
```

Figure 286 shows an example of the panel that appears when you use the F4 function key to prompt the QP2SHELL program call to execute the .rl.sh startup shell script.

Call Program (CALL)	`
Type choices, press Enter.	
Program > QP2SHELL Name Library *LIBL Name, *LIBL, *CURLIB Parameters	
+ for more values > '/opt/i2/TradeMatrix/5_0_1/link/ OS400_450/.rl.sh'	
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys	,

Figure 286. Using CALL QP2SHELL to start the Link server using the .rl.sh shell script

Note

To process a shell script using QP2SHELL, the /QOpenSys/usr/bin/sh shell has to be started first.

Press Enter to execute the program call. This starts the Link server as a foreground or interactive process (on the default port 27333) that locks your display session until it is ended. You can call QP2SHELL multiple times this way if you have multiple iSeries signons. Since your display session is locked, one way to verify that the server is running is to bring up another display session. Then use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status). Or use the NETSTAT OPTION (*CNN) command and look for port 27333. An example is shown in Figure 287.

Work with TCP/IP Connection Status					
Local internet address	System: 12				
Type options, press Enter. 4=End 5=Display details					
Remote Remote	Local				
Opt Address Port	Port Idle Time State				
* *	as-cent > 444:10:57 Listen				
* *	as-data > 444:10:55 Listen				
* *	as-dtaq-s 444:10:57 Listen				
* *	as-file-s 444:11:17 Listen				
* *	as-netp > 444:10:56 Listen				
* *	as-rmtc > 444:10:56 Listen				
* *	as-sign > 444:10:56 Listen				
* *	9953 000:04:38 *UDP				
* *	16590 140:02:57 Listen				
* *	16591 015:48:59 Listen				
* *	27333 000:27:15 Listen				
	More				
F5=Refresh F11=Display byt	e counts F13=Sort by column				
F14=Display port numbers F22=Display entire field F24=More keys					
)				

Figure 287. Using NETSTAT *CNN to see Link server port 27333 running

Another way to verify this is to use the ps command from another display session:

ps -ef

Figure 288 shows an example of this.

```
/QOpenSys/usr/bin/sh
 $
> ps -ef
                                 TTY TIME CMD
      UID PID PPID C STIME
  I20WNER 6721 1 0 13:51:18
                                  - 0:01 /QOpenSys/usr/bin/sh
                                           /opt/i2/TradeMatrix/5 0 1/link/OS400 450/.rl.sh
  I20WNER 6782 6770 0 12:46:38
                                  - 0:00 /00penSys/usr/bin/sh -i
  I20WNER 6812 6721 0 13:51:19
                                   - 0:00 rl engine as400 startup name i2
                                           as400 owner separator / +diagnostic
  I20WNER 6813 6782 0 13:51:21
                                   - 0:00 ps -ef
 Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 288. Using ps -ef from another display session to see the .rl.sh shell and Link server processes running

Notice that there are two processes running:

- One for the call to the .rl.sh shell script
- One where the Link server is running

This means that there are two separate processes to stop. There are three ways to end them:

• Use the System Request function key to end your locked display where you made the QP2SHELL call (PID 6721). This key varies with terminals, keyboards, and display emulators as explained on page 253.

Then you need to use the kill command from a PASE QP2TERM shell environment to end the Link server (PID 6812):

kill 6812

- Use the kill command to end both processes:
 - kill 6721 kill 6812
- The recommended way is to use the shutdown option available in the scp_batch client. The full syntax is:

scp_batch [host <hostname>] port <portnumber> batch 'shutdown("now")'

If you are on the same system as the Link server is running, you can omit the host parameter and use:

scp batch port <portnumber> batch 'shutdown("now")'

A benefit to using scp_batch is that it ends both processes for you at the same time.

After you end the Link server, you can use the ps command to verify that it ended. Figure 289 shows an example of ending the Link server using scp_batch and using ps -ef to verify this.

```
/QOpenSys/usr/bin/sh
 $
> ps -ef
      UID PID PPID C STIME TTY TIME CMD
  I2OWNER 6721 1 0 13:51:18 - 0:01 /QOpenSys/usr/bin/sh
                                         /opt/i2/TradeMatrix/5_0_1/link/0S400 450/.rl.sh
  I20WNER 6782 6770 0 12:46:38 - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 6812 6721 0 13:51:19 - 0:00 rl engine as400 startup name i2
                                          as400 owner separator / +diagnostic
  I2OWNER 6813 6782 0 13:51:21 - 0:00 ps -ef
 Ś
> scp_batch port 27333 batch 'shutdown("now")'
 Ś
> ps -ef
     UID PID PPID C STIME TTY TIME CMD
  I2OWNER 6782 6770 0 12:46:38 - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 6815 6782 0 13:52:17
                                  - 0:00 ps -ef
 Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 289. Using scp_batch to end the Link server and monitoring using ps -ef

To see the progress messages from the server after the server has ended, or to look for errors, you can use the Work with Spooled Files (WRKSPLF) command for the user that issued the call:

WRKSPLF SELECT (120WNER)

You then need to look for a spooled file called QPRINT. If the server is still running, this file is in an open (OPN) status and cannot be viewed. If the file is in a ready (RDY) status, then you can select option 5 to view the file.

Figure 290 shows an example of the contents of QPRINT after a Link server started and ended normally.

File : QPRINT	Pag Columns
	Columns
Control	
Find	
*+1+2+3+4+5+6+7	.+8
rl_engine version 5.0.1 of 01-01-08 [ASCII]	
Copyright 1995-2000 i2 Technologies, Inc.	
i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.	
Import: \$12_HOME/system	
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds.imp	
User [unspecified] path: ""	
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_parameters	.imp
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_properties	.imp
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure_base.imp	
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/meta_model.imp	
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/model_access.imp	
Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/user.imp	
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure_base.	dat usi
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure_base.	dat 45
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/model_access.	dat usi
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/model_access.	dat 14
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/meta_model.da	t using
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/meta_model.da	t 12 re
Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/user.dat using	g user
	More
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys	

Figure 290. Using WRKSPLF to view the contents of QPRINT after using a Link server

6.2.3 Automating Link servers using CL programs

The PASE QP2TERM shell environment is fine when you want to manually start and stop Link servers. However, most customers want to automate this process. This section shows you how to create CL programs to do this using QP2SHELL.

6.2.3.1 Starting the Link server

To start the Link server, follow these steps:

- 1. Create a startup shell script since Link requires multiple environment variables to be set before calling rl_engine. We use a modified version of the shipped .rl.sh one, or you can create a different one.
- 2. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the startup shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 291 shows an example program that you can use called LINK_START.

```
Columns . . . :
             1 80
                      Browse
                                                  12/12SOURCE
SEU==>
                                                  LINK START
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...
     0001.00
          PGM
0002.00
          MONMSG
                  MSGID(CPF0000)
0003.00
         CALL
                 PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' +
                    '/opt/i2/TradeMatrix/5_0_1/link/OS400_450/+
0004.00
0005.00
                    .rl.sh')
         ENDPGM
0006.00
     F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel
F16=Repeat find F24=More keys
           (C) COPYRIGHT IBM CORP. 1981, 1999.
```

Figure 291. Creating a CL program called LINK_START to start the Link server

3. After you create and compile the program, start the Link server by calling the program:

call i2/link_start

In our case, i2 was the name of the library in which the program was created, and LINK_START was the name of the program. An example is shown in Figure 292.

(MAIN	AS/400 Main Menu	Crash an	10
	Select one of the following:		System:	12
	 User tasks Office tasks General system tasks Files, libraries, and solutions Programming Communications Define or change the system tasks Problem handling Display a menu Information Assistant of Client Access/400 tasks Sign off 	olders ystem options		
	Selection or command ===> call i2/link_start			
	F3=Exit F4=Prompt F9=Retrie F23=Set initial menu	eve F12=Cancel	F13=Information Assist	ant

Figure 292. Starting the Link server from CL program LINK_START

4. As shown in 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265, this starts the Link server on the default port of 27333 as a foreground or interactive process. It locks your display session until it is ended.

Since your display session is locked, one way to verify that everything starts correctly is to bring up another display session, use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status). Or you can use the NETSTAT OPTION (*CNN) command and look for port 27333. Another way is to bring up another display session and use the ps command.

When you are ready to end the Link server, the recommended way is to use the shutdown option available with the scp_batch client:

scp_batch port 27333 batch 'shutdown("now")'

You can then use the ps -ef command to verify that it ended.

5. After you create the CL program to start the Link server, you can easily create another CL program to submit this as a batch job so an interactive session is not locked while the Link server is running.

Figure 293 shows an example program that you can use called STRLINKBCH.



Figure 293. Creating a CL program called STRLINKBCH to start the Link server as a batch job

Notice that we called the batch job LINK27333 so it would be easy to see which server was running and on which port it was running. We also used QBATCH for the job description and subsystem, but you could use another one.

6. After you create and compile the program, start the Link server by calling the program:

call i2/strlinkbch

In our case, *i2* was the name of the library in which the program was created and *STRLINKBCH* was the name of the program. An example is shown in Figure 294.

MAIN	AS/400 1	Main Menu	Creation:	
Select one of the follow:	ing:		System:	12
 User tasks Office tasks General system ta Files, libraries Programming Communications Define or change Problem handling Display a menu Information Assis Client Access/400 	asks and folders the system stant options) tasks			
90. Sign off				
Selection or command ===> call i2/strlinkbch				
F3=Exit F4=Prompt F9: F23=Set initial menu	-Retrieve F1	2=Cancel	F13=Information Ass	istant

Figure 294. Starting the Link server as a batch job from CL program STRLINKBCH

7. As shown in 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265, this starts the Link server on the default port 27333 as a foreground or interactive process. This time it does not lock your display session. You can use the NETSTAT OPTION (*CNN) command and look for port 27333. Or from another display session, use the ps command to verify that everything started correctly. You can also look at the submitted batch job using one of the following commands:

WRKSBMJOB SBMFROM(*USER) WRKSBSJOB SBS(QBATCH) WRKACTJOB SBS(QBATCH)

Figure 295 shows an example of using the WRKACTJOB SBS (QBATCH) command. Notice that there is one job for the startup shell script and one QP2FORK job where Link server (rl_engine executable) is running.

	Work with Active Jobs	I2
CPU %: .0 Elapsed	time: 00:00:00 Active jobs: 351	. 00
Type options, press Enter 2=Change 3=Hold 4=E 8=Work with spooled file	nd 5=Work with 6=Release 7=Display message s 13=Disconnect	
Opt Subsystem/Job User QBATCH QSYS LINK27333 I20WNER QP2FORK I20WNER	Type CPU % Function Status SBS .0 DEQW BCH .0 PGM-LINK_START THDW BCI .0 SELW	
Parameters or command	Bott	:om
 F3=Exit F5=Refresh F11=Display elapsed data	F7=FindF10=Restart statisticsF12=CancelF23=More optionsF24=More keys	

Figure 295. Using the WRKACTJOB command to check on the Link server running in QBATCH

8. When you are ready to end the Link server, we recommend you use the shutdown option available in the scp_batch client:

scp_batch port 27333 batch 'shutdown("now")'

You can then use the ps -ef command to verify that it ended. The jobs running in QBATCH also end automatically.

6.2.3.2 Shutting down the Link server

To shut down the Link server, follow these steps:

1. The recommended way to shut down the Link server is to use the shutdown option available in the scp_batch client. The full syntax is:

scp_batch [host <hostname>] port <portnumber> batch 'shutdown("now")'

If you are on the same system as the Link server is running, you can omit the host parameter and use:

scp batch port <portnumber> batch 'shutdown("now")'

We start the Link server on the default port of 27333, so our syntax is:

scp_batch port 27333 batch 'shutdown("now")'

A benefit to using scp_batch instead of manually ending processes with the kill command, or using the System Request function key if there is an interactive process, is that it ends all processes for you at the same time.

You could create a shell script to contain this scp_batch string (as shown in Figure 285 on page 265), or you can use QP2SHELL to issue it directly. This is what we show in this section.

 Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call scp_batch. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 296 shows an example program that you can use called LINK_END.

```
Columns . . . :
              1 80
                       Browse
                                                  12/12SOURCE
SEU==>
                                                    LINK END
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
     0001.00
               PGM
0002.00
               MONMSG
                       MSGID(CPF0000)
0003.00
               CALL
                        PGM(QP2SHELL) +
0004.00
                         PARM('/opt/i2/TradeMatrix/5 0 1/+
0005.00
                         link/OS400_450/scp_batch' 'PORT' +
                         '27333' 'BATCH' 'shutdown("now")')
0006.00
0007.00
               ENDPGM
     F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
                                               F12=Cancel
F16=Repeat find F24=More keys
            (C) COPYRIGHT IBM CORP. 1981, 1999.
```

Figure 296. Creating a CL program called LINK_END to end the Link server

3. After you create and compile the program, you can end the Link server by calling the program:

call i2/link_end

In our case, *i2* was the name of the library the program was created and *LINK_END* was the name of the program. An example is shown in Figure 297.

MAIN	AS/400 Main Mer	าน	
Solort one of the follo	uing.	System: I2	
Select one of the form	wind:		
1. User tasks			
2. Office tasks			
3. General system	lasks		
4. Files, librarie	s, and folders		
5. Programming			
7 Define or chang	the cyctem		
8 Problem handlin	r che system		
9. Display a menu			
10. Information Ass	istant options		
11. Client Access/4)0 tasks		
90. Sign off			
Selection or command			
===> call 12/link_end			
F3=Exit F4=Promot F	P=Retrieve F12=Cance	F13=Information Assistan	nt.
F23=Set initial menu			

Figure 297. Ending the Link server from a CL program called LINK_END

4. You can use the ps -ef command to verify that the Link server ended. Or, you can use a command, such as WRKACTJOB SBS (QBATCH), to verify that the jobs running in QBATCH ended if you started the Link server this way.
6.2.4 Running multiple Link servers

When you start a Link server, you can accept the default port number 27333, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Link servers on one system at the same time.

Figure 298 shows an example of using the EDTF command to add the -port parameter to the .rl.sh startup shell script to have the Link server start and run on port number 11000. You could create custom scripts for each port you want to start, or create a script where you pass in the port number as a parameter when calling the script.

```
Edit File: /opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh
Record . :
            1 of 18 by 10
                                                                 Column:
                                                                          1 of 101 by 126
Control :
**********Beginning of data***********
# LINK Environment Setup Script:
# /opt/i2/TradeMatrix/5 0 1/link/OS400 450/.rl.sh
# Generated by the LINK 5 0 1 Install.
# Changes in this file will effect the LINK setup, please do not alter
# unless instructed to do so by i2.
export LIBPATH=/opt/i2/TradeMatrix/5 0 1/link/OS400 450
I2 HOME=/opt/i2/TradeMatrix/5 0 1/link/OS400 450
export I2_HOME
I2 DATA=/opt/i2/TradeMatrix/5 0 1/link/OS400 450/models/rhythmlink
export I2 DATA
PATH=/opt/i2/TradeMatrix/5 0 1/link/OS400 450:\$PATH
export PATH
LD LIBRARY PATH=/opt/i2/TradeMatrix/5 0 1/link/OS400 450${LD LIBRARY PATH:+":"}${LD LIBRARY PATH:-""}
export LD LIBRARY PATH
rl engine as400 startup name i2 as400 owner separator / +diagnostic -port 11000
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change F19=Left
```

Figure 298. Using the EDTF command to change .rl.sh to start the Link server on a different port

To start Link using port 11000 after adding the -port parameter to rl_engine in the .rl.sh startup shell script, follow these steps:

- On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the cd command to change to the main Link directory:

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450/

3. Call the startup shell script .rl.sh:

.rl.sh

See the example in Figure 299.

```
/QOpenSys/usr/bin/sh
 > cd /opt/i2/TradeMatrix/5 0 1/link/OS400 450
   Ś
 > .rl.sh
   rl engine version 5.0.1 of 01-01-08 [ASCII]
  Copyright 1995-2000 i2 Technologies, Inc.
  i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat using measure base
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/measure base.dat 45 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat using model access
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/model access.dat 14 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat using meta model
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.dat 12 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat using user
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/user.dat 16 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat on
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.dat 197 records
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control_kinds.dat using control_kinds
  Reading file /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control kinds.dat 118 records
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat usin
  Reading file /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.dat 20 records
  RhythmLink Server handling requests from port 11000
  Warning: [Self Channel, User: I2OWNER] shutdown: now
 Warning: [TCP Server Channel: 5, User: I20WNER] quit: Batch client finished
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 299. Starting and stopping the Link server with a non-default port number

4. To shut down the Link server on port 11000, from another session, use the scp_batch client:

scp_batch port 11000 batch 'shutdown("now")'

Notice that the dollar sign (\$) character reappears after you use scp_batch. An example is shown in Figure 299.

6.2.5 Starting the Link client

Once a Link server is started on a port, you need to start the Link client from a PC. You can read how to install the client in 6.1.6, "Link client installation" on page 255.

To start the Link client, follow these steps:

- Start the Link client program from a PC by clicking Start-> Programs-> i2 TradeMatrix-> Link-> Client. If this is something you are going to start often, you may want to create a shortcut to this program and place it on your PC desktop.
- 2. Once you execute this program, the Link Connect window (Figure 300) appears where you need to specify:

- The host name (Host parameter) of the iSeries server where the Link server is running.
- The port number (Port parameter) of the Link server on the iSeries server (the default is 27333).

🥝 i2 TradeMatrix Li	nk - Connect	<u>_ ×</u>
Host:	j2	
Port	27222	
Foit.	12/333	
Connect	Cancel Options Help	

Figure 300. Link client Connect window

3. Click the **Connect** button to continue. If the connection from client to server is established, the main Link window (Figure 301) appears.

Data Users by Data Server	Details	
	Connection:	
	Data Server:	
	User Name:	
	Connection Dwner:	
	Test Connection	
Ince you have established a Data Server, you	must create a valid Data User for each data server. If authorization is required to	use a server, your Data
Iser also lets you connect to the server without nenu or right-click the mouse to create a Data	having to provide your authorized user name and password every time you want Jser.	to use it. Use the Edit

Figure 301. Link client window after successful connection to a server

At this point, your Link environment is up and running. See 6.3, "Using the Link client to access flat files" on page 282, 6.4, "Using the Link client to access SQL data using SequeLink" on page 294, and 6.5, "Using the Link client to access SQL data using CLI" on page 306, for the steps to access data on an iSeries server.

If there is a problem connecting to the Link server (for example, you specified an incorrect host name or there isn't a server running on the port specified), a Connect Failed window appears like the example in Figure 302. Then follow these steps:

- 1. Stop the Link client by clicking the **OK** button.
- 2. Verify the information provided in the Link Connect display (Figure 300).
- 3. Start the server if necessary as described in 6.2.1, "Using QP2TERM to start and stop the Link server" on page 258, or 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265.
- 4. Start the client again.

In addition, you may be able to analyze Link client log files for additional information, as is described in 6.2.6.2, "Link client log file" on page 280.

Connect I	Failed 🔀
⚠	Connect Failed. Invalid Host or Port number.
	ОК

Figure 302. Link client Connect Failed window

6.2.6 Server and client logging considerations

If you have problems running a Link server, it can be helpful to create and analyze log files of Link server and Link client activity. These log files record detailed activity data and error messages. This section explains how to work with log files both on the server and on the client.

6.2.6.1 Link server log file

Link server activity displays on your panel if you start Link with the PASE QP2TERM shell. The diagnostic parameter on the rl_engine executable adds additional information. If you encounter problems involving the Link server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

A log file is maintained by the Link server by using the log_file parameter on rl_engine and specifying the name of an existing log file:

rl_engine as400_startup_name i2 as400_owner_separator / +diagnostic -log_file
/link_log/log.dat

Before you can use the log_file parameter, you have to manually create the log file. If you don't, the next time you start the server, you see the error message Error: Can't open log_file: /link_log/log.dat. This does not affect Link server operation, but you do not end up with a log file or any logging information.

To create and view a Link server log file, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the mkdir command to create the directory for the log file if you want to use one that does not already exist:

mkdir /link_log

3. Use the touch command to create the log file:

touch /link_log/log.dat

Figure 303 shows an example of steps two and three.

/QOpenSys/usr/bin/sh
<pre>\$ > mkdir /link_log \$ > touch /link_log/log.dat \$ </pre>
==>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 303. Creating the Link server log file /link_log/log.dat

4. Add the log_file parameter to the rl_engine executable, pointing to the log file you created:

rl engine +log file /link log/log.dat

We use the .rl.sh startup shell script to start Link, so you can use the EDTF command to modify it:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh')

Press the F3 function key twice to save and exit.

5. Start the Link server. As soon as it starts, your file is updated. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view the log file:

cat /link_log/log.dat

An example is shown in Figure 304.

```
/QOpenSys/usr/bin/sh
  Ŝ
> cat /link log/log.dat
  rl_engine version 5.0.1 of 01-01-08 [ASCII]
  Copyright 1995-2000 i2 Technologies, Inc.
  i2 TradeMatrix Link is a registered trademark of i2 Technologies, Inc.
  Import: $12_HOME/system
  Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/control kinds.imp
  User [unspecified] path: ""
  Reading /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control parameters.im
  Reading /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/control properties.imp
  Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/measure base.imp
  Reading /opt/i2/TradeMatrix/5 0 1/link/OS400 450/system/meta model.imp
  Reading /opt/i2/TradeMatrix/5_0_1/link/OS400_450/system/model access.imp
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 304. Displaying the contents of the Link server log file /link_log/log.dat using cat

If you look in the /link_log directory, notice that the last or previous version of the log file is stored as *log.dat*~. This is handy when you want to compare examples of working and non-working Link servers, such as when you start having problems with the server but didn't have any problems the last time it started.

6.2.6.2 Link client log file

If you have trouble connecting the Link client to a server or if i2 Customer Support requests additional information, you can create and analyze a log file of Link client activity. To create a Link client log file, follow these steps:

1. Bring up the Link client Connect window (shown in Figure 300 on page 277). Click the **Options** button to open the Options dialog box (Figure 305).

e	2 Options			X
	Connection	General]	
	I Enable Logging: I Verbose Messages:			
	Connection Timeout:	30	Seconds	
	Request Timeout:	20	Minutes	
	ОК	Cancel	Help	

Figure 305. Link client Options window

- 2. On the **Connection** tab, select the options you want. The two that you are interested in for logging are:
 - Enable Logging: This produces a log, named rlclient.log, of Link client activity and detailed error messages. Depending on your PC operating system, the log file may be in the C:\WINDOWS\temp or C:\Documents and Settings\<username>\Local Settings\Temp directory. A backup version of the log is stored as rlclient.old in the same directory.
 - Verbose Messages: This forces on-screen messages to display in full detail.

In the *Connection Timeout* box, you can enter the time in seconds that Link attempts to establish a connection between the Link client and the Link server before giving up and displaying a message. The default timeout is 30 seconds. This setting does not affect timeouts between the Link server and a data server (such as a Supply Chain Planner server).

In the *Request Timeout* box, you can enter the time in minutes that a Link client request waits for a response from the Link server before giving up and displaying a message. The default timeout is one minute, which is the minimum value. This setting does not affect timeouts between the Link server and a data server (such as a Supply Chain Planner server).

The example in Figure 306 shows the contents of the rlclient.log file after the client fails to connect to a Link server running on port number 20000. In this case, there was no Link server on that port running on the system specified. The recovery is to start a Link server with port number 20000 and try to connect the client again.

📋 rlclient.log - WordPad	×
File Edit View Insert Format Help	
k<< ADL instance: DLL connection, Time: Tue Feb 27 16:07:35 2001	
Error: Couldn't connect to server on port 20000 after 15 seconds From: ADL Base API	
Error: Unable to connect to Rhythm engine on port 20000 From: ADL_Base API	
<<< ADL instance: DLL connection, Time: Tue Feb 27 16:07:35 2001	
Error: Couldn't connect to server on port 20000 after 15 seconds From: ADL_Base API	
Error: Unable to connect to Rhythm engine on port 20000 From: ADL Base API	
_	
For Help, press F1	1

Figure 306. Displaying the Link client log file rlclient.log using WordPad

6.3 Using the Link client to access flat files

This section explains how to use the Link client to extract data from a flat file on the iSeries server in the IFS. Another name for a flat file is a *stream file*. In a production environment, you may need to access planning or modeling data that could reside in a flat file.

The steps are summarized here:

- 1. Create or identify the flat file to be accessed.
- 2. Add a data server.
- 3. Add a data user.
- 4. Test the connection.
- 5. Add a catalog.
- 6. Create a table definition.
- 7. View the data.

To access flat files using the Link client, follow these steps:

- 1. Create a simple flat file in the PASE environment using the comma (,) character as a delimiter:
 - a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the Link directory (or any directory where you want the sample flat file):

cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450

c. Use the echo command to create the flat file with four fields:

echo field1,field2,field3,field4 > flatfile.txt

We also used the $_{\mbox{cat}}$ command to view the contents of the flat file after it was created:

cat flatfile.txt

Figure 307 shows an example of this.

```
/QOpenSys/usr/bin/sh
$
> cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450
$
> echo field1,field2,field3,field4 > flatfile.txt
$
> cat flatfile.txt
field1,field2,field3,field4
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 307. Using the echo command in a PASE QP2TERM shell to create a file with four fields

- 2. At this point, start a Link server on the iSeries server if one is not already running. This is explained in 6.2.1, "Using QP2TERM to start and stop the Link server" on page 258, 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265, and 6.2.3, "Automating Link servers using CL programs" on page 269.
- 3. From a PC, start the Link client and connect to a server as explained in 6.2.5, "Starting the Link client" on page 276. After the Link main window appears, create a data server. There are two ways to create a data server:
 - With your cursor almost anywhere in the Data Servers tab window: Right-click and click **Data Servers-> Add**. Figure 308 shows an example.
 - From the menu bar at the top, click Edit-> Data Servers-> Add.

Data Servers → Add Data User: Data Users → Add Data User: Data User: Data User: Add	Variables Table Formal Details Connection: Data Server: User Name: Connection Owner:	Is Messaging	
Once you have established a Data Server, you must create a valid Data Use User also lets you connect to the server without having to provide your autho menu or right-click the mouse to create a Data User.	r for each data server. If aut rized user name and passw	horization is required to us ord every time you want to Host: b2b400	e a server, your Data ouse it. Use the Edit

Figure 308. Adding a data server

A data server can provide access to:

- A database
- An ODBC data source
- A flat file
- A business application (for example, Demand Planner, Factory Planner, Supply Chain Planner, an i2 messaging server, or an ERP system)

In this case, we access a flat file that doesn't require the use of any middleware.

The Data Server Information window (Figure 309) appears.

@Data Server Informat	ion X
Server Name:	
Middleware:	CORBA
Host:	
Port	
	Retry Connection Listeners >>
OK	Cancel Help

Figure 309. Data Server Information window

Follow these steps:

- a. Type a meaningful Server Name to identify the data server. We use Flat File Server in our example. Two different servers should not have the same name within Link.
- b. From the Middleware drop-down list, select the middleware or connection protocol, which is **FLATFILE** in our case. Notice that the Host and Port options disappear.

The Data Server Information window now appears as shown in Figure 310. Click the **OK** button to return to the Data Servers tab window.

Server Name	: Flat File Server		
Middleware	ELATFILE	•	
	Data Connection	L. C. Lawrence	
	neuy connection	Listeneis >>	

Figure 310. Data Server Information window when accessing a flat file (no middleware)

4. Create a data user by right-clicking the flat file data server that you created. Click **Data Users-> Add** as shown in Figure 311.

ta Users by Data Server Data Server Data Users Data Users Add Delete Edit	Details Server Name: Flat File Server Middleware: FLATFILE
	Test Connection
nce you have established a Data Server, you must create a valid Data U ser also lets you connect to the server without having to provide your aut enu or right-click the mouse to create a Data User.	er for each data server. If authorization is required to use a server, your Data orized user name and password every time you want to use it. Use the Edit

Figure 311. Adding data users to the flat file data server

The Data User Information window appears. Complete the following fields:

- a. Type a meaningful Connection name to identify the data user. We used Flat File User in our example.
- b. Make sure that the data server is the one you created. In our example, it is called Flat file Server. If it is not correct, use the drop-down list to find and select the correct one.
- c. The User Name and Password fields may be left blank.

The Data User Information window should appear as shown in Figure 312. Click the **OK** button to return to the Data Servers tab window.

Data User Information			×
Company			_
Connection:			
Data Server:	Flat File Server		<u> </u>
Oser Name:	I		- 1
Connection Owner:	, 	vau/2006	_
	1	A292300	
ОК	Cancel	Help	

Figure 312. Data User Information window for a Flat File User

5. After you create the data server and data user, click the **Test Connection** button to test the connection. You see a window similar to the example in Figure 313. This is not an error message, but an indication that your data user is valid. Click the **OK** button to close the window.

Test Con	nection Status
٩	Error: Command compile_status with message: Data_User Flat File User is valid From: ADL_Base API
	ОК

Figure 313. Test Connection Status window

 Select the Catalogs tab located next to the Data Servers tab. Right-click SERVER in the Catalogs area and then click Catalogs-> Add as shown in Figure 314.

From the menu bar at the top, you can also click Edit-> Catalogs-> Add.

PROCEDURE SERVER USER Catalogs Add	Catalog Name:	
Edit	Table Type: Table Name:	
	Table Defi	nition
	Data Vie Refresh Ca	ver italog

Figure 314. Adding a server catalog

You must create at least one server catalog for each data server you use. You can create multiple server catalogs, for example, if you want to access different directories.

The Data Catalog Information window appears. Complete the following fields:

- a. Type a meaningful Catalog Name to identify the catalog. We use Flat File Catalog in our example.
- b. The Catalog Type radio button defaults to the type of the currently selected catalog. Make sure that **SERVER** is selected.

- c. The Server Name field is the name of the data server you created. In our example, it is called Flat File Server. If it is not correct, use the drop-down list to find and select the correct one.
- d. Type a valid qualifier name in the Qualifier field. This is the directory structure where Link starts when showing objects. For example, you could use the forward slash (/) character to indicate the root directory. Since we created flatfile.txt in the Link directory, we enter /opt/i2/TradeMatrix/5_0_1/link/OS400_450.
- e. You can leave the Database User Name and Package fields blank.

The Data Catalog Information window should appear like the example in Figure 315. Click the **OK** button to return to the Catalogs tab window.

🖉 Data Catalog Information	×
Catalog Name:	Flat File Catalog
Catalog Type:	C USER
	SERVER PROCEDURE
Server Name:	Flat File Server
Qualifier:	/opt/i2/tradematrix/5_0_1/link/os400
Database User Name:	
Package:	
OK	Cancel Help

Figure 315. Flat file Data Catalog Information window

7. Under the Catalogs tab shown in Figure 316, you now see the catalog you created called Flat File Catalog.

alles 	Catalog Name: Flat File Catalog Table Type:
	Table Definition Data Viewer Refresh Catalog
i2 TradeMatrix Link, you work with data in table format, with). The tables allow you to transform and integrate data, and e Table Definition button to review column information, or cliu	rows (records) and columns (fields) of information (such as name, price, volume, and so communicate the data from a source to a destination. Once you have created a table, clic sk the Data Viewer button to view the contents of the table.

Figure 316. Flat File Catalog

Click the plus sign (+) next to the catalog you created to view the files in the Flat File Catalog. You will a window similar to the example in Figure 317. In our case, it shows the contents of the Link directory /opt/i2/TradeMatrix/5_0_1/link/OS400_450.

PROCEDURE SERVER Elst File Catalog	Catalog Name: Flat File Catalog
Eler Ele Catalog	
	Table Type: FLATFILE
flatfile.txt	
JDPA.jar	Table Name: flatfile.txt
ibDPA.a	
liborb.a	Table Definition
ibxerces-c1_0.a	
rhythmlink.jar	Data Viewer
rl_engine_odbc	Refresh Catalog
rl_engine_oracle	
I lengine_oracieo	
rl_oracle8	
rL_sap 👘 🚽	

Figure 317. Flat File Catalog showing the contents of the Link directory

8. Click the file **flatfile.txt** to highlight it. Then click the **Table Definition** button. The Physical Table Information window (Figure 318) appears.

Physical Table Information flatfile.txt	
Table Name: flatfile.txt Catalog Name: Flat File Catalog Table Type: FLATFILE	
Key Column Name Internal Data Type Native Data Type Length Description	
Column Information Foreign Keys	
ОК Ныр	

Figure 318. Physical Table Information window for flatfile.txt showing no field definitions

9. Notice that no metadata or field definitions exist yet. Click the **OK** button to return to the Catalogs window and then click the **Data Viewer** button. You see

an error message like the example in Figure 319. Notice the line in the error window that says Error: No columns defined for table flatfile.txt. This is an indication that no metadata or field definitions are defined.

Error X
Error Communicating with the 12 TradeMatrix Link Engine. Error: Command compile_status with message: Error: No columns defined for table flatfile.txt From: File: /opt/12/TradeMatrix/5_0_1/link/O5400_450/reports/rl_win_ui/rl_data.wrk, Cell: A3 From: expression: display_report("rl_data", "Flat File Catalog","flatfile.txt",0) While executing: A3 rec = if (recmode == 0, table.records, (if(recmode == 1, table.valid_records, (if(recmode == 2, table.invalid_records, table.records))))) Error: No columns defined for table flatfile.txt From: File: /opt/12/TradeMatrix/5_0_1/link/O5400_450/reports/rl_win_ui/rl_data.wrk, Cell: B1 From: expression: display_report("rl_data", "Flat File Catalog","flatfile.txt",0) While executing: B1 field = table.fields From: ADL_Base API Error: Mable to gen report with OIL expression: display_report("rl_data", "Flat File Catalog","flatfile.txt",0)
OK

Figure 319. Error window showing no metadata or field definitions

10.Click the file **flatfile.txt** to highlight it. Then, right-click and click **Tables-> Edit** as shown in Figure 320.

Tables PROCEDURE Flat File Catalog Flat File Catalogs Flat File Catalogs COPYRIGHT core Mathietx JDPA, jar Catalogs Add Copy Delete Biberces-c1_0.a Hothmink, jar I.engine_oracle I.engine_oracle I.engine_oracle I.engine_stripped I.sap	Details Catalog Name: Flat File Catalog Table Type: FLATFILE Table Name: Flatfile txt Table Definition Table Definition Refresh Catalog	
In i2 TradeMatrix Link, you work with data in table format, with rows (records on). The tables allow you to transform and integrate data, and communicate the Table Definition button to review column information, or click the Data Vi	and columns (fields) of information (such as name, price, volume, an the data from a source to a destination. Once you have created a tal ewer button to view the contents of the table.	d so ile, click

Figure 320. Using the Catalogs tab to edit flatfile.txt

The Flat File Table window (Figure 321) appears.

t File Table				į
Catalog Name:	Flat file catalog	Field Delimi	ter: <tab></tab>	
Table Name:	flatfile.txt	Comment Indical	tor: #	
Line Delimiter:	KNEW_LINE>	Record Si	ze: 0	
File Name:	/opt/i2/tradematrix/5_0_	_1/link/os400_450/fla	atfile.txt]
	Irim Trailing Spaces Empty Number Strings	s As Null		
Add Column	Edit Column	Delete Column		• •
Column Name	Data Type Length		Description	Primary Key
				F
Colum	n Information		Validation Expression:	\$

Figure 321. Flat File Table window

- 11.From the Flat File Table window, click the **Add Column** button. The Column Information window appears. Complete the fields as explained here:
 - a. Type a meaningful Column Name to identify the column. We use COL1 in our example.
 - b. You can leave the Data Type, Length, and Description fields at their defaults. The Primary Key box is left deselected for our example.

The Column Information window should appear as shown in Figure 322. Click the **OK** button to return to the Flat File Table window.

Column Information	×
Column Name:	Col1
Data Type:	String
Length:	0
Description:	
	Frimary Key
ОК	Cancel Help

Figure 322. Column Information window for Col1

- 12. You need to add a column for the number of fields in the flat file. Since our file flatfile.txt has four fields, we did this four times.
- 13.After the columns are defined, change the Field Delimiter field since the default is <TAB> for tab characters. We used the comma (,) character to delimit our fields. You can either type the delimiter or select one from the drop-down list. We used the drop-down list and selected the comma. You now have a table definition like the example shown in Figure 323.

Flat File Table				×
Catalog Name: Flat	File Catalog 📃	Field Delimiter:	•	
Table Name: flatfil	e.txt	Comment Indicator: 🛛	ŧ	
Line Delimiter: <a> 	w_LINE>	Record Size:)	
File Name: 70pt	/i2/tradematrix/5_0_1/linl	k/os400_450/flatfile.ti	«t	
I⊽ T I⊤ E	rim Trailing Spaces mpty Number Strings As M	Null		
Add Column	Edit Column	Delete Column	Ŀ	▲ ▼
Column Name	Data Type	Length	Description	Primary Key
iol2 iol3	String String String			
ol4	String	0		
				•
Column Info	rmation		Validation Expressions	
	OK	Cancel H	Help	

Figure 323. Flat File Table window showing column definitions

- 14.Once the columns are defined and the field delimiter is set, click **OK** to return to the Catalogs tab.
- 15.Click the file **flatfile.txt** to highlight it, and then click the **Data Viewer** button. You see the Table Data window as shown in Figure 324.

🥙 Table Data	Catalog Name: I	lat File Catalog	Table Name: flatf	ile.txt		×
All Records		C Valid Records	s Only	🔘 Invalid F	Records	
					Record: 11 of 1	_
Col1 field1	Col2 field2	Col3 field3	Col4 field4			-11
					•	
		1				
	<<	>>>	OK	H	elp	

Figure 324. Table Data window for flatfile.txt

This window shows the same data (field1 field2 field3 field4) that the cat command showed after we created the flatfile.txt file. This is shown in Figure 307 on page 283. This indicates that you successfully created a flat file connection using Link.

6.4 Using the Link client to access SQL data using SequeLink

This section explains how to integrate Link with the Merant SequeLink product. It also explains, using Link, how to extract data from an iSeries server SQL table using ODBC support provided through SequeLink. In a production environment, you may need to access planning or modeling data that could reside in an SQL table.

The steps are summarized here:

- 1. Update the Link startup shell script with SequeLink environment variables.
- 2. View data in an SQL table using iSeries interactive SQL support.
- 3. Add a data server.
- 4. Add a data user.
- 5. Test the connection.
- 6. Add a catalog.
- 7. View the data.

To access SQL data using the Link client with SequeLink, follow these steps:

1. When the SequeLink Client product is installed, as explained in 8.2.1, "Installing the SequeLink Client" on page 369, a hidden file called .sqlnk.sh is created in the /sqlnk45/4_51_00 directory. This contains environment variable information that needs to be added to the Link startup shell script for Link to use a SequeLink ODBC data source. We use the .rl.sh startup shell script to start the Link server. Therefore, you must add the SequeLink information to it. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell to view the contents of the SequeLink .sqlnk.sh file:

EDTF STMF('/sqlnk45/4_51_00/.sqlnk.sh')

An example is shown in Figure 325.



Figure 325. Using EDTF to view the .sqlnk.sh file showing SequeLink environment variables

 Manually copy or add these lines to the Link startup shell script .rl.sh. We used the copy and paste functions of the IBM Personal Communications 5250 emulator to copy the text from .sqlnk.sh, edit the .rl.sh file, using the EDTF command, and then paste the text from .sqlnk.sh into it:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh')

An example is shown in Figure 326.





This information can go anywhere before the call to rl_engine. Press the F3 function key twice to save and exit.

- 3. Start a Link server using the updated .rl.sh startup shell script. You can find this information in 6.2.1, "Using QP2TERM to start and stop the Link server" on page 258, 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265, or 6.2.3, "Automating Link servers using CL programs" on page 269.
- 4. The SQL table that we use is called ADW_CTRL. It resides on the iSeries server in an SQL collection called ADW50, which is a part of the i2 TradeMatrix Active Data Warehouse product. We expect that you have installed and configured Active Data Warehouse as documented in Chapter 3, "i2 TradeMatrix Active Data Warehouse" on page 49. You can use any SQL table with data instead of the one we use.

One way to look at an SQL table is to use the Start SQL Interactive Session (STRSQL) command, which is a part of the Licensed Program Product DB2 Query Manager and SQL Development Kit for AS/400 (5769-ST1).

To look at an SQL table using STRSQL, follow these steps:

- a. Issue the Start SQL Interactive Session (STRSQL) command from an OS/400 command line.
- b. This brings up an interactive SQL session where you can enter SQL statements. While in the interactive SQL session, type the following SQL statement:

SELECT * FROM ADW50/ADW_CTRL

An example is shown in Figure 327.

	Enter SQL	Statements
Type SQL statement, p Current connecti ===> select * from	oress Enter. on is to relation a adw50/adw_ctr	al database I2. 1
F3=Exit F4=Prompt F12=Cancel	F6=Insert line F13=Services	F9=Retrieve F10=Copy line F24=More keys (C) COPYRIGHT IBM CORP. 1982, 2000.

Figure 327. Using interactive SQL to select all records from the ADW50/ADW_CTRL table

c. Press Enter to run the SQL statement. You see the Display Data panel like the example in Figure 328.

	Displ	ay Data		
Position to line . +l+ ctrl_id sr 0 AD ******** End of da	 2+3+ c_name ver_nam W 5.0 ta *******	Da Shift .4+5+ e ver_descr ADW Release	ta width to column 6+	: .7+8
F3=Exit F12=Ca	ncel F19=Left	F20=Right	F21=Split	Bottom F22=Widt

Figure 328. Result of the SQL select statement for the ADW50/ADW_CTRL table

You can see that there is only one record in the table. We compare this later with the results when data is accessed using the Link client through a SequeLink ODBC connection. Press the F3 function key twice and then press Enter to exit the interactive SQL session.

- 5. From a PC, start the Link client and connect to a server as explained in 6.2.5, "Starting the Link client" on page 276. After the Link main window appears, create a data server. There are two ways to create a data server:
 - With your cursor almost anywhere in the Data Servers tab window, right-click and select Data Servers-> Add as shown in Figure 329.
 - From the menu bar at the top, click Edit-> Data Servers-> Add.

User Name: Connection Owner:	
Test Connection	

Figure 329. Adding a data server

As stated earlier, a data server can provide access to:

- A database
- An ODBC data source
- A flat file
- A business application (for example, Demand Planner, Factory Planner, Supply Chain Planner, an i2 messaging server, or an ERP system)

In this case, we access an ODBC data source using SequeLink middleware.

- Note -

Before you can use ODBC support in Link, you must use the SequeLink sqlnkcau utility to create an ODBC data source, update the .odbc.ini file with information about this data source, and then update the

as400_startup_name parameter on rl_engine with the name of it (in our example, it is called i2).

SequeLink is described in Chapter 8, "Merant SequeLink Client and Server" on page 367. If you do not complete these tasks, then Link cannot access any data using ODBC.

The Data Server Information window (Figure 330) appears.

@Data Server Informat	ion X
Server Name:	
Middleware:	CORBA
Host:	
Port:	
	Retry Connection Listeners >>
ОК	Cancel Help

Figure 330. Data Server Information window

Complete the fields as explained here:

- a. Type a meaningful Server Name to identify the data server. We used ODBC server in our example. Two different servers should not have the same name within Link.
- b. From the Middleware drop-down list, select the middleware or connection protocol, which is **ODBC** in our case. Notice that the Host and Port options disappear and are replaced with a Database option.
- c. Select the name of the ODBC data source that you created with the SequeLink Client sqlnkcau utility from the drop-down list. In our example, it is called **i2**.

The Data Server Information window should now look like the example in Figure 331. Click **OK** to return to the Data Servers tab window.

🖉 Data Server Informati	on	×
Server Name:	ODBC Server	
Middleware:	ODBC	•
Database:	2	•
	Retry Connection	Listeners >>
OK.	Cancel	Help

Figure 331. Data Server Information window when using SequeLink ODBC middleware

6. Create a data user by right-clicking the ODBC server that you created. Click **Data Users-> Add** as shown in Figure 332.

eneellene	bu Data Serv	or	· ·)etaile		, , , , , , , , , , , , , , , , , , , ,	
	DBC Server				_ `	Clairs			
		Data Servers	Add			Server N	lame:	ODBC Server	
		Data Osers	Delete Edit			Middle	ware:	ODBC	_
								Test Connection	1
									,
) nce you h Jser also le	ave establish ts vou connec	ed a Data Server, j ct to the server with	vou must crea nout having to	ate a v alid D provide vo	ata User fo ur authoriz	or each data se ed user name	erver. I and pa	If authorization is required to use a ser assword every time you want to use it.	rver, your Data Use the Edit
ince you n Iser also le nenu or righ	ave establish ts you connec nt-click the mo	ed a Data Server, j ct to the server with ouse to create a Da	vou must crea nout having to ata User.	o provide yo	ur authoriz	ed user name -	and pa	r authorization is required to use a sei assword every time you want to use it.	Use the Edit

Figure 332. Adding data users to the ODBC data server

The Data User Information window appears. Complete these fields:

- a. Type a meaningful Connection name to identify the data user. We used ODBC User in our example.
- b. Make sure that the Data Server is the one you created. In our example, it is called **ODBC Server**. If it is not correct, use the drop-down list to find and select the correct one.
- c. Leave the User Name and Password fields blank.

The Data User Information window now looks like the example shown in Figure 333. Click **OK** to return to the Data Servers tab window.

Data User Information	×
Connection:	ODBC User
Data Server:	ODBC Server
User Name:	
Password:	
Connection Owner:	xzy2986
ОК	Cancel Help

Figure 333. Data User Information window for an ODBC User

 After you create the data server and data user, click the Test Connection button to test the connection. You see the Test Connection Status window (Figure 334). This is not an error message, but an indication that your data user is valid. Click OK to close the window.

Test Conr	nection Status	
٩	Error: Command compile_status with message: Data_User ODBC User is valid From: ADL_Base API	
	OK	

Figure 334. Test Connection Status window

 Select the Catalogs tab located next to the Data Servers tab. Right-click SERVER in the Catalogs area and then click Catalogs-> Add as shown in Figure 335. From the menu bar at the top, you can also click Edit-> Catalogs-> Add.

	Catalog Name:
USER Catalogs > Add Tables > Delete Edit,	Table Type:
	Table Name:
	Table Definition
	Data Viewer
	Refresh Catalog
i2 TradeMatrix Link, you work with data in table format, with ro	ws (records) and columns (fields) of information (such as name, price, volume, and so

Figure 335. Adding a server catalog

You must create at least one server catalog for each data server you use. You can create multiple server catalogs, for example, if you want to use data sources that are owned by different users, provided you have access permission to each server, or if you want to access different SQL collections.

The Data Catalog Information window appears. Complete the fields as explained here:

- a. Type a meaningful Catalog Name to identify the catalog. We use ODBC Catalog in our example.
- b. The Catalog Type radio button defaults to the type of the currently selected catalog. Make sure that **SERVER** is selected.
- c. The Server Name field is the name of the data server you created. In our example, it is called **ODBC Server**. If it is not correct, use the drop-down list to find and select the correct one.
- d. The Database User Name field is the name of the SQL collection or library that contains the SQL table or tables you want to access. In our example, we use the Active Data Warehouse collection called ADW50 that was installed and configured as described in 3.1.7, "Active Data Warehouse collection content verification" on page 66. If it is not correct, use the drop-down list to find and select the correct one.
- e. Leave the Qualifier and Package fields blank.

The Data Catalog Information window now looks like the example shown in Figure 336. Click **OK** to return to the Catalogs tab window.

@Data Catalog Information	×	
Catalog Name:	ODBC Catalog	
Catalog Type:	C USER	
	SERVER PROCEDURE	
Server Name:		
Qualifier		
Database User Name:	ADW50	
Package:		
ОК	Cancel Help	

Figure 336. ODBC Data Catalog Information window

9. You see the catalog you created (in Figure 337) called "ODBC Catalog".

🖓 i2 TradeMatrix Link			_ I ×
File Edit Tools Help			
Data Servers Catalogs Stored Procedures Alerts Events Copy Maps	'ariables Table Fo	rmats Messaging	
Tables	stails		
	Catalog Name:	ODBC Catalog	
	Table Type:		-
	Table Name:		
		Table Definition	
		Data Viewer	
		Refresh Catalog	
In i2 TradeMatrix Link, you work with data in table format, with rows (records) and	l columns (fields) of i	information (such as name, price, v	olume, and so
the Table Definition button to review column information, or click the Data Viewe	button to view the	contents of the table.	aleu a lable, click
		Host: b2b400	Port: 27333

Figure 337. ODBC Catalog window

Click the plus sign (+) next to the catalog you created to view the tables in the ODBC Catalog. You see a window similar to the example in Figure 338, which in our case, shows all tables in the ADW50 SQL collection. This could take a

while depending on your iSeries server resources because there are a lot of tables in an Active Data Warehouse SQL collection. To see iSeries server activity while this information is being retrieved, you can use the Work with Active Jobs (WRKACTJOB) command to look at the QSYSWRK subsystem and the job SSTCPNONE:

PROCEDURE	
E	Catalog Name: ODBC Catalog
	Table Type: PHYSICAL
	Table Name: ADW_CTRL
	Table Definition
ADW_H_TABLE_DEF_H	Data Viewer
	Refresh Catalog
ADW_NET_CHG	
ADW_NET_CHG_DEF	

WRKACTJOB SBS (QSYSWRK)

Figure 338. ODBC Catalog tables in the ADW50 SQL collection

10.Click the table **ADW_CTRL** to highlight it. Then click the **Table Definition** button. You see the Physical Table Information window (Figure 339). Click the **OK** button when you are done.

Physical Table Information ADW_CTRL	
Table Type: PHYSICAL Catalog Name: JUDBL Catalog	
Key Column Name Internal Data Type Native Data Type Length Description X CTRL_D Integer INTEGER 4 SRC_NAME Computed_String CHAR 40 VER_NAME Computed_String CHAR 40 VER_DESCR Computed_String VARCHAR 200	
Column Information Foreign Keys	
ОК Нер	

Figure 339. Physical Table Information window showing field definitions for ADW_CTRL

11.Click the table **ADW_CTRL** to highlight it and then click the **Data Viewer** button. The Table Data window (Figure 340) opens.

🥙 Table Data Catalog	Name: sds Tabl	e Name: ADW_CT	RL	_ 🗆 🗙
 All Records 	C Valid	Records Only	O Invalio	l Records
				Record: 11 of 1
CTRL_ID SRC	NAME	VER_NAME	VER_DESCR	
		0.0	IND W Helease	- 1
<<	>>		OK	Help

Figure 340. Table Data window for ADW_CTRL

This window shows the same data that was returned from the SQL select statement <code>SELECT * FROM ADW50/ADW_CTRL</code> and is shown in Figure 328 on page 297. This indicates that you successfully created an ODBC connection using Link with SequeLink middleware.

6.5 Using the Link client to access SQL data using CLI

Starting with OS/400 V5R1M0 and i2 Five.Two, Link can use the DB2 Universal Database for iSeries server SQL Call Level Interface (CLI) or native ODBC support to access data. DB2 CLI is a callable SQL programming interface that is supported in all DB2 environments except for DB2 for MVS and DB2 for VSE and VM. A callable SQL interface is a WinSock Application Program Interface (API) for database access that uses function calls to start dynamic SQL statements.

DB2 CLI is an alternative to embedded dynamic SQL (or using an ODBC product like Merant SequeLink). The important difference between embedded dynamic SQL and DB2 CLI is how the SQL statements are started. On the iSeries server, this interface is available to any of the ILE languages and in PASE. DB2 CLI provides full Level 1 Microsoft ODBC support, plus many Level 2 functions.

This section explains how to use i2 Five.Two Link with CLI to extract data from an iSeries server SQL table. In a production environment, you may need to access planning or modeling data that could reside in an SQL table.

The steps are summarized here:

- 1. Add a data server.
- 2. Add a data user.
- 3. Test the connection.
- 4. Add a catalog.
- 5. View the data.

To access SQL data using the Link client with CLI, follow these steps:

- Start a Link server using a startup shell script such as .rl.sh that is used in this chapter. You do not need to set any special environment variables or specify rl_engine parameters when CLI is going to be used. You can find the steps to start Link in 6.2.1, "Using QP2TERM to start and stop the Link server" on page 258, in 6.2.2, "Using QP2SHELL to start and stop the Link server" on page 265, or 6.2.3, "Automating Link servers using CL programs" on page 269.
- 2. The SQL table that we use is called ADW_CTRL. It resides on the iSeries server in an SQL collection called ADW52, which is a part of the Active Data Warehouse product. We expect that you have installed and configured Active Data Warehouse as described in Chapter 3, "i2 TradeMatrix Active Data Warehouse" on page 49, or Chapter 10, "i2 Five.Two Active Data Warehouse" on page 435. Any SQL table with data can be used instead of the one we used.

One way to look at an SQL table is to use the Start SQL Interactive Session (STRSQL) command, which is a part of the Licensed Program Product DB2 Query Manager and SQL Development Kit for iSeries (5722-ST1).

To look at an SQL table using STRSQL, follow these steps:

- a. Issue the Start SQL Interactive Session (STRSQL) command from an OS/400 command line.
- b. This brings up an interactive SQL session where you can enter SQL statements. While in the interactive SQL session, type the following SQL statement:

SELECT * FROM ADW52/ADW CTRL

The Enter SQL Statements panel is shown in Figure 341.

ſ		Enter SQI	5 Statements
	Type SQL statement, p Current connecti ===> select * from	press Enter. on is to relation adw52/adw_ct	nal database I2. rl
	F3=Exit F4=Prompt F12=Cancel	F6=Insert line F13=Services	F9=Retrieve F10=Copy line F24=More keys (C) COPYRIGHT IBM CORP. 1982, 2000.

Figure 341. Using interactive SQL to select all records from the ADW52/ADW_CTRL table

c. Press Enter to run the SQL statement. Then you see the Display Data panel (Figure 342).

		Display	Data		
Position to 1 +1 ctrl_i ******** End	ine .+2+ d src_name 0 ADW l of data ****	3+4 ver_name 5.2	Dat Shift t +5+ ver_descr ADW Release	ca width co column 6+7	: + 8
F3=Exit	F12=Cancel	F19=Left	F20=Right	F21=Split	Bottom F22=Widt

Figure 342. Result of the SQL select statement for the ADW52/ADW_CTRL table

You can see that there is only one record in the table. We will compare this later with the results when data is accessed using the Link client with CLI. Press the F3 function key twice and then press Enter to exit the interactive SQL session.

- 3. From a PC, start the Link client and connect to a server as explained in 6.2.5, "Starting the Link client" on page 276. After the Link main window appears, create a data server. There are two ways to create a data server:
 - With your cursor almost anywhere in the Data Servers tab window, right-click and select **Data Servers-> Add** as shown in Figure 343.
 - From the menu bar at the top, click Edit-> Data Servers-> Add.

Data Servers Catalogs Stored Procedures Alerts Events Copy Maps V Data Users Data Users Add Delete Edit Delete Edit Copy Maps V	Variables Table Formats Messaging
Once you have established a Data Server, you must create a valid Data User fo User also lets you connect to the server without having to provide your authorize menu or right-click the mouse to create a Data User.	r each data server. If authorization is required to use a server, your Data ad user name and password every time you want to use it. Use the Edit

Figure 343. Adding a data server

As stated earlier, a data server can provide access to:

- A database
- An ODBC data source
- A flat file
- A business application (for example, Demand Planner, Factory Planner, Supply Chain Planner, an i2 messaging server, or an ERP system)

In this case, we access the DB2 UDB for iSeries server database using DB2 CLI middleware.

The Data Server Information window (Figure 344) opens.

😥 Data Server Informat	ion
Server Name:	
Middleware:	CORBA
Host:	
Port:	
	Retry Connection Listeners >>
ОК	Cancel Help

Figure 344. Data Server Information window

Complete the fields as explained here:

- a. Type a meaningful Server Name to identify the data server. We used CLI server in our example. Two different servers should not have the same name within Link.
- b. From the Middleware drop-down list, select the middleware or connection protocol, which is **DB2_CLI** in our case. Notice that the Host and Port options disappear and are replaced with a Database option.
- c. Type the name of the *LOCAL relational database directory entry. This name can be determined or verified with the Work with RDB Directory Entry (WRKRDBDIRE) command. The name is case-sensitive and should be entered in all uppercase letters. In our example, it is called 12.

The Data Server Information window now looks like the example in Figure 345. Click **OK** to return to the Data Servers tab window.

@Data Server Informat	ion	×
Server Name:	CLI Server	
Middleware:	DB2_CLI	
Database:	12	
	Retry Connection	
OK	Cancel Help	

Figure 345. Data Server Information window when using DB2 CLI middleware

4. Create a data user by right-clicking the CLI data server that you created. Click **Data Users-> Add** as shown in Figure 346.

2.12 Link Iile Edit Tools Help	
Data Servers Catalogs Stored Procedures Alerts Events Copy M Data Users by Data Server Data Servers Data Servers Add Delete Edit	aps Variables Table Formats Messaging Details Connection: Data Server: User Name: Connection Owner:
Once you have established a Data Server, you must create a valid Data I User also lets you connect to the server without having to provide your at menu or right-click the mouse to create a Data User.	Test Connection User for each data server. If authorization is required to use a server, your Data athorized user name and password every time you want to use it. Use the Edit
	Host robaselly Dort 27222

Figure 346. Adding data users to the CLI data server

The Data User Information window appears. Complete these fields:

- a. Type a meaningful Connection name to identify the data user. We used CLI User in our example.
- b. Make sure that the Data Server is the one you created. In our example, it is called **CLI Server**. If it is not correct, use the drop-down list to find and select the correct one.
- c. Leave the User Name and Password fields blank.

The Data User Information window now looks like the example in Figure 347. Click **OK** to return to the Data Servers tab window.
Data User Information	X
Connection:	CLI User
Data Server:	CLI Server
User Name:	
Password:	
Connection Owner:	xzy2986
OK	Cancel Help

Figure 347. Data User Information window for a CLI User

5. After you create the data server and data user, click the **Test Connection** button to test the connection. You see a pop-up window similar to the example in Figure 348. This is not an error message, but an indication that your data user is valid. Click **OK** to close the window.

Test Conr	nection Status	
٩	Error: Command compile_status with message: Data_User CLI User is valid From: ADL_Base API	
	OK	

Figure 348. Test Connection Status window

 Select the Catalogs tab located next to the Data Servers tab. Right-click SERVER in the Catalogs area and then click Catalogs-> Add as shown in Figure 349. From the menu bar at the top, you can also click Edit-> Catalogs-> Add.

USER Catalogs → Add Tables → Delete Edit	Catalog Name: Table Type: Table Name: Table Definition	
	Data Viewer Refresh Catalog	

Figure 349. Adding a server catalog

You must create at least one server catalog for each data server you use. You can create multiple server catalogs, for example, if you want to use data sources that are owned by different users, provided you have access permission to each server, or if you want to access different SQL collections.

The Data Catalog Information window appears. Complete these fields:

- a. Type a meaningful Catalog Name to identify the catalog. We used CLI Catalog in our example.
- b. The Catalog Type radio button defaults to the type of the currently selected catalog. Make sure that **SERVER** is selected.
- c. The Server Name field is the name of the data server you created. In our example, it is called **CLI Server**. If it is not correct, use the drop-down list to find and select the correct one.
- d. The Database User Name field is the name of the SQL collection or library that contains the SQL table or tables you want to access. In our example, we use the Active Data Warehouse collection called **ADW52** that was installed and configured as described in 3.1.4, "Creating an SQL collection or schema" on page 60. If it is not correct, use the drop-down list to find and select the correct one.
- e. Leave the Qualifier and Package fields blank.

The Data Catalog Information window now looks like the example in Figure 350. Click **OK** to return to the Catalogs tab window.

②Data Catalog Information	×	
Catalog Name:	CLI Catalog	
Catalog Type:	C USER	
	© PROCEDURE	
Server Name:	CLI Server	
Qualifier:		
Database User Name:	ADW52	
Package:		
ОК	Cancel Help	

Figure 350. CLI Data Catalog Information window

7. The catalog, CLI Catalog, you created now appears as shown in Figure 351.

HIE Edit Tools Help	
Data Servers Catalogs Stored Procedures Alerts Events Copy Maps Variables Table Formats Messaging	
Tables Details	
PROCEDURE SERVER Catalog Name: CLI Catalog	
USER Table Type:	
Table Name:	
Tiable Definition	
Data Viewer	
Refresh Catalog	
In i2 Link, you work with data in table format, with rows (records) and columns (fields) of information (such as name, price, volume, and so on). The tab allow you to transform and integrate data, and communicate the data from a source to a destination. Once you have created a table, click the Table	les
Definition button to review column information, or click the Data Viewer button to view the contents of the table.	
Host. rchassih Port. 27333	

Figure 351. CLI Catalog window

Click the plus sign (+) next to the catalog you created to view the tables in the CLI Catalog. The window now appears similar to the example in Figure 352, which in our case, shows all tables in the ADW52 SQL collection. This could

take a while depending on your iSeries server resources because there are a lot of tables in an Active Data Warehouse SQL collection. To see iSeries server activity while this information is being retrieved, you can use the Work with Active Jobs (WRKACTJOB) command to look at the following jobs:

• Job QSQSRVR running under user QUSER in the QSYSWRK subsystem:

WRKACTJOB SBS (QSYSWRK)

 The job where the Link server started. If CALL QP2TERM was used to start the Link server, then you may see one or more jobs running in the QINTER subsystem with the function being PGM-QP2FORK:

WRKACTJOB SBS (QINTER)

i, SERVER		Catalog Name: CLI Catalog	
		Table Type: PHYSICAL	
ADW_H_HIST_DEF_H		Table Name: ADW_CTRL	
		Table Definition	
		Data Viewer	
		Refresh Catalog	
ADW_NET_CHG_DEF_H			
ADW_NET_CHG_MAP	-		

Figure 352. CLI Catalog tables in the ADW52 SQL collection

8. Click the table **ADW_CTRL** to highlight it. Then click the **Table Definition** button. The Physical Table Information window (Figure 353) opens. Click **OK** when you are done.

E	Physical Table Infor	mation ADW_CTRL				_	
	Table Name:	ADW_CTRL	C	atalog Name:	CLI Catalog		
	Table Type:	PHYSICAL					
	Key Column Nar	ne Internal Data Type	Native Data Type	Length	Description		
	SRC_NAME	Computed_String	CHAR	4			
	VER_NAME VER_DESCR	Computed_String	UHAR VARCHAR	40 202			
	•) L	
	Column Inform	ation	oreign Keue				
Ļ			oreigniticeys				
		OK	Help				

Figure 353. Physical Table Information window for ADW_CTRL showing field definitions

9. On the Catalog tables window, click the table **ADW_CTRL** to highlight it and then click the **Data Viewer** button. The Table Data window (Figure 354) opens.

🙆 Table Data Ca	atalog Name: CLI C	atalog Table Name	ADW_CTRL		_ 🗆 X
 All Records 	0	Valid Records Only	🔿 Inval	id Records	
				Record:	11 of 1
CTRL_ID	SRC_NAME	VER_NAME	VER_DESCR		
	ADW	0.2	AD W Helease		
		1			
	<< >>	>	OK	Help	

Figure 354. Table Data window for ADW_CTRL

This window shows the same data that was returned from the SQL select statement SELECT * FROM ADW52/ADW_CTRL and is shown in Figure 342 on page 307. This indicates you successfully created a connection using Link with CLI middleware.

6.6 Using a user catalog to specify SQL statements

Once you create a successful ODBC or DB2 CLI middleware connection using Link, you can also issue manual SQL statements to retrieve table data, which is much like using the interactive SQL command Start SQL Interactive Session (STRSQL) from the iSeries server.

To create a user catalog using the Link client with ODBC, follow these steps:

 From the Catalogs tab located next to the Data Servers tab, right-click USER in the Catalogs area and then click Catalogs-> Add as shown in Figure 355. From the menu bar at the top, you can also click Edit-> Catalogs-> Add.

9 PROCEDURE 9 SERVER Fil 9 ODBC Catalog	Catalog Name:
Catalogs > Add	Table Type:
Tables Delete Edit,	Table Name:
	Table Definition
	Data Viewer
	Refresh Catalog
	Hetresh Latalog

Figure 355. Adding a user catalog

The Data Catalog Information window appears. Complete these fields:

- a. Type a meaningful Catalog Name to identify the catalog. We used SQL Catalog in our example.
- b. The Catalog Type radio button defaults to the type of the currently selected catalog. Make sure that **USER** is selected.
- c. Leave all other fields blank.

The Data Catalog Information window now looks like the example in Figure 356. Click **OK** to return to the Catalogs tab window.

🖉 Data Catalog Information	×	
Catalog Name:	SQL Catalog	
Catalog Type:	USER SERVER PROCEDURE	
Server Name:		
Qualifier:		
Database User Name:		
Package:		
OK	Cancel Help	

Figure 356. SQL Data Catalog Information window

2. In the Catalogs tab (Figure 357), you see the catalog you created called "SQL Catalog". Click the plus sign (+) next to the catalog you created. Notice that there is nothing under it at this time.

PROCEDURE SERVER DOBC Catalog	Catalog Name: SQL Catalog
È,9 USER È 9 SQL Catalog	Table Type:
	Table Name:
	Table Definition
	Data Viewer
	Refresh Catalog
In i2 TradeMatrix Link, you work with data in table format, with rows	s (records) and columns (fields) of information (such as name, price, volume, and so

Figure 357. SQL Catalog window

 Add an SQL table. To do so, right-click the SQL Catalog that you created and click Tables-> Add-> SQL Table as shown in Figure 358. From the menu bar at the top, you can also click Edit-> Tables-> Add-> SQL Table.



Figure 358. Adding an SQL table to a user catalog

The SQL Table window (Figure 359) opens.

🖉 SQL Table			×			
Catalan Nama						
Latalog Name:	SQL Latalog					
Table Name:	Table Name:					
Data Server:	Data Server: ODBC Server					
SQL Expression:						
	🔲 Column Type Ov	renide				
Add Column	Edit Column	Delete Column	▲ ♥			
Column Name	Туре	Length	Descriț 🔺			
4			×			
10	Canc	el Help				

Figure 359. SQL Table window

Complete the fields as shown here:

- a. The Catalog Name is the one you created. In our example, it is called **SQL Catalog**. If it is not correct, use the drop-down list to find and select the correct one.
- b. Type a meaningful Table Name to identify the SQL table. We used SQL Table in our example.
- c. Make sure that the data server is the one that was created for ODBC. In our example, it is called **ODBC Server**. If it is not correct, use the drop-down list to find and select the correct one.
- d. In the SQL Expression field, type the SQL statement that you want to run. We used SELECT * FROM ADW50/ADW_CTRL to match the one that was used in Figure 327 on page 297.
- e. Leave the Column Type Override box blank.

The SQL Table window now look like the example in Figure 360. Click **OK** to return to the Catalogs tab window.

SQL Table			×	
Catalog Name:	SQL Catalog 💌			
Table Name:	SQL Table			
Data Server:	ODBC Server			
SQL Expression:	SELECT * FROM ADW50/AD	W_CTRL	-	
	Column Tune Override			
	Column Type overhide			
Add Column	Edit Column Delet	e Column		
Column Name	Type Lei	ngth	Descriț 🔺	
	K Court	11-1-		
		Help		

Figure 360. SQL Table window with the SELECT * FROM ADW50/ADW_CTRL statement

4. The SQL table you created called "SQL Table" appears under SQL Catalog, as shown in Figure 361.

PHOLE DURE SERVER ODBC Catalog Sol Ca	Catalog Name: SQL Catalog Table Type: SQL Table Name: SQL Table Table Definition Data Viewer Refresh Catalog	
---	--	--

Figure 361. SQL Table under SQL Catalog

5. Click **SQL Table** to highlight it and then click the **Data Viewer** button. The Table Data window (Figure 362) appears.

@ Table	e Data Cat	alog Name: SQL	Catalog Table N	ame: SQL Table		×	
⊙ All	Records	C	Valid Records Only	y C Invali	d Records		
					Record: 11 of 1		
CTRL	_ID	SRC_NAME	VER_NAME	VER_DESCR	-		
		ADW	13.0	AD W Helease	-		
	<<	:	>>	OK	Help		

Figure 362. Table Data window for SQL Table

This window shows the same data that was returned from the SQL select statement SELECT * FROM ADW50/ADW_CTRL (Figure 328 on page 297) and when manually showing table data (Figure 340 on page 305). This indicates you successfully used an ODBC connection through Link using SequeLink middleware.



Chapter 7. i2 TradeMatrix Supply Chain Planner

This chapter describes the iSeries server installation procedures for the i2 TradeMatrix Supply Chain Planner products before the i2 Five.Two release. It explains how to start, stop, and operate the Supply Chain Planner environment.

For a description of the Supply Chain Planner product, see 1.1.2.5, "i2 Supply Chain Planner" on page 6. You can find installation information for i2 Five.Two in Chapter 13, "i2 Five.Two Supply Chain Planner" on page 519.

7.1 Installation procedure

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Supply Chain Planner 5.0.1 on an iSeries server. As explained in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V4R5M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Supply Chain Planner code requires approximately 260 MB of disk space.

After you order Supply Chain Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Supply Chain Planner are summarized here:

- 1. Install the Supply Chain Planner code from the CD-ROM.
- 2. Run the scp_engine program.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2 based on the host ID.
- 5. Activate the license key.
- 6. Install the Supply Chain Planner client.

7.1.1 Supply Chain Planner reference documentation

The following manuals are available on the Supply Chain Planner CD-ROM in the root (\) directory and on the iSeries server in the /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/pdf directory after server installation:

- *i2 TradeMatrix Supply Chain Planner Installation Manual* Version 5.0.1 (installation_manual_5.0.1.pdf)
- *i2 TradeMatrix Supply Chain Planner Model Reference Manual Version 5.0.1* (model_ref_manual_5.0.1.pdf)
- *i2 TradeMatrix Supply Chain Planner Release Notes Version 5.0.1* (release_notes_5.0.1.pdf)

On a PC in the C:\Rhythm\SCP\5.0.1\Help folder after client installation, Web-based help is available for the Supply Chain Planner user interface. You can access this by opening the toclist.htm file.

You can also find documentation on the i2 support Web site (http://support.i2.com). Log in and select the **Documentation** link.

7.1.2 Installing Supply Chain Planner server code on the iSeries server

To install the Supply Chain Planner server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Supply Chain Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. To learn how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Supply Chain Planner execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2/TradeMatrix/5 0 1/SCP/')

Figure 363 shows the EDTF command prompted with the F4 function key.

Edit File (EDTF)					
Type choices, press Enter.					
Stream file, or > '/opt/i2/TradeMatrix/5_0_1/SCP/'					
Data base file	Name Name, *LIBL, *CURLIB				
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	F13=How to use this display				

Figure 363. Edit File (EDTF) command prompt of /opt/i2/TradeMatrix/5_0_1/SCP/

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Supply Chain Planner environment and start from the beginning. This is shown in Figure 364.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 368 on page 327 shows where you can define this). You may want to do this if you want multiple Supply Chain Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: Position to New File :	/opt/i2/Trad	leMatrix/5_0	_ 1/SCP Record . :	1 of	1
2=Edit 4=D	elete File	5=Display	6=Path Size	9=Recursive Del	ete
Opt Name 9 OS400_450)	Size *DIR	Owner I2OWNER	Changed 02/19/01 14:00	Used 02/19/01 14:08
					Bottom
F3=Exit	F12=Cancel (C) COPYRI	F16=Sort GHT IBM COR	F17=Position P. 1980, 2000	n to F22=Displ ·	ay entire field

Figure 364. Using EDTF to recursively delete an existing Supply Chain Planner environment

- Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Supply Chain Planner software in your iSeries CD-ROM drive.
- 7. Start the installation from an OS/400 command line by using the Load and Run (LODRUN) command. Then press the F4 function key to prompt it. The Load and Run screen (Figure 365) appears.

Select *OPT or the name of your optical drive for the Device parameter. Press Enter when you are ready to start the installation.

Or you can simply issue the following command:

LODRUN DEV (*OPT)



The *OPT option assumes your optical device is named OPT01. If you are not sure, you can use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE (*DEV) CFGD(*OPT)

8. Once the installation starts, you see messages such as the following examples at the bottom of your panel:

- Restoring software installation...
- Copying Start/Stop menu files...
- Running Installation Procedure...
- 9. A panel appears that asks you to verify the CD-ROM path to the Supply Chain Planner code. QOPT is the optical file system, and SCP_5_0_1 is the label of the CD-ROM in the CD-ROM drive. You must add /UNIX/ENGINE to the path because this is where installation code is located with this product. This is shown in Figure 366. Press Enter to continue the installation.

I20WNER GETCDROM	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/21/01 09:41:21
Enter CDRC /qopt/SCP_	DM path[/qopt/SCP_5_0_1]: 5_0_1/UNIX/ENGINE	
Input char	nges and press ENTER	
F3=Exit F12=Car	ncel	

Figure 366. Confirming the CD-ROM path to Supply Chain Planner code

10. You now see a panel like the example in Figure 367 where you can review:

- The required disk space and space available on the iSeries server
- The i2 product and release level to be installed
- The OS/400 release level (V4R5M0 required)
- The default installation directory

The correct choices are filled in, so press Enter to continue the installation.

I20WNER ALLINFO	INER i2 Technologies, Inc. INFO TradeMatrix Installation iSeries Platform					
	You are about to install TradeMatrix 5.0.1					
Disk space: Select a product to 1. SCP	Required: 249 MB install?	Available: 20,859 MB Select an OS/400 version? 1. OS400 V4R5M0				
Which Product? 1		Which OS Version? 1				
Install directory: /opt/i2/TradeMatrix/5_0_1 Make your choices and press Enter.						
F3=Exit						

Figure 367. Confirming the installation defaults

11. The next panel (Figure 368) looks similar to the previous one, with the only selectable option being the installation directory. The installation program builds the default directory where the Supply Chain Planner environment is placed based on the selection made in Figure 367. This is where you can specify a different directory if you want multiple versions of the Supply Chain Planner environment on the same system.

The installation program checks to see if the target directory already exists on the system. You can accept the default and overwrite the files in the directory if it already exists. If the target directory is not available, it is created as shown in Figure 368. Press Enter to continue with the installation.

I20WNER ALLINF02	i2 Technolo TradeMatrix I iSeries F	gies, Inc. Installation Platform	2/21/01 09:42:24		
	You are about to i	nstall TradeMatrix 5.0.1			
Disk space: Select a product to 1. SCP	Required: 249 MB install?	Available: 20,859 MB Select an OS/400 version? 1. OS400 V4R5M0			
Which Product? 1		Which OS Version? 1			
Install directory: /opt/i2/TradeMatrix/5_0_1/SCP/0S400_450 Target directory does not exist. To create it press Enter.					
F3=Exit					

Figure 368. Confirming the default/specifying a new Supply Chain Planner installation directory

12. The installation program now initiates a Control Language Program (CLP). The panel in Figure 369 briefly appears.

I20WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/21/01 09:42:55
	Performing initial setup tasks	
	Proceeding with Installation. Please wait	

Figure 369. Installation status: Performing initial setup tasks

13. The Restoring Program Files status window (Figure 370) appears. At this point, the installation program uncompresses and restores the program files.



Figure 370. Installation status: Restoring program files

14.After the program files are restored, the installation program automatically brings up the status panel shown in Figure 371. This indicates that the installation program is now restoring document and miscellaneous files.



Figure 371. Installation status: Restoring document and miscellaneous files

15.As long as the installation status panels continue to appear and the less than (<) and greater than (>) characters move, you do not need to press any keys until you see the Installation completed panel (Figure 372). Press Enter to return to an OS/400 command line.

120WNER STATUS	i2 Technologies, Inc. TradeMatrix Installation iSeries Platform	2/21/01 09:59:51
	Installation Completed	
	Installation finished. No errors were detected.	
_	Press Enter to continue.	

Figure 372. Supply Chain Planner installation completed panel

16.The installation invoked many background jobs. You can quickly check to make sure they completed normally by looking at your message queue using the Display Messages (DSPMSG) command:

DSPMSG MSGQ(I20WNER)

The Display Messages panel appears as shown in Figure 373. If everything looks good, you can use the F13 key to remove them all or the F11 key to remove them one at a time.

	Display N	lessages	
	Dispidy	System:	I2
Queue :	120WNER	Program :	*DSPMSG
Library :	QUSRSYS	Library :	
Severity :	00	Delivery :	*NOTIFY
Type reply (if requ	ired), press Enter.		
Job 056034/I2OWNE	R/SCP completed norma	ally on 02/21/01 at 09:5	8:51.
Job 056043/I20WNE	R/QP0ZSPWP completed	normally on 02/21/01 at	09:58:54.
Job 056044/I2OWNE	R/QP0ZSPWP completed	normally on 02/21/01 at	09:58:54.
Job 056046/I20WNE	R/QP0ZSPWP completed	normally on 02/21/01 at	09:58:57.
Job 056041/I20WNE	R/SCP completed norma	ally on $02/21/01$ at $09:5$	8:57.
Job 056050/120WNE	R/QP0ZSPWP completed	normally on 02/21/01 at	09:58:59.
Job 056051/I20WNE	R/QP0ZSPWP completed	normally on 02/21/01 at	09:59:00.
Job 056053/I20WNE	R/OP0ZSPWP completed	normally on 02/21/01 at	09:59:02.
Job 056048/I20WNE	R/SCP completed norma	lly on 02/21/01 at 09:5	9:02.
Job 056057/I20WNE	R/OP0ZSPWP completed	normally on 02/21/01 at	09:59:05.
Job 056058/120WNE	R/OP0ZSPWP completed	normally on 02/21/01 at	09:59:05.
Job 056060/I20WNE	R/OP0ZSPWP completed	normally on $02/21/01$ at	09:59:50
Job 056055/120WNE	R/SCP completed norma	$\frac{1}{2}$ on $\frac{02}{21}$ of $\frac{1}{21}$ of $\frac{1}{21}$	9.50
	it, bei benpieteta norm	01 01, 11, 01 ac 03.3	Bottom
F3-Fvit	F11-Remove a messa	F 12-C	ancel
	FIG-Perrove all ever	riz-c	lore keyr
TIJ-NEIIDVE AII	TID-RENOVE ALL EXCE	Pro champwered F24=M	ore vers

Figure 373. Display Messages (DSPMSG) for I2OWNER

- 17.After the installation completes, a log file is written to the root (/) directory of the IFS in the form /trdmtx-install-log.mm-dd-yy.hh:mm:ss.SCP. You can use the log file to diagnose installation problems:
 - a. Use the EDTF command:
 - EDTF STMF('/')
 - b. Type option 5 next to the log file to display it. A sample log file is shown in Figure 374.

```
Browse : /trdmtx-install-log.02-21-01.09:42:06.SCP
Record . : 1 of 447 by 18
                                                Column:
                                                          1 of 87 by 131
Control :
....+....1....+....2....+....3....+....4....+....5....+....6....+....7...+...
install.cpp: VERSION 2.14 02/07/01 DO.
time: 02-21-01.09:42:06, process: Open Log File DisplayALLINFORec().
  FillTargetDir().
  FillTargetDir().
    ProdSelected.
    ArchSelected.
    tmpbuff=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450.
TargetDirExist():
  ctmp = >/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450<
  Dir value is NULL. Dir NOT Opened.
  stat() error on /opt/i2/TradeMatrix/5 0 1/SCP/OS400 450: No such path or dir
  non existing dir:/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450.
  TargetDir=.
  TargetDir=/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450.
  cCopyFiles() - Selecting Customize for Product: SCP .
  cCopyFiles() - Selcted Customize for Product: SCP.
time: 02-21-01.09:42:, process: RunCreateLibCL()
F3=Exit
        F10=Display Hex F12=Cancel F15=Services F16=Repeat find
            (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 374. Sample trdmtx-install-log file generated during product installation

18.A library called SCP is created and only used as part of the installation. You can delete it by using the Delete Library (DLTLIB) command:

DLTLIB LIB(SCP)

- Or, you can use it to contain Supply Chain Planner files and programs.
- 19.If you want to see the results of the Supply Chain Planner installation, you can use the EDTF command to view the contents of the directory /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450')

See the example in Figure 375.

Directory: /opt/i2/TradeMatrix/5 0 1/SCP/OS400 450					
Position to:	Record	.: 1 c	of 19		
New File :					
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete	
Opt Name	Size	Owner	Changed	Used	
COPYRIGHT	8K	I20WNER	01/09/01 13:07	02/21/01 09:43	
custom	*DIR	I20WNER	01/09/01 13:07	02/21/01 09:44	
liborb_r.a	5,120K	120WNER	01/09/01 09:45	02/21/01 09:44	
netgopt	640K	I20WNER	01/15/01 09:14	02/21/01 09:43	
scp_engine	51,200K	I20WNER	01/12/01 02:04	02/21/01 09:43	
scp_batch	9,216K	I20WNER	01/10/01 01:44	02/21/01 09:44	
lpopt	3,584K	I20WNER	01/15/01 09:14	02/21/01 09:44	
oil	*DIR	I20WNER	12/11/00 16:52	02/21/01 09:44	
1.6_schema	*DIR	I20WNER	02/21/01 09:48	02/21/01 09:48	
4.2.1_schema	*DIR	I20WNER	02/21/01 09:50	02/21/01 09:50	
4.2_schema	*DIR	I20WNER	02/21/01 09:52	02/21/01 09:52	
4.3.1_schema	*DIR	I20WNER	02/21/01 09:53	02/21/01 09:53	
4.3_schema	*DIR	I20WNER	02/21/01 09:55	02/21/01 09:55	
5.0.1_schema	*DIR	I20WNER	02/21/01 09:57	02/21/01 09:57	
5.0_schema	*DIR	I20WNER	02/21/01 09:58	02/21/01 09:58	
df	*DIR	I20WNER	02/21/01 09:58	02/21/01 09:58	
scp	*DIR	I20WNER	02/21/01 09:59	02/21/01 09:59	
pdf	*DIR	I20WNER	02/21/01 09:59	02/21/01 09:59	
web	*DIR	I20WNER	02/21/01 09:59	02/21/01 09:59	
				Bottom	
F3=Exit F12=Cancel	F16=Sort	F17=Position	ito F22=Displa	ay entire field	

Figure 375. Using EDTF to display the Supply Chain Planner directory after installation

7.1.3 Obtaining a host ID and license key

When you attempt to run the Supply Chain Planner server (scp_engine) without a license key on the system, you receive an error that gives you the host identifier (or host ID) for your system so you can request a valid license key from i2. This also occurs if the license key you have is not valid. This section explains how to start the server and obtain the host ID.

To start the Supply Chain Planner server, set the LIBPATH environment variable and then run the scp_engine program in the PASE QP2TERM environment by following these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450 directory:

cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450

- Use the export command to set the LIBPATH environment variable. You can choose between two different formats of the export statement that are functionally equivalent:
 - Export and define the environment variable in one statement:

export LIBPATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/

• Define the environment variable and then export it in a separate export statement:

```
LIBPATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/
export LIBPATH
```

4. Run the scp_engine program:

scp_engine

5. Notice that after you do this, you receive an error stating that the reports directory was not found. This is normal because Supply Chain Planner is usually started with an options file that points to the reports directory. To get around this error so that you can obtain the host ID, use the mkdir command to create the reports directory:

mkdir reports

6. Run the scp_engine program again:

scp_engine

An example is shown in Figure 376.

```
/openSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450
  Ś
> export LIBPATH=/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
  $
> scp engine
  scp_engine version 5.0.1 of 00-12-21 [32-bit ASCII]
  Error: Can't find report directory: reports
  $
> mkdir reports
  Ś
> scp engine
  scp_engine version 5.0.1 of 00-12-21 [32-bit ASCII]
 Error: Unable to find a valid license for the host I2.DOMAIN.IBM.COM with host_id 0x4364b7eb.
  Please contact i2 Technologies.
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 376. License key error with host ID information after calling scp_engine program

Since the license key is missing at this time, an error message appears with host ID information. Record the host ID from here and request a license key from i2 support as described in 2.4.5, "Requesting i2 software license keys from i2" on page 47.

Press the F3 function key to exit the PASE QP2TERM environment, and return to an OS/400 command line.

7.1.4 Activating the license key

After you receive the license key from i2, it has to be activated. You can manually create the license key file and place the license key in it, or you can use the license parameter on the scp_engine executable to do this. This section explains the first option.

To create a license key file with a license key in it, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

- Supply Chain Planner expects the license key to be placed in a file called scp_engine.lic located in the custom subdirectory. To create the file, follow these steps:
 - a. Use the cd command to change to the custom subdirectory:

cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/custom

b. Use the echo command to put the license key in it:

echo {provide your license key here} > scp_engine.lic

The license key has to be entered exactly as it was supplied from i2. This means use all uppercase characters and with dashes (-) every four characters.

- c. Use the 1s command to verify that the file was created.
- d. Use the cat command to verify that license key information was placed into it correctly:

cat scp_engine.lic

An example is shown in Figure 377.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/custom
$
> echo 4EY7-FNEW-DAN2-YX5C-85E9 > scp_engine.lic
$
> ls
scp_engine.lic
> cat scp_engine.lic
4EY7-FNEW-DAN2-YX5C-85E9
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 377. Creating file scp_engine.lic and inserting a license key in it

3. If you need to insert a different license key later on, use the rm command to delete the file:

rm scp_engine.lic

Then use the echo command to put the new key in. You can also use the EDTF command to edit the license key file:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/custom/scp_engine.lic')

An example is shown in Figure 378. Press the F3 function key twice to save and exit.

Figure 378. Editing the scp_engine.lic file to change Supply Chain Planner license key information

– Note

You should keep a backup copy of the scp_engine.lic file or the custom subdirectory since it contains license key information.

7.1.5 Supply Chain Planner client installation

This section explains how to install Supply Chain Planner client code on a Windows NT/2000 PC. The installation of the Supply Chain Planner client code requires approximately 30 MB of disk space.

To install the Supply Chain Planner client, follow these steps:

- 1. Place the CD-ROM containing the Supply Chain Planner software in the CD-ROM drive of a client PC.
- 2. The Supply Chain Planner client setup program does not automatically start because the CD-ROM is designed to use Notepad to open the \NT\README.TXT file as shown in Figure 379.

🖉 README.TXT - Notepad	×
File Edit Format Help	
i2 TradeMatrix Supply Chain Planner 5.0.1	-
The CD contains the following five components:	
1) engine 2) vb_ui 3) vb_sa 4) scm_ui 5) web_ui	
You can choose to install any of these components by running the corresponding setup.exe from the directory <cd_rom drive="">:\NT\<component>.</component></cd_rom>	
If your CD_ROM drive has the drive letter 'D', then to install the engine component, run D:\NT\engine\setup.exe from your Windows Internet Explorer.	
<pre>similarly, to install vb_ui, run D:\NT\vb_ui\setup.exe, to install vb_sa, run D:\NT\vb_sa\setup.exe to install scm_ui, run D:\NT\scm_ui\setup.exe, to install web_ui, run D:\NT\web_ui\setup.exe,</pre>	-
	//

Figure 379. Displaying the README.TXT file using Notepad

- 3. After you browse the information in the README.TXT file, manually execute SETUP.EXE from the NT\VB_UI folder on the CD-ROM:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the NT\VB_UI folder and double-click SETUP.EXE.

Or you can follow these steps:

- a. Click Start->Run.
- b. Type:
 - (drive):\NT\VB_UI\SETUP.EXE

Here (drive) is the drive letter assigned to your CD-ROM.

c. Press Enter.

Figure 380 shows an example using Windows Explorer.

Image: Search Part of the second								
Folders	×	Name 🔺	Size	Туре	Modified			
psfonts_old psfonts_old PsM READIBMW ReADIBMW Reading Stress Stymbols temp temp temp temp viaVoice viaVoice		INST321.EX_ ISDEL.EXE SETUP.DLL SYS1.ADR USER1.CAB USER1.CAB USER1.HDR DATA.TAG DATA1.CAB DATA1.CAB DATA1.CAB DATA1.CAB DATA1.CAB DATA1.HDR LANG.DAT LAYOUT.BIN OS.DAT SETUP.EXE SETUP.INS	292 KB 9 KB 11 KB 172 KB 4 KB 3 KB 5 KB 21,281 KB 98 KB 5 KB 1 KB 21,800 KB 532 KB 60 KB 1 KB 96 KB 1 KB 96 KB 1 KB	EX_File Application Application Extension WinZip File HDR File HDR File HDR File HDR File HDR File DAT File BIN File DAT File Bitmap Image Application Configuration Settings Internet Communic LID File	1/14/2001 8:05 PM 10/27/1998 6:08 AM 9/29/1998 11:44 AM 1/10/2001 8:34 PM 1/15/2001 7:09 AM 1/15/2001 7:09 AM 1/10/2001 8:34 PM 1/10/2001 8:35 PM 1/10/2001 8:35 PM 1/10/2001 8:34 PM 9/18/1998 9:12 AM 1/15/2001 7:08 AM 1/15/2001 7:08 AM 10/2/1998 12:04 PM 1/15/2001 7:09 AM 1/14/2001 8:05 PM 1/15/2001 7:09 AM 1/15/2001 7:09 AM			
Type: Application Size: 59.5 KB	•			59.5 КВ 🛄 М	ly Computer			

Figure 380. Windows Explorer view of Supply Chain Planner client setup.exe program

4. On the Welcome window (Figure 381), click the Next button to continue.



Figure 381. Supply Chain Planner client setup: Welcome window

- 5. Read the software license agreement, and click the Yes button to continue.
- Accept the default for the destination folder location (c:\Rhythm\SCP\5.0.1), or change it as needed, and click the Next button to continue.
- 7. Accept the default for the program folder (i2 TradeMatrix Supply Chain Planner 5.0.1), or change it as needed, and click the **Next** button to continue.
- 8. Select the appropriate language, and click the **Next** button to continue.

- 9. At this point, the installation starts creating objects on the client PC. When it completes, click the **Finish** button to exit the installation program.
- 10.An install log is created on the PC in the WINDOWS directory called vbui_<release level>_install.log that you can view for additional information regarding the Supply Chain Planner client installation. In our case, it was called C:\WINDOWS\vbui_5.0.1_install.log.

7.1.6 Transferring a sample dataset from a PC to the iSeries server

To test the functionality of the Supply Chain Planner server, you need a sample options file and dataset. One is not provided with the installation of Supply Chain Planner on the iSeries server. Therefore, you have to obtain one from i2 or an i2 consultant if you want to completely bring up or test the server. This section goes through the procedure to transfer a sample options file and dataset to the iSeries server once you obtain one.

To transfer a sample dataset from a PC to an iSeries server, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM

 We recommend that you place the sample dataset into a directory somewhere off the Supply Chain Planner directory structure. We started from the /opt/i2/TradeMatrix/5_0_1/SCP/ directory and created the sample_model directory. Use the cd command to change to the /opt/i2/TradeMatrix/5_0_1/SCP directory:

cd /opt/i2/TradeMatrix/5_0_1/SCP/

3. Directory sample_model can be created with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within a PASE QP2TERM shell:

mkdir sample_model

See the example in Figure 382.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5 0 1/SCP/
  $
> pwd
  /opt/i2/TradeMatrix/5_0_1/SCP
  Ŝ
> ls
  OS400 450
  Ś
> mkdir sample model
  Ś
> ls
  OS400 450
                 sample model
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 382. Using a PASE QP2TERM shell to create directory sample_model

4. Now you can copy or transfer the dataset from your PC to the iSeries server. There are different ways to accomplish this task, which include mapping a network drive, using Operations Navigator to drag files from a PC to the iSeries server, or using file transfer protocol (FTP), which is what we used.

To transfer files from a PC to an iSeries server using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC where the Supply Chain Planner dataset is located. Click Start-> Programs-> Accessories-> Command Prompt.
- b. Use the cd command to change to the directory where the dataset is located:

cd C:\Rhythm\SCP\5.0.1\sample_model

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WNER in this example.
- e. Enter the password for your iSeries server user ID.
- f. Use the cd command to change to the iSeries server directory where the dataset will be placed, which is /opt/i2/TradeMatrix/5_0_1/SCP/sample_model:

cd /opt/i2/TradeMatrix/5 0 1/SCP/sample model

g. Change to the binary mode:

bin

h. Turn prompting support off so you don't have to press Enter to send each file to the iSeries server:

prompt

i. Transfer the entire dataset to the iSeries server using the FTP $_{\tt mput}$ * command.

j. Exit FTP using the quit command.

See the example shown in Figure 383.

```
C: \>cd \rhythm\scp\5.0.1\sample model
```

C:\Rhythm\SCP\5.0.1\sample model>ftp i2 Connected to i2.domain.ibm.com. 220-OTCP at i2.domain.ibm.com. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com: (none)): **120WNER** 331 Enter password. Password: 230 I2OWNER logged on. ftp> cd /opt/i2/TradeMatrix/5 0 1/SCP/sample model 250-NAMEFMT set to 1. 250 "/opt/i2/TradeMatrix/5_0_1/SCP/sample_model" is current directory. ftp> bin 200 Representation type is binary IMAGE. ftp> prompt Interactive mode Off . ftp> mput * 200 PORT subcommand request successful. 150 Sending file to /opt/i2/TradeMatrix/5_0_1/SCP/sample_model/enh_as400.opt 250 File transfer completed successfully. ftp: 1789 bytes sent in 0.02Seconds 89.45Kbytes/sec. 200 PORT subcommand request successful. etc... 150 Sending file to /opt/i2/TradeMatrix/5 0 1/SCP/sample model/run web ui engine 250 File transfer completed successfully. ftp: 239 bytes sent in 0.00Seconds 239000.00Kbytes/sec. ftp> quit 221 QUIT subcommand received. C:\Rhythm\SCP\5.0.1\sample model>

Figure 383. Using FTP from a PC to put the sample dataset on the iSeries server

To verify that the dataset is now on the iSeries server, you can use the EDTF command:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/sample_model')

See the example in Figure 384.

Directory: /opt/i2/TradeMatrix/5_0_1/SCP/sample_model/					
Position to:	Record	.: 10	f 19		
New File :					
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete	
		_			
Opt Name	Size	Owner	Changed	Used	
brussels	*DIR	120WNER	03/02/01 09:59	03/13/01 23:11	
WS_FTP.LOG	8K	120WNER	10/27/00 14:12	02/21/01 16:51	
enh_as400.opt	8K.	120WNER	03/13/01 15:53	05/07/01 10:51	
enh_brus_corba.in	32K	120WNER	10/27/00 14:12	05/07/01 10:51	
enh_brussels.opt	8K	120WNER	10/27/00 14:12	02/21/01 16:51	
run_web_ui_engine	8K.	120WNER	10/27/00 14:12	02/21/01 16:51	
				Bottom	
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field	

Figure 384. Using the EDTF command to verify that the sample dataset is on the iSeries server

7.2 Operating the Supply Chain Planner environment

This section explains how to:

- Start the Supply Chain Planner server
- · Check whether the server is running
- Shut down the server
- Automate the starting and stopping of a server using CL programs
- · Run multiple servers at the same time

The Supply Chain Planner server runs in the PASE environment. Therefore, you must start and run it from there. There are two different ways to start a Supply Chain Planner server in PASE:

- Using the PASE terminal environment (QP2TERM) to start the server as a foreground (interactive) or background process
- Using the QP2SHELL callable program to start the server as a foreground (interactive) or background process

7.2.1 QP2TERM to start and stop the Supply Chain Planner server

You can start and stop the Supply Chain Planner server from an interactive PASE terminal session. The PASE QP2TERM shell is an interactive shell environment. It is useful during development activity or when debugging Supply Chain Planner server problems. It is not suited for unattended or "lights-out" operation of the Supply Chain Planner server.

To start the Supply Chain Planner server using QP2TERM, follow these steps:

1. Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the Supply Chain Planner environment directory. The default directory is /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450:

cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450

3. Call the Supply Chain Planner scp_engine program with the required parameters. Supply Chain Planner requires that the LIBPATH environment variable be set before calling scp_engine. It also requires a dataset directory.

There are also many optional parameters (progress, port, and so on). Because of this, we recommend that you use a startup shell script to start the Supply Chain Planner server. This saves you from having to retype the program name, directory path, and all parameters each time.

To create a custom startup shell script, follow these steps:

a. Use the echo command to create an empty file:

echo > start_scp

b. Use the chmod command to give the file execute authority:

chmod +x start_scp

An example is shown in Figure 385.

```
/QOpenSys/usr/bin/sh
$
> cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/
$
> pwd
/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450
$
> echo > start_scp
$
> chmod +x start_scp
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 385. Using a PASE QP2TERM shell to create start_scp

c. Use the EDTF command to modify start_scp:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/start_scp')

d. Set the LIBPATH environment variable to the main Supply Chain Planner environment directory:

export LIBPATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450

e. Call scp_engine with the name of an options file that points to a dataset. A sample one is not provided with the installation of Supply Chain Planner on the iSeries server. Therefore, you have to obtain one from i2 or an i2 consultant if you want to completely bring up the server. We use one located in /opt/i2/TradeMatrix/5_0_1/SCP/sample_model/ that was loaded in 7.1.6, "Transferring a sample dataset from a PC to the iSeries server" on page 337. The option_file parameter is used to point scp_engine to the options file:

scp_engine -option_file
/opt/i2/TradeMatrix/5_0_1/SCP/sample_model/enh_as400.opt

An example is shown in Figure 386. Press the F3 function key twice to save and exit.

Edit File: /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/start_scp								
Record . Control	: 1 of	2 by	10	Column:	1 of	67 by 126		
CMD+1+2+3+4+5+6+7+.								
export LIBPATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450								
<pre>scp_engine -option_file /opt/i2/TradeMatrix/5_0_1/SCP/sample_model/enh_as400.opt *********************************</pre>								
F2=Save	F3=Save/Exit	F12=Exit	F15=Services	F16=Repeat fi	ind	,		

Figure 386. Using the EDTF command to update the start_scp script

7.2.1.1 Starting Supply Chain Planner server as a foreground process

You can run the Supply Chain Planner server as a foreground process. This is an interactive process that locks the QP2TERM session until the process is ended. While the process is running and QP2TERM is locked, you cannot issue any other commands or program calls. You can start multiple QP2TERM sessions if you have multiple iSeries signons. To start a program or shell script as a foreground process, call it and press Enter.

Figure 387 shows an example of changing to the Supply Chain Planner environment directory within QP2TERM, manually setting the LIBPATH environment variable, and then calling scp_engine with the option_file parameter as a foreground process.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450
> export LIBPATH=/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
  Ś
> scp engine -option file /opt/i2/TradeMatrix/5 0 1/SCP/sample model/enh as400.opt
  scp engine version 5.0.1 of 00-12-21 [32-bit ASCII]
  Import: $SCP SYSTEM
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/control kinds.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/control parameters.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control properties.imp
 Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/meta_model.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/model access.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/user.imp
  Reading file /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/measure base.dat using measure ba
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.dat 60 records
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/model access.dat using model acce
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/model access.dat 14 records
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/meta model.dat using meta model
 Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/meta model.dat 26 records
etc...
 Reading /opt/i2/tradematrix/5 0 1/scp/brussels/import/restriction date.fmt
    7.78 sec Expression in $DATA AREA/../enh brus corba.in(814828096)
     6.43 sec Expression in $DATA_AREA/../enh_brus_corba.in(814828173)
     5.43 sec Expression in $DATA AREA/../enh brus corba.in(814828021)
  Reading corba interface.def
  Handling requests from port 27111
  Running main loop
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 387. Supply Chain Planner server running in the PASE QP2TERM interactive environment as a foreground process

The Supply Chain Planner server is now up and running on the default port 27111. Notice that you don't see the dollar sign (\$) character after the last line. This means that this QP2TERM session is locked until the Supply Chain Planner server is ended.

- Note

If you see the pound sign (#) character instead of the dollar sign (\$) character, then you are signed onto the iSeries server as QSECOFR. We assume that *I2OWNER* is being used and that user profile sees dollar signs.

You can stop the Supply Chain Planner server by using the kill command from another terminal session and specifying the Process ID (PID) of the process to end:

kill PID

You can use the process overview (ps) command to determine the Supply Chain Planner server's PID.

To stop the Supply Chain Planner server from the current terminal session, you can use the System Request function key. This key varies with terminals, keyboards, and display emulators.

- When using *IBM Personal Communications*, right-click anywhere in the panel and press the SysRq key. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.
- On a PC keyboard, the System Request function key sequence is to press and hold the Shift and Esc keys at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and press Enter again.
- On a *non-programmable terminal*, the System Request function key sequence is to hold down the ALT key and then press the Print/Sys Req key at the same time. A line appears at the bottom of the panel. Press Enter and you see the System Request menu. Select option 2 (End previous request) and then press Enter again.

See the reference manual for your particular terminal, keyboard, or display emulator if these combinations do not work for you.

Once you do this, you see the dollar sign (\$). This indicates that the QP2TERM session is free again and available for other requests.

An example is shown in Figure 388.



Figure 388. Supply Chain Planner server foreground process ended using the System Request function key

7.2.1.2 Starting Supply Chain Planner server as a background process You can also run the Supply Chain Planner server as a background process. This is like a batch process that does not lock the QP2TERM session. Since the process is running in the background, you can issue other commands or program calls. You do not have to start multiple QP2TERM sessions from multiple iSeries signons, because you can start multiple background processes from one QP2TERM session.

To start a program or shell script as a background process, call it with the ampersand (&) character at the end and press Enter.

Figure 389 shows an example of changing to the Supply Chain Planner environment directory within QP2TERM and then calling the start_scp startup shell script as a background process.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
  $
> start scp &
         149
  [1]
  $ scp engine version 5.0.1 of 00-12-21 [32-bit ASCII]
  Import: $SCP SYSTEM
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_kinds.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_parameters.
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_properties.
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.imp
 Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/meta model.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/model access.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/user.imp
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.d
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 389. Starting the start_scp script as a background process

The Supply Chain Planner server is now up and running on the default port 27111. Notice that you see the dollar sign (\$) character available right after you called the script. This means that this QP2TERM session is not locked and other commands or program calls can be issued.

If you receive the error message \$ No such file or directory /QOpenSys/usr/bin/sh: /dev/null: cannot open, then you need to create the /dev/null file on your system. You can do this by using the touch command:

touch /dev/null

The background processes now works.

An example showing the error and using touch to create the file /dev/null is shown in Figure 390.

```
/QOpenSys/usr/bin/sh
> cd /opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
  $
> start_scp &
         1254
 [1]
  $ No such file or directory
  /QOpenSys/usr/bin/sh: /dev/null: cannot open
> ls /dev
 QASP01
                 jva-stdin-null qsh-stdin-null
  Ś
> touch /dev/null
> ls /dev
                 jva-stdin-null null
                                                  qsh-stdin-null
 QASP01
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 390. Using touch to create the /dev/null file needed for background processes

You can also change the scp_engine program string within the start_scp script to run as a background process:

scp_engine -option_file
/opt/i2/TradeMatrix/5_0_1/SCP/sample_model/enh_as400.opt &

Figure 391 shows an example of changing to the Supply Chain Planner environment directory within QP2TERM and then calling the start_scp startup shell script as a foreground process, but with the scp_engine program set to run as a background process.

```
/@penSys/usr/bin/sh
  $
> cd /opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
  Ś
> start scp
  $ scp engine version 5.0.1 of 00-12-21 [32-bit ASCII]
  Import: $SCP SYSTEM
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_kinds.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/control parameters.
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/control properties.
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/meta model.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/model_access.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/user.imp
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.d
  Reading file /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/measure base.d
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 391. Starting the start_scp script with scp_engine run as a background process
The Supply Chain Planner server is now up and running on the default port 27111. The dollar sign (\$) character that you see means that this QP2TERM session is not locked and other commands and program calls can be issued. Notice that Figure 389 on page 345 and Figure 391 look almost identical and that the result is the same for both.

Once you submit a script or program as a background process, it cannot be ended by the System Request function key. Use the ps command to obtain a list of the running processes and their process identifiers (PIDs) running in the system.

An example of using ${\tt ps}~{\tt -ef}$ is shown in Figure 392.

/QOpenSys/usr/bin/sh

```
Reading file /opt/i2/tradematrix/5 0 1/scp/brussels/data/flo data/demand.dat
                                                                                    using Demand
  Reading file /opt/i2/tradematrix/5_0_1/scp/brussels/data/flo_data/demand.dat 81 records
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/4.3.1 schema/scp/reports/basic/default restriction.fm
  Reading /opt/i2/tradematrix/5 0 1/scp/brussels/import/restriction date.fmt
     7.74 sec Expression in $DATA_AREA/../enh_brus_corba.in(814828096)
     6.43 sec Expression in $DATA AREA/../enh brus corba.in(814828173)
     5.44 sec Expression in $DATA AREA/../enh brus corba.in(814828021)
 Reading corba interface.def
 Handling requests from port 27111
 Running main loop
> ps -ef
       UID PID PPID C STIME TTY TIME CMD
   I2OWNER 167 166 0 10:17:17 - 0:00 /QOpenSys/usr/bin/sh -i
I2OWNER 169 1 0 10:20:45 - 0:30 scp engine -option file
/opt/i2/tradematrix/5_0_1/SCP/sample_model/enh_as400.opt
   I20WNER 170 167 0 10:23:39
                                     - 0:00 ps -ef
  Ś
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 392. Using ps -ef to see the Supply Chain Planner server background process running

Notice that the Supply Chain Planner server is running with PID 169. There are three ways to end a background process:

- Press the F3 function key to exit the PASE QP2TERM shell terminal session. Use caution because this also ends all other background processes started from this session.
- Use the kill command to end the process, which is kill 169 in our example.
- The recommended way is to use the shutdown option available with scp_batch. The full syntax is:

scp_batch -port {port number} -batch 'do(shutdown("now"))'

After you end a background process, you can use the ps command to verify that it ended. An example of ending the Supply Chain Planner server using scp_batch and using ps -ef to verify this is shown in Figure 393.

```
/QOpenSys/usr/bin/sh
> ps -ef
                                     TTY TIME CMD
       UID PID PPID C STIME

        I2OWNER 167 166
        0 10:17:17
        - 0:00 /QOpenSys/usr/bin/sh -i

        I2OWNER 169
        1 0 10:20:45
        - 0:30 scp_engine -option_file

/opt/i2/tradematrix/5 0 1/SCP/enh as400.opt
   I2OWNER 170 167 0 10:23:39
                                      - 0:00 ps -ef
  $
> scp_batch -port 27111 -batch 'do(shutdown("now"))'
  [Thread 515] Trying to run [Command: identity for [TCP_Server Channel: 4, User
  [Thread 515] Running [Command: identity for [TCP Server Channel: 4, User: I2OW
  [Thread 515] Finished [Command: identity for [TCP Server Channel: 4, User: I20
  [Thread 515] Trying to run [Command: wait for [TCP Server Channel: 4, User: I2
  [Thread 515] Running [Command: wait for [TCP Server Channel: 4, User: I2OWNER]
  [Thread 515] Finished [Command: wait for [TCP_Server_Channel: 4, User: 120WNER
  [Thread 515] Trying to run [Command: com register for [TCP Server Channel: 4,
  [Thread 515] Running [Command: com register for [TCP Server Channel: 4, User:
  [Thread 515] Finished [Command: com_register for [TCP_Server_Channel: 4, User:
  [Thread 515] Trying to run [Command: wait for [TCP Server Channel: 4, User: 12
  [Thread 515] Running [Command: wait for [TCP Server Channel: 4, User: I2OWNER]
  [Thread 515] Finished [Command: wait for [TCP Server Channel: 4, User: I2OWNER
  [Thread 772] Trying to run [Command: load user for [TCP Server Channel: 4, Use
  [Thread 772] Running [Command: load user for [TCP Server Channel: 4, User: I20
  [Thread 772] Finished [Command: load user for [TCP Server Channel: 4, User: I2
  [Thread 772] Trying to run [Command: eval expression for [TCP Server Channel:
  [Thread 772] Running [Command: eval expression for [TCP Server Channel: 4, Use
  eval expression [User: I2OWNER]: [Expression: shutdown("now")]
  [Thread 772] Finished [Command: eval expression for [TCP Server Channel: 4, Us
  [Thread 515] Trying to run [Command: shutdown notify for [TCP_Server_Channel:
  [Thread 515] Running [Command: shutdown notify for [TCP Server Channel: 4, Use
 Warning: [TCP Server Channel: 4, User: I2OWNER] quit: Batch client finished
  [Thread 515] Finished [Command: shutdown notify for [*DEAD* TCP Server Channel
  [Thread 515] Trying to run [Command: shutdown_request for [Self_Channel, User:
  [Thread 515] Running [Command: shutdown_request for [Self_Channel, User: I20WN
 Warning: [Self Channel, User: I2OWNER] shutdown: now
  [Thread 515] Finished [Command: shutdown request for [*DEAD* Self Channel, Use
 Running main loop
 $
> ps -ef
      UID PID PPID C STIME TTY TIME CMD
  I20WNER 167 166 0 10:17:17 - 0:00 /QOpenSys/usr/bin/sh -i
I20WNER 177 167 0 10:36:15 - 0:00 ps -ef
 Ś
===>
F3=Exit
         F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```



Instead of typing the long scp_batch string every time you want to end the Supply Chain Planner server, place this into a shell script that you can call.

To create a Supply Chain Planner shutdown shell script, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the Supply Chain Planner directory:

cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/

- 3. Use the echo command to put the scp_batch string into a file called end_scp: echo scp_batch -port 27111 -batch 'do(shutdown("now"))' > end_scp
- 4. Use the chmod command to give the file execute authority:

chmod +x end_scp

5. Use the EDTF command to correct it because the single quotes (') are dropped by the echo command:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/end_scp')

Figure 394 shows an example of steps two through four.



Figure 394. Using a PASE QP2TERM shell to create shutdown shell script end_scp

7.2.2 QP2SHELL to start and stop the Supply Chain Planner server

You can also start and stop the Supply Chain Planner server in the PASE environment from an OS/400 command line. You use the QP2SHELL callable program and then pass a startup shell script or program as a parameter.

To start the Supply Chain Planner server using QP2SHELL and the start_scp script, you can use the following command:

CALL PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' 'PATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450' '/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/start_scp')

Notice that you have to set the PATH environment variable (for example, PATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450) for the start_scp shell script to find the scp_engine executable. You could also change the start_scp shell script by qualifying the path to the scp_engine executable (for example, /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/scp_engine), then PATH would not be needed.

Figure 395 shows an example of the panel that appears when you use the F4 function key to prompt the QP2SHELL program call to execute the start_scp startup shell script.

```
Call Program (CALL)
Type choices, press Enter.
                    . . . . . . . > QP2SHELL
Program .
                                                Name
                                     *LIBL
                                                Name, *LIBL, *CURLIB
  Library
Parameters .
                               . > '/QOpenSys/usr/bin/sh'
                                  > 'PATH=/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450
                + for more values > '/opt/i2/TradeMatrix/5 0 1/SCP/OS400 450/star
t scp'
                                                                        Bottom
         F4=Prompt
                     F5=Refresh F12=Cancel
                                                F13=How to use this display
F3=Exit
F24=More keys
```

Figure 395. Using CALL QP2SHELL to start Supply Chain Planner using the start_scp shell script

```
Note
```

To process a shell script using QP2SHELL, start the /QOpenSys/usr/bin/sh shell first.

Press Enter to run the program call. This starts the Supply Chain Planner server as a foreground or interactive process (on the default port 27111) that locks your display session until it is ended. You can call QP2SHELL multiple times this way if you have multiple iSeries signons.

Since your display session is locked, one way to verify that the server is running is to bring up another display session. Then use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status), or use the NETSTAT OPTION (*CNN) command, and look for port 27111. An example is shown in Figure 396.

		Work with	n TCP/IP Com	nection Status	
Loca	al internet ad	ldress		: *ALL	System: 12
Type 4=	e options, pre =End 5=Displ	ess Enter. ay details			
	Remote	Remote	Local		
Opt	Address	Port	Port	Idle Time State	
-	*	*	16571	090:15:10 Listen	
	*	*	16572	090:15:19 Listen	
	*	*	16610	116:15:40 Listen	
	*	*	16611	089:45:25 Listen	
	*	*	16612	089:45:29 Listen	
	*	*	27111	000:02:59 Listen	
	*	*	40000	115:49:51 Listen	
	*	*	40024	116:15:43 Listen	
	*	*	www-http	090:12:56 Listen	
	*	*	https	090:12:56 Listen	
	*	*	www-http	089:42:42 Listen	
					More
F5=F	efresh F11=	Display byte (rounts F13:	-Sort by column	
F14-	Display port	numbers F22-	=Display ent	ire field F24-More	kevs
- -	-probray Porc	TOTOCTO TZZ-	-Dispidy die.		1010

Figure 396. Using NETSTAT *CNN to see Supply Chain Planner server port 27111 running

Another way to verify this is to use the \mathtt{ps} command from another display session: \mathtt{ps} -ef

See Figure 397 for an example.

```
/QOpenSys/usr/bin/sh
 $
> ps -ef
     UID PID PPID C STIME TTY TIME CMD
  I20WNER 166 1 0 11:28:19
                               - 0:00 /QOpenSys/usr/bin/sh PATH=/opt/i2/TradeMatrix/5 0 1/SCP/OS40
/opt/i2/TradeMatri
  I2OWNER 197 166 0 11:28:20 - 0:30 scp engine -option file
/opt/i2/tradematrix/5 0 1/SCP/sample_model/enh_as400.opt
  I20WNER 199 198 0 11:32:58 - 0:00 /QOpenSys/usr/bin/sh -i
  I20WNER 200 199 0 11:33:01
                                - 0:00 ps -ef
 $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 397. Using ps -ef from another display session to see the start_scp shell and Supply Chain Planner processes running

Notice that there are two processes running:

- One for the call to the start_scp shell script
- · One where the Supply Chain Planner server is running

This means that there are two separate processes to stop. There are three ways to end them:

 Use the System Request function key to end your locked display where you did the QP2SHELL call (PID 166). This key varies with terminals, keyboards, and display emulators as explained on page 343.

Then you need to use the kill command from a PASE QP2TERM shell environment to end the Supply Chain Planner server (PID 197):

kill 197

• Use the kill command to end both processes:

kill 166 kill 197

 The recommended way is to use the shutdown option available with the scp_batch client. The full syntax is:

scp_batch -port 27111 -batch 'do(shutdown("now"))'

A benefit to using scp_batch is that it ends both processes for you at the same time.

After you end the Supply Chain Planner server, you can use the ps command to verify that it ended. An example of ending the Supply Chain Planner server using scp batch and using ps -ef to verify this is shown in Figure 398.

```
/QOpenSys/usr/bin/sh
 Ś
> cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/
 Ś
> ps -ef
      UID PID PPID C STIME TTY TIME CMD
  I20WNER 166 1 0 11:28:19
                                  - 0:00 /QOpenSys/usr/bin/sh PATH=/opt/i2/TradeMatrix/5_0_1/SCP/OS4
/opt/i2/TradeMatri
  I2OWNER 197 166 0 11:28:20 - 0:30 scp_engine -option_file /opt/i2/tradematrix/5_0_1/SCP/enh a
  I2OWNER 199 198 0 11:32:58 - 0:00 /QOpenSys/usr/bin/sh -i
I2OWNER 200 199 0 11:33:01 - 0:00 ps -ef
 Ś
> scp batch -port 27111 -batch 'do(shutdown("now"))'
 Ŝ
> ps -ef
     UID PID PPID C STIME TTY TIME CMD
  120WNER 199 198 0 11:32:58 - 0:00 /Q0penSys/usr/bin/sh -i
  I20WNER 203 199 0 11:40:21
                                  - 0:00 ps -ef
 $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 398. Using scp_batch to end the Supply Chain Planner server and monitoring using ps -ef

To see the progress messages from the server after the server end, or to look for errors, you can use the Work with Spooled Files (WRKSPLF) command for the user that issued the call:

WRKSPLF SELECT (I20WNER)

You then need to look for a spooled file called QPRINT. If the server is still running, this file is in an open (OPN) status and cannot be viewed. If the file is in a ready (RDY) status, then select option 5 to view the file.

Figure 399 shows an example of the contents of QPRINT after a Supply Chain Planner server started and ended normally.

$\left(\right)$	Display Spooled File
File : QPRINT	Page/Line 1/6
Control	Columns 1 - 130
Find	
*+1+2+3+.	4+5+6+7+
scp_engine version 5.0.1 of 00-12-21	[32-bit ASCII]
Import: \$SCP_SYSTEM	
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/control_kinds.imp
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/control_parameters.im
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/control_properties.im
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/measure_base.imp
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/meta_model.imp
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/model_access.imp
Reading /opt/i2/tradematrix/5_0_1/SCP	P/OS400_450/scp/system/user.imp
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/measure_base.dat
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/measure_base.dat
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/model_access.dat
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/model_access.dat
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/meta_model.dat u
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/meta_model.dat 2
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/user.dat using u
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/user.dat 20 reco
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/control_properti
Reading file /opt/i2/tradematrix/5_0_	1/SCP/OS400_450/scp/system/control_properti
	More
F3=Exit F12=Cancel F19=Left F20	9=Right F24=More keys

Figure 399. Using WRKSPLF to view the contents of QPRINT after using Supply Chain Planner

7.2.3 Automating the Supply Chain Planner servers using CL programs

The PASE QP2TERM shell environment is fine when you want to manually start and stop Supply Chain Planner servers. However, most customers want to automate this process. This section shows you how to create CL programs to do this using QP2SHELL.

7.2.3.1 Starting the Supply Chain Planner server

To start the Supply Chain Planner server, follow these steps:

- 1. Create a startup shell script since the Supply Chain Planner startup program name and parameters can become quite lengthy. We use one called start_scp, or you can create a different one.
- 2. Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call the startup shell script. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 400 shows an example program that you can use called SCP_START.

```
Columns . . . :
              1 80
                        Browse
                                                       12/12SOURCE
SEU==>
                                                         SCP START
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...
      0001.00
                PGM
             MONMSG
0002.00
                         MSGID(CPF0000)
              CALL
0002.01
                         PGM(QP2SHELL) PARM('/QOpenSys/usr/bin/sh' +
0002.02
                           'PATH=/opt/i2/TradeMatrix/5_0_1/SCP/os400_4+
0002.03
                          50' +
                          '/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/st+
0002.04
0002.05
                          art_scp')
0010.00
                ENDPGM
      F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel F16=Repeat find F24=More keys
            (C) COPYRIGHT IBM CORP. 1981, 2000.
```

Figure 400. Creating a CL program called SCP_START to start the Supply Chain Planner server

3. After you create and compile the program, start the Supply Chain Planner server by calling the program:

call i2/scp_start

In our case, *i2* is the name of the library the program was created in, and *SCP_START* is the name of the program. An example is shown in Figure 401.

MAIN	AS/400 Main Menu	Contour TO	
Select one of the following:		System: 12	
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the s Problem handling Display a menu Information Assistant Client Access/400 task Sign off 	folders system options		
Selection or command ===> call i2/scp_start			
F3=Exit F4=Prompt F9=Retri F23=Set initial menu	leve F12=Cancel F13=In	formation Assistant	-

Figure 401. Starting the Supply Chain Planner server from CL program SCP_START

4. As explained in 7.2.2, "QP2SHELL to start and stop the Supply Chain Planner server" on page 349, this starts the Supply Chain Planner server on the

default port of 27111 as a foreground or interactive process, and it locks your display session until it is ended.

Since your display session is locked, one way to verify that everything starts correctly is to bring up another display session, use the Work with TCP/IP Network Sts (NETSTAT) command and select option 3 (Work with TCP/IP connection status). Or you can use the NETSTAT OPTION (*CNN) command and look for port 27111. Another way is to bring up another display session and use the ps command.

When you are ready to end the Supply Chain Planner server, we recommend that you use the shutdown option available with the scp_batch client:

scp_batch -port 27111 -batch 'do(shutdown("now")) '

Then use the ps -ef command to verify that it ended.

5. After you create the CL program to start the Supply Chain Planner server, you can easily create another CL program to submit this as a batch job so an interactive session is not locked while the Supply Chain Planner server is running.

Figure 402 shows an example program that you can use called STRSCPBCH.

Columns : 1 SEU==>	80	Browse		12/12SOURCE
FMT ** + 1 +	+ 2	+ 3 + 4	+ 5 +	6 + 7
**********	* Beginni	ng of data ******	*****	*****
0001.00	PGM			
0002.00 M	MONMSG	MSGID(CPF0000)		
0003.00	SEMJOB	CMD (CALL PGM (12/S	CP START) JOB (S	SCP27111) +
0004.00		JOBD (*LIBL/QBAT	CH)	,
0005.00 E	ENDPGM			
********	**** End	of data *********	*****	*****
F3=Exit F5=Refresh	F9=Retr:	leve F10=Cursor	F11=Toggle F1	12=Cancel
F16=Repeat find	F24=More	e keys		
(C) (C)	OPYRIGHT I	IBM CORP. 1981, 200	0.	
)

Figure 402. Creating a CL program called STRSCPBCH to start Supply Chain Planner as a batch job

Notice that we call the batch job SCP27111 so it is easy to see which server is running and on which port it is running. We also use QBATCH for the job description and subsystem, but you can use another one.

6. After you create and compile the program, start the Supply Chain Planner server by calling the program:

call i2/strscpbch

In our case, *i2* is the name of the library in which the program is created, and *STRSCPBCH* is the name of the program. An example is shown in Figure 403.

MAIN	AS/400 Main Menu	l Charlenn	
Select one of the following:		System:	12
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the s Problem handling Display a menu Information Assistant Client Access/400 task 	folders system options		
90. Sign off			
Selection or command ===> call i2/strscpbch			
F3=Exit F4=Prompt F9=Retr F23=Set initial menu	leve F12=Cancel	F13=Information Ass	istant

Figure 403. Starting the Supply Chain Planner server as a batch job from CL program STRSCPBCH

7. As explained in 7.2.2, "QP2SHELL to start and stop the Supply Chain Planner server" on page 349, this starts the Supply Chain Planner server on the default port 27111 as a foreground or interactive process. This time it does not lock your display session. You can use the NETSTAT OPTION (*CNN) command and look for port 27111. Or from another display session, use the ps command to verify that everything started correctly. You can also look at the submitted batch job using one of the following commands:

WRKSBMJOB SBMFROM(*USER) WRKSBSJOB SBS(QBATCH) WRKACTJOB SBS(QBATCH)

Figure 404 shows an example of using the WRKACTJOB SBS (QBATCH) command. Notice that there is one job for the startup shell script and one QP2FORK job where the Supply Chain Planner server (scp_engine executable) is running.

Work with Active Jobs	I2
05/08/01 CPU %: 48.4 Elapsed time: 00:00:00 Active jobs: 196	11:29:28
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display mes 8=Work with spooled files 13=Disconnect	sage
OptSubsystem/JobUserTypeCPU %FunctionStatusQBATCHQSYSSBS.0DEQWQP2FORKI20WNERBCI47.0RUNSCP27111I20WNERBCH.0PGM-SCP_STARTTHDW	
Parameters or command	Bottom
===> F3=Exit F5=Refresh F7=Find F10=Restart statistics F11=Display elapsed data F12=Cancel F23=More options F24=More	keys

Figure 404. Using WRKACTJOB to check on the Supply Chain Planner server running in QBATCH

8. When you are ready to end the Supply Chain Planner server, we recommend you use the shutdown option available with the scp_batch client:

scp batch -port 27111 -batch 'do(shutdown("now"))'

You can then use the ps -ef command to verify that it ended. The jobs running in QBATCH also end automatically.

7.2.3.2 Shutting down the Supply Chain Planner server

To shut down the Supply Chain Planner server, follow these steps:

1. The recommended way to shut down the Supply Chain Planner server is to use the shutdown option available with the scp_batch client. The full syntax is:

scp batch -port 27111 -batch 'do(shutdown("now"))'

A benefit to using scp_batch instead of manually ending processes with the kill command, or using the System Request function key if there is an interactive process, is that it ends all processes for you at the same time.

You could create a shell script to contain this scp_batch string (as shown in Figure 394 on page 349), or you can use QP2SHELL to issue it directly. We explain the latter option in this section.

 Create a source physical file, add a member to it, and create a CL program in it using CALL QP2SHELL to call scp_batch. For help with these steps, see C.1, "Basic tips and techniques" on page 627.

Figure 405 shows an example program that you can use called SCP_END.

```
Columns . . . :
             1 80
                      Browse
                                                 I2/I2SOURCE
SEU==>
                                                   SCP END
FMT ** ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 .
    FGM
MONMSG
CALL
0001.00
                       MSGID(CPF0000)
0002.00
0003.00
                       PGM (QP2SHELL) +
                       PARM('/opt/i2/TradeMatrix/5 0 1/SCP/os400 4+
0004.00
                        50/scp batch' '-port' '27111' '-batch' +
0005.00
                        'do(shutdown("now"))')
0006.00
0007.00
              ENDPGM
     F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel
F16=Repeat find F24=More keys
```

Figure 405. Creating a CL program called SCP_END to end the Supply Chain Planner server

3. After you create and compile the program, you can end the Supply Chain Planner server by calling the program:

call i2/scp_end

In our case, *i2* is the name of the library the program was created, and SCP_END is the name of the program. An example is shown in Figure 406.

MAIN	AS/4	00 Main Menu	~	
Select one of the foll	owing:		System:	12
 User tasks Office tasks General system Files, librari Programming Communications Define or chan Problem handli Display a menu Information As Client Access/ Sign off 	tasks es, and folde: ge the system ng sistant option 400 tasks	ns		
Selection or command ===> call i2/scp_en	d			
F3=Exit F4=Prompt F23=Set initial menu	F9=Retrieve	F12=Cancel	F13=Information Assis	stant

Figure 406. Ending the Supply Chain Planner server from a CL program called SCP_END

4. You can use the ps -ef command to verify that the Supply Chain Planner server ended. Or you can use a command, such as WRKACTJOB SES (QBATCH), to verify that the jobs running in QBATCH ended if you started the Supply Chain Planner server this way.

7.2.4 Running multiple Supply Chain Planner servers

When you start a Supply Chain Planner server, you can accept the default port number 27111, or you can specify a different port number for the server to run on. By using different port numbers, you can run multiple Supply Chain Planner servers on one system at the same time.

Figure 407 shows an example of using the EDTF command to add the -port parameter to the start_scp startup shell script so the Supply Chain Planner server starts and runs on port number 11000. You could create custom scripts for each port you want to start. Or you can create a script where you pass in the port number as a parameter when calling the script.



Figure 407. Changing start_scp to start the Supply Chain Planner server on a different port

To start Supply Chain Planner using port 11000 after adding the -port parameter to scp_engine in the start_scp startup shell script, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 2. Use the cd command to change to the main Supply Chain Planner directory:

cd /opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/

3. Call the startup shell script start_scp:

start_scp

An example is shown in Figure 408.

/QOpenSys/usr/bin/sh Reading file /opt/i2/tradematrix/5 0 1/scp/brussels/data/flo data/demand.dat 8 Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/4.3.1 schema/scp/reports/basic Reading /opt/i2/tradematrix/5 0 1/scp/brussels/import/restriction date.fmt 7.77 sec Expression in \$DATA AREA/../enh brus corba.in(814828096) 6.45 sec Expression in \$DATA_AREA/../enh_brus_corba.in(814828173) 5.44 sec Expression in \$DATA AREA/../enh brus corba.in(814828021) Reading corba interface.def Handling requests from port 11000 Running main loop [Thread 515] Trying to run [Command: identity for [TCP Server Channel: 4, User [Thread 515] Running [Command: identity for [TCP Server Channel: 4, User: I2OW [Thread 515] Finished [Command: identity for [TCP Server Channel: 4, User: I20 etc... Warning: [Self Channel, User: I2OWNER] shutdown: now [Thread 515] Finished [Command: shutdown request for [*DEAD* Self_Channel, Use Running main loop Ś ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 408. Starting and stopping the Supply Chain Planner server with a non-default port number

4. To shut down the Supply Chain Planner server on port 11000, from another session, use the scp_batch client with the -port parameter:

scp_batch -port 11000 -batch 'do(shutdown("now"))'

Notice that the dollar sign (\$) character reappears after you use scp_batch. An example is shown in Figure 408.

7.2.5 Starting the Supply Chain Planner client

Once you a Supply Chain Planner server is started on a port, start the Supply Chain Planner client from a PC. You can read how to install the client in 7.1.5, "Supply Chain Planner client installation" on page 334.

To start the Supply Chain Planner client, follow these steps:

- Start the Supply Chain Planner client program from a PC by clicking Start-> Programs-> i2 TradeMatrix Supply Chain Planner 5.0.1-> i2 TradeMatrix Supply Chain Planner. If this is something you are going to start often, you may want to create a shortcut to this program and put it on your PC desktop.
- 2. Once you execute this program, Supply Chain Planner client login information window (Figure 409) opens where you need to specify:
 - The host name (Host parameter) of the iSeries server where the Supply Chain Planner server is running
 - The port number (Port parameter) of the Supply Chain Planner server on the iSeries server (the default is 27111)
 - The user name (User parameter) for the user trying to connect to the Supply Chain Planner server (the default is SCPUSER)
 - The password (Password parameter) for the user trying to connect to the Supply Chain Planner server (the default is CHANGEME)

🐉 i2 TradeMatri	x Supply Chain Planner 🛛 🗙
Login Information	۱ <u> </u>
<u>H</u> ost:	i2
Port:	27111
User:	scpuser
Password:	*****
	OK Cancel

Figure 409. Supply Chain Planner client login information window

3. Click the **OK** button to continue. A window (Figure 410) appears that shows the client trying to connect to the server.



Figure 410. Supply Chain Planner client connecting to server status window

4. If the connection from the client to the server is established, the main Supply Chain Planner window (Figure 411) appears.



Figure 411. Supply Chain Planner client window after successful connection to a server

At this point, your Supply Chain Planner environment is up and running.

If there is a problem connecting to the Supply Chain Planner server (for example, you specified an incorrect host name, or there isn't a server running on the port specified), a window opens like the example in Figure 412.

- 1. Stop the Supply Chain Planner client by clicking OK.
- 2. Verify the information provided in Figure 409.
- 3. Start the server if necessary as described in 7.2.1, "QP2TERM to start and stop the Supply Chain Planner server" on page 340, or 7.2.2, "QP2SHELL to start and stop the Supply Chain Planner server" on page 349.
- 4. Start the client again.

You may be able to analyze Supply Chain Planner client log files for additional information, which is described in 7.2.6.2, "Supply Chain Planner client log file" on page 365.

i2 TradeMatrix Supply Chain Planner	×
Could not connect to port 27111 on host i2 after 3 attempts.	Make sure the host and port are correct and try again.
ОК	

Figure 412. Supply Chain Planner connect failed window

7.2.6 Server and client logging considerations

If you have problems running a Supply Chain Planner server, it can be helpful to create and analyze log files of Supply Chain Planner server and Supply Chain Planner client activity. These log files record detailed activity data and error messages. This section explains how to work with log files both on the server and on the client.

7.2.6.1 Supply Chain Planner server log file

Supply Chain Planner server activity displays on your panel if you start Supply Chain Planner with the PASE QP2TERM shell. There are a few parameters on the scp_engine executable that can add additional information, for example:

- command_execute: Displays a message when commands execute.
- diagnostic: Displays messages meant for programmers.
- show_progress: Displays progress messages.
- stack_trace: Prints a stack trace of each thread when the process dies with a signal.

You can specify these parameters on the call to scp_engine or in the options file. If you encounter problems involving the Supply Chain Planner server, you see those messages on your panel. However, if you are not using QP2TERM to start the server or you want to save the messages, you can create a log file of this server activity. Another reason to create a log file is when working with i2 Customer Support.

A log file is maintained by the Supply Chain Planner server by using the log_file parameter on scp_engine and specifying the name of an existing log file, for example:

```
scp_engine -option_file
/opt/i2/TradeMatrix/5_0_1/SCP/sample_model/enh_as400.opt -port 11000 -log_file
/scp_log/log.dat
```

Before you can use the log_file parameter, you have to manually create the log file. If you don't, the next time you start the server, you see the error message Error: Can't open log file: /scp_log/log.dat.

This does not affect Supply Chain Planner server operation, but you do not end up with a log file or any logging information.

If you want to monitor CORBA activity, you can use parameter corba_log on scp_engine and specify a different log file as shown here:

-corba_log /scp_log/CORBA.log

To create and view a Supply Chain Planner server log file, follow these steps:

- On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the mkdir command to create the directory for the log file if you want to use one that does not already exist:

mkdir /scp_log

3. Use the touch command to create the log file:

touch /scp_log/log.dat

An example of steps two and three is shown in Figure 413.



Figure 413. Creating the Supply Chain Planner server log file /scp_log/log.dat

4. You now need to add the log_file parameter to the scp_engine executable, pointing to the log file you created. We use the start_scp startup shell script to start Supply Chain Planner, so you can use the EDTF command to modify it:

EDTF STMF('/opt/i2/TradeMatrix/5_0_1/SCP/OS400_450/start_scp')

Press the F3 function key twice to save and exit.

5. Start the Supply Chain Planner server. As soon as it starts, your file is updated. You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line or the cat command from within the PASE QP2TERM shell to view the log file:

cat log.dat

An example is shown in Figure 414.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /scp log
  Ś
> 1s
  log.dat
          log.dat~
  $
> cat log.dat
  scp engine version 5.0.1 of 00-12-21 [32-bit ASCII]
  Import: $SCP SYSTEM
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_kinds.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control parameters.
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/control_properties.
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/measure_base.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/meta model.imp
  Reading /opt/i2/tradematrix/5 0 1/SCP/OS400 450/scp/system/model access.imp
  Reading /opt/i2/tradematrix/5_0_1/SCP/OS400_450/scp/system/user.imp
 ==>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 414. Displaying the contents of the Supply Chain Planner server log file /scp_log/log.dat

If you look in the /scp_log directory, notice that the last or previous version of the log file is stored as *log.dat*~. This is handy when you want to compare examples of working and non-working Supply Chain Planner servers, such as when you start having problems with the server but didn't have any the last time it was started.

7.2.6.2 Supply Chain Planner client log file

If you have trouble connecting the Supply Chain Planner client to a server or if i2 Customer Support requests additional information, you can analyze log file i2rhythm.log on the client PC. This is updated by the Supply Chain Planner client program. Depending on your PC operating system, the log file may be in the location C:\WINDOWS\temp or C:\Documents and Settings\<username>\Local Settings\Temp.

The example in Figure 415 shows the contents of the i2rhythm.log file after the client fails to connect to a Supply Chain Planner server running on port number 27111. In this case, there was no Supply Chain Planner server on that port running on the system specified. The recovery is to start a Supply Chain Planner server with port number 27111 and try to connect the client again.

📋 i2rhythm.log - WordPad	
File Edit View Insert Format Help	
<pre>k<< ADL instance: DLL connection, Time: Wed Feb 21 16:32:10 2001 Error: Couldn't connect to server on port 27111 after 1 seconds From: ADL_Base API Error: Unable to connect to Rhythm engine on port 27111 From: ADL_Base API</pre>	-
<<< ADL instance: DLL connection, Time: Wed Feb 21 16:32:10 2001 Error: Couldn't connect to server on port 27111 after 1 seconds From: ADL_Base API Error: Unable to connect to Rhythm engine on port 27111 From: ADL_Base API	
<<< ADL instance: DLL connection, Time: Wed Feb 21 16:32:19 2001 Error: Couldn't connect to server on port 27111 after 1 seconds From: ADL_Base API Error: Unable to connect to Rhythm engine on port 27111 From: ADL_Base API	-
For Help, press F1	

Figure 415. Displaying the Supply Chain Planner client log file i2rhythm.log using WordPad



Chapter 8. Merant SequeLink Client and Server

This chapter provides information about the Merant SequeLink ODBC Edition 4.51 Client and Server products, how to install them on an iSeries server, and how to use them with the i2 Link product to enable ODBC support. This information is only valid for OS/400 V4R5M0. i2 Five.Two Link on OS/400 V5R1M0 does not use SequeLink, because native DB2 CLI support is available and is the preferred way to access data.

8.1 What is SequeLink

The Open Database Connectivity (ODBC) interface is a standard way that many applications, including the i2 Link product, access data from a database. In UNIX environments (and in OS/400 PASE on an iSeries server), i2 Link uses Merant's (formerly Intersolv) SequeLink ODBC middleware. The SequeLink ODBC drivers provide a common interface definition, permitting access to a variety of data sources.

There are three distinct components to the ODBC/SequeLink interface, each of which requires a different level of complexity of configuration:

- SequeLink
- ODBC layer
- i2 Link

In i2 Link, you can define a connection without knowing the details of the connections. However, if you need to configure the lower communication layers, then you need detailed knowledge of the databases and networks.

8.1.1 SequeLink layer

SequeLink is a client/server software package, with an added ODBC layer in the UNIX version. Normally, the SequeLink Client is installed on the same computer as the Link server. The SequeLink Server is installed on the computer where the database resides.

Link uses ODBC executable program calls to access the SequeLink Client. The SequeLink Client and Server use a TCP/IP-based communication protocol to talk to each other. The SequeLink Server talks to the database using native database methods. The SequeLink Client layer can be thought of as an ODBC driver.

Figure 416 shows the relationship between Link, SequeLink, and a customer's database.



Figure 416. Link use of SequeLink overview diagram

8.1.1.1 What SequeLink Client is

SequeLink Client is a universal client component that includes an ODBC driver. It provides direct, point-to-point connections from client to server, removing the need for gateways and database-vendor middleware. ODBC calls are sent across a network from SequeLink Clients to the SequeLink Server service, which passes the requests to the database engine. The database engine processes the requests and passes the results back to the SequeLink Server service, which returns them to the Client.

The SequeLink ODBC Driver on UNIX (and in PASE on an iSeries server) is compliant with Microsoft's ODBC 3.0 specification. ODBC allows applications to access multiple databases using Structured Query Language (SQL). The SequeLink ODBC Driver allows any ODBC-compliant application to access any database supported by SequeLink Server.

8.1.1.2 What SequeLink Server is

SequeLink Server provides the common communication, management, and ODBC database access between ODBC client applications and server databases. It uses a common architecture and common functionality across its supported platforms, with only a few platform-specific differences.

SequeLink Server handles:

- The starting and stopping of processes
- Host security authentication
- Logging information
- · Communication and data access activities

As stated in "What SequeLink Client is", SequeLink Server receives ODBC calls across a network from SequeLink Clients. Then it passes the requests to the database engine. The database engine processes the requests and passes the results back to the SequeLink Server service, which returns them to the Client.

SequeLink Server for iSeries allows a SequeLink Client to access one or more files (tables) in one or more libraries (collections). SequeLink communicates with the iSeries server using dynamic SQL.

SequeLink's network service is provided by compatible network modules residing at the client and server that send and receive network packets. On the iSeries server, APPC or TCP/IP can be used. Using APPC, SequeLink Server runs on the iSeries server as a communications job. Using TCP/IP, it runs as a Batch Immediate (BCI) job. For both network protocols, a new job is started for each SequeLink session.

8.1.2 ODBC layer

ODBC is the standard middleware used to communicate data between databases and applications in the Windows world, but it is not standard in the UNIX world. To use the ODBC standard in the UNIX world, SequeLink developed shared libraries in UNIX that mimic the ODBC Manager, the tool that coordinates ODBC connections. You must implement the SequeLink ODBC driver as shared libraries before the UNIX ODBC Manager can use it.

8.1.3 Link layer

Link uses the same configuration when used with either a native ODBC driver or the SequeLink ODBC driver. The ODBC interface is a one-way interface where Link is a client of the ODBC data source. Link cannot receive direct requests from an ODBC source.

8.2 SequeLink Client

This section goes through the steps you need to install the Merant SequeLink ODBC Edition Client 4.51 for AIX on an iSeries server in the PASE environment. This version of SequeLink is only supported on OS/400 V4R5M0. i2 Five.Two Link on OS/400 V5R1M0 does not use SequeLink, because native DB2 CLI support is available and is the preferred way to access data.

8.2.1 Installing the SequeLink Client

Accessing an ODBC data source through Link using SequeLink Client on an iSeries server in the PASE environment involves several steps:

- 1. Install the SequeLink Client
- 2. Set environment variables
- 3. Configure a data source with the sqlnkcau utility
- 4. Configure the UNIX ODBC Manager for the data source
- 5. Configure i2 Link to use SequeLink ODBC (see 6.4, "Using the Link client to access SQL data using SequeLink" on page 294)

- Note -

SequeLink is not shipped automatically with Link even though it is required for ODBC support. You need to make sure to order it at the same time you order Link, or call i2 Support if it is not included with the Link CD-ROM. Do not call Merant for this because it has to come from i2.

8.2.2 Reference documentation

The following manuals are available on the SequeLink CD-ROM in the \Books\Sequelnk directory by opening books.pdf and selecting one of the manuals. The first one was used as a basis for this section.

- SequeLink ODBC Edition Client Installation Guide
- SequeLink Server Installation Guide
- SequeLink Administrator's Guide
- SequeLink ODBC Driver Reference for Windows 3.1x
- SequeLink ODBC Driver Reference for Windows 9x, Windows NT, UNIX, and Macintosh

- SequeLink Server for VSAM Installation and Administration Guide
- SequeLink Error Codes and Messages Reference

The *i2 TradeMatrix Link Implementation Manual - Version 5.0.1* is available on the Link CD-ROM in the root (\) directory. After you install the Link server, it is located in the /opt/i2/TradeMatrix/5_0_1/link/os400_450 directory. After you install the Link client, it is located in the C:\Rhythm\RhythmLink\5.0.1 folder. It is called tml_implementation.pdf. In the i2 manual, Chapter 3 has a section on SequeLink, and Chapter 10 has a section on ODBC connectivity.

8.2.3 Installing the SequeLink Client install code on the iSeries server

We recommend that you install the SequeLink Client on the same computer as the Link server or engine.

To move the installation code from the CD-ROM onto the iSeries server, follow these steps:

- 1. Sign onto the iSeries server with the user profile described in 2.4.1, "User profile creation" on page 33. In our case, it is called *I2OWNER*.
- Create a temporary directory on the iSeries server to hold the installation program. The one commonly used is /tmp/sqlnk, which is what we use during our installation. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /tmp/sqlnk

3. The file on the CD-ROM that you are looking for is called slclient.tar. You can find it in the /sequelnk/aix/client directory. Load the CD-ROM into a PC and FTP the file (in binary format) to the iSeries server, or load the CD-ROM into the iSeries's CD-ROM drive and copy it directly. We recommend that you use the latter option, which is what we used.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes or use the Work with Optical Volumes (WRKOPTVOL) command, and then select option 8 (Work with directories) to view the contents of the CD-ROM as shown in Figure 417.

Work with Optical F	iles
Directory /SEQUELNK/AIX/CLIENT Volume CD_DC_017	System: 12
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print	7=Rename
Opt File Name	SizeCreated
SLCLIENT.TAR	5836800 11/04/98 15:24:28
Parameters or command	Bottom
F3=Exit F4=Prompt F5=Refresh F6=Print F16=Repeat position to F17=Position to	list F9=Retrieve F12=Cancel F22=Display entire name

Figure 417. The slclient.tar file on the SequeLink CD-ROM

To copy the file directly, use the Copy Object (CPY) command:

CPY OBJ('/QOPT/CD_DC_017/SEQUELNK/AIX/CLIENT/SLCLIENT.TAR') TODIR('/tmp/sqlnk')

You should see a completion message stating that the object was copied.

4. After the tar file is on the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

5. Use the cd command to change to the directory where the tar file is located:

cd /tmp/sqlnk

6. Extract the tar file using the tar -xvf command as shown in Figure 418:

tar -xvf slclient.tar

/QOpenSys/usr/bin/sh
\$ > cd /tmp/sqlnk \$ > ls SLCLIENT.TAR \$
<pre>> tar -xvf slclient.tar x etc x etc/enc x etc/enc/itgdecr, 198094 bytes, 387 tape blocks x etc/enc/itgdecr, 198094 bytes, 387 tape blocks x etc/enc/encini.msg, 967 bytes, 2 tape blocks x etc/lang x etc/lang/usenglish.msg, 10637 bytes, 21 tape blocks x etc/lang/msg.dat, 34 bytes, 1 tape blocks x etc/tar x etc/tar x etc/tar x etc/tar/ivslkAIX.tar, 5498888 bytes, 10741 tape blocks x install.pi, 3745 bytes, 8 tape blocks x product.dat, 1046 bytes, 3 tape blocks x rscshell, 63825 bytes, 125 tape blocks x unixpi.ksh, 46094 bytes, 91 tape blocks \$ > ls -1 total 12712</pre>
-rwxrwxrwx 1 I20WNER 0 5836800 Nov 04 1998 SLCLIENT.TAR drwxr-xr-x 5 I20WNER 0 36864 Feb 22 11:43 etc -rr-r 1 I20WNER 0 3745 Oct 22 1998 install.pi -rr 1 I20WNER 0 1046 Oct 22 1998 product.dat -rwxrwxr-x 1 I20WNER 0 63825 Oct 22 1998 rscshell -rwxrwxr-x 1 I20WNER 0 46094 Oct 22 1998 unixpi.ksh \$
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 418. Extracting the slclient.tar file in a PASE QP2TERM shell

8.2.4 Modifying the SequeLink Client installation script

We are going to use the unixpi.ksh shell script to install the UNIX version of SequeLink Client code in PASE. However, it requires some modifications for it to work properly. You need to make the following changes:

- Add an uname section for OS/400.
- Add the GetMachineType section for OS/400.
- Comment out the CheckAvailSpace section.
- Set the AVAILSPACE variable to an appropriate number.
- Remove references to the clear command.

To update the unixpi.ksh script, follow these steps:

1. Use the Edit File (EDTF) command against the /tmp/sqlnk directory:

EDTF STMF('/tmp/sqlnk')

2. Type option 2 (Edit) next to the unixpi.ksh script to select it as shown in Figure 419. This takes you to the edit mode.

Dire Posi New	ctory: /tmp/sqlnk tion to: File :	Record	.: 10	É 6	
2=Ed	it 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete
Opt 1	Name SLCLIENT.TAR etc install.pi product.dat rscshell unixpi.ksh	Size 6,144K *DIR 8K 8K 96K 64K	Owner I20MNER I20MNER I20MNER I20MNER I20MNER I20MNER	Changed 11/04/98 15:24 02/22/01 11:43 10/22/98 00:28 10/22/98 00:29 10/22/98 00:29 10/22/98 00:29	Used 02/22/01 11:43 02/22/01 11:43 02/22/01 11:43 02/22/01 11:43 02/22/01 11:43 02/22/01 11:43
					Bottom
F3=E	xit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field

Figure 419. Using the EDTF command to display the /tmp/sqlnk directory

3. You see the panel shown in Figure 420.

Edit File: /tmp/sqlnk/unixpi.ksh Column: 1 of 80 by Record . : 1 of 1677 by 10 Control : #!/bin/ksh # # DataDirect SequeLink UNIX installation script Copyright (c) Intersolv Inc, 1991-1998 All rights reserved. # # #===== # toolkit.sh : DataDirect SequeLink UNIX installer # Copyright (c) INTERSOLV Inc., 1997 All rights reserved. # # #_____ # Global init #-_____ F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat ch (C) COPYRIGHT IBM CORP. 1980, 2000.

Figure 420. Using the EDTF command to edit shell script unixpi.ksh

On the Control line at the top of the panel, type:

case \$UNAME

Press the F16 function key to find that string. You need to copy the AIX section. You can easily do this by using the cc block copy function and then specifying A to insert the copied text *after* the *case \$UNAME in* line as shown in Figure 421. With the cursor anywhere under the CMD section of the editor, press F1 for help with these and other available options.

```
Edit File: /tmp/sqlnk/unixpi.ksh
Record . :
            775 of
                                                          1 of 47 by
                    1670 by 10
                                                 Column:
Control : case SUNAME
А
     case $UNAME in
CC
      "AIX")
      VERSION=`uname -v`
      if [ "$VERSION" = "4" ] ; then
        MACHINETYPE="AIX4"
      fi
      ;;
CC
      "HP-UX")
      VERSION=`uname -r | sed 's/\(....\).*/\1/'`
      if [ "$VERSION" = "B.10" ] ; then
        MACHINETYPE="HPUX10"
      elif [ "$VERSION" = "B.11" ] ; then
        MACHINETYPE="HPUX11"
      fi
       ;;
       "SunOS")
                    F12=Exit
                             F15=Services
F2=Save F3=Save/Exit
                                          F16=Repeat find
                                                          F17=Repeat ch
```

Figure 421. Using the EDTF command to block copy and insert AIX uname section

4. Change AIX in your copied section to OS400 as shown in Figure 422.

```
Edit File: /tmp/sqlnk/unixpi.ksh
Record . : 775 of
                                                Column:
                                                         1 of 47 by
                    1677 by 10
Control : case $UNAME
case $UNAME in
   "OS400")
   VERSION=`uname -v`
   if [ "$VERSION" = "4" ] ; then
    MACHINETYPE="AIX4"
   fi
   ;;
   "AIX")
   VERSION=`uname -v`
   if [ "$VERSION" = "4" ] ; then
    MACHINETYPE="AIX4"
   fi
   ;;
   "HP-UX")
   VERSION=`uname -r | sed 's/\(....\).*/\1/'`
   if [ "$VERSION" = "B.10" ] ; then
F2=Save F3=Save/Exit
                   F12=Exit
                             F15=Services
                                         F16=Repeat find F17=Repeat ch
```

Figure 422. Using the EDTF command to update the OS/400 uname section

5. On the Control line at the top of the panel, type:

GetMachineType

Press F16 to find the string. You then need to change *AIX* to OS400 after the line *case \$UNAME in* as shown in Figure 423. You should also add the line DISPLAYTYPE="AIX" somewhere after the line *if* ["*\$VERSION*" = "4"] to set a variable that the script never sets.



Figure 423. Using the EDTF command to update the GetMachineType section

6. On the Control line at the top of the panel, type:

CheckAvailSpace

Press F16 to find the string. Comment out the entire section using the pound (#) character as shown in Figure 424.

```
Edit File: /tmp/sqlnk/unixpi.ksh
Record . :
          1101 of
                     1677 by 10
                                                   Column:
                                                            1 of 80 by
Control : CheckAvailSpace
# CheckAvailSpace
  Checks the available space in the passed directory and puts it in
#
  the AVAILSPACE variable.
#
# Usage
#
  CheckAvailSpace <dirname>
#-----
#CheckAvailSpace()
#{
#
  case $MACHINETYPE in
#
  "AIX4")
   AVAILSPACE=`eval df -k $1 | sed '1d' 2>> $LOGFILE | awk '{print $3}'
#
#
   return 0
#
    ;;
 "HPUX1010" | "HPUX1020" | "HPUX11")
#
#
   AVAILSPACE=`eval df -b $1 | awk '{i=NF-2 ; print $i}'`
#
   return 0
#
    ;;
#
  "Solaris")
   AVAILSPACE=`eval df -k $1 | sed '1d' 2>> $LOGFILE | awk '{print $4}'`
#
#
   return 0
#
   ;;
#*)
  Ini Section ReadMsg $MSGFILE NoSpace | tee -a $LOGFILE
#
#
   Ini Section ReadMsg $MSGFILE ExitFailure | tee -a $LOGFILE
#
   exit 1
# esac;
#
  }
#
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat ch
```

Figure 424. Using the EDTF command to comment out the CheckAvailSpace section

7. On the Control line at the top of the panel, type:

CheckAvailSpace \$TARGETDIR

Press F16 to find the string. Since you commented out the CheckAvailSpace section, you also need to comment out the call to that section using the pound (#) character as shown in Figure 425. Set the *AVAILSPACE* variable to a large enough number (10000 in our case) since this is going to be set in the CheckAvailSpace section.

```
Edit File: /tmp/sqlnk/unixpi.ksh
                                                                   1 of 66 by
Record . :
             1563 of
                       1677 by 10
                                                        Column:
Control : CheckAvailSpace $TARGETDIR
CMD ....+...1....+...2...+...3...+...4...+...5...+...6...+...7...+..
#CheckAvailSpace $TARGETDIR
AVAILSPACE=10000
if [ $SIZEREQ -lt $AVAILSPACE ]; then
  Ini_Section_ReadMsg $MSGFILE SpaceOk | tee -a $LOGFILE
else
  Ini Section ReadMsg $MSGFILE SpaceFailed | tee -a $LOGFILE
  Ini Section ReadMsg $MSGFILE SpaceReg | tee -a $LOGFILE
 print $SIZEREQ | tee -a $LOGFILE
  Ini Section ReadMsg $MSGFILE ExitFailure | tee -a $LOGFILE
  exit 1
fi
# Check for the product tar file so that u can warn the user about
# incomplete installation product.
if [ ! -s $PRODFILE ]; then
  Ini_Section_ReadMsg $MSGFILE NoFullInstall | tee -a $LOGFILE
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find
                                                                  F17=Repeat ch
```

Figure 425. Using the EDTF command to set the AVAILSPACE variable

9. Remove the five references in the installation script to the clear command, which is not supported in PASE. As shown in Figure 426, on the Control line at the top of the panel, type T and press Enter to go to the top.

Then type clear and press function key F16 to find that string. You need to delete the lines with the clear command. You can easily do this using the D (delete) function. Use the F16 function key to find the next occurrence and continue until all five are deleted.

```
Edit File: /tmp/sqlnk/unixpi.ksh
                                                                   1 of 80 by
Record . : 1093 of 1678 by 10
                                                        Column:
Control : clear
\texttt{CMD} \dots + \dots 1 \dots + \dots 2 \dots + \dots 3 \dots + \dots 4 \dots + \dots 5 \dots + \dots 6 \dots + \dots 7 \dots + \dots
D
       clear
       Ini Section ReadMsg "$MSGFILE" MachineNotFound | tee -a $LOGFILE
       Ini Section ReadMsg "$MSGFILE" ExitFailure | tee -a $LOGFILE
       exit 1
      fi
      return 0;
    }
                  # CheckAvailSpace
  Checks the available space in the passed directory and puts it in
#
   the AVAILSPACE variable.
#
# Usage
#
  CheckAvailSpace <dirname>
#------
#CheckAvailSpace()
#{
  case $MACHINETYPE in
#
F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find
                                                                 F17=Repeat ch
```

Figure 426. Using the EDTF command to show deleting a clear command line

10.To save your changes and exit, press function key F2 to save and then the F3 or F12 function keys to exit. Or, you can simply press the F3 function key twice to save and then exit.

8.2.5 Running the installation script

Now that you corrected the installation script to run in PASE, you can start it.

Note

During the installation, you are asked for license or registration information, and part of this is a key. This is not provided with the software. Be sure you contact i2 Support and obtain a valid key before continuing. It will take some time to receive the key. See 2.4.5, "Requesting i2 software license keys from i2" on page 47, which explains the process.

To run the installation script, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the directory where the unixpi.ksh script is located. The directory is /tmp/sqlnk in our case:

cd /tmp/sqlnk

3. Call the script using ksh to make sure it is run as a Korn shell script:

ksh unixpi.ksh

— Note

After the script is called, the display does not go input inhibited and may appear not to be doing anything. Do not press Enter or do anything with this session until you are prompted to do so.

If you want to see the server working, use the F21 function key from within QP2TERM to bring up an OS/400 command line or another session. Then issue the WRKACTJOB command to see the QP2FORK jobs running.

Figure 427 shows an example of the installation script running.



Figure 427. Calling the unixpi.ksh installation script in PASE QP2TERM shell

- 4. At this point, the server is waiting for you to press Enter. Then it prompts the question: Do you want to continue (Y/N) ? [Y]. Default answers to some questions are shown enclosed in square brackets ([and]). Press Enter to select them, or type Y and then press Enter.
- 5. An INTERSOLV Product License Agreement appears. Type YES to accept the agreement. Press Enter to continue the installation.
- 6. You are then asked to enter four pieces of registration information and press Enter after each one:
 - Name
 - Company
 - Serial number. This is on the back of the CD-ROM and is in the form SQL-1234
 - Key. This is an eight-digit number that you need to get from i2 Support. See 2.4.5, "Requesting i2 software license keys from i2" on page 47.

An example of steps four through six is shown in Figure 428.

```
/QOpenSys/usr/bin/sh
>
  Do you want to continue (Y/N) ? [Y]
> Y
 THE USE OF THIS SOFTWARE IS GOVERNED BY THE LICENSE AGREEMENT ACCOMPANYING THE
 PRODUCT. YOU SHOULD READ THE AGREEMENT CAREFULLY. IF YOU AGREE TO ACCEPT THE
 TERMS OF THIS AGREEMENT, INDICATE YOUR ACCEPTANCE BY TYPING "YES" AT THE PROMPT
 BELOW, AND THE SOFTWARE WILL CONTINUE ITS INSTALLATION. IF YOU DO NOT ACCEPT TH
 TERMS OF THE AGREEMENT, TYPE "NO" AT THE PROMPT BELOW, AND THE INSTALLATION WIL
 TERMINATE. IF YOU DO NOT ACCEPT THE TERMS OF THE AGREEMENT, PROMPTLY RETURN TH
 PRODUCT TO INTERSOLV AND YOUR MONEY WILL BE REFUNDED.
  PLEASE NOTE THAT CERTAIN COMPANIES MAY HAVE A SIGNED LICENSE AGREEMENT WITH
 INTERSOLV GOVERNING THE USE OF THIS SOFTWARE. IN THAT INSTANCE, THE LICENSE
 AGREEMENT ACCOMPANYING THE PRODUCT SHALL BE SUPERSEDED BY THE SIGNED LICENSE
 AGREEMENT.
 FINALLY, PLEASE NOTE THAT INTERSOLV SOFTWARE IS LICENSED ON AN "AUTHORIZED
 USER" BASIS. THIS MEANS A LICENSE FEE MUST BE PAID FOR EACH PERSON WHO
 ACCESSES THE SOFTWARE, REGARDLESS OF WHETHER SUCH ACCESS IS SIMULTANEOUS
 OR CONCURRENT WITH OTHER USERS.
  Enter 'YES' to accept the terms of the license or 'NO' to reject the terms of
  the license (YES/NO):
> YES
  The software you are installing will now be registered.
   Please enter the following information required for registration.
  Name
          :
> TBM
 Company :
> IBM
 Serial :
  . . . . . . . .
> SQL-1234
 Key
        :
> 33882099
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 428. PASE QP2TERM shell display after pressing Y to continue

 You are prompted for the fully qualified path of the target directory for the SequeLink Client software. We recommend that you use /sqlnk45. This matches the name used for SequeLink Server. Press Enter.

You see multiple informational messages. The last one you should see is The product installation has completed successfully as shown in Figure 429.

```
/QOpenSys/usr/bin/sh
Enter the fully qualified path of the target directory where you want to
install SequeLink ODBC Edition Client. If this directory does not exist,
it will be created for you.
> /sqlnk45
   Target directory ? [/usr/sqlnk] : Creating the following directory:
   /sqlnk45
The Product Setup found the required space. Continuing with the product installat
Please wait while the product is installing...
Your SequeLink ODBC Edition Client installation was successful.
You must set up the environment for each SequeLink user.
If you are using the Korn or Bourne shell, execute: . .sqlnk.sh
If you are using the C shell, execute: source .sqlnk.csh
These two shell scripts can be found in the installation directory.
The Product Setup is removing temporary files from your system.
The Product Setup successfully removed the temporary files.
The product installation has completed successfully.
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 429. PASE QP2TERM shell display of final installation informational messages.

8. After the installation completes, use the cd command to change to the /sqlnk45 directory. You see that the installation script created a directory called 4_51_00 inside it. If you change to it, you can use the ls -la command to view the contents as shown in Figure 430.

The hidden file .sqlnk.sh is used to set needed environment variables. The bin directory contains the sqlnkcau utility that is used to configure data sources, and the ini directory contains files beginning with sqlnk* along with two hidden files named .odbc.ini and .sqlnkdll.ini.

/QOpenSys/usr/bin/sh											
\$											
> cd /sqlnk45/4_51_00											
\$											
> ls -la											
total 1032											
drwxrwxrwx	11 I20WN	JER 0	53248	Feb 2	2 12:12						
drwxrwxrwx	3 I20WN	JER 0	45056	Feb 2	2 12:11						
-rwxrwxrwx	1 I20WN	JER 0	202	Feb 2	2 12:12	.sqlnk.csh					
-rwxrwxrwx	1 I20WN	JER 0	180	Feb 2	2 12:12	.sqlnk.sh					
drwxr-xr-x	2 I20WN	JER 0	45056	Oct 2	2 1998	bin					
drwxr-xr-x	2 I20WN	JER 0	45056	Oct 2	2 1998	example					
drwxr-xr-x	2 I20WN	JER 0	45056	Oct 2	2 1998	include					
drwxr-xr-x	2 I20WN	JER 0	45056	Feb 2	2 12:12	ini					
drwxr-xr-x	2 I20WN	JER 0	45056	Oct 2	2 1998	lib					
drwxr-xr-x	3 I20WN	JER 0	45056	Oct 2	2 1998	locale					
drwxr-xr-x	3 I20WN	JER 0	45056	Oct 2	2 1998	messages					
drwxr-xr-x	2 I20WN	JER 0	45056	Oct 2	2 1998	msg					
drwxr-xr-x	6 I20WN	JER 0	45056	Feb 2	2 12:12	nothread					
-rw-rw-rw-	1 I20WN	JER 0	231	Feb 2	2 12:12	odbcinst.ini					
\$											
===>											
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect											
F13=Clear F17	Top F18	B=Bottom	F21=CL comm	and en	itry						

Figure 430. PASE QP2TERM shell display of the /sqlnk45/4_51_00 directory

8.2.6 Setting up the SequeLink environment

For Link to use SequeLink ODBC properly on a UNIX operating system, environment variables SQLNK_HOME, ODBCINI, and the shared library path variable LIBPATH must be set correctly. You can manually set these or set them with a script file that is included as part of the install.

- SQLNK_HOME points to the directory containing the hidden file named .sqlnkdll.ini, which contains explicit paths to the basic configuration files and other configurable options within the SequeLink client. If the SQLNK_HOME environment variable is not set, SequeLink looks for the .sqlnkdll.ini file in the HOME environment variable of the user who is trying to access the SequeLink software.
- ODBCINI points to the hidden file named .odbc.ini.
- LIBPATH is the shared library path and holds the paths for shared libraries that are not installed in standard locations.

The .sqlnk.sh (Korn or Bourne shells) and .sqlnk.csh (C shell) scripts are created by the installation and contain the appropriate values for the environment variables.

Figure 431 shows the contents of the .sqlnk.sh script that is used with the iSeries server and PASE.
```
/QOpenSys/usr/bin/sh
$
> cd /sqlnk45/4_51_00
$
> cat .sqlnk.sh
LIBPATH=${LIBPATH:-""}${LIBPATH:+":"}/sqlnk45/4_51_00/lib
export LIBPATH
SQLNK_HOME=/sqlnk45/4_51_00/ini; export SQLNK_HOME
ODBCINI=/sqlnk45/4_51_00/ini/.odbc.ini; export ODBCINI
$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 431. PASE QP2TERM shell display of .sqlnk.sh script

You can run the script interactively by typing . .sqlnk.sh and press Enter. Or you can type each of the statements separately. If you want to verify that the environment variables are set correctly, use the env command and press Enter as shown in Figure 432.

```
/QOpenSys/usr/bin/sh
  Ś
  . .sqlnk.sh
>
  $
> env
   =/QOpenSys/usr/bin/env
 LANG=en US.ISO8859-1
etc...
  ODBCINI=/sqlnk45/4 51 00/ini/.odbc.ini
  PASE LOCPATH=/usr/lib/nls/loc
  HOME=/home/I2OWNER
  QYPS DISCOVERY STARTUP=0
  PASE TZ=CST6CDT
  QYPS FTP DISCOVERY=1
  PASE NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat
  PWD=/sqlnk45/4 51 00
  SQLNK HOME=/sqlnk45/4 51 00/ini
  TZ=CST6CDT
  QYPS_SOCKETTIMEOUT=30
  QYPS SSL=0
  LIBPATH=/sqlnk45/4 51 00/lib
  $
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 432. PASE QP2TERM shell display of ODBCINI, SQLNK_HOME and LIBPATH variables set

These variables are typically set by the script used to start the Link server. This is described in more detail in 6.1.4.1, "Defining a startup shell script" on page 246.

8.2.7 Configuring a data source with the sqlnkcau utility

To configure an ODBC data source for SequeLink in PASE, run the sqlnkcau utility program. It is found in the bin directory in the SequeLink install directory (/sqlnk45/4_51_00 in our case).

The sqlnkcau utility uses the value of the SQLNK_HOME environment variable to find the .sqlnkdll.ini file, where it stores default parameters for the data sources. The sqlnkcau utility also uses the .sqlnkdsn.ini file where it stores specific configuration information for the data source.

To create a SequeLink ODBC data source, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the directory where SequeLink is loaded, which is /sqlnk45_4_51_00 in our case:

cd /sqlnk45/4_51_00

3. Run the .sqlnk.sh script to set the environment variables as described in 8.2.6, "Setting up the SequeLink environment" on page 382:

. .sqlnk.sh

4. Use the cd command to change to the bin directory:

cd bin

5. Call the sqlnkcau utility:

sqlnkcau

Then you see a panel like the example in Figure 433.

If you see the error message Could not load program sqlnkcau: Dependent module libbsd_r.a(shr.o) could not be loaded, then you need to create a symbolic link first that is missing in OS/400 V4R5M0. From within QP2TERM, issue the following command:

ln -s /usr/lib/libbsd.a /usr/lib/libbsd_r.a

After this, sqlnkcau should work.

/QOpenSys/usr/bin/sh
<pre>> cd /sqlnk45/4_51_00/ \$ >sqlnk.sh \$ > cd bin \$ > sqlnkcau SequeLink Connect Administration Tool on AIX (c)Copyright 1995-1998 INTERSOLV, Inc., All rights reserved</pre>
The following Data Source is selected : . [1] Select a Data Source [2] New [7] About [0] Cancel Select an action [0]:
==>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 433. PASE QP2TERM shell display of starting the sqlnkcau utility

- 6. Since this procedure is to create a new data source, select option 2 and press Enter. You can use option 1 to select an existing data source if you need to test or make changes to one. Default choices to some questions are enclosed in square brackets ([and]). If they contain the choice you want, press Enter to accept it.
- 7. There are eight questions or choices that require user input that are described in more detail here:
 - Name. This is the name of the data source that you are creating. A good name to use for your first data source is your iSeries server name. Type a name and press Enter.
 - **Description**. This is where you can enter an optional description. This will help you later on when you have multiple data sources and wonder what they are for or why you created them. Type a description (recommended) and press Enter.
 - **Transliteration**. This is where you can enter an optional method of transliteration. It appears that transliteration allows data received and sent to the SequeLink server to be changed in some way (for example, when character sets between a client and server are different). We did not need to specify anything here, so press Enter.
 - Network type: This is where you define that TCP/IP is used as the network protocol. There is only one option, so type 1 and press Enter.
 - Host: This is the name of your host or server that contains the data you want to access and where the SequeLink Server is running. This could be an IP address if the logical name cannot be resolved. The best way to determine if the logical name can be resolved is to ping the host from an OS/400 command line using the Verify TCP/IP Connection (VFYTCPCNN or PING) command. Enter the name or IP address and press Enter.

- Server type: This is the type of server or operating system that you specified. It is also the where the SequeLink Server is running. In our case, it is an iSeries (AS/400) server, so type 1 and press Enter.
- User: On most types of servers or operating systems, you must provide a server user name and password. This gives SequeLink permission to access the remote server host. We created a separate user profile called SQLNK using the Create User Profile (CRTUSRPRF) command so that we could manage authorities separate from the I2OWNER user profile:

CRTUSRPRF USRPRF(SQLNK) PASSWORD(*****) USRCLS(*SECOFR) TEXT('User profile for SequeLink')

If you want to use I2OWNER or another user profile, you do not have to do this. We noticed that SequeLink assumes that the user name and password are the same, so it does not give the option to enter a password. Enter a user profile name and press Enter.

- Service type: This is the database type running on the host or server that you specified. It is also where the SequeLink server is running. In our case, it is DB2 on iSeries (AS/400) since we are using an iSeries server. Type 1 and press Enter.
- Name: This is the service name for the database type. This resolves to a TCP/IP port number on the SequeLink server. The default service name is found in the .sqlnkdll.ini file (in /sqlnk45/4_51_00/ini on our server). You can also enter the port number here instead of the service name. SequeLink Server on an iSeries server starts ports 4001 and 4002, so you can enter any of the following options:
 - SQLNKALL = 4001
 - SQLNKNONE = 4002
 - TCPALL = 4001
 - TCPNONE = 4002

SQLNKNONE is the default (port 4002), so press Enter.

• **Database**: This is the name of the database that you are trying to access. On the iSeries server, this name is added. You can see it with the Work with RDB Directory Entry (WRKRDBDIRE) command. Enter the name and press Enter.

Now the data source is created. An example of creating a data source is shown in Figure 434 and Figure 435.

```
/QOpenSys/usr/bin/sh
> 2
  Name[]:
> i2
  *Description[<description>]:
> ODBC data source for system i2
  *Transliteration[<transliteration>]:
>
  The following network types are available:
  [1] TCP/IP
  Select a network [1]:
> 1
 Host[<host>]:
> i2
 The following server types are available:
  [1] AS/400
  [2] OS/390
  [3] UNIX
  [4] Windows NT
  Select a server [1]:
> 1
  User[<user>]:
> sqlnk
  Password[*****]:
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 434. PASE QP2TERM shell creating a data source using sqlnkcau



Figure 435. PASE QP2TERM shell creating a data source using sqlnkcau

8.2.8 Testing the data source connection with the sqlnkcau utility

After you create a data source, use the sqlnkcau utility to test the connection from your data source to the SequeLink Server. The test is equivalent to a simple ping. It checks if the host or server is present (and the SequeLink Server is running), but does not give any information on whether the connection can actually retrieve any data. If the connection definition is valid, then you receive the message Test passed: connection to 'xxx' made, where xxx is the name of the datasource as shown in Figure 436.

```
/QOpenSys/usr/bin/sh
    Select an action [0]:
 > 6
   Test passed: connection to 'i2' made.
   The following Data Source is selected : i2.
   [1] Select a Data Source
   [2] New
   [3] Duplicate
   [4] Edit
   [5] Delete
   [6] Test
   [7] About
   [0] Cancel
   Select an action [0]:
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 436. PASE QP2TERM shell valid data source connection test

If the connection is not made or valid, then an error is reported. Some common errors and reasons are:

- SequeLink Server is not running on the host: SequeLink Client error -12929. The connection has been refused by the TCP/IP stack of the remote host. Probable cause is that no application is listening on the TCP port specified.
- SequeLink Client user ID and password are not the same: SequeLink Client error -12871. The host password is invalid.
- SequeLink Server 30-day demo license has expired: SequeLink Server error -359. The demo license for this SequeLink Server has expired.

An example is shown in Figure 437.

```
/QOpenSys/usr/bin/sh
   Select an action [0]:
 > 6
 SequeLink Client error -12929
 The connection has been refused by the TCP/IP stack
 of the remote host. Probable cause : no application
 is listening on the TCP port specified.
 Test failed: connection to 'i2' failed.
  The following Data Source is selected : i2.
  [1] Select a Data Source
  [2] New
  [3] Duplicate
  [4] Edit
  [5] Delete
  [6] Test
  [7] About
  [0] Cancel
  Select an action [0]:
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 437. PASE QP2TERM shell failed data source connection test

8.2.9 Configuring SequeLink ODBC Manager for your data sources

After you create a data source, you must manually update the SequeLink ODBC Manager with this information since it defines the specific instances of ODBC drivers in the shared library file named .odbc.ini. The ODBC Manager looks for the environment variable named ODBCINI described in 8.2.6, "Setting up the SequeLink environment" on page 382, which points to this shared library file (/sqlnk45/4_51_00/ini/.odbc.ini in our case).

The .odbc.ini file contains three parts:

- ODBC Data Sources: This is a listing of the data sources that you want Link and SequeLink to use.
- **DataSourceName**: This section defines the ODBC data sources. Each data source has its own header, which should contain the same name that was defined in the sqlnkcau configuration. The two required lines in the definition of an ODBC data source are Driver and SqlnkDSN:
 - Driver indicates the path to the actual ODBC driver, which is a shared library. This should already be correct and does not need to be changed.
 - SqlnkDSN indicates which of the SequeLink configured data sources in the sqlnkdsn.ini file is to be used for the ODBC connection.

The other lines are optional.

 ODBC: This section is optional and is used to trace the results of ODBC calls in a log file. Trace=0 disables tracing, and Trace=1 enables tracing. Tracing is logged in the file defined by TraceFile. For tracing to work, the user ID must have write permission to that file. On UNIX, the trace flag must be set before Link is started. Tracing results in a very large log file that quickly fills disk space, so it should only be used as a diagnostic tool.

To update the .odbc.ini file, follow these steps:

1. Use the EDTF command against the /sqlnk45/4_51_00/ini directory:

EDTF '/sqlnk45/4_51_00/ini'

2. Type option 2 (Edit) next to the .odbc.ini file to select it as shown in Figure 438.

Directory: /sqlnk45/4_ Position to: New File : 2=Edit 4=Delete File	_ 51_00/ini Record 5=Display	. : 1 o 6=Path Size	f 7 9=Recursive D	elete
Opt Name sqlnkdbs.ini sqlnkdsn.ini sqlnkntw.ini sqlnkrsc.ini sqlnksrv.ini .sqlnkdll.ini 2 .odbc.ini	Size 8K 8K 8K 8K 8K 8K 8K	Owner 120MNER 120MNER 120MNER 120MNER 120MNER 120MNER 120MNER	Changed 10/22/98 00:29 02/22/01 12:47 10/22/98 00:29 10/22/98 00:29 10/22/98 00:29 02/22/01 12:12	Used 02/22/01 12:48 02/22/01 12:48 02/22/01 12:48 02/22/01 12:48 02/22/01 12:48 02/22/01 12:48 02/22/01 12:12
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Positio	n to F22=Displ	ay entire field

Figure 438. Using the EDTF command to select the .odbc.ini file for editing

3. Press Enter to take you into edit mode, which is shown in Figure 439.

Edit F: Record Control	ile: /sqlnk45/ .: 1 of L :	4_51_00/i 62 by	ni/.odbc.ini 10	Column:	1 of	69 by
CMD	+1+ *****Beginning	.2+ of data****	3+4 ******	+5+6	+7.	+
;Tl ;Tc ;Sc ;Sc	nis is a templat be able to use AlnkDSN must be equeLink CAT dat	e for a Seq this data set to a va a sources c	ueLink ODBC Driv source you must lid SequeLink C an be created u	ver data source. set SqlnkDSN. AT data source. sing the sqlnkcau t	utility	
[OI Dat	DBC Data Sources LaSourceName=INI	ERSOLV 3.10	SequeLink			
[Da Dr: Des Sq: Log Dat Al: Uio Ena Ena Dat Dat	ataSourceName] iver=/sqlnk45/4_ scription=INTERS [nkDSN= gonID= :abase= LowBatchStatemen dPwdMapping=0 eFetchRows=30 ableWarnings=0 ableScrollableCu :aDictionary=(De :aDictionaryCata :aDictionarySche	51_00/lib/i OLV 3.10 Se ts=0 rsors=0 fault) log= ma=	vslk13.so queLink			
[OI Tra Tra Ins	DBC] ace=0 aceFile=odbctrac aceDl1=/sqlnk45/ stallDir=/sqlnk4	e.out 4_51_00/lib 5/4_51_00	/odbctrac.so			
*****	*****End of Dat	a********	*****			
F2=Save	e F3=Save/Exit	F12=Exit	F15=Services	F16=Repeat find	F17=Rep	eat ch

Figure 439. Using the EDTF command to display the shipped .odbc.ini file

4. Add a new line under ODBC Data Sources and a DataSourceName section for your data source. You can easily do this by using the c copy and cc block copy function and then specifying B to insert the copied text *before* the existing text as shown in Figure 440.

You could also simply modify the shipped line. However, we recommend that you keep these as a base template or reference.

Edit File: /sqlnk45/4_51_00/ini/.odbc.ini Record . : 1 of 30 by 10 Control :	Column:	1 of	69 by
CMD+1+2+3+4+5 **************************	+6	+7.	+
;This is a template for a SequeLink ODBC Driver data ;To be able to use this data source you must set Sqlr ;SqlnkDSN must be set to a valid SequeLink CAT data s ;SequeLink CAT data sources can be created using the	source. hkDSN. source. sqlnkcau u	itility	
[ODBC Data Sources] C DataSourceName=INTERSOLV 3.10 SequeLink			
CC [DataSourceName] Driver=/sqlnk45/4_51_00/lib/ivslk13.so Description=INTERSOLV 3.10 SequeLink SqlnkDSN= LogonID= Database= AllowBatchStatements=0 UidPwdMapping=0 PreFetchRows=30 EnableWarnings=0 EnableWarnings=0 EnableScrollableCursors=0 DataDictionary=(Default) DataDictionaryCatalog= DataDictionarySchema=			
CC B [ODBC] Trace=0 TraceFile=odbctrace.out TraceDll=/sqlnk45/4_51_00/lib/odbctrac.so InstallDir=/sqlnk45/4_51_00			

F2=Save F3=Save/Exit F12=Exit F15=Services F16=Rep	peat find	F17=Rep	eat ch

Figure 440. Using the EDTF command to copy and paste sections of text

5. Modify the copied text for your data source as shown in Figure 441.

Edit File Record . Control	e: /sqlnk45/4_5 : 1 of :	1_00/ini/.c 61 by	dbc.ini 10	C	olumn:	1 of	69 by
CMD ******** ;Thi; ;To l ;Sqlu ;Sqlu	+1+ ****Beginning o s is a template be able to use nkDSN must be s ueLink CAT data	2+3 f data***** for a Sequ this data s et to a val sources ca	+4 ********* eLink ODBC Driv ource you must id SequeLink C7 n be created us	+5+ ver data so set SqlnkD AT data sou sing the sq	6 urce. SN. rce. lnkcau u	.+7. tility	+
[ODB Data i2=1	C Data Sources] SourceName=INTE NTERSOLV 3.10 S	RSOLV 3.10 PequeLink	SequeLink				
[12] Drive Desc: Sqlnl Logo Datal Allo UidP Prefe Enab Datal Datal Datal	er=/sqlnk45/4_5 ription=INTERSO kDSN=12 nID= base= wBatchStatement wdMapping=0 etchRows=30 leWarnings=0 leScrollableCur Dictionary=(Def DictionaryCatal DictionarySchem	1_00/lib/iv LV 3.10 Seg s=0 sors=0 ault) og= a=	slk13.so ueLink				
[Data Drive Sqlni Logor Data Allor UidP PreR Enab Enab Data Data Data Data	aSourceName] er=/sqlnk45/4_5 ription=INTERSO kDSN= hID= base= wBatchStatement wdMapping=0 etchRows=30 leWarnings=0 leScrollableCur Dictionary=(Def DictionaryCatal DictionarySchem	1_00/lib/iv LV 3.10 Seq sors=0 ault) og= a=	slk13.so ueLink				
[ODB Trace Trace Trace Insta	C] e=0 eFile=odbctrace eDll=/sqlnk45/4 allDir=/sqlnk45	out _51_00/lib/ /4_51_00	odbctrac.so				
******	****End of Data	********	****				
F2=Save	F3=Save/Exit	F12=Exit	F15=Services	F16=Repea	t find	F17=Rep	eat ch

Figure 441. Using the EDTF command to display the updated .odbc.ini file

6. To save your changes and exit, press F2 to save and then F3 or F12 to exit. Or, you can simply press F3 twice to save and exit.

8.3 SequeLink Server

This section goes through the steps you need to install the Merant SequeLink ODBC Edition Server 4.51 on an iSeries server. This version of SequeLink is only supported on OS/400 V4R5M0. i2 Five.Two Link on OS/400 V5R1M0 does not use SequeLink, because native DB2 CLI support is available and is the preferred way to access data.

8.3.1 Installing the SequeLink Server

Installing and accessing a data source through Link using the SequeLink Server on an iSeries server involves several steps:

- 1. Install the SequeLink Server.
- 2. Install a SequeLink Server patch.
- 3. Activate the TCPSPAWN job.
- 4. Configure a data source using the SequeLink Client (see 8.2.7, "Configuring a data source with the sqlnkcau utility" on page 384).
- 5. Configure Link to use SequeLink ODBC (see 6.4, "Using the Link client to access SQL data using SequeLink" on page 294).

Note

SequeLink is not shipped automatically with Link even though it is required for ODBC support. You need to make sure that you order it at the same time you order Link. Or call i2 Support if it is not included with the Link CD-ROM. Do not call Merant because it has to come from i2.

8.3.2 Reference documentation

The following manuals are available on the SequeLink CD-ROM in the \Books\Sequelnk directory by opening books.pdf and then selecting one of the manuals. The second one was used as a basis for this section.

- SequeLink ODBC Edition Client Installation Guide
- SequeLink Server Installation Guide
- SequeLink Administrator's Guide
- SequeLink ODBC Driver Reference for Windows 3. 1x
- SequeLink ODBC Driver Reference for Windows 9x, Windows NT, UNIX, and Macintosh
- SequeLink Server for VSAM Installation and Administration Guide
- SequeLink Error Codes and Messages Reference

8.3.3 Installing the SequeLink Server install code on the iSeries server

You need to install SequeLink Server on the same computer as the database or data that you need to access from Link.

To move the installation code from the CD-ROM onto the iSeries server, follow these steps:

1. Sign onto the iSeries server with the user profile described in 2.4.1, "User profile creation" on page 33. In our case, it is called 120WNER. This user profile must have sufficient privileges to restore objects and to start and stop

subsystems. The installation program checks the user class of the user running the procedure. If it is not *SECADM or *SECOFR, the installation ends with an error.

2. If you want to put the installation code from the CD-ROM into a separate SequeLink library, create this before continuing. We used a library called SQLNKINST for this. You can use the Create Library (CRTLIB) command to create a library:

CRTLIB LIB(SQLNKINST) TEXT('SequeLink library to hold install code')

You should see a completion message stating that the library was created. A library does not have to be created if you have an existing library that you want to use.

- 3. There are two files on the CD-ROM that we are looking for. They are:
 - SQINS405. This is a save file containing the installation programs.
 - SQV3R6M0. This is a save file containing the SequeLink Server objects for OS/400 V3R6, V3R7, and V4Rx.

You can find these files in the /sequelnk/as400/server directory. You can either load the CD-ROM into a PC and send the files (in binary format) using FTP to the iSeries server. Or you can load the CD-ROM into the iSeries's CD-ROM drive and copy them directly. We recommend the second option, which is what we used.

Use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or, use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 442.

Work with Optical	Files		Characteria T2
Directory /SEQUELNK/AS400/SE Volume CD_DC_017	RVER		System: 12
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print	7=Rena	me	
Opt File Name	Size	Crea	ated
SQV3R2M0 SQV3R2M0 SQV3R6M0	262416 13863696 14217984	06/22/98 06/22/98 06/22/98	10:22:38 10:33:00 10:45:20
Parameters or command			Bottom
F3=Exit F4=Prompt F5=Refresh F6=Pri F16=Repeat position to F17=Position to	nt list	F9=Retriev F22=Displa	ve F12=Cancel ay entire name

Figure 442. SQINS405 and SQV3R6M0 files on CD-ROM

4. To copy the files directly, use the Copy From Stream File (CPYFRMSTMF) command:

CPYFRMSTMF FROMSTMF('/qopt/cd_dc_017/sequelnk/as400/server/sqins405') TOMBR('/qsys.lib/sqlnkinst.lib/sqins405.file') MBROPT(*ADD) CPYFRMSTMF FROMSTMF('/qopt/cd_dc_017/sequelnk/as400/server/sqv3r6m0') TOMBR('/qsys.lib/sqlnkinst.lib/sqv3r6m0.file') MBROPT(*ADD)

You should see completion messages stating that the stream files are created in the library as shown in Figure 443.

Command	Entry I2
<pre>All previous commands and messages: > CRTLIB LIB(SQLNKINST) TEXT('SequeL Library SQLNKINST created. > CPYFRMSTMF FROMSTMF('/qopt/cd_dc_0 BR('/qsys.lib/sqlnkinst.lib/sqins4 File SQLNS405 created in library S Stream file copied to object. > CPYFRMSTMF FROMSTMF('/qopt/cd_dc_0 BR('/qsys.lib/sqlnkinst.lib/sqv3r6 File SQV3R6M0 created in library S Stream file copied to object.</pre>	Request level: 1 ink library to hold install code') 17/sequelnk/as400/server/sqins405') TOM 05.file') MBROPT(*ADD) QLNKINST. 17/sequelnk/as400/server/sqv3r6m0') TOM m0.file') MBROPT(*ADD) QLNKINST.
Type command, press Enter.	Bottom
===>	
F3=Exit F4=Prompt F9=Retrieve F11=Display full F12=Cancel	F10=Exclude detailed messages F13=Information Assistant F24=More keys

Figure 443. Command Entry display of the CRTLIB and CPYFRMSTMF commands

You can use the Display Save File (DSPSAVF) command to verify the contents of the new save files:

DSPSAVF FILE (SQLNKINST/SQINS405) DSPSAVF FILE (SQLNKINST/SQV3R6M0)

An example of the SQINS405 save file is shown in Figure 444.

Dis	play Save	ed Objects - Sa	ve File			
Library saved : ASP	SQINST4 1 SQINS40 SQINS40 SQINS40 497 SAVLIB *NO 06/22/9	05 15 LINST 28 09:26:39	Release level Data compressed Objects display Objects saved Access paths .	: l : ed . : :	V3R1M(No 6 7 0	D
Type options, press Ent 5=Display saved data	er. base file	e members				
Opt Object SQINST405 QINSTALL QSQLOGFEM SQINSTALL SQINSTALL QINSTALL	Type *LIB *PGM *PGM *PGM *PGM *FILE	Attribute PROD CLP CLE CLP CLP DSPF	Owner QPGMR MARIO QPGMR QPGMR QPGMR QPGMR	Size 73728 147456 40960 163840 28672 16384	Data YES YES YES YES YES	+
F3=Exit F12=Canc	el)

Figure 444. DSPSAVF display of the SQINS405 save file

8.3.4 Running the installation program

Note

During the installation, you are asked for license or registration information, and part of this is a key. This is not provided with the software. Be sure you contact i2 Support and obtain a valid key before continuing. It will take some time to receive the key. See 2.4.5, "Requesting i2 software license keys from i2" on page 47, which explains the process.

To perform the installation, follow these steps:

1. After the files are on the iSeries server, use the Restore Library (RSTLIB) command to restore the installation library:

RSTLIB SAVLIB(SQINST405) DEV(*SAVF) SAVF(SQLNKINST/SQINS405)

— Note -

The name of the save file is SQINS405, while the name of the library saved to the save file is SQINST405 (extra T in the name). Make sure to specify this correctly on the Restore Library (RSTLIB) command.

You should see the completion message 7 objects restored. 0 not restored to SQINST405.

You can use the Display Library (DSPLIB) command to verify the contents of the library:

DSPLIB LIB(SQINST405)

The Display Library panel is shown in Figure 445.

	Display L	ibrary	
Library : Type : Create authority : Type options, press Enter 5=Display full attribut	SQINST405 PROD *SYSVAL f. es 8=Display	Number of objec ASP of library service attribut	ts .: 6 : 1 es
Opt Object Type QINSTALL *PGM QSQLOGPGM *PGM SQINSTALL *PGM SQINSTALL *PGM QINSTALL *FILE SQINSTALL *CMD	Attribute CLP CLE CLP CLP DSPF	Size 151552 40960 167936 32768 16384 4096	Text qinstall,*Revision: qsqlogpgm,*Revision: qinstall,*Revision: qinstall,*Revision: qinstall,*Revision: unpcksq,*Revision: 1
F3=Exit F12=Cancel F1 (C) COPYRIGHT IBM CORP. 1	17=Top F18=Bot 1980, 2000.	tom	

Figure 445. Library SQINST405 after it is restored

 To start the product installation, from an OS/400 command line, add the SQINST405 library to your library list using the Add Library List Entry (ADDLIBLE) command:

ADDLIBLE LIB(SQINST405)

3. Use the SQINSTALL command in library SQINST405, specifying to install from a save file:

SQINSTALL FROM(*FILE) SAVF(SQLNKINST/SQV3R6M0)

The installation panel shown in Figure 446 appears.

equeLink for DB2/400 V 4.5 installation	
System: I2	
OS/400 Version : V4R5M0	
Current Step : Set the SequeLink Product Library	

* Question : *	
* *	
* OS/400 release not supported *	
* *	
* C = Stop installation *	
* * *	
* I = Periorm Instal for 05/400 V4RIMU	
* *	
* *	
* *	
* *	
* Reply : I *	

Figure 446. SequeLink Server installation unsupported release panel

4. At the time this redbook was written, Merant began testing SequeLink Server code with OS/400 V4R5M0. Therefore, our version of code stated that this is an unsupported release. We did not had any problems running it on this release after applying the patch described in 8.3.5, "Installing the SequeLink Server patch" on page 405.

Type I and press Enter. Then you see a panel like the one shown in Figure 447.

Figure 447. SequeLink Server installation library choice panel

- 5. The default SequeLink Server product library is SQLNK45, which is what we recommend. You can change this to any library. Press Enter.
- 6. The installation program runs for awhile. During this time, you see panels such as the one shown in Figure 448. The Current Step section changes as the installation program progresses.

SequeL:	ink for DB2/400 V	4.5 installation		
			System:	12
	OS/400 Version :	V4R5M0		
	Current Step :	Restoring SequeLink Product Library	r	
	******	****	******	******
	*			*
	*			*
	*			*
	*			*
	*			*
	*			*
	* Operat	ion busy, Please wait		*
	*			*
	*			*
	*			*
	*			*
	*			*
	*			*
	**************	***************	*******	******

Figure 448. SequeLink Server progress panel

 The next input panel (Figure 449) asks for the type of network you have. TCP/IP is the default and what we selected. You can also specify APPC or BOTH. Make the appropriate selection and press Enter.

equeLink for DB2/400 V 4.5 installation
System: I2
OS/400 Version : V4R5M0
Current Step : Network configuration

* Question : *
* *
* Which type of network are you using ? *
* *
* TCP : If you are using a TCP network *
* *
* APPC: If you are using an APPC network *
* *
* BOTH : If you are using both types of networks *
* *
* *
* *
* Reply : TCP *

Figure 449. SequeLink Server network configuration choice panel

8. The installation program then runs for awhile. Now you see panels like the example in Figure 450. The Current Step section changes as the installation program progresses.

SequeLi	nk for DB2/400 V 4	.5 installation		
			System:	12
	OS/400 Version :	V4R5M0		
	Current Step :	Setup basic TCP services		
	*****	*****	**********	*****
	*			*
	*			*
	*			*
	*			*
	*			*
	*			*
	* Operat:	on busy, Please wait		*
	*			*
	*			*
	*			*
	*			*
	*			*
	*			*
	*************	***************************************	**********	*****

Figure 450. SequeLink Server progress panel

- 9. The Product Registration panel (Figure 451) appears and required the following registration information:
 - Name
 - Company
 - Serial number: This is a twelve-digit number. You need to get this from i2 Support. See 2.4.5, "Requesting i2 software license keys from i2" on page 47.
 - **IPE Key**: This is an eight-digit number. You need to obtain this from i2 Support. See 2.4.5, "Requesting i2 software license keys from i2" on page 47.

We noticed that you can select the default of all zeroes, which gives you a 30-day demo license. We recommend that you obtain the key before you start the installation. You can use the SequeLink Edit IPE Key (EDTIPEKEY) command later to enter the key once you receive it.

Type the registration information and press Enter to continue.

INTERSOLV Product Registration	
Please fill in the following information to register product:	
Product	
Name IBM	
Company IBM	
Serial number 110000038984	
IPE Key	
F3=Exit F12=Cancel	

Figure 451. SequeLink Server product registration panel

10.A license agreement panel (Figure 452) appears. You need to read and accept.

Press the F10 function key to accept it and continue. Then you see a pop-up window over the license agreement that states INTERSOLV Product Registration successful. Press the F3 function key to exit and continue.

Please read the following Licence agreement

THE USE OF THIS SOFTWARE IS GOVERNED BY THE LICENSE AGREEMENT ACCOMPANYING THE PRODUCT. YOU SHOULD READ THE AGREEMENT CAREFULLY. IF YOU AGREE TO ACCEPT THE TERMS OF THIS AGREEMENT, INDICATE YOUR ACCEPTANCE BY PRESSING THE F10 KEY, AND THE SOFTWARE WILL CONTINUE ITS INSTALLATION. IF YOU DO NOT ACCEPT THE TERMS OF THE AGREEMENT, PRESS F12, AND THE INSTALLATION WILL TERMINATE. IF YOU DO NOT ACCEPT THE TERMS OF THE AGREEMENT, PROMPTLY RETURN THE PRODUCT TO INTERSOLV AND YOUR MONEY WILL BE REFUNDED.

PLEASE NOTE THAT CERTAIN COMPANIES MAY HAVE A SIGNED LICENSE AGREEMENT WITH INTERSOLV GOVERNING THE USE OF THIS SOFTWARE. IN THAT INSTANCE, THE LICENSE AGREEMENT ACCOMPANYING THE PRODUCT SHALL BE SUPERSEDED BY THE SIGNED LICENSE AGREEMENT.

FINALLY, PLEASE NOTE THAT INTERSOLV SOFTWARE IS LICENSED ON AN AUTHORIZED USER BASIS. THIS MEANS A LICENSE FEE MUST BE PAID FOR EACH PERSON THAT ACCESSES THE SOFTWARE, REGARDLESS OF WHETHER SUCH ACCESS IS SIMULTANEOUS OR CONCURRENT WITH OTHER USERS.

F10=Accept agreement F12=Cancel

Figure 452. SequeLink Server license agreement

11.The next input panel (Figure 453) asks you if you want to start the TCPSPAWN listener job. Answer No and press Enter to continue since we have to apply a patch first. We manually start it later.

SequeLink for DB2/400 V 4.5 installation	
System:	I2
OS/400 Version : V4R5M0	
Current Step : Start TCPSPAWN listener	
*******	******
* Question :	*
*	*
* Start TCPSPAWN listener job now ?	*
*	*
* YES : The TCPSPAWN job is started	*
*	*
* NO : The TCPSPAWN job is not started	*
*	*
* (Please refer to the installation guide for more info)	*
*	*
*	*
*	*
* Reply : NO	*

Figure 453. SequeLink Server start TCPSPAWN listener job question

12. The installation completes and takes you back to a command line. Use the Display Job Log (DSPJOBLOG) command and press Enter to look at your job log for errors. Press the F10 function key to see detailed messages and press F18

to go to the bottom. The last message should be SequeLink for DB2/400 V 4.5 installation completed, as shown in Figure 454.

Display All Messages	
Sys	tem: I2
Job : QPADEV0007 User : I2OWNER Number :	098798
Object SSTCPNONE in SQLNK45 type *FILE deleted.	
Object SSTCPNONE in SQLNK45 type *FILE created.	
1 objects duplicated.	
Member SRVCDB2400 renamed to member SSTCPNONE.	
Job description TCPSPAWN in library SQLNK45 changed.	
Object SQINST.LOG in SQLNK45 type *FILE not found.	
Object SQINST.LOG in QGPL type *FILE moved to library SQLNK45.	
Object INSTJOBLOG in SQLNK45 type *FILE not found.	
File INSTJOBLOG created in library SQLNK45.	
Member INSTJOBLOG added to file INSTJOBLOG in SQLNK45.	
Member TAP01 added to file INSTJOBLOG in SQLNK45.	
847 records copied to file INSTJOBLOG in SQLNK45.	
SequeLink for DB2/400 V 4.5 installation completed	
>> DSPJOBLOG	
	Bottom
Press Enter to continue.	
F3=Exit F5=Refresh F12=Cancel F17=Top F18=Bottom	

Figure 454. SequeLink Server installation job log

You can use the Display Library (DSPLIB) command to verify the contents of the SequeLink product library that was created during the installation:

DSPLIB LIB(SQLNK45)

An example is shown in Figure 455.

			Display L	ibrary	
Library Type Create a Type opt	 uthority	: 5 : P : *3	QLNK45 ROD SYSVAL	Number of object ASP of library	cts . : 63 : 1
5=Disp	lay full	attributes	8=Display	service attribut	ces
Opt Obj APP CHG CRI CRI EDI EDI EDI EDI INZ	ect C TCPSPWN SQSRV SQSRVVC SQSRV IPEKEY SQSRV SQSRVVC IPEKEY	Type *PGM *PGM *PGM *PGM *PGM *PGM *PGM *PGM	Attribute CLE CLP CLP CLP CLP CLE CLP CLP CLP CLP	Size 2527232 24576 32768 20480 20480 65536 20480 20480 20480 20480	Text main, \$Revision: 1.9 getversion, \$Revision: buildsqpck, *Revision: buildsqpck, *Revision: edtipekey, \$Revision: buildsqpck, *Revision: buildsqpck, *Revision:
PCK PCK	SQLIB SQLIBVC	*PGM *PGM	CLP CLP	36864 24576	pcksqlib,*Revision: pcksqlibvc,*Revision: More
F3=Exit (C) COPY	F12=Car RIGHT IBN	ncel F17= M CORP. 198	=Top F18=Bot 30, 2000.	tom	FOLC

Figure 455. DSPLIB display of library SQLNK45 after product installation

The job log for the user performing the installation was also saved to member TAP01 in file INSTJOBLOG in the SequeLink product library (SQLNK45 in our case). You can use the Display Physical File Member (DSPPFM) command to view it at any time:

DSPPFM FILE (SQLNK45/INSTJOBLOG) MBR (TAP01)

All completed installation steps are logged in the SQINST.LOG file in the QGPL library. If problems occur during the installation, examine this log. When the installation completes successfully, the log file is moved to the SequeLink product library (SQLNK45 in our case). You can use the Display Physical File Member (DSPPFM) command to view it at any time:

DSPPFM FILE(SQLNK45/SQINST.LOG)

The Display Physical File Member panel is shown in Figure 456.

Display Physical File Member					
File : SQINST.LOG Library : SQL	NK45				
Member : SQINST.LOG Record	. : 1				
Control Column	.: 1				
Find					
*+1+2+3+4+5+6+7	+8				
***************************************	******				
* Copyright (c) 1997 INTERSOLV, Inc. All rights reserved.					
***************************************	******				
Installation Sequelink 4.5 started by I2OWNER on 09/21/00 at 1400116					
OS/400 Version detected : V4R5M0					
Product library selected : SQLNK45					
Start Restore operation					
Restore Completed					
Setting of CCSID completed					
Change of programobjects completed					
Type of network : TCP					
End setup basic TCP services					
Job description TCPSPAWN Changed					
TCPSPAWN job not started					
Installation Completed on 09/21/00 at 1523536					
***** END OF DATA *****					
	Bottom				
F3=Exit F12=Cancel F19=Left F20=Right F24=More keys					

Figure 456. DSPPFM display of the SequeLink Server SQINST.LOG log file

8.3.5 Installing the SequeLink Server patch

Merant issued a SequeLink Server patch, number 23997 for OS/400 V4R4M0 that we had to use to run SequeLink Server on OS/400 V4R5M0. You need to call or open a support case with i2 Support to obtain the patch. The patch contains a README.TXT file and a SQV3R7M0.ZIP file.

To apply the patch, follow these steps:

1. Once you receive the patch from i2, you need to unzip the file on a PC and send the SQV3R7M0 save file to the iSeries server. We used FTP.

Create a save file on the iSeries server. You can use the Create Save File (CRTSAVF) command to do this:

CRTSAVF FILE(SQLNKINST/SQV3R7M0) TEXT('SAVF for SequeLink Patch')

You should see a completion message stating that the save file was created.

2. Figure 457 shows you how to FTP the file from a PC to the iSeries server.

```
C:\i2 information\Sequelink>dir sqv3r7m0
Volume in drive C is C DRIVE
Volume Serial Number is 473B-18DC
Directory of C:\i2 information\Sequelink
SQV3R7M0 ZIP
                2,990,468 08-09-00 10:58a sqv3r7m0.zip
             12,144,000 09-29-99 4:03p SQV3R7M0
SQV3R7M0
        2 file(s) 15,134,468 bytes
         0 dir(s)
                       4,786.30 MB free
C:\i2 information\Sequelink>ftp i2
Connected to i2.domain.ibm.com.
220-QTCP at i2.
220 Connection will close if idle more than 500 minutes.
User (i2.domain.ibm.com: (none)): 120WNER
331 Enter password.
Password:
230 I20WNER logged on.
ftp> bin
200 Representation type is binary IMAGE.
ftp> cd sqlnkinst
250 "SQLNKINST" is current library.
ftp> put sqv3r7m0
200 PORT subcommand request successful.
150 Sending file to member SQV3R7M0 in file SQV3R7M0 in library SQLNKINST.
250 File transfer completed successfully.
ftp: 12144000 bytes sent in 23.73Seconds 511.76Kbytes/sec.
ftp> ls
200 PORT subcommand request successful.
125 List started.
SQINS405
SQV3R6M0
SQV3R7M0
250 List completed.
ftp: 39 bytes received in 0.00Seconds 39000.00Kbytes/sec.
ftp> quit
221 QUIT subcommand received.
```

Figure 457. Sending the SQV3R7M0 file using FTP to the iSeries server

3. Once the file is on the iSeries server, use the Display Save File (DSPSAVF) command to verify that the save file contains data:

DSPSAVF FILE (SQLNKINST/SQV3R7M0)

An example is shown in Figure 458.

	Displ	ay Saved Obje	cts - Save File		
Library saved ASP Save file Library Records Save command Save active Save date/time . Type options, press	. : SQV3R7M . : 1 . : SQV3R7M . : SQUNK . : 23000 . : SAVOBJ . : *NO . : 09/29/9 ss Enter. data base file	0 IO INST 9 15:39:30	Release level Data compresse Objects displa Objects saved Access paths	: ed : ayed . : :	V3R7M0 No 2 2 0
Opt Object APPC TCP F3=Exit F12	Type *PGM *PGM =Cancel	Attribute CLE CLE	Owner QPGMR QPGMR	Size 5529600 6225920	Data YES YES

Figure 458. DSPSAVF display of SequeLink SQV3R7M0 patch

4. Rename the existing SequeLink Server objects since you are going to replace them with the APPC and TCP ones in the save file. If you specified TCP for the network configuration, do this only for the SSTCPALL and SSTCPNONE objects, both of type *PGM. Use the Rename Object (RNMOBJ) command to do this:

RNMOBJ OBJ (SQLNK45/SSTCPALL) OBJTYPE (*PGM) NEWOBJ (SSTCPA01) RNMOBJ OBJ (SQLNK45/SSTCPNONE) OBJTYPE (*PGM) NEWOBJ (SSTCPN01)

You should see completion messages stating that the objects were renamed. If you specified APPC or BOTH for the network configuration, then do this for the SSAPPCALL and SSAPPCNONE *PGM objects.

5. Restore the new server objects out of the save file using the Restore Object (RSTOBJ) command:

RSTOBJ OBJ (*ALL) SAVLIB (SQV3R7M0) DEV (*SAVF) SAVF (SQLNKINST/SQV3R7M0) MBROPT (*ALL) ALWOBJDIF (*ALL) RSTLIB (SQLNK45)

You should see a completion message stating that two objects were restored.

 Copy the restored objects to the objects renamed in step four. Use the Create Duplicate Object (CRTDUPOBJ) command to copy TCP to SSTCPNONE and then to SSTCPALL:

CRTDUPOBJ OBJ (TCP) FROMLIB (SQLNK45) OBJTYPE (*PGM) TOLIB (SQLNK45) NEWOBJ (SSTCPALL)

CRTDUPOBJ OBJ (TCP) FROMLIB (SQLNK45) OBJTYPE (*PGM) TOLIB (SQLNK45) NEWOBJ (SSTCPNONE)

You should see completion messages stating that the objects were created. If you specified APPC or BOTH for the network configuration, then copy APPC to SSAPPCALL and then to SSAPPCNONE.

These commands are shown in Figure 459.

Command Entry I2	2
Request level: 1	-
All previous commands and messages:	
> CRTSAVF FILE(SQLNKINST/SQV3R7M0) TEXT('SAVF for SequeLink Patch')	
File SQV3R7M0 created in library SQLNKINST.	
> DSPSAVF FILE (SQLNKINST/SQV3R7M0)	
> RNMOBJ OBJ (SQLNK45/SSTCPALL) OBJTYPE (*PGM) NEWOBJ (SSTCPA01)	
Object SSTCPALL in SQLNK45 type *PGM renamed SSTCPA01.	
> RNMOBJ OBJ (SQLNK45/SSTCPNONE) OBJTYPE (*PGM) NEWOBJ (SSTCPN01)	
Object SSTCPNONE in SQLNK45 type *PGM renamed SSTCPN01.	
> RSTOBJ OBJ (*ALL) SAVLIB (SQV3R7M0) DEV (*SAVF) SAVF (SQLNKINST/SQV3R7M0) M	1BR
OPT (*ALL) ALWOBJDIF (*ALL) RSTLIB (SQLNK45)	
2 objects restored from SQV3R7M0 to SQLNK45.	
> CRTDUPOBJ OBJ (TCP) FROMLIB (SQLNK45) OBJTYPE (*PGM) TOLIB (SQLNK45) NEWOB	۲(S
STCPALL)	
Object SSTCPALL in SQLNK45 type *PGM created.	
1 objects duplicated.	
> CRTDUPOBJ OBJ (TCP) FROMLIB (SQLNK45) OBJTYPE (*PGM) TOLIB (SQLNK45) NEWOBJ	ſ(S
STCPNONE)	
Object SSTCPNONE in SQLNK45 type *PGM created.	
1 objects duplicated.	
Bott	om
Type command, press Enter.	
===>	
F3=Exit F4=Prompt F9=Retrieve F10=Exclude detailed messages	
F11=Display full F12=Cancel F13=Information Assistant F24=More key	′S

Figure 459. Commands run to apply the SequeLink patch

7. After the SequeLink Server product and patch installation is completed, you may want to delete the two save files (SQINS405 and SQV3R6M0, which we put in the SQLNKINST library), the SequeLink installation library (SQINST405), and the temporary installation library (SQLNKINST) if you created it on the iSeries server.

You are now ready to start the SequeLink Server by calling the STRTCPSPWN program in the SequeLink Server product library, which is described in 8.3.6, "Starting the TCPSPAWN job" on page 408.

8.3.6 Starting the TCPSPAWN job

The TCPSPAWN job listens for incoming TCP/IP connection requests and spawns, or starts, a service job for each incoming connection request. Using a user profile with *ALLOBJ special authority (such as I2OWNER), you can start the TCPSPAWN job using the command:

CALL PGM (SQLNK45/STRTCPSPWN)

Then you see the message Job 098870/I2OWNER/TCPSPAWN submitted to job queue QSYSNOMAX in library QSYS. If the job started correctly, then a TCPSPAWN job is running in the QSYSWRK subsystem. You can verify this by using the Work with Active Jobs (WRKACTJOB) or Work with Subsystem Jobs (WRKSBSJOB) commands:

WRKACTJOB SBS (QSYSWRK) WRKSBSJOB SBS (QSYSWRK)

An example is shown in Figure 460.

	I2				
CPU %: 2.5 Ela	apsed time: 00:	13:19 Active jobs	. 219		
Type options, press H 2=Change 3=Hold 8=Work with spooled	Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message 8=Work with spooled files 13=Disconnect				
Opt Subsystem/Job U QSYSWRK (SSTCPNONE I TCPSPAWN I	User Type QSYS SBS I2OWNER BCI I2OWNER BCH	CPU % Function .0 .0 PGM-TCPSPAWN	Status DEQW SELW SELW		
Parameters or command	đ		Bottom		
F3=Exit F5=Refresh F11=Display elapsed o	F7=Find data F12=Cancel	F10=Restart statis F23=More options	tics F24=More keys		

Figure 460. WRKACTJOB SBS(QSYSWRK) display showing TCPSPAWN job

To stop the TCPSPAWN spawner job, use option 4 (End) from the WRKACTJOB display.

The STRTCPSPWN program also starts TCP/IP ports 4001 and 4002 as shown in Figure 461. Check these using the Work with TCP/IP Network Status (NETSTAT) command and selecting option 3 (Work with TCP/IP connection status).

					System:	I2
ocal internet a	ddress		: *ALI	ı	-	
ype options, pro	ess Enter.					
4=Ena 5=Disp.	Tay details					
Remote	Remote	Local				
ot Address	Port	Port	Idle Time	State		
*	*	4001	049:11:31	Listen		
*	*	4002	000:05:36	Listen		
*	*	5009	055:26:59	*UDP		
*	*	as-mgtc >	055:27:04	Listen		
*	*	5582	001:47:54	Listen		
*	*	5665	000:26:49	*UDP		
*	*	as-cent >	024:43:21	Listen		
*	*	as-data >	005:11:58	Listen		
*	*	as-dtaq	024:44:08	Listen		
*	*	as-file	002:38:28	Listen		
*	*	as-netprt	000:08:43	Listen		
					Mor	e
5=Refresh F11:	=Display byte (counts F13=	Sort by col	umn		

Figure 461. NETSTAT TCP/IP connection status for SequeLink Server ports 4001 and 4002

If the user profile you used to start the TCPSPAWN job did not have *ALLOBJ authority, the job ends immediately. It writes the message The TCPSPAWN-Job's User Profile requires *ALLOBJ Special authority to the job log of the TCPSPAWN job.

You are now ready to start using SequeLink ODBC support in Link.

8.3.6.1 Automating TCPSPAWN startup

The TCPSPAWN listener job/ports must be activated before SequeLink connections can be established. Also, preforming an IPL on the iSeries server or bringing it to a restricted stated ends the TCPSPAWN job/ports. In such cases, consider automating the start of the TCPSPAWN job/ports. You can do this by adding an autostart job to a subsystem, or adding an entry to your IPL startup program.

To add an autostart job to a subsystem, you first have to create a job description with request data that issues CALL PGM(SQLNK45/STRTCPSPWN). You can do this with the Create Job Description (CRTJOBD) command:

CRTJOBD JOBD(I2SOURCE/STRTCPSPWN) TEXT('Job description for SequeLink STRTCPSWPN') USER(I2OWNER) RQSDTA('call pgm(sqlnk45/strtcpspwn)') LOG(4 0 *NOLIST) LOGCLPGM(*NO)

You may want to specify LOG(4 0 *SECLVL) and LOGCLPGM(*YES) if you want detailed job logs. Then add an autostart job entry to a subsystem that is started every time. We recommend using the QSYSWRK subsystem since it is also where the TCPSPAWN job will run once it is started. Use the Add Autostart Job Entry (ADDAJE) command to do this:

ADDAJE SBSD (QSYSWRK) JOB (STRTCPSPWN) JOBD (12SOURCE/STRTCPSPWN)

You should see a completion message stating that the subsystem description has changed and that the change will take effect the next time the subsystem starts.

To verify that the autostart job entry is added, use the Display Subsystem Description (DSPSBSD) command such as DSPSBSD SBSD (QSYSWRK) and select option 3 (Autostart job entries). The Display Autostart Job Entries panel appears as shown in Figure 462.

Display Autostart Job Entries	Grat on .	TO
Subsystem description: QSYSWRK Status: ACTIVE	System:	12
Job Job Description Library STRTCPSPWN STRTCPSPWN I2SOURCE		
Press Enter to continue.		
F3=Exit F12=Cancel		,

Figure 462. Display subsystem description for STRTCPSPWN autostart job entry

To update your IPL startup program instead of the autostart job entry on a subsystem, follow these steps:

Note

Because TCP/IP must be started and running when the listener is started, add the Start TCP/IP (STRTCP) command to the startup program *before* the start of the TCPSPAWN job is issued.

 Determine the name and library of the automatic startup program by using the Display System Value (DSPSYSVAL) command to look at the QSTRUPPGM system value:

DSPSYSVAL SYSVAL (QSTRUPPGM)

The shipped value is QSYS/QSTRUP.

2. Find the location of the source of the QSTRUPPGM by using the Display Program (DSPPGM) command:

DSPPGM PGM (LLLLLLLLL/PPPPPPPPP)

Here *LLLLLLLLL* is the name of the library and *PPPPPPPP* is the name of the automatic startup program found in step 1.

- 3. Write down the names of the source file, library, and source member.
 - If this information is available, skip to step 5.
 - If the source file name is blank, QSTRUPPGM has not been changed since the server was shipped. Continue to the next step.
- 4. Retrieve the source of the startup program using the Retrieve CL Source (RTVCLSRC) command:

RTVCLSRC PGM(LLLLLLLL/PPPPPPPP) SRCFILE(TTTTTTTT/SSSSSSSSS) SRCMBR(PPPPPPPPP)

Here *LLLLLLLLL* is the name of the library, *PPPPPPPPP* is the name of the program found in step 1, and *TTTTTTTTT* and *SSSSSSSSS* are the library and name of an existing source file. If you don't have an existing source file, you can create one with the Create Source Physical File (CRTSRCPF) command:

CRTSRCPF FILE(TTTTTTTTTTT/SSSSSSSSS) TEXT('Source physical file')

5. To modify the startup program code, use the Start Source Entry Utility (STRSEU) command if it is available on your iSeries server:

STRSEU SRCFILE (TTTTTTTTTT/SSSSSSSSSS) SRCMBR (PPPPPPPPP)

You need to insert the following lines after the start of TCP/IP:

DLYJOB DLY(60) ADDLIBLE LIB(ZZZZZZZZZZZ) CALL PGM(STRTCPSPWN) MONMSG MSGID(CPF0000)

Here ZZZZZZZZZ is the name of the SequeLink Product Library (SQLNK45 in our case). We used the Delay Job (DLYJOB) command to allow the starting of TCP/IP to fully complete before calling the STRTCPSPWN program.

An example is shown in Figure 463.

Columns .	: 1 80 Edit LLLLLLLLLLLSSSSSSSS
SEU==>	
FMT **	+ 1+ 2+ 3+ 4+ 5+ 6+ 7
0040.00	MONIMSG MSGID (CPF0000)
0041.00	QSYS/STRSBS SBSD(QSYSWRK)
0042.00	MONMSG MSGID(CPF0000)
0043.00	QSYS/STRSBS SBSD(QINTER)
0044.00	MONMSG MSGID (CPF0000)
0045.00	QSYS/STRSBS SBSD (QBATCH)
0046.00	MONMSG MSGID (CPF0000)
0047.00	QSYS/STRSBS SBSD (QCMN)
0048.00	MONMSG MSGID (CPF0000)
0049.00	DLYJOB DLY(100)
0050.00	STRTCP
0051.00	MONMSG MSGID (CPF0000)
0051.01	DLYJOB DLY(60)
0051.02	ADDLIBLE LIB (SQLNK45)
0051.03	CALL PGM (STRTCPSPWN)
0051.04	MONMSG MSGID (CPF0000)
0052.00 I	ONE:
0053.00	QSYS/RTVSYSVAL SYSVAL (QSTRPRTWIR) RTNVAR (&STRWIRS)
0054.00	IF COND (& STRWIRS = '0') THEN (GOTO CMDLBL (NOWIRS))
0055.00	CALL PGM (QSYS/QWCSWIRS)
F3=Exit	F4=Prompt F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
F16=Repea	at find F17=Repeat change F24=More keys

Figure 463. STRSEU display of IPL startup program adding the start of STCPSPWN

After you press the F3 function key to exit, make sure that the top line of the next panel, Change/create member, is set to Y=Yes, or your changes will not be saved. Press Enter.

 Recompile the program into the library LLLLLLLL using the Create CL Program (CRTCLPGM) command:

CRTCLPGM PGM(LLLLLLLL/PPPPPPPP) SRCFILE(TTTTTTTTT/SSSSSSSSS) SRCMBR(PPPPPPPPP) REPLACE(*YES)

Here *LLLLLLLLL* is the name of the library, *PPPPPPPPP* is the name of the program, and *TTTTTTTTT* and *SSSSSSSSS* are the library and name of the source file. You can verify that it completed properly by looking for the completion message Program PPPPPPPP created in library LLLLLLLLL either on your panel or in your job log that says:

You can use the Display Job Log (DSPJOBLOG) command and press Enter to look at your job log. Press the F10 function key to see detailed messages and F18 to go to the bottom.

The TCPSPAWN job is now automatically activated the next time you IPL or restart the iSeries server.

8.4 Troubleshooting a SequeLink ODBC connection

If you have a problem establishing a communication from Link to your data, the best approach is to work from the lowest level of communication (the SequeLink layer) upward toward the Link layer. Most communication problems in Link are an

indirect result of problems at the lower levels. Table 15 contains a list of common problems and possible solutions.

Problem	Solution
Server name is not accepted.	Verify name in host file. Change to the IP address of host.
Testing the connection results in a time out.	Server not running. Time-out value not long enough.
sqlnkcau utility does not start.	Hidden .sqlnkdll.ini in HOME or current directory. SQLNK_HOME environment variable not set properly. libbsd_r.a symbolic link not set (OS/400 V4R5M0 only).
sqInkcau utility does not save new definitions.	User does not have write permission to the sqlnkdsn.ini file.

Table 15. Common SequeLink ODBC connection problems and solutions

8.4.1 Testing the environment

To verify that the SequeLink environment is set up correctly, check the following items:

1. Ensure that the iSeries server is running, has TCP/IP active, and is visible to your Link server. The best way to determine if the iSeries server can be resolved is to ping the host from an OS/400 command line using the Verify TCP/IP Connection (VFYTCPCNN or PING) command. Enter the name and press Enter.

If you have problems with the name, try using the command with the host IP address and press Enter.

- 2. Try to log in to the iSeries server using the user name and password combination that is used in the SequeLink ODBC data source. This confirms that the user ID is valid and that the server is not in an unstable state. It is possible to ping a computer that is in an unstable state, but logging in verifies that it is running correctly.
- 3. Validate that the SequeLink Server job TCPSPAWN is running in the QSYSWRK subsystem. You can verify this by using the Work with Active Jobs (WRKACTJOB) or Work with Subsystem Jobs (WRKSBSJOB) commands:

WRKACTJOB SBS (QSYSWRK) WRKSBSJOB SBS (QSYSWRK)

Figure 460 on page 409 shows an example of using the WRKACTJOB command.

- 4. Validate that the SequeLink Server is listening on the correct port. The STRTCPSPWN program starts TCP/IP ports 4001 and 4002. You can check them by using the Work with TCP/IP Network Status (NETSTAT) command and then selecting option 3 (Work with TCP/IP connection status). They should be in a listen status as shown in Figure 461 on page 409.
- 5. Use the env command in the PASE QP2TERM shell where you started the Link server. It helps you check if the environment variables SQLNK_HOME, ODBCINI, and the UNIX shared library variable LIBPATH are set correctly. You can use the SequeLink Client script file (.sqlnk.sh) as a guide for how to set the variables. This is described more in 8.2.6, "Setting up the SequeLink environment" on page 382.

8.4.2 Testing at the SequeLink Client layer with sqlnkcau

Test the connection at the SequeLink Client level with the sqlnkcau utility, as explained in 8.2.8, "Testing the data source connection with the sqlnkcau utility" on page 388. Run this test as the user who is running Link and select the data source whose connection you want to test.

- If the sqlnkcau utility does not start correctly, then this may indicate that the user's environment, specifically SQLNK_HOME, is not correctly set up.
- If the test passes, then the SequeLink Client level of the communication is good.
- If the test fails, then the sqlnkcau utility returns an error message with more information about the connection failure.

8.4.3 Testing at the SequeLink Server layer

When SequeLink Server receives a request to access a database or file, the TCPSPAWN job creates a new job for this. If you used the defaults when creating the SequeLink Client data source, the service name used was SQLNKNONE; it maps to port 4002.

Since this request is coming in via TCP/IP, the job name used is called SSTCPNONE. This is the job name that you can see with the WRKACTJOB or WRKSBSJOB commands, as shown in Figure 464, when looking at the QSYSWRK subsystem. This is helpful to know if you are having problems accessing data and suspect the iSeries server as the source of the errors, since you can view the job log for these jobs.

Work with Active Jobs I2							
09/21/00 CPU %: 2.5 Elapsed time: 00:13:19 Active jobs: 219	16:20:59						
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message 8=Work with spooled files 13=Disconnect							
Opt Subsystem/Job User Type CPU % Function Status QSYSWRK QSYS SBS .0 DEQW SSTCPNONE 120WNER BCI .0 SELW TCPSPAWN 120WNER BCH .0 PGM-TCPSPAWN	Dather						
Parameters or command							
F3=ExitF5=RefreshF7=FindF10=Restart statisticsF11=Display elapsed dataF12=CancelF23=More optionsF24=More between the statistics	F10=Restart statistics F23=More options F24=More keys						

Figure 464. WRKACTJOB SBS(QSYSWRK) display showing SSTCPNONE job

8.4.4 Testing at the Link layer

Check the layers of communication lower than Link as described in the preceding sections. If you still have problems, follow these steps:

- 1. Make sure that the Link server was started with the +as400_startup_name <data source name> and +as400_owner_separator / parameters or options.
- 2. Verify that the Data Server and Data User are correctly defined.

- 3. Create a test user catalog. In this catalog, create an SQL table to pass an SQL statement directly to the SequeLink Server. This helps determine where the connection errors are happening.
- 4. If no ODBC data sources appear in the Data Server drop-down list:
 - Verify that the .odbc.ini file is available and correct.
 - Verify that the .odbc.ini file is in the correct directory (/sqlnk45/4_51_00/ini in our case) and is not in the HOME or other directory.
 - Verify that the ODBCINI environment variable points to your .odbc.ini file.

8.4.5 Using log files

Log files can help narrow down the search for problems. There are two ways to create and put information into log files:

1. Use the +sql option when you launch the Link server or engine. This displays the SQL code that Link is passing to the SequeLink Server. You can also log all these error messages from Link into a file:

rl_engine +sql -log_file /link_log/log.dat

You can find more information on Link server logging in 6.2.6.1, "Link server log file" on page 278.

2. Turn on ODBC tracing in the .odbc.ini file. To do this, add or modify the following lines of the .odbc.ini file:

```
[ODBC]
Trace=1
TraceFile=odbctrace.out
TraceDll=/opt/sequel40/4_51_00/lib/odbctrac.so
InstallDir=/opt/sequel40/4_51_00
```

You can find more information on this file in 8.2.9, "Configuring SequeLink ODBC Manager for your data sources" on page 390.



Chapter 9. i2 Five. Two pre-installation information

This chapter describes the iSeries server pre-installation procedures for the i2 Five.Two Active Data Warehouse, Demand Planner, Factory Planner, and Supply Chain Planner products on OS/400 V5R1M0. Be sure to read this chapter and complete the steps in it before you attempt to install any of these i2 Five.Two products. Then refer to the individual i2 Five.Two product installation chapters to perform the actual product installations.

9.1 Pre-installation overview

Starting with i2 Five.Two, product installation for many i2 products is now performed using the Zero G InstallAnywhere product. There are two ways to do the installation using this product:

- Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
- Use a standard Telnet or console client to display plain text.

The X Window System or graphical window interface is the desired way to perform i2 Five.Two product installations because of its simple look and feel and because the console mode may not be supported for every product (such as for Active Data Warehouse or Supply Chain Planner). Active Data Warehouse uses InstallShield instead of InstallAnywhere, but it also uses a graphical window interface. We used the X Window System with VNC to install i2 Five.Two products on the iSeries server, but console mode installation is documented in the individual product installation chapters where it is supported.

The InstallAnywhere and InstallShield products on the iSeries server requires Java 1.3.0 (not the one provided with the IBM Developer Kit for Java (5722-JV1). It has to be loaded and set up in OS/400 PASE. When using the X Window System, an X Window product like Hummingbird Exceed or VNC (open source or freeware) needs to be installed to render the graphical output from it.

This section takes you through the steps to get a PASE-supported version of Java 1.3.0 and VNC ready on an iSeries server. It also explains how to create a symbolic link for /bin. This information is located here so that individual i2 Five. Two product installation chapters do not have to repeat this each time.

9.2 Installing PASE-supported Java 1.3.0 code on an iSeries server

The Zero G InstallAnywhere product requires Java 1.3.0. This is not the same as the one provided with Licensed Program Product IBM Developer Kit for Java (5722-JV1). The required version of Java also has to be one that has been tested and is supported in the PASE environment.

Individual i2 Five.Two product installation CD-ROMs do not contain this Java code. You have to obtain the code from the i2 Support Web site (http://www.support.i2.com). Once you retrieve the supported Java Runtime Environment (JRE) Version 1.3.0 tar file and place it on your iSeries server, you need to untar the file and update the PATH environment variable to point to it. If you don't load the JRE, when you try to run an i2 Five.Two installation program,

you receive the error message No Java virtual machine could be found from your PATH environment variable. You must install a VM prior to running this program.

If you are unsure whether version 1.3.0 PASE JRE is already loaded, you can verify this by using the Edit File (EDTF) command against directory /opt/jre1.3/jre/bin:

EDTF STMF('/opt/jre1.3/jre/bin')

An example is shown in Figure 465.

Directory: /opt/jre1.3/jre/bin						
Position to :	Record	: 10	£ 30			
New File :						
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete		
Opt Name	Size	Owner	Changed	Used		
jvmtcf	64K	120WINER	03/30/01 14:46	12/05/01 13:45		
libjsound.a	384K	120WNER	08/10/01 08:27	12/05/01 13:45		
libawt.a	2,048K	120WINER	08/10/01 08:26	12/05/01 13:45		
libdcpr.a	384K	I20WNER	08/10/01 08:26	12/05/01 13:45		
libjpeg.a	384K	I20WNER	08/10/01 08:27	12/05/01 13:45		
libfontmanager.a	1,408K	I20WINER	08/10/01 08:26	12/05/01 13:45		
libcmm.a	512K	120WINER	08/10/01 08:26	12/05/01 13:45		
libhpi.a	128K	120WINER	08/10/01 08:26	12/05/01 13:45		
libxhpi.a	16K	120WINER	08/10/01 08:27	12/05/01 13:45		
classic	*DIR	I20WNER	12/05/01 13:45	12/05/01 13:45		
libjava.a	512K	I20WNER	08/10/01 08:26	12/05/01 13:45		
libzip.a	128K	120WNER	08/10/01 08:27	12/05/01 13:45		
java	64K	120WNER	08/10/01 08:26	12/05/01 13:54		
javaw	64K	120WNER	08/10/01 08:26	12/05/01 14:04		
keytool	64K	120WNER	08/10/01 08:26	12/05/01 13:45		
oldjava	64K	I20WNER	08/10/01 08:27	12/05/01 13:45		
oldjavaw	64K	120WNER	08/10/01 08:27	12/05/01 13:45		
				More		
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field		
(C) COPYRIG	HT IBM CORP.	1980, 2000.				
)		

Figure 465. Using the EDTF command to verify that the PASE JRE is on the iSeries server

If Version 1.3.0 JRE is loaded, then skip to step 17 on page 424.

To load a version 1.3.0 PASE JRE on an iSeries server, follow these steps:

- 1. Bring up a Web browser, such as Microsoft Internet Explorer or Netscape Navigator, on a PC. Change the address or location URL to the i2 Support Web site (http://www.support.i2.com). The first time you go to this site, you must register. If you are already registered, type your e-mail address and password. Then click **Enter** to log in.
- 2. Once you log on, from the Quick Menu on the left part of the window, click **Documentation**. You may have to click the plus sign (+) next to **Quick Menu** to see the Documentation link.
- The right part of the window should now say "Documentation, Patches, Presentations and other downloads available to <your company name>". For the Select a Product drop-down box, make sure it says All. Click the Go button.
- 4. You should see a long list of Application Notes, Documentation, Localization, Patches, Presentations, Release Notes, Software, and White Paper sections. The PASE JRE is located in the Software section, which is at the bottom of the list. Three links were posted on November 7, 2001:
 - **Readme file for IBM-JRE**: This is a readme file for the JRE and contains basic installation information for it. This section in the redbook contains more detailed information, so we recommend that you use it instead.
 - **IBM-JRE for AS400/PASE**: This is the jre-ca130-20010615.tar.Z file that contains the JRE. You need to send this to your iSeries server, uncompressed and untarred to load the JRE.
 - License file for IBM-JRE: This is a license file for the JRE and contains IBM copyright information.



An example is shown in Figure 466.

Figure 466. i2 Support Web site window showing links for PASE JRE files

5. Click one of the links (for example, **Readme file for IBM-JRE**). The browser loads a new page. Under the Select a Product heading, you should see "Click on Readme file for IBM-JRE (or right click and choose 'Save As') to begin download to your machine," as shown in Figure 467.

💣 i2 Customer Support - M	licrosoft Internet Explorer	
File Edit View Favorit	tes Tools Help	
Back Forward →	Stop Refresh Home Search Favorites History Mail	Print Edit Discuss
Address 🙋 http://www.sup	port.i2.com/Authentication/wvalidatelogin.cfm	▼ 🖓 Go 🗍 Links ≫
🕖 eSupport	Global Customer Solutions Management home : : Welcome Daniel R. Sundt!	search · help · feedback · logout
Quick Menu Create Case Order Software Request LicenseKey Documentation	Documentation, Patches, Presentations and other IBM - International Business Machines Corporatio Items older than 2 years are not available. Please send <u>feedback</u> if you d Select a Product : All	r downloads available to
Lookup Type Case 💌 ID go	Click on <u>Readme file for IBM-JRF</u> (or right click and choose 'Save your machine. PDF files require the freely available <u>Adobe Acrobat Reader</u> .	e As') to begin download to
 http://www.support.i2.com,	/Homepage/wcusthomepage.cfm	S Internet

Figure 467. i2 Support Web site window showing link for Readme file for IBM-JRE

6. At this point, if you click the Readme or License file links, the browser displays these text files. Or if you click the compressed tar file link, the browser asks whether you want to open it or save it to disk. We recommend that you right-click all of the links and save them directly to a folder on your PC (Save Target As in Microsoft Internet Explorer or Save Link As in Netscape Navigator).

The files that you are saving are called:

- readme_for_IBM-JRE.txt
- jre-ca130-20010615.tar.z
- license_for_IBM-JRE.txt

An example of saving these files to a folder called PASE information is shown in Figure 468.



Figure 468. Saving file readme_for_IBM-JRE.txt to a PC

7. You can go directly to these files without having to log into http://www.support.i2.com. Here are the direct links that were available at the time this redbook was written:

• Readme file for IBM-JRE

http://esupport.i2.com/Documentation/Support/i2%20Customer%20Support%20W ebsite/docs/readme_for_IBM-JRE.txt

License file for IBM-JRE

http://esupport.i2.com/Documentation/Support/i2%20Customer%20Support%20W ebsite/docs/license_for_IBM-JRE.txt

• IBM-JRE for AS400/PASE

http://esupport.i2.com/Documentation/Support/i2%20Customer%20Support%20W ebsite/docs/jre-ca130-20010615.tar.Z

8. After the three files are on a PC, sign onto your iSeries server and create a directory to hold the tar file and its contents after it is untarred. We use the directory name /opt/jre1.3 during our installation. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line:

```
MKDIR DIR('/opt/jre1.3')
```

If the directory /opt is not on your system, then you receive an "object not found" error. Then you have to issue the MKDIR command in two steps:

```
MKDIR DIR('/opt')
MKDIR DIR('/opt/jre1.3')
```

You should see a completion message stating that the directory was created. You can also use mkdir from within a PASE QP2TERM shell.

 Copy or transfer the files from your PC to the iSeries server and into directory /opt/jre1.3. There are different ways to accomplish this task, like mapping a network drive, using Operations Navigator to drag the files from a PC to the iSeries server, or using File Transfer Protocol (FTP). We use FTP.

To copy the files using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC where you downloaded the three JRE files. Click Start-> Programs-> Accessories-> Command Prompt.
- b. Use the cd command to change to the directory where the files are located:

cd C:\PASE information

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WNER in the example.
- e. Enter the password for your iSeries server user ID.
- f. Use the cd command to change to the iSeries server directory where the files will be placed. This should be /opt/jre1.3:

cd /opt/jre1.3

- g. Use the bin command to change to binary mode.
- h. Use the put command to transfer the files one after the other to the iSeries server:

```
put readme_for_IBM-JRE.txt
put jre-cal30-20010615.tar.z
put license_for_IBM-JRE.txt
```

i. Use the quit command to exit FTP.

An example is shown in Figure 469.

C:\>cd PASE information

C:\PASE information>ftp I2 Connected to i2.domain.ibm.com. 220-OTCP at i2.domain.ibm.com. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com: (none)): **I20WNER** 331 Enter password. Password: 230 I2OWNER logged on. ftp> cd /opt/jre1.3 250-NAMEFMT set to 1. 250 "/opt/jre1.3" is current directory. ftp> bin 200 Representation type is binary IMAGE. ftp> put readme for IBM-JRE.txt 200 PORT subcommand request successful. 150 Sending file to /opt/jre1.3/readme for IBM-JRE.txt 250 File transfer completed successfully. ftp: 1434 bytes sent in 0.03Seconds 47.80Kbytes/sec. ftp> put jre-ca130-20010615.tar.z 200 PORT subcommand request successful. 150 Sending file to /opt/jre1.3/jre-ca130-20010615.tar.Z 250 File transfer completed successfully. ftp: 22537096 bytes sent in 948.56Seconds 23.76Kbytes/sec. ftp> put license for IBM-JRE.txt 200 PORT subcommand request successful. 150 Sending file to /opt/jre1.3/license_for_IBM-JRE.txt 250 File transfer completed successfully. ftp: 501 bytes sent in 0.00Seconds 501000.00Kbytes/sec. ftp> quit 221 QUIT subcommand received.

C:\PASE information>

Figure 469. Using FTP from a PC to place the PASE JRE files on the iSeries server

10. To verify that the files are now on the iSeries server, use the EDTF command against the /opt/jre1.3 directory:

EDTF STMF('/opt/jre1.3')

An example is shown in Figure 470.

Directory: / Position to New File : 2=Edit 4=De	'opt/jre1.3 : elete File	Record 5=Display	: 1 o: 6=Path Size	f 3 9=Recursive Del	ete
Opt Name <dme_for <a130-20 <nse_for< td=""><td>r_IBM-JRE.txt 0010615.tar.Z r_IBM-JRE.txt</td><td>Size 8K 2 22,528K 2 8K</td><td>Owner I2OWNER I2OWNER I2OWNER</td><td>Changed 12/05/01 13:17 12/05/01 13:34 12/05/01 13:34</td><td>Used 12/05/01 13:17 12/05/01 13:34 12/05/01 13:34</td></nse_for<></a130-20 </dme_for 	r_IBM-JRE.txt 0010615.tar.Z r_IBM-JRE.txt	Size 8K 2 22,528K 2 8K	Owner I2OWNER I2OWNER I2OWNER	Changed 12/05/01 13:17 12/05/01 13:34 12/05/01 13:34	Used 12/05/01 13:17 12/05/01 13:34 12/05/01 13:34
					Bottom
F3=Exit F	712=Cancel (C) COPYRIGH	F16=Sort IT IBM CORP.	F17=Position 1980, 2000.	to F22=Displa	y entire field

Figure 470. Using the EDTF command to verify that the PASE JRE files are on the iSeries server

11.After the PASE JRE tar file is on the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

12.Use the cd command to change to the directory where it is located:

cd /opt/jre1.3

13.Use the uncompress command to uncompress the tar file:

uncompress jre-ca130-20010615.tar.Z

Note that the Z at the end of the file name is dropped after the file is uncompressed.

14.Use the tar -xvf command to untar the tar file:

tar -xvf jre-ca130-20010615.tar

15.Use the ls command to verify that the jre/lib and jre/bin subdirectories were created:

ls -la jre

An example is shown in Figure 471.

```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/jre1.3
  $
> ls -la
 total 45272

        drwxrwsrwx
        2 I20WNER
        0
        49152 Dec 05 13:34 .

        drwxrwsrwx
        3 I20WNER
        0
        45056 Nov 26 16:27 ...

                                    45056 Nov 26 16:27 ...
                                  22537096 Dec 05 13:34 jre-ca130-20010615.tar.Z
  -rwxrwxrwx 1 I20WNER 0
 -rwxrwxrwx 1 I20WNER 0
                                    501 Dec 05 13:34 license for IBM-JRE.txt
  -rwxrwxrwx 1 I20WNER 0
                                      1434 Dec 05 13:17 readme_for_IBM-JRE.txt
> uncompress jre-ca130-20010615.tar.Z
> ls -la jre-ca130-20010615.tar
  -rwxrwxrwx 1 I20WNER 0
                                    25661440 Dec 05 13:34 jre-ca130-20010615.tar
  Ś
> tar -xvf jre-ca130-20010615.tar
 x jre/lib/ext/ibmjcaprovider.jar, 375769 bytes, 734 media blocks.
 x jre/lib/ext/indicim.jar, 43606 bytes, 86 media blocks.
 x jre/lib/images/cursors/cursors.properties, 1316 bytes, 3 media blocks.
 x jre/lib/images/cursors/motif_CopyDrop32x32.gif, 183 bytes, 1 media blocks.
 x jre/lib/images/cursors/motif CopyNoDrop32x32.gif, 195 bytes, 1 media blocks.
etc...
 x jre/bin/libagent.a, 59163 bytes, 116 media blocks.
 x jre/bin/libjitc.a, 2262001 bytes, 4418 media blocks.
 x jre/bin/libjdwp.a, 247734 bytes, 484 media blocks.
 x jre/bin/libdt socket.a, 19592 bytes, 39 media blocks.
 x jre/bin/awt robot, 43317 bytes, 85 media blocks.
  Ś
> ls -la jre
 total 488
  drwxrwsrwx 4 I20WNER 0
                                      45056 Dec 05 13:45 .
                                    86016 Dec 05 13:45 ...
  drwxrwsrwx
               3 I2OWNER 0
 drwxrwsrwx 3 I20WNER 0
                                     45056 Dec 05 13:45 bin
 drwxrwsrwx 8 I20WNER 0
                                      73728 Dec 05 13:45 lib
> jre/bin/java -version
  java version "1.3.0"
  Java (TM) 2 Runtime Environment, Standard Edition (build 1.3.0)
  Classic VM (build 1.3.0, J2RE 1.3.0 IBM build ca130-20010615a (JIT enabled: jit
  $
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                       F18=Bottom
                                      F21=CL command entry
```

Figure 471. Extracting the jre-ca130-20010615 tar file in a PASE QP2TERM shell

16.You can use the -version parameter with the java or javaw programs located in the /opt/jre1.3/jre/bin directory to verify that the version of Java that was loaded is 1.3.0:

java -version

An example is shown in Figure 471.

17.Update the PATH environment variable to point to the location of the Java program, which is /opt/jre1.3/jre/bin, in addition to what it is currently set to:

export PATH=/opt/jre1.3/jre/bin:\$PATH

A good way to test that the system can find the Java program after updating PATH is to use the which command:

which java

If the which command cannot find the Java program, you see an error. Otherwise, you see a directory location. You can also use the env command to verify that PATH was set correctly.

An example is shown in Figure 472.

/QOpenSys/usr/bin/-sh			
\$ > which java which: 0652-141 There is no java in /QOpenSys/usr/bin /usr/ccs/bin /usr/sbin . \$			
> export PATH=/opt/jre1.3/jre/bin:\$PATH			
<pre>\$ > which java /opt/jrel.3/jre/bin/java \$ > env _=/QOpenSys/usr/bin/env LANG=en_US.ISO8859-1 NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat PASE_LANG=en_US.ISO8859-1 OTDELCT DECEMBENT OF THE COMMENT.</pre>			
PATH=/opt/jre1.3/jre/bin:/QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin			
<pre>etc HOME=/home/I2OWNER PASE_TZ=CST6CDT PASE_NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat PWD=/opt/jrel.3 TZ=CST6CDT \$ ===></pre>			
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry			

Figure 472. Setting PATH to find the PASE JRE and verifying that it was set correctly

9.2.1 Setting the PASE_PATH environment variable

Instead of manually changing or updating the PATH environment variable each time you go into PASE, you can set the OS/400 environment variable PASE_PATH. This causes PATH to be set to a custom value each time PASE is started.

To see if it is already set on your system, use the Work with Environment Variable (WRKENVVAR) command. The command has *JOB and *SYS options to show job or system (global) level environment variables. *JOB environment variables are only active for the current job, while *SYS are active for all jobs on the system permanently. PASE_PATH should be set at the system level so that it does not disappear after your current job ends.

The Add Environment Variable (ADDENVVAR) command or option 1 from the WRKENVVAR command output adds an environment variable consisting of a

character string in the form 'environment variable name=environment variable value'.

– Note –

You must have *JOBCTL special authority to use these commands to add, change, or remove system-level environment variables.

To see system level environment variables, use the <code>wrkenvvar</code> command and press the F4 function key to prompt the command. Change the Level parameter from *JOB to *SYS as shown in Figure 473.

Work with Environment Var (WRKENVVAR)
Type choices, press Enter.
Additional Parameters
Level *SYS *JOB, *SYS
Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 473. WRKENVVAR command prompt changing level to *SYS

Press Enter. You could also simply issue the following command:

WRKENVVAR LEVEL (*SYS)

If you don't see PASE_PATH listed, then select option 1 to add an environment variable and type PASE_PATH as shown in Figure 474. Then press Enter.

Work with E	hvironment Vars (*SYS)
Type options, press Enter. 1=Add 2=Change 4=Remove 5	=Display details 6=Print
Opt Name 1 pase pater	Value
PASE_TZ	'CST6CDT'
Parameters or command	More
===>	
F3=Exit F4=Prompt F5= F12=Cancel F16=Print list F17 (C) COPYRIGHT IBM CORP. 1980, 200	Refresh F9=Retrieve F11=Display CCSIDs '=Top F18=Bottom F22=Display entire field 0.

Figure 474. Using the WRKENVVAR command to add the PASE_PATH environment variable

When we looked at the current value of the PATH environment variable inside PASE, we noticed that it was set to

/QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin:, so this setting should remain. Since we want to add /opt/jre1.3/jre/bin so the system can find the PASE JRE, the initial value for PASE_PATH should be set to:

/QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin:/opt/jre1.3/jre/bin

Make sure that the Level parameter is set to *SYS. If you issue the ADDENVVAR command manually from a command line, then you have to use the F10 function key to bring up the Level parameter as shown in Figure 475.

Add Environment Variable (ADDENVVAR)
Type choices, press Enter.
Environment variable > PASE_PATH
Initial value /QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.: /usr/bin:/opt/jre1.3/jre/bin'
Additional Parameters
Level > *SYS *JOB, *SYS
Bottom
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More keys

Figure 475. Using the ADDENVVAR command to add PASE_PATH

Press Enter to add the environment variable. You can also simply issue the following command:

ADDENVVAR ENVVAR(PASE_PATH) VALUE('/QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin:/opt/jre1.3/jre/bin ') LEVEL(*SYS)

To verify that PATH is set correctly, you can use the env, echo \$PATH, or which java commands inside a PASE QP2TERM shell. They should look the same as the example in Figure 472.

9.3 Verifying and starting VNC on an iSeries server

The Zero G InstallAnywhere product uses graphical windows for its output. In UNIX or AIX (PASE) environments, this means that you need to have X Window support on the client PC that is going to perform the i2 Five.Two product installation. You can purchase a product like Hummingbird Exceed, or you can use the open source or freeware product VNC available from AT&T labs (which is what we used).

If you are unsure whether the VNC server is loaded on your iSeries server, you can verify that it is loaded by using the EDTF command against directory /QOpenSys/QIBM/ProdData/DeveloperTools/vnc. Then look for the vncserver program:

EDTF STMF('/QOpenSys/QIBM/ProdData/DeveloperTools/vnc')

An example is shown in Figure 476.

Directory: /QOpenSys/QIBM/ProdData/DeveloperTools/vnc				
Position to :	Record	: 1 0	E 13	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete
Opt Name	Size	Owner	Changed	Used
Xvnc	2,048K	QSYS	02/28/01 16:10	12/05/01 17:06
Xvnc.libdbm	2,048K	QPGMR	02/27/01 17:52	03/20/01 09:10
rgb.dir	8K	QSYS	09/12/01 13:53	09/12/01 13:53
rgb.pag	64K	QSYS	09/12/01 13:53	09/12/01 13:53
rgb.txt	32K	QSYS	09/12/01 13:53	09/12/01 13:53
vncconnect	16K	QPGMR	02/27/01 17:44	03/20/01 09:10
vncpasswd	32K	QPGMR	02/27/01 17:44	03/20/01 09:10
vncserver	32K	QSYS	06/05/01 10:43	12/05/01 17:20
vncserver.libdbm	32K	QPGMR	03/07/01 09:44	03/20/01 09:17
vncserver_java	32K	QPGMR	06/05/01 10:42	06/05/01 10:43
vncsetup	8K.	QPGMR	03/20/01 10:30	06/05/01 10:49
vncviewer	512K	QPGMR	02/27/01 17:44	06/05/01 10:49
classes	*DIR	QPGMR	12/05/01 16:06	12/05/01 16:06
				Dath
				BOLLOM
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field
(C) COPYRIG	HT IBM CORP.	1980, 2000.	-	-

Figure 476. Using the EDTF command to verify that the VNC server is on the iSeries server

If you are unsure whether the VNC viewer program is loaded on your PC, you can search your computer for it. For example, on Windows 2000, click **Start-> Search-> For Files or Folders...** Under the heading *Search for files or folders named*:, type vncviewer.exe and click the **Search Now** button as shown in Figure 477. On other versions of Windows, you can click **Start-> Find-> Files or Folders**.

💐 Search Results		
File Edit View Favorites Tools Help		1
- 	rs 🎯 History 📲 🧏 🗙 🕫 🏢 🗸	
Address 🔕 Search Results		▼ @Go
Search ×	Name	In Folder
🗘 New 🤣	vncviewer.exe	C:\VNC
Search for Files and Folders		
Search for files or folders named:		
vncviewer.exe		
Containing text:		
Look in:		
🖃 Local Harddrives (C:)		
Search Now Stop Search		
Search Options >>		
Search for other items:		
Files or Folders		
Computers		
People		
Internet	1	F
1 object(s)		

Figure 477. Searching a PC for the vncviewer.exe program

If VNC is loaded on the iSeries server and on a PC, then continue with this section. If VNC is not loaded, then follow the steps in B.1.7.1, "Installing VNC on an iSeries server and a PC" on page 576 to install and set it up. Return here when you are finished.

To prepare VNC for i2 Five. Two product installations, follow these steps:

- 1. When using VNC, the first step is to start the VNC server running on the iSeries server. This is described in B.1.7.2, "Starting a VNC server" on page 582. Basically, you call /QOpenSys/QIBM/ProdData/DeveloperTools/vnc/vncserver from within a PASE QP2SHELL or QP2TERM shell. Then, note the VNC server name and instance number of the VNC server started.
- After the VNC server is started, set the DISPLAY environment variable to point to the VNC server that was started. This tells the system where to send the X Window output from programs like the InstallAnywhere product. If this is not set, then you will see many error messages such as the ones shown in Figure 478.



Figure 478. Errors in a PASE QP2TERM shell if the DISPLAY environment variable is not set

To set the DISPLAY environment variable, use the export command:

export DISPLAY=I2.DOMAIN.IBM.COM:1

Note that *I2.DOMAIN.IBM.COM:1* was the VNC server and instance number information that was returned when the VNC server was started.

If you are not using VNC, you only need to set the DISPLAY environment variable to the name or IP address of your PC:

export DISPLAY=<name or IP address of your PC:0>

You can use the env command to verify that DISPLAY was set correctly as shown in Figure 479.

/QOpenSys/usr/bin/-sh
\$ > export PATH=/opt/jre1.3/jre/bin:\$PATH
> /QOpenSys/QIBM/ProdData/DeveloperTools/vnc/vncserver
New 'X' desktop is I2.DOMAIN.IBM.COM:1
Starting applications specified in /home/I2OWNER/.vnc/xstartup Log file is /home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.log
\$ > export DISPLAY=I2.DOMAIN.IBM.COM:1 \$
<pre>> env _=/QOpenSys/usr/bin/env LANG=en_US.ISO8859-1 NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat PASE_LANG=en_US.ISO8859-1 QIBM_PASE_DESCRIPTOR_STDIO=T PATH=/opt/jre1.3/jre/bin:/QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin</pre>
etc
DISPLAY=12.DOMAIN.IBM.COM:1 PASE_SHELL=/QOpenSys/usr/bin/sh SHELL=/QOpenSys/usr/bin/sh PASE_LOCPATH=/usr/lib/nls/loc HOME=/home/I2OWNER PASE_TZ=CST6CDT PASE_NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat PWD=/home/I2OWNER TZ=CST6CDT \$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 479. Setting and verifying the DISPLAY environment variable in a PASE QP2TERM shell

3. Connect your PC to the VNC server that you started on the iSeries server. You can use the vncviewer program on your PC and specify the fully qualified server name (for example, I2.DOMAIN.IBM.COM:1). Or use a browser, such as Microsoft Internet Explorer or Netscape Navigator, and change the address or location URL to the iSeries server name followed by HTTP port 5801 (for example, http://I2.DOMAIN.IBM.COM:5801).

You need to know the password used when VNC server was set up to make the connection. This is described in more detail in B.1.7.4, "Connecting to the VNC server from a PC using a Web browser" on page 588, and B.1.7.5, "Connecting to the VNC server from a PC using vncviewer" on page 591.

9.4 Creating a symbolic link for /bin

We discovered a problem where the i2 installation program looks for the /bin directory. However, this does not exist on the iSeries server with OS/400 V4R5M0 or V5R1M0. To get around this problem, you need to create /bin as a symbolic link to /QOpenSys/usr/bin.

To create a symbolic link for /bin, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the root (/) directory:

cd /

3. Use the ls command to verify that /bin does not exist:

ls -la /b* ls -la /bin

You should see one of the following messages proving that /bin does not exist:

ls: 0653-341 The file /b* does not exist.
ls: 0653-341 The file /bin does not exist.

4. To create the symbolic link, use the ln -s command, providing the name of the object that you want to link to followed by the name of the object that you want to link to it:

ln -s /QOpenSys/usr/bin bin

5. Use the ls command to verify that the /bin symbolic link now exists. You can use either of the following formats:

ls -la /b* ls -la /bin

You should see text like the following example that proves that the /bin symbolic link now exists:

/bin -> /QOpenSys/usr/bin

6. If Qshell is used on this iSeries server, then we recommend that you remove this symbolic link at the end of the i2 Five.Two product installation. You can do this using the rm command:

rm bin

An example is shown in Figure 480.

```
/QOpenSys/usr/bin/-sh
  $
> engine.bin
  Preparing to install...
  engine.bin[11]: /usr/bin/ls: cannot execute
  engine.bin[40]: /usr/bin/ls: cannot execute
  engine.bin[44]: shift: bad number
  $
> cd /
  $
> ls -al /b*
  ls: 0653-341 The file /b* does not exist.
> ln -s /QOpenSys/usr/bin bin
  Ś
> ls -al /b*
 lrwxrwxrwx 1 I20WNER 0
                                      34 Dec 05 17:43 /bin -> /QOpenSys/usr/bin
  $
> rm bin
  Ŝ
> ls -al /b*
  ls: 0653-341 The file /b* does not exist.
  $
===>
F3=Exit
           F6=Print
                      F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                       F18=Bottom
                                    F21=CL command entry
```

Figure 480. Creating a symbolic link called /bin to point to /QOpenSys/usr/bin

You are now ready to run the i2 Five. Two product installation programs as described in the individual i2 Five. Two product installation chapters.



Chapter 10. i2 Five. Two Active Data Warehouse

This chapter describes the iSeries server installation procedures for the i2 Five.Two Active Data Warehouse product. It covers the differences in i2 Five.Two that are important for you to know.

For a description of the Active Data Warehouse product, see 1.1.2.1, "i2 Active Data Warehouse" on page 1. You can find installation information for the previous releases of i2 TradeMatrix Active Data Warehouse in Chapter 3, "i2 TradeMatrix Active Data Warehouse" on page 49.

10.1 Installation overview

This section contains information on how to install Active Data Warehouse 5.2 on an iSeries server. As pointed out in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V5R1M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Active Data Warehouse code requires approximately 54 MB of disk space. The SQL collection requires approximately 280 MB of disk space before customer data is added.

After you order Active Data Warehouse from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Active Data Warehouse are summarized here:

- 1. Install the Active Data Warehouse code from the CD-ROM.
- 2. Verify the existence of a local relational database directory entry.
- 3. Create an SQL collection or schema.
- 4. Change the job decimal format to *BLANK.
- 5. Run the ADWDDL command to create tables in the SQL collection.
- 6. Verify the contents of the Active Data Warehouse collection.
- 7. Install the Active Data Warehouse Web client (optional).

10.2 Active Data Warehouse reference documentation

The following manuals are available on the Active Data Warehouse CD-ROM in the \docs directory and on the iSeries server in the /opt/i2TradeMatrix/adw/5.2/docs directory after server installation:

- i2 Active Data Warehouse Installation Manual Version 5.2 (adw_install.pdf)
- *i2 Active Data Warehouse Release Notes Version 5.2* (release_notes_5_2.pdf)
- *i2 Active Data Warehouse User Guide Version 5.2* (help.zip)

On a PC in the C:\i2tradematrix\adw\5.2\doc folder after client installation, Web-based help is available for the Active Data Warehouse user interface. You can access this by unzipping the help.zip file and then opening the index.htm file. This appears to be the same as the *i2 Active Data Warehouse User Guide -Version 5.2* (adw_Manual.pdf) file.

Documentation is also available from the i2 support Web site (http://support.i2.com). Log in and then select the **Documentation** link.

10.3 Installing Active Data Warehouse server code on iSeries

To install the Active Data Warehouse server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Active Data Warehouse server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Active Data Warehouse execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2TradeMatrix/adw. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2TradeMatrix/adw')

Figure 481 shows the EDTF command after prompting with the F4 function key.

Edit File (EDTF)
Type choices, press Enter.
Stream file, or > '/opt/i2TradeMatrix/adw'
Data base file Name Library
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 481. Edit File (EDTF) command prompt of /opt/i2TradeMatrix/adw

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Active Data Warehouse environment and start from the beginning as shown in Figure 482.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (see Figure 488 on page 441 where you can define this). You may want to do this if you want multiple Active Data Warehouse environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: /opt/i21	radeMatrix/adw			
Position to :	Recor	rd: 1 c	of 1	
New File :				
2=Edit 4=Delete Fi	le 5=Display.	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
9 5.2	*DIR	I20WINER	11/20/01 08:40	11/21/01 11:13
				Bottom
F3=Exit F12=Canc (C) COE	el F16=Sort PYRIGHT IBM CORF	F17=Position 9. 1980, 2000.	to F22=Display	v entire field

Figure 482. Using EDTF to recursively delete an existing Active Data Warehouse environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Active Data Warehouse software in your iSeries CD-ROM drive.
- 7. The i2 Five.Two Active Data Warehouse installation program is called setupadw.jar. It is located in the root (\) directory on the CD-ROM. You can run the program from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell. We noticed that it ran extremely slower compared to when the program was on disk. Therefore, we recommend that you copy the installation program to disk from CD-ROM before you run it.

To copy the installation program from CD-ROM, follow these steps:

a. Create a temporary directory on the iSeries server to hold the installation program. We recommend that you use /opt/i2, but any option will work. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The file on the CD-ROM that you are looking for is called setupadw.jar, which you can find in the root (\) directory. You can either load the CD-ROM into a PC and FTP the file (in binary format) to the iSeries server. Or, load the CD-ROM into the iSeries CD-ROM drive and copy it directly. We recommend that you use the latter option, which is what we used.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or you can use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. The Work with Optical Files display is shown in Figure 483.

Work with Optical Files				
Directory / Volume ADW_52				
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Rename				
Opt File Name SizeCreated				
OS400INS.SAV344256009/28/0108:14:00QTEMP.SAV8870409/28/0108:14:00README.TXT146610/22/0111:26:02SETUPADW.JAR586361710/25/0112:48:00SETUPUI.JAR1843097410/25/0113:01:00				
Parameters or command				
===> F3=Exit F4=Prompt F5=Refresh F6=Print list F9=Retrieve F12=Cancel F16=Repeat position to F17=Position to F22=Display entire name				

Figure 483. The setupadw.jar installation program on the Active Data Warehouse CD-ROM

To copy the file directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/adw_52/setupadw.jar') TODIR('/opt/i2')

You should see a completion message stating that the object was copied.

- 8. After the installation program is on the iSeries server, you are ready to start the product installation. Perform the i2 Five.Two pre-installation procedures described in Chapter 9, "i2 Five.Two pre-installation information" on page 417, if you have not already done them. This involves:
 - Loading Version 1.3.0 JRE in PASE
 - Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server
 - Making a connection from a client PC to the VNC server
 - Setting up a symbolic link to /bin
- 9. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

10.Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation program is located:

cd /opt/i2

11.Active Data Warehouse is installed using the InstallShield product. This requires the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows. It does not support a standard Telnet or console client to display plain text like some of the other i2 Five.Two products can use with the InstallAnywhere product.

Call the i2 Five.Two Active Data Warehouse installation program, as shown in Figure 484, using either of the following commands:

```
java -cp setupadw.jar run
java -jar setupadw.jar
```

/QOpenSys/usr/bin/-sh			
<pre>> cd /opt/i2 \$ \$ ls -1 -rwxrwxrwx 1 I20WN \$ > java -cp setupady</pre>	ER 0 5863617 Oct 25 18:48 setupadw.jar w.jar run		
===>			
F3=Exit F6=Print F13=Clear F17=Top	F9=Retrieve F11=Truncate/Wrap F18=Bottom F21=CL command entry		

Figure 484. Calling setupadw.jar in a PASE QP2TERM shell

12. The Active Data Warehouse Installer splash panel (Figure 485) opens in either your Web browser or vncviewer window (depending on how you connected to the VNC server).



Figure 485. i2 Five. Two Active Data Warehouse Installer window

13.Read the information on the welcome window (Figure 486) and click the **Next** button to continue the installation.

Note: SUNDT's X desktop (RCHASSLH.RCHLAND.)	IBM.COM:1)	
Installer Five.Two Installer Installer Installer Installer Installer Installer Installer	▼ □	
instansmente	Next > Cancel	

Figure 486. i2 Five.Two Active Data Warehouse welcome window

14.Read the information on the license agreement window (Figure 487) and click the **I accept the terms of the license agreement** radio button. Click the **Next** button to continue the installation.

CSUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1)	
🚺 Installer 📃 🕹	×
Installer Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement carefully. Please read the following license agreement. Please read the following registered trademarks are the propert in the following preserve the terms of the license agreement. Placept the terms of the license agreement. InstallShield	
<pre></pre>	

Figure 487. i2 Five. Two Active Data Warehouse license agreement window

15.On the choose installation folder window (Figure 488), type the directory path that you want the installation to install to. The default is /opt/i2TradeMatrix/adw/5.2, which we recommend and use. Click the **Next** button to continue the installation.

If the desired directory structure does not exist, then another small window opens and asks if you want to create the directory structure. Click the **Yes** button to continue the installation.

)T's X desktop (RCHASSLH.RCHLA	ND.IBM.COM:1)	
🐠 Installer		
C Five.Two	Click Next to install "ADW 5.2 " to this folder, or click Browse to install to a different folder. NOTE 1 : Please DO NOT use the browse button on SOLARIS. NOTE 2 : Please DO NOT use backspace button on SOLARIS to edit the destination path. Navigate and use the DELETE button instead. Directory name /opf/i2tradematrix/adw/5.2 Browse	
Create th The directo i2 Technol	e directory T C X	
	< Back Next > Cancel	
		Π

Figure 488. i2 Five. Two Active Data Warehouse choose installation folder window

16.On the pre-installation summary window (Figure 489), verify that the installation location or folder is what you want, and click the **Next** button to continue the installation. Click the **Back** button if you need to back up and make any changes.

🚾 SUNDT's X desktop (RCHASSLH.RCHLAN	D.IBM.COM:1)	
Installer E. Five.Two I Technologies, Inc.	A DW 5.2 will be installed in the following location: /opt/i2tradematrix/adw/5.2 for a total size: 16.4MB	
InstallShield	< Back Next > Cancel	
4		▼ ▶

Figure 489. i2 Five. Two Active Data Warehouse pre-installation summary window

17. You now see the installation in progress window (Figure 490), where jar files are expanded, authorities are set, and so on. This takes time depending on the speed of your system.



Figure 490. i2 Five. Two Active Data Warehouse installation in progress window

18.When the installation is finished, you see an installation complete window (Figure 491). Click the **Finish** button to finish the installation.



Figure 491. i2 Five. Two Active Data Warehouse installation complete window

The installation complete window disappears. Then you can close the vncviewer window or Web browser unless you have additional i2 Five. Two products to install.

19. You can review an installation log file called log.txt that is generated and placed in directory /opt/i2TradeMatrix/adw/5.2 (and possibly in the home directory of the user that performed the install, for example, /home/I2OWNER).

To review the installation log file, follow these steps:

 a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the /opt/i2TradeMatrix/adw/5.2 directory where the installation log file is located:

cd /opt/i2TradeMatrix/adw/5.2

c. Use the cat command to view the installation log file:

cat log.txt

An example is shown in Figure 492.

```
/QOpenSys/usr/bin/-sh
 > cd /opt/i2TradeMatrix/adw/5.2
 > ls -l log.txt
   -rw-rw-rw- 1 I20WNER 0
                                        799 Jan 28 14:57 log.txt
   Ś
 > cat log.txt
    (Jan 28, 2002 2:49:51 PM), Setup.product.install,
 com.installshield.product.service.product.PureJavaProductServiceImpl$DiskSpaceChe
 Checking required disk space requires file service native support.
    (Jan 28, 2002 2:53:47 PM), Setup.product.install,
 com.installshield.product.service.product.PureJavaProductServiceImpl$DiskSpaceChe
 Checking required disk space requires file service native support.
    (Jan 28, 2002 2:57:40 PM), Setup.product.install, com.installshield.product.ac
 wrn, Cannot set file attributes: operation is not supported by the current file s
 implementation.
    (Jan 28, 2002 2:57:41 PM), Setup.product.install, com.installshield.product.ac
 wrn, Cannot set file times: operation is not supported by the current file servic
 implementation.
   $
 --->
 F3=Exit
            F6=Print F9=Retrieve F11=Truncate/Wrap
 F13=Clear F17=Top F18=Bottom F21=CL command entry
Figure 492. Using cat to view the i2 Five. Two Active Data Warehouse installation log file
```

20.If you want to see the results of the Active Data Warehouse installation, you can use the EDTF command to view the contents of the directory /opt/i2TradeMatrix/adw/5.2:

EDTF STMF('/opt/i2TradeMatrix/adw/5.2')

An example is shown in Figure 493.

Directory: /opt/i2Tr Position to :	adeMatrix/ Record	adw/5.2 l: 1 c	f 7	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name log.txt common ddl doc loader copyright.txt _uninst	Size 8K *DIR *DIR *DIR *DIR *DIR	Owner 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER	Changed 01/28/02 14:57 01/28/02 14:57 01/28/02 14:57 01/28/02 14:57 01/28/02 14:57 01/28/02 14:57 01/28/02 14:57	Used 01/28/02 15:04 01/28/02 15:04 01/28/02 15:04 01/28/02 15:04 01/28/02 15:04 01/28/02 15:04 01/28/02 15:05
				Bottom
F3=Exit F12=Cancel (C) COPYRIC	F16=Sort GHT IBM CORP.	F17=Position 1980, 2000.	to F22=Displa	ay entire field

Figure 493. Using EDTF to display the Active Data Warehouse directory after installation

10.4 Creating an Active Data Warehouse instance on iSeries

The Active Data Warehouse product is basically an SQL collection or schema that contains data. The installation process simply placed various objects onto the iSeries server. Now you have to perform the actual steps to create the Active Data Warehouse instance on the iSeries server.

To create an Active Data Warehouse instance, follow these steps:

 Copy two files from the Active Data Warehouse CD-ROM to the /tmp directory on the iSeries server. The files on the CD-ROM that you are looking for are called OS400INS.sav and QTEMP.sav. You can find them in the root (\) directory. You can either load the CD-ROM into a PC and FTP the files (in binary format) to the iSeries server, or load the CD-ROM into the iSeries CD-ROM drive and copy them directly. We recommend the latter option, which is what we use.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or you can use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 494.

Work with Optic	cal Files	
Directory / Volume ADW_52		System: I2
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print	7=Renam	e
Opt File Name	Size	Created
OS400 INS . SAV QTEMP . SAV README . TXT SETUPADW . JAR SETUPUI . JAR	3442560 88704 1466 5863617 18430974	09/28/01 08:14:00 09/28/01 08:14:00 10/22/01 11:26:02 10/25/01 12:48:00 10/25/01 13:01:00
Parameters or command		Bottom
===> F3=Exit F4=Prompt F5=Refresh F6=Prin F16=Repeat position to F17=Position to	nt list	F9=Retrieve F12=Cancel F22=Display entire name

Figure 494. OS400INS.sav/QTEMP.sav files on the Active Data Warehouse CD-ROM

To copy the files directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/adw_52/OS400INS.sav') TODIR('/tmp') CPY OBJ('/qopt/adw_52/QTEMP.sav') TODIR('/tmp')

You should see the completion messages stating that the objects were copied.

Create a save file using the Create Save File (CRTSAVF) command for the QTEMP.sav object you just copied:

CRTSAVF QGPL/QTEMP

You should see the completion message File QTEMP created in library QGPL.

If this generates the error message File QTEMP in library QGPL already exists, then use the Clear Save File (CLRSAVF) command:

CLRSAVF QGPL/QTEMP

3. Copy the QTEMP.sav file to the save file you created using the Copy From Stream File (CPYFRMSTMF) command:

CPYFRMSTMF FROMSTMF('/tmp/QTEMP.sav') TOMBR('/qsys.lib/qgpl.lib/qtemp.file') MBROPT(*replace)

You should see the completion message Stream file copied to object.

4. You can use the Display Save File (DSPSAVF) command to verify that the save file QGPL/QTEMP now contains data:

DSPSAVF FILE (QGPL/QTEMP)

An example is shown in Figure 495.

	Display	Saved Objects	- Save File		
Library saved : ASP	QTEMP 1 QTEMP QGPL 168 SAVOBJ *NO 09/26/ hter.	01 13:26:13 e members	Release leve Data compres Objects disp Objects save Access paths	el : ssed : olayed . : ed : ; :	V5R1M0 No 1 1 0
Opt Object QINSTAPP	Type *PGM	Attribute CLP	Owner QSYS	Size (K) 68	Data YES
F3=Exit F12=Car	ncel				

Figure 495. Using the DSPSAVF command to verify that the QGPL/QTEMP save file contains data

5. Use the Restore Object (RSTOBJ) command to restore the one object in the save file:

RSTOBJ OBJ (*ALL) SAVLIB (QTEMP) DEV (*SAVF) SAVF (QGPL/QTEMP) RSTLIB (QTEMP)

You should see the completion message1 objects restored from QTEMP to QTEMP.

6. Run the installation setup program that you restored:

CALL QTEMP/QINSTAPP 'IFSSAV'

Press Enter. Then you see such messages as the following examples at the bottom of your panel:

- Restoring software installation...
- · Copying Start/Stop menu files...
- Installation completed successfully
- 7. Use the Create Library (CRTLIB) command to create the INSTALLIB library:

CRTLIB LIB(INSTALLIB) TEXT('Library for i2 ADW installation')

You should see the completion message Library INSTALLIB created.

8. Use the Create Duplicate Object (CRTDUPOBJ) command to copy the ADWINST program from the QGPL library to the INSTALLIB library:

CRTDUPOBJ OBJ (ADWINST) FROMLIB (QGPL) OBJTYPE (*PGM) TOLIB (INSTALLIB)

You should see the completion message Object ADWINST in INSTALLIB type *PGM created.

An example of these steps is shown in Figure 496.

Command Entry	12			
Request level	: 1			
Previous commands and messages:				
<pre>> CPY OBJ('/qopt/adw_52/OS400INS.sav') TODIR('/tmp')</pre>				
Object copied.				
> CPY OBJ('/qopt/adw_52/QTEMP.sav') TODIR('/tmp')				
Object copied.				
> CRTSAVF QGPL/QTEMP				
File QTEMP in library QGPL already exists.				
File QIEMP not created in library QGPL.				
> CLRSAVF QGPL/QTEMP				
Save file QTEMP in library QGPL cleared.				
> CPYFRMSTMF FROMSTMF('/tmp/QTEMP.sav') TOMBR('/qsys.lib/qgpl.lib/qt	emp.fil			
e') MBROPT(*replace)				
Stream file copied to object.				
> DSPSAVF FILE (QGPL/QTEMP)				
> RSTOBJ OBJ (*ALL) SAVLIB (QTEMP) DEV (*SAVF) SAVF (QGPL/QTEMP) RSTLIB (QTEMP)				
1 objects restored from QTEMP to QTEMP.				
> CALL QTEMP/QINSTAPP 'IFSSAV'				
> CRILE LIB(INSTALLIB) TEXT('LIDTARY FOR 12 ADW installation')				
Library INSTALLIE created.				
> CRIDUPOBJ OBJ (ADWINST) FROMLIB (QGPL) OBJTYPE (*PGM) TOLIB (INSTALLIF)			
Object ADWINST in INSTALLIB type *RGM created.				
1 objects duplicated.				
These seminary di muses Tetran	BOLLOW			
Type command, press Enter.				
==>				
F3=Exit F4=Prompt F9=Retrieve F10=Include detailed messages				
F11=Display full F12=Cancel F13=Information Assistant F24=Mor	e keys			

Figure 496. Command entry display of commands run to create an Active Data Warehouse instance

- 9. Complete the rest of the Active Data Warehouse instance creation by going to the following sections:
 - 3.1.3, "Verifying the existence of a local relational database directory entry" on page 58
 - 3.1.4, "Creating an SQL collection or schema" on page 60
 - 3.1.5, "Changing the job decimal format to *BLANK" on page 63
 - 3.1.6, "Running ADWDDL to create tables in the SQL collection" on page 64.

The collection we created is called ADW52. The i2 Five.Two DDLs are located in the /opt/i2TradeMatrix/adw/5.2/ddl directory. Note that the ADWDDL command starts a long running process, so it will take some time to complete.

10.After the collection is populated, follow the steps in 3.1.7, "Active Data Warehouse collection content verification" on page 66, to verify that everything installed correctly. In our case, we saw that library ADW52 contained 1,247 objects and that the SQL collection contained 815 tables.

10.5 Active Data Warehouse PC installation directory

You may choose to install Active Data Warehouse on a PC because you want to FTP the DDLs from a PC to the iSeries server versus loading them directly on the iSeries server (resulting in a manual installation process). Keep in mind that it installs into a slightly different PC directory structure when compared to previous releases.

For example, with version 5.0.1, the DDLs were installed into the C:\Rhythm\Adw\5.0.1\ddl directory. With version 5.2, the DDLs are installed into the C:\i2tradematrix\adw\5.2\ddl directory.

Chapter 11. i2 Five. Two Demand Planner

This chapter describes the iSeries server installation procedures for the i2 Five.Two Demand Planner products. It does not cover the information such as how to start, stop, and operate the Demand Planner environment because this has not changed. Instead, it covers the differences in i2 Five.Two that are important to know.

For a description of the Demand Planner product, see 1.1.2.2, "i2 Demand Planner" on page 2. You can find installation information for the previous releases of i2 TradeMatrix Demand Planner in Chapter 4, "i2 TradeMatrix Demand Planner" on page 87.

11.1 Installation procedure

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Demand Planner, Demand Planner - Administrator, and Demand Analyzer 5.2 on an iSeries server. As stated in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V5R1M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Demand Planner code requires approximately 73 MB of disk space.

Note

The i2 Five.Two release is the last shipment of the Demand Analyzer product, which is being phased out effective this release. Analyzer for Demand Planner (ADP) is now the preferred reporting tool for the Demand Planner suite of products. We do not cover the installation of this product since Demand Analyzer is still available.

After you order Demand Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Demand Planner are summarized here:

- 1. Install the Demand Planner and VisiBroker code from the CD-ROM.
- 2. Run the planaxs program with a sample database.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2 based on the host ID.
- 5. Activate the license key.
- 6. Install the Demand Planner clients.
- 7. Install the demo database from the CD-ROM.

11.1.1 Demand Planner reference documentation

The following manuals are available on the Demand Planner CD-ROM in the \DOCS directory:

- i2 Demand Planner Release Notes Version 5.2 (DP_relnotes.pdf)
- *i2 Demand Planner User Manual Version 5.2* (DP_user.pdf)
- i2 Demand Planner Web Client User Manual Version 5.2 (DPWC_user.pdf)
- Demand Analyzer User Manual Version 5.2 (demand_analyzer_user.pdf)

- *i2 Demand Planner Administrator User Manual Version 5.2* (dp-administrator_user.pdf)
- i2 Demand Planner PRO User Manual Version 5.2 (PRO_User.pdf)
- *i2 SCM Web User Interface Infrastructure Installation Manual Version 5.2* (scm_webui_instal.pdf)
- *i2 TMAPI DP Adapters Users Guide Version 5.2* (TMAPI52UserGuide.pdf)
- i2 Demand Planner Installation Guide Version 5.2 (DP_Install_Guide.pdf)

Web-based help available for the Demand Planner and Demand Planner -Administrator user interfaces on a PC in the C:\i2tradematrix\DP\5.2\Client\Docs (Demand Planner) and C:\i2tradematrix\DP\5.2\admin\docs (Demand Administrator) folders after client installation. You can access the help by opening the cnts.htm file:

- i2 Demand Planner Help
- i2 Demand Planner Administrator Help

You can also find documentation from the i2 support Web site (http://support.i2.com). Log in and select the **Documentation** link.

11.1.2 Installing Demand Planner server code on the iSeries server

To install the Demand Planner server code on your iSeries server, follow these steps:

- 1. Bring up a 5250 terminal session to the iSeries server where you want to install the Demand Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Demand Planner execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2TradeMatrix/dp. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2TradeMatrix/dp')

Figure 497 shows the EDTF command prompted with the F4 function key.

Edit File (EDTF))			
Type choices, press Enter.				
Stream file, or > '/opt/i2TradeMatrix/dp'				
Data base file	Name Name, *LIBL, *CURLIB			
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	Bottom F13=How to use this display			

Figure 497. Edit File (EDTF) command prompt of /opt/i2TradeMatrix/scp

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Demand Planner environment and start from the very beginning. This is shown in Figure 498.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 505 on page 457 shows where you can define this). You may want to do this if you want multiple Demand Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: /opt/i2Trad	eMatrix/dp			
Position to :	Recor	rd: 1 c	of 1	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
9 5.2	*DIR	120WINER	11/20/01 08:40	11/21/01 11:13
				Bottom
E2_Exit E12_Concol	F16-Cort	F17_Dogition	to E22_Dimplot	ontiro fiold
C) COPYRT	CHT IBM CORF	$r_{1} = r_{0} s_{1} c_{0} c_{0}$	CO FZZ=DISPIAY	
		. 1900, 2000.		

Figure 498. Using EDTF to recursively delete an existing Demand Planner environment

5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.

- 6. Place the CD-ROM containing the Demand Planner software in your iSeries CD-ROM drive.
- 7. The i2 Five.Two Demand Planner installation program is called *DP_Install.bin*, and the i2 Five.Two Demand Planner Administrator program is called *DPAdmin_Install.bin*. You can find the Demand Planner program in the \Demand_Planner\SERVER\os400 directory, and the Demand Planner Administrator program in the \Demand_Planner\ADMIN\SERVER\os400 directory.

You can run the programs directly from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell, but we noticed that it ran extremely slower compared to when the program was on disk. Therefore, we recommend copying the installation programs to disk from CD-ROM before trying to run it.

To copy the installation programs from CD-ROM, follow these steps:

 a. Create a temporary directory on the iSeries server to hold the installation program. We recommend using /opt/i2, but any directory works. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The files on the CD-ROM that you are looking for are called *DP_Install.bin* for Demand Planner and *DPAdmin_Install.bin* for Demand Planner - Administrator. The Demand Planner program is found in the \Demand_Planner\SERVER\os400 directory. The Demand Planner - Administrator program is found in the \Demand_Planner\ADMIN\SERVER\os400 directory. You can load the CD-ROM into a PC and FTP the files (in binary format) to the iSeries server. Or, you can load the CD-ROM into the iSeries's CD-ROM drive and copy them directly. We recommend that you use the latter option, which is what we used.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example of the Work with Optical Files display is shown in Figure 499 and Figure 500.

Work with Optical Files				
Directory /DEMAND~1/SERVER/OS400 Volume DP_52	System: I2			
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Rena	me			
Opt File Name Size	Created			
DP_INS~1.BIN 43916808	10/23/01 13:00:02			
	Detter			
Parameters or command	BOLLOIII			
===> F3=Exit F4=Prompt F5=Refresh F6=Print list F16=Repeat position to F17=Position to	F9=Retrieve F12=Cancel F22=Display entire name			

Figure 499. DP_INS~1.BIN installation program on the Demand Planner CD-ROM

Work with Optical Files	
Directory /DEMAND~1/ADMIN/SERVER/OS400 Volume DP_52	
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=	Rename
Opt File Name	SizeCreated
DPADMI~1.BIN 3709	6755 10/23/01 12:32:48
	Pottom
Parameters or command ===>	BOLLOII
F3=Exit F4=Prompt F5=Refresh F6=Print li F16=Repeat position to F17=Position to	st F9=Retrieve F12=Cancel F22=Display entire name

Figure 500. DPADMI~1.BIN installation program on the Demand Planner CD-ROM

Notice that when you view files with names longer than eight characters, the iSeries server truncates the name to six characters. Then it uses the tilde (~) character and a number to distinguish files where the first six characters match. For example, DP_Install.bin translates to DP_Ins~1.bin and DPAdmin_Install.bin translates to DPAdmi~1.bin. If this is too confusing, you can send the files using FTP to the iSeries server and the names will not truncate.

To copy the files directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/dp_52/demand~1/server/os400/dp_ins~1.bin') TODIR('/opt/i2') CPY OBJ('/qopt/dp_52/demand~1/admin/server/os400/dpadmi~1.bin') TODIR('/opt/i2')

You should see completion messages stating that the objects were copied.

- 8. After the installation programs are on the iSeries server, you are ready to start the product installation. Perform the i2 Five.Two pre-installation procedures described in Chapter 9, "i2 Five.Two pre-installation information" on page 417, if you have not done them already. This involves:
 - Loading Version 1.3.0 JRE in PASE
 - · Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server
 - Making a connection from a client PC to the VNC server
 - Setting up a symbolic link to /bin
- 9. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

10.Use the cd command to change to the /opt/i2 directory where the i2 Five.Two installation program is located:

cd /opt/i2

- 11. There are two ways to install using the Zero G InstallAnywhere product:
 - Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
 - Use a standard Telnet or console client to display plain text.

We used the X Window System or graphical interface with VNC to install i2 Five.Two on the iSeries server. If you prefer the procedure to use console mode with plain text, see 11.1.3, "Installing Demand Planner using standard console mode" on page 470.

Call the i2 Five.Two Demand Planner installation program using a graphical interface:

dp_ins~1.bin (or DP_Install.bin)

You can ignore the message in the PASE QP2TERM shell dp_ins~1.bin[321]: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling dp_ins~1.bin as shown in Figure 501.
```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/i2
  $
> ls -l
  total 1074072
  -rwxrwxrwx 1 I2OWNER 0 43916808 Jan 23 14:24 DP_Install.bin
-rwxrwxrwx 1 I2OWNER 0 43916808 Oct 23 19:00 dp_ins~1.bin
  Ś
> dp_ins~1.bin
  Preparing to install...
  dp_ins~1.bin[321]: test: syntax error
  InstallAnywhere 4.0.1 Enterprise
  No plugins installed
  Wed Jan 23 14:31:32 CST 2002
  Free memory = 13395 kB
  Total memory = 16382 kB
  No arguments.
  java.class.path =
      /tmp/install.dir.387/InstallerData
      /tmp/install.dir.387/InstallerData/installer.zip
  ZGUtil.CLASS PATH =
      /tmp/install.dir.387/InstallerData
      /tmp/install.dir.387/InstallerData/installer.zip
  java.version = 1.3.0
java.vendor = IBM Corporation
java.home = /tmp/install.dir.387/Solaris/resource/jre
  java.class.version = 46.0
  os.name = OS400
 os.version = 5.1
file.encoding = 8859_1
user.home = /home/I2OWNER
user.dir = /tmp/install.dir.387
  user.language = en
  user.region
  java.compiler
                      = null
                     = NONE
  seaFilename = dp_ins~1
  Default location = /opt/i2/
  UI Mode set to Default - AWT. No UI mode specification was given.
  Installer: InstallAnywhere 4.0.1 Enterprise Build 1012
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                         F18=Bottom F21=CL command entry
```

Figure 501. Calling dp_ins~1.bin in a PASE QP2TERM shell using graphical mode

12. You briefly see a Demand Planner Installer splash panel (Figure 502) in your Web browser or vncviewer window (depends on how you connected to the VNC server).



Figure 502. i2 Five. Two Demand Planner Installer window

13.Read the information on the Introduction window (Figure 503) and click the **Next** button to continue the installation.



Figure 503. i2 Five. Two Demand Planner Introduction window

14.Read the information on the License Agreement window (Figure 504) and select the I accept the terms of the License Agreement radio button. Click Next.

2 Demand Planner - Serve	r version 5.2 The X
	License Agreement
	Installation and Use of i2 Demand Planne <mark>r - S</mark> erver versio Requires Acceptance of the Following License Agreement:
A FIVE.IWO	One i2 Place 11701 Luna Road Dallas, TX 75234
	i2 Five.Two Demand Planner © 1995–2001 i2 Technologies US, Inc., exclusive of the following works: "Visibroker" which are © 1995–2001 X Corp. ALL RICHTS RESERVED.
	This notice is intended as a precaution against inadvertent publication and does not imply any waiver of confidentiality. No part of this software or database may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or information storage or retrieval systems, for any purpose accept as expressly provided in writing by 12 Technologies US, Inc.
i2 Technologies, Inc.	◇I accept the terms of the License Agreement ◇I do NOT accept the terms of the License Agreement
InstallAnywhere by Zero G Cancel	Previous Next

Figure 504. i2 Five. Two Demand Planner License Agreement window

15.On the Choose Install Folder window (Figure 505), type the directory path to which you want the installation to install. The default is /opt/i2TradeMatrix/dp/5.2, which is what we recommend and use. Click **Next**.





Figure 505. i2 Five. Two Demand Planner Choose Install Folder window

16.On the Pre-Installation Summary window (Figure 506), verify that the install folder is what you want and click the **Install** button. Click the **Previous** button if you need to back up and make any changes.



Figure 506. i2 Five. Two Demand Planner Pre-Installation Summary window

17. You now see the installation in progress window (Figure 507) where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system.



Figure 507. i2 Five. Two Demand Planner installation in progress window

18. When the installation is finished, you see presented with the Install Complete window (Figure 508). Click **Done** to finish the installation.

The Install Complete window disappears. But, do not close the vncviewer window or Web browser yet, because you need to install Demand Planner - Administrator next.

The Demand - Hamler - Gerv	Install Con	nplete
Eventson 2 Technologies, Inc.	Congratulations! i2 Demand Planner – Server version 5 been successfully installed to: /opt/i2tradematrix/dp/5.2 Press "Done" to quit the installer.	.2 has
InstellAnywhere by Zero G	Previous 🗌	Done

Figure 508. i2 Five. Two Demand Planner Install Complete window

- 19. You can review the messages that the installation program generates in the PASE QP2TERM shell (Figure 509) where the installation started.
- 20.Call the i2 Five.Two Demand Planner Administrator installation program using a graphical interface:

dpadmi~1.bin (or DPAdmin_Install.bin)

You can ignore the message in the PASE QP2TERM shell dpadmi~1.bin[321]: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling dpadmi~1.bin as shown in Figure 510.

```
/QOpenSys/usr/bin/-sh
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/bin/, mode: 777
  ExtractZip: 25.027933 e/s
  Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/Integration Services 52/
  to 664
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/Integration Services
  ExtractZip: 47.348484 e/s
  Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/ptab/
  to 664
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/ptab/, mode: 777
  ExtractZip: 16.0 e/s
  Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/stab/
  to 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/stab/, mode: 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/dat, mode: 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/inp, mode: 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/logs, mode: 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/pusers, mode: 777
  Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/sch, mode: 777
 Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/susers, mode: 777
 Retrying Installables deferred in pass 0
  + /bin/touch /tmp/cbe d2b36d66eb9532c057.init
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/lax.jar
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/UninstallDPServer.lax
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/uninstaller.jar
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/resource
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/resource/i18nresources
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/resource/remove.sh
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/UninstallerData/resource/i18nresources/c
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/adapters/
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/bin/
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/Integration Services 52/
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/ptab/
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/stab/
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/dat
 + chmod 0777 /opt/i2TradeMatrix/dp/5.2/inp
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/logs
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/pusers
 + chmod 0777 /opt/i2TradeMatrix/dp/5.2/sch
  + chmod 0777 /opt/i2TradeMatrix/dp/5.2/susers
  + r=0
  cbe-ERR: + echo 0
  cbe-ERR: + 1> /tmp/cbe d2b36d+ exit 0
  Time waited for exit file/exit process: 4250
  Deferral retries done because:
  There were no deferrals in the last pass.
  ZGWin32LaunchHelper.exe does not exist at path:
       /tmp/install.dir.387/Solaris/resource/ZGWin32LaunchHelper.exe
      Resource may not have been needed for this installation.
  invoker.exe does not exist at path:
       /tmp/3385.tmp/invoker.exe
      Resource may not have been needed for this installation.
  Setting $INSTALL_SUCCESS$ to WARNING
  Ś
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear
           F17=Top
                      F18=Bottom
                                    F21=CL command entry
```

Figure 509. i2 Five. Two Demand Planner installation status messages

```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/i2
  $
> ls -l
  total 1073728
  -rwxrwxrwx 1 I2OWNER 0 37096755 Jan 23 14:24 DPAdmin_Install.bin
-rwxrwxrwx 1 I2OWNER 0 37096755 Oct 23 18:32 dpadmi~1.bin
  Ś
> dpadmi~1.bin
  Preparing to install...
  dpadmi~1.bin[321]: test: syntax error
  InstallAnywhere 4.0.1 Enterprise
  No plugins installed
  Wed Jan 23 15:47:18 CST 2002
  Free memory = 13402 kB
  Total memory = 16382 kB
  No arguments.
  java.class.path =
       /tmp/install.dir.528/InstallerData
       /tmp/install.dir.528/InstallerData/installer.zip
  ZGUtil.CLASS PATH =
       /tmp/install.dir.528/InstallerData
       /tmp/install.dir.528/InstallerData/installer.zip
  java.version = 1.3.0
java.vendor = IBM Corporation
java.home = /tmp/install.dir.528/Solaris/resource/jre
  java.class.version = 46.0
 = OS400
os.arch = ppc
os.version = 5.1
file.encoding = 8859_1
user.home = /home/I2OWNER
user.dir = /tmp/install
                    = /tmp/install.dir.528
  user.language
                      = en
  user.region
                       = null
  java.compiler
                       = NONE
  seaFilename = dpadmi~1
  Default location = /opt/i2/
  UI Mode set to Default - AWT. No UI mode specification was given.
  Installer: InstallAnywhere 4.0.1 Enterprise Build 1012
===>
F3=Exit
             F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                          F18=Bottom F21=CL command entry
```

Figure 510. Calling dpadmi~1.bin in a PASE QP2TERM shell using graphical mode

21.You briefly see a Demand Planner - Administrator Installer splash panel (Figure 511) in your Web browser or vncviewer window (depends on how you connected to the VNC server).



Figure 511. i2 Five. Two Demand Planner - Administrator Installer window

22.Read the information on the Introduction window (Figure 512) and click the **Next** button to continue the installation.



Figure 512. i2 Five. Two Demand Planner - Administrator Introduction window

23.Read the information on the License Agreement window (Figure 513) and select the I accept the terms of the License Agreement radio button. Click Next.

IZ Demand Planner - Admi	n Server Version 5.2		
		License Ag	reement
P. Five.Two	Installation and Use of i2 Demai version 5.2 Requires Acceptance Agreement:	nd Plann <mark>er – A</mark> d of the Followin	min Server Ig License
	One i2 Place 11701 Luna Road Dallas, TX 75234		
	i2 Five.Two Demand Planner © 1995–2001 i2 Technologies US, II following works: "Visibroker" which ALL RIGHTS RESERVED.	nc., exclusive of ti are © 1995–2001	he 1 X Corp.
	This notice is intended as a precaut publication and does not imply any No part of this software or database transmitted in any form or by any n mechanical, including photocopying storage or retrievel systems for any	ion against inadv waiver of confide may be reproduc eans, electronic , recording, or inf- purnose accent a	ertent entiality. ced or or ormation
	providge of redieval systems, for any	purpose accept a	
i2 Technologies Inc.	✓I accept the terms of the Lice	ense Agreement	
Install& numbers by Zero C	VI do NUT accept the terms of	r the License Agre	ement
Cancel		Previous	Next

Figure 513. i2 Five. Two Demand Planner - Administrator License Agreement window

24.On the Choose Install Folder window (Figure 514), type the directory path to which you want the installation to install. The default is

/opt/i2TradeMatrix/dp/5.2, which is what we recommend and use. Click Next.



Figure 514. i2 Five. Two Demand Planner - Administrator Choose Install Folder window

25.On the Pre-Installation Summary window (Figure 515), verify that the install folder is what you want and click the **Install** button to continue the installation. Click the **Previous** button if you need to back up and make any changes.



Figure 515. i2 Five. Two Demand Planner - Administrator Pre-Installation Summary window

26.You now see the installation in progress window (Figure 516) where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system.



Figure 516. i2 Five. Two Demand Planner - Administrator installation in progress window



Figure 517. i2 Five. Two Demand Planner - Administrator Install Complete window

27.When the installation is finished, you see the Install Complete window (Figure 517). Click **Done** to finish the installation.

The Install Complete window disappears. You can close the vncviewer window or Web browser, unless you have additional i2 Five.Two products to install.

28.You can review the messages that the installation program generates in the PASE QP2TERM shell (Figure 518) where the installation started.

/QOpenSys/usr/bin/-sh CDS: Required Disk Space in bytes == 4742322 CDS: Assuming sufficient disk space. (-1) Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin, mode: 777 Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/schctrl.dbf, m Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/migrate, mode: Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/admaixs, mode: Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/admaixb, mode: Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/logs, mode: 77 Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/UninstallerDat InstallUninstaller: Retreiving classes from /tmp/install.dir.528/InstallerData/ The path from UninstallDAServer to the VM is undefined because a VM was bundled Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/UninstallerDat + /bin/touch /tmp/cbe_a6ff126eeb95673f29.init + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/schctrl.dbf + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/migrate + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/admaixs + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/admaixb + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/logs + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData + chmod 0755 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/UninstallDAServer + r=0 cbe-ERR: + echo 0 cbe-ERR: + 1> /tmp/cbe a6ff126eeb95673Time waited for exit file/exit process: 1 Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/admin/UninstallerDat Retrying Installables deferred in pass 0 + /bin/touch /tmp/cbe cc3d7d20eb9567526c.init + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/lax.jar + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/UninstallDAServer. + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/uninstaller.jar + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/resource + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/resource/i18nresou + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/resource/remove.sh + chmod 0777 /opt/i2TradeMatrix/dp/5.2/admin/UninstallerData/resource/i18nresou + r = 0cbe-ERR: + echo 0 cbe-ERR: + 1> /tmp/cbe cc3d7d20eb95675Time waited for exit file/exit process: 1 Deferral retries done because: There were no deferrals in the last pass. ZGWin32LaunchHelper.exe does not exist at path: /tmp/install.dir.528/Solaris/resource/ZGWin32LaunchHelper.exe Resource may not have been needed for this installation. invoker.exe does not exist at path: /tmp/7610.tmp/invoker.exe Resource may not have been needed for this installation. Setting \$INSTALL_SUCCESS\$ to WARNING Ś ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 518. i2 Five. Two Demand Planner - Administrator installation status messages

29. You can also review installation log files that are generated and placed in the /opt/i2TradeMatrix/dp/5.2/logs directory (and possibly in the home directory of the user that performed the installation, for example, /home/I2OWNER).

To review the installation log files, follow these steps:

a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the /opt/i2TradeMatrix/dp/5.2/logs directory, where the installation log file is located:

cd /opt/i2TradeMatrix/dp/5.2/logs

c. Use the cat command to view the installation log files:

cat i2_Demand_Planner_-_Server_version_5.2_InstallLog.log cat i2_Demand_Planner_-_Admin_Server_version_5.2_InstallLog.log

An example is shown in Figure 519 and Figure 520.

```
/QOpenSys/usr/bin/-sh
  $
> cd /opt/i2TradeMatrix/dp/5.2/logs
 $
> ls
 i2_Demand_Planner_-_Admin_Server_version_5.2_InstallLog.log
i2 Demand Planner - Server version 5.2 InstallLog.log
 $
> cat i2 Demand Planner - Server version 5.2 InstallLog.log
 Install Begin: Fri Dec 07 11:51:58 CST 2001
 Install End: Fri Dec 07 11:56:13 CST 2001
 Created with Zero G's InstallAnywhere 4.0.1 Enterprise Build 1012
 Summary
  _____
 Installation: Successful with warnings.
 258 SUCCESSES
 1 WARNINGS
 0 NONFATAL ERRORS
 0 FATAL ERRORS
 Action Notes:
 None.
 Install Log Detail:
  Custom Action:
                           versions
                           Status: SUCCESSFUL
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom
                                   F21=CL command entry
```

Figure 519. Using cat to view the i2 Five. Two Demand Planner installation log file

/QOpenSys/usr/bin/-sh									
<pre>\$ > cd /opt/i2TradeMatrix/dp/5.2/logs \$ > ls i2_Demand_PlannerAdmin_Server_version_5.2_InstallLog.log i2_Demand_PlannerServer_version_5.2_InstallLog.log</pre>									
<pre>> cat i2_Demand_PlannerAdmin_Server_version_5.2_InstallLog.log Install Begin: Fri Dec 07 11:58:24 CST 2001 Install End: Fri Dec 07 11:59:15 CST 2001 Created with Zero G's InstallAnywhere 4.0.1 Enterprise Build 1012</pre>									
Summary									
Installation: Successful with warnings.									
19 SUCCESSES 1 WARNINGS 0 NONFATAL ERRORS 0 FATAL ERRORS									
Action Notes:									
None.									
Install Log Detail:									
Custom Action: versions Status: SUCCESSFUL									
===>									
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry									

Figure 520. Using cat to view the i2 Five. Two Demand Planner - Administrator installation log file

30.If you want to see the results of the Demand Planner installation, you can use the EDTF command to view the contents of the /opt/i2TradeMatrix/dp/5.2 directory:

EDTF STMF('/opt/i2TradeMatrix/dp/5.2')

An example is shown in Figure 521.

Directory: /opt/i2Trade	Matrix/dp/5.	2		
Position to :	Record	l: 10	of 14	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
VERSIONS	8K	120WNER	01/23/02 16:11	01/23/02 16:11
UninstallerData	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
adapters	*DIR	120WNER	01/23/02 15:13	01/23/02 15:13
bin	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
<pre><gration_services_9< pre=""></gration_services_9<></pre>	52 *DIR	120WNER	01/23/02 15:14	01/23/02 15:14
ptab	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
stab	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
dat	*DIR	120WINER	01/23/02 15:14	01/23/02 15:14
inp	*DIR	120WINER	01/23/02 15:14	01/23/02 15:14
logs	*DIR	120WINER	01/23/02 16:13	01/23/02 16:33
pusers	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
sch	*DIR	120WNER	01/23/02 15:14	01/23/02 15:14
susers	*DIR	I20WNER	01/23/02 15:14	01/23/02 15:14
admin	*DIR	120WNER	01/23/02 16:11	01/23/02 16:11
				Bottom
F3=Exit F12=Cancel (C) COPYRIC	F16=Sort HT IBM CORP.	F17=Position 1980, 2000.	to F22=Displa	ay entire field

Figure 521. Using the EDTF command to display the Demand Planner directory after installation

11.1.3 Installing Demand Planner using standard console mode

There are two ways to install using the Zero G InstallAnywhere product:

- Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
- Use a standard Telnet or console client to display plain text.

We used the X Window System or graphical interface with VNC to install i2 Five.Two on the iSeries server, as described earlier. You may prefer to use the console mode with a plain text interface if you don't want to spend the time loading an X Window System product on the iSeries server and on a PC, or if you like a simple plain text interface better than a graphical interface.

To install i2 Five. Two Demand Planner using console mode, follow these steps:

- After the installation programs are on the iSeries server, make sure that you completed all i2 Five. Two pre-installation procedures in Chapter 9, "i2 Five. Two pre-installation information" on page 417, except for the sections regarding VNC and setting the DISPLAY environment variable. These are necessary only when the graphical interface is being used.
- On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

3. Use the cd command to change to the /opt/i2 directory where the i2 Five.Two installation program is located:

cd /opt/i2

4. Call the i2 Five.Two Demand Planner installation program using the console mode:

dp_ins~1.bin -i console (or DP_Install.bin -i console)

You can ignore the message in the PASE QP2TERM shell $dp_ins\sim1.bin[321]$: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling dp_ins~1.bin as shown in Figure 522.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2
  Ś
> ls -1
 total 1074072
  -rwxrwxrwx 1 I20WNER 0
                                 43916808 Jan 23 14:24 DP Install.bin
  -rwxrwxrwx 1 I20WNER 0
                                 43916808 Oct 23 19:00 dp ins~1.bin
  Ś
> dp_ins~1.bin -i console
 Preparing to install...
 dp ins~1.bin[321]: test: syntax error
 InstallAnywhere 4.0.1 Enterprise
 No plugins installed
 Fri Jan 25 09:31:43 CST 2002
 Free memory = 13395 kB
 Total memory = 16382 kB
 2 arguments =
 0
    -i
 1
     console
===>
F3=Exit
           F6=Print
                      F9=Retrieve
                                   F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom
                                   F21=CL command entry
```

Figure 522. Calling dp_ins~1.bin in a PASE QP2TERM shell using console mode

5. You now see panels similar to the ones displayed when using the graphical interface. Follow the instructions on each panel, pressing Enter to continue with the installation, or typing quit if you want to end the installation.

The first and last panels displayed are shown in Figure 523 and Figure 524.

	/QOpenSys/usr/bin/-sh
	Introduction
	InstallAnywhere will guide you through the installation of i2 Demand Planner - Server version 5.2.
	It is strongly recommended that you quit all programs before continuing with this installation.
	Respond to each prompt to proceed to the next step in the installation. If you want to change something on a previous step, type 'back'.
	You may cancel this installation at any time by typing 'quit'.
	PRESS <enter> TO CONTINUE: Increasing VM Search</enter>
_	==>
F F	3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap 13=Clear F17=Top F18=Bottom F21=CL command entry



		/Q0penSys	s/usr/bin/-sh
Resou -]	irce may no	t have been ne	eeded for this installation.
Installati	ion Complet	e 	
Congratula installed	ations. i2 to:	Demand Planner	- Server version 5.2 has been successfully
/opt/i2	?TradeMatri	x/dp/5.2	
PRESS <eni< th=""><th>TER> TO EXI</th><th>T THE INSTALLE</th><th>R:</th></eni<>	TER> TO EXI	T THE INSTALLE	R:
> \$			
===>			
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry

Figure 524. Last panel displayed in a PASE QP2TERM shell using console mode installation

11.1.4 Loading VisiBroker 4.1 from the installation CD-ROM

Demand Planner requires VisiBroker 4.1 AIX libraries called *liborb_r.a* and *libvport_r.a*, which are shipped on the Demand Planner installation CD-ROM. You cannot use VisiBroker 3.3 files that were used with previous releases of Demand Planner and placed in the /opt/vbroker directory. You need to copy the AIX libraries to the iSeries server along with other VisiBroker components that may be

needed later. This section explains how to perform this. If you don't do this, when you try to start Demand Planner, you receive the following errors:

- exec(): 0509-036 Cannot load program planaxs because of the following errors: 0509-150 Dependent module libvport_r.a could not be loaded.
- exec(): 0509-036 Cannot load program planaxs because of the following errors: 0509-150 Dependent module liborb_r.a could not be loaded.

To load VisiBroker 4.1 and the other components, follow these steps:

 Create a directory to hold the VisiBroker components. We used the directory name /vbroker4.1 off the /opt directory during our installation. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line:

MKDIR DIR('/opt/vbroker4.1')

You should see a completion message stating that the directory was created. You can also use mkdir from within the PASE QP2TERM shell.

2. The files on the CD-ROM that you are looking for are called osagent, osfind, libcosev_r.a, libcosnm_r.a, liborb_r.a, and libvport_r.a. The first two are located in the \VBroker4.1\aix\exe directory, while the remaining four are located in the \VBroker4.1\aix\lib directory. You can either load the CD-ROM into a PC and send the files using FTP (in binary format) to the iSeries server. Or you can load the CD-ROM into the iSeries CD-ROM drive and copy them directly. We recommend that you use the first option so the file names are not truncated (this is the method we used).

To transfer files from a PC to an iSeries server using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC where the Demand Planner CD-ROM is loaded. Click **Start-> Programs-> Accessories-> Command Prompt**.
- b. Use the cd command to change to the CD-ROM directory where the first two VisiBroker files are located, which is \VBroker4.1\aix\exe:

cd VBroker4.1\aix\exe

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WINER in this example.
- e. Enter the password for your iSeries server user ID.
- f. Use the cd command to change to the iSeries server directory where the VisiBroker files will be placed, which is /opt/vbroker4.1:

cd /opt/vbroker4.1

g. Change to binary mode:

bin

h. Turn prompting support off so you don't have to press Enter to send each file to the iSeries server:

prompt

- i. Transfer the two files to the iSeries server using the FTP mput * command.
- j. Use the lcd command to change to the CD-ROM directory where the remaining four VisiBroker files are located, which is \VBroker4.1\aix\lib:

lcd d:\vbroker4.1\aix\lib

- k. Transfer the four files to the iSeries server using the FTP mput * command.
- I. Exit FTP using the quit command.

An example is shown in Figure 525.

D:\>cd vbroker4.1\aix\exe D:\VBroker4.1\aix\exe>ftp i2 Connected to i2.domain.ibm.com. 220-QTCP at I2. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com:(none)): **I20WNER** 331 Enter password. Password: 230 I20WNER logged on. ftp> cd /opt/vbroker4.1 250-NAMEFMT set to 1. 250 "/opt/vbroker4.1" is current directory. ftp> bin 200 Representation type is binary IMAGE. ftp> prompt Interactive mode Off . ftp> mput * 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/osagent 250 File transfer completed successfully. ftp: 962358 bytes sent in 25.62Seconds 37.57Kbytes/sec. 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/osfind 250 File transfer completed successfully. ftp: 387 bytes sent in 0.00Seconds 387000.00Kbytes/sec. ftp> lcd d:\vbroker4.1\aix\lib Local directory now D:\vbroker4.1\aix\lib. ftp> mput * 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/libcosev r.a 250 File transfer completed successfully. ftp: 499766 bytes sent in 11.15Seconds 44.84Kbytes/sec. 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/libcosnm r.a 250 File transfer completed successfully. ftp: 489623 bytes sent in 8.57Seconds 57.12Kbytes/sec. 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/liborb r.a 250 File transfer completed successfully. ftp: 12291313 bytes sent in 242.22Seconds 50.74Kbytes/sec. 200 PORT subcommand request successful. 150 Sending file to /opt/vbroker4.1/libvport r.a 250 File transfer completed successfully. ftp: 472549 bytes sent in 8.53Seconds 55.39Kbytes/sec. ftp> quit 221 QUIT subcommand received. D:\VBroker4.1\aix\exe>

Figure 525. Using FTP from a PC to put the VisiBroker 4.1 files on the iSeries server

3. To verify that the VisiBroker 4.1 components are now on the system, use the EDTF command to view the contents of the directory /opt/vbroker4.1:

EDTF STMF('/opt/vbroker4.1')

An example is shown in Figure 526.

<i>.</i>								
Directory: /opt/vbro	ker4.1			N				
Position to :	Record	: 1 of	6					
New File :								
2=Edit 4=Delete File	5=Display 6	=Path Size	9=Recursive Delet	ze -				
Opt Name	Size	Owner	Changed	Used				
osagent	1,024K	120WNER	12/09/01 14:48	12/09/01 15:18				
osfind	8K	120WNER	12/09/01 14:48	12/09/01 14:48				
libcosev_r.a	512K	120WNER	12/09/01 14:48	12/09/01 14:48				
libcosnm_r.a	512K	120WNER	12/09/01 14:48	12/09/01 14:48				
liborb_r.a	12,288K	120WNER	12/09/01 14:48	12/09/01 14:48				
libvport_r.a	512K	I20WNER	12/09/01 14:48	12/09/01 14:48				
				Bottom				
F3=Exit F12=Cancel	F16=Sort F	17=Position t	to F22=Display e	entire field				
(C) COPYRI	GHT IBM CORP.	1980, 2000	·					

Figure 526. Using the EDTF command to display the contents of the VisiBroker 4.1 directory

11.1.5 Obtaining a host ID and license key

New with i2 Five.Two, Demand Planner requires a license key to run. When you attempt to run the Demand Planner server (planaxs) without a license key on the system, or the license key you have is not valid, you receive an error that gives you the host identifier (or host ID) for your system so you can request a valid license key from i2. This section explains how to start the server and obtain the host ID.

To generate a Demand Planner host ID, follow these steps:

 Unlike other i2 planning engines, simply calling the Demand Planner server planaxs executable without a valid license key on the system does not generate the host ID that we need to request a license key. You have to actually start the Demand Planner server with a database to see a host ID.

You must obtain a sample or demo database. We transferred the sample database described in 4.1.6, "Transferring a sample database from a PC to the iSeries server" on page 103, to the iSeries server. We converted it to version 5.2 as described in 4.1.6.1, "Upgrading a database from one release to another" on page 107. Then we created the start_dp startup shell script as explained in 4.2.1, "QP2TERM to start and stop the Demand Planner server" on page 110.

2. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM

3. We noticed that after Demand Planner was installed, the executable objects in the bin directory did not have execute (x) authority set for them. Before you try to run the Demand Planner server planaxs executable, be sure to correct this. Otherwise, you receive the error /QOpenSys/usr/bin/-sh: planaxs: 0403-006 Execute permission denied.

Use the cd command to change to directory /opt/i2TradeMatrix/dp/5.2/bin:

cd /opt/i2TradeMatrix/dp/5.2/bin

4. Use the ls command to see that execute (x) authority is missing for all of the files in the directory:

ls -l

5. Use the chmod command to add execute (x) authority for every file in the directory:

chmod +x *

6. Use the ls command to see that execute (x) authority is now set for all of the files in the directory:

ls -l

An example is shown in Figure 527.

<pre>\$ - of /opt/i2TradeMatrix/dp/5.2/bin \$ > is -1 total 31104</pre>		/QOpenSys/usr/bin/-sh										
<pre>> d /gpt/i2TradeMatrix/dp/5.2/bin \$ > ls -1 total 31104 -rw-rw-Tr- 1 12ONNER 0 1236544 Jan 23 15:13 actal rw-rw-rw-T- 1 12ONNER 0 489013 Jan 23 15:13 bont -rw-rw-Tr- 1 12ONNER 0 245812 Jan 23 15:13 cmigrate -rw-rw-rr- 1 12ONNER 0 245812 Jan 23 15:13 cmigrate -rw-rw-rr- 1 12ONNER 0 249013 Jan 23 15:13 cmigrate -rw-rw-rr- 1 12ONNER 0 326129 Jan 23 15:13 cmigrate -rw-rw-rr- 1 12ONNER 0 326129 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 306192 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 7806756 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 7806756 Jan 23 15:13 ploak -rw-rw-rr- 1 12ONNER 0 7806756 Jan 23 15:13 ploak -rw-rw-rr- 1 12ONNER 0 24023 Jan 23 15:13 ploak -rw-rw-rr- 1 12ONNER 0 7806756 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 2407 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 2407 Jan 23 15:13 load -rw-rw-rr- 1 12ONNER 0 4495 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 115767 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rr- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rw-r- 1 12ONNER 0 1295870 Jan 23 15:13 logatage -rw-rw-rw-r- 1 12ONNER 0 251057 Jan 23 15:13 logatage -rw-rw-rw-r- 1 12ONNER 0 229139 Jan 23 15:13 logatage -rw-rw-rw-r- 1 12ONNER 0 229139 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 229139 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 229139 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 306192 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 11516 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 306192 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 780675 Jan 23 15:13 logatage -rwerworx-x 1 12ONNER 0 7</pre>	ć	ċ										
<pre>\$ is -1 total 31104 -rw-rw-r- 1 I20WNER 0 251057 Jan 23 15:13 addlang -rw-rw-r- 1 I20WNER 0 24512 Jan 23 15:13 conter -rw-rw-r- 1 I20WNER 0 24512 Jan 23 15:13 contert -rw-rw-r- 1 I20WNER 0 24512 Jan 23 15:13 contert -rw-rw-r- 1 I20WNER 0 24512 Jan 23 15:13 contert -rw-rw-r- 1 I20WNER 0 24223 Jan 23 15:13 load -rw-rw-r- 1 I20WNER 0 24223 Jan 23 15:13 load -rw-rw-r- 1 I20WNER 0 24023 Jan 23 15:13 planaxs -rw-rw-r- 1 I20WNER 0 2401 Jan 23 15:13 planaxs -rw-rw-r- 1 I20WNER 0 2401 Jan 23 15:13 load -rw-rw-rw-r- 1 I20WNER 0 2402 Jan 23 15:13 planaxs -rw-rw-r- 1 I20WNER 0 2402 Jan 23 15:13 planaxs -rw-rw-r- 1 I20WNER 0 2407 Jan 23 15:13 load -rw-rw-r- 1 I20WNER 0 2407 Jan 23 15:13 planaxs -rw-rw-r- 1 I20WNER 0 1179701 Jan 23 15:13 load -rw-rw-r- 1 I20WNER 0 14919 Jan 23 15:13 load -rw-rw-r- 1 I20WNER 0 1236544 Jan 23 15:13 usrlogout \$ > dmmod +x * \$ \$ > ls -1 total 31104 -rworwcr-x 1 I20WNER 0 1236544 Jan 23 15:13 addlang -rwcrwor-x 1 I20WNER 0 123657 Jan 23 15:13 usrlogout \$ > chmod +x * \$ \$ > ls -1 total 31104 -rworwcr-x 1 I20WNER 0 229139 Jan 23 15:13 dollang -rwcrwor-x 1 I20WNER 0 229139 Jan 23 15:13 contert -rworwcr-x 1 I20WNER 0 229139 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 229139 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 229139 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24512 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24502 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24502 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24502 Jan 23 15:13 convert -rworwcr-x 1 I20WNER 0 24502 Jan 23 15:13 convert -rworwcr-x 1 I2</pre>	> 0	> cd /opt/i2TradeMatrix/dp/5.2/bin										
<pre>> ls -1 total 31104 -rw-rw-rr- 1 I2ONNER 0 1236544 Jan 23 15:13 addlang -rw-rw-rr- 1 I2ONNER 0 251057 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 245812 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 245812 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 229139 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 232291 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 306192 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 306192 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 306192 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 306192 Jan 23 15:13 cmigrate -rw-rw-rr- 1 I2ONNER 0 780676 Jan 23 15:13 plock -rw-rw-rr- 1 I2ONNER 0 842620 Jan 23 15:13 plock -rw-rw-rr- 1 I2ONNER 0 842620 Jan 23 15:13 plock -rw-rw-rr- 1 I2ONNER 0 1179701 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 slsaivs -rw-rw-rr- 1 I2ONNER 0 129570 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 229139 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 229139 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 230176 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 230170 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 230170 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 230170 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 229139 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 220170 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 220170 Jan 23 15:13 loch -rwcrwcr-x 1 I2ONNER 0 220170 Jan 23 15:13 loch -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 cmigrate -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 loch -rwcrwcr-x 1 I2ONNER 0 26422 Jan 23 15:13 loch -rwcrwcr-x 1 I2ONNER 0 264220 Jan 23 15:13 loch -rwcrwcr-x 1 I2ONNER 0 264220 Jan 2</pre>	S	\$										
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F13=Clear F17=Top F18=Bottom F21=CL command entry	F3=	Exit F6	=Pi	rint F9	=Retrieve	F11=T1	runca	ate	/Wrap			
	F13	B=Clear F1	7=7	Fop F1	8=Bottom	F21=CI	L cor	nmar	nd enti	Ϋ́		

Figure 527. Using chmod +x * to give all files in a directory execute (x) authority

7. Use the cd command to change to the /opt/i2TradeMatrix/dp/5.2/cola/sch directory:

cd /opt/i2TradeMatrix/dp/5.2/cola/sch

8. Run the start_dp program:

start_dp

An example is shown in Figure 528.



Figure 528. License key error with host ID information after calling start_dp program

Since the license key is missing at this time, an error message appears with the host ID information. Record the host ID from here and request a license key from i2 Support as described in 2.4.5, "Requesting i2 software license keys from i2" on page 47.

Press the F3 function key to exit the PASE QP2TERM environment. Then, return to an OS/400 command line.

11.1.6 Activating the license key

After you receive the license key from i2, you must activate it. The Demand Planner license key is an extremely long character string (over 150 characters), and it is delivered in a text file. The name of the text file is in the form <i2 support case number>_dp.txt, for example 189318_dp.txt. You can send the text file to the iSeries server directly as explained in this section. Or, you can manually create the license key file and place the license key in it. We used FTP to transfer the file from a PC to the iSeries server.

To send the Demand Planner license key text file to the iSeries server using FTP and then activate it, follow these steps:

- Open an MS-DOS command prompt window on the PC where you downloaded the Demand Planner license key text file. Click Start-> Programs-> Accessories-> Command Prompt.
- 2. Use the cd command to change to the directory where the text file was saved to:

cd i2 information dp information

3. Connect to the iSeries server using FTP:

ftp i2

- 4. Enter your iSeries server user ID, which is 120WINER in this example.
- 5. Enter the password for your iSeries server user ID.
- 6. Use the cd command to change to the iSeries server directory where the text file will be placed, which is /opt/i2TradeMatrix/dp/5.2/cola/ptab:

cd /opt/i2TradeMatrix/dp/5.2/cola/ptab

7. Transfer the file to the iSeries server using the FTP put command:

put 189318_dp.txt

8. Exit FTP using the quit command.

An example is shown in Figure 529.

C:\>cd i2 information\dp information
C:\i2 information\DP Information>dir *.txt Volume in drive C is C_DRIVE Volume Serial Number is 14D9-BA67
Directory of C:\i2 information\DP Information
01/17/2002 03:43p 173 189318_dp.txt 1 File(s) 173 bytes 0 Dir(s) 300,222,976 bytes free
C:\i2 information\DP Information>ftp i2 Connected to i2.domain.ibm.com. 220-QTCP at I2. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com:(none)): I2OWNER 331 Enter password. Password: 230 I2OWNER logged on. ftp> cd /opt/i2TradeMatrix/dp/5.2/cola/ptab 250-NAMEFMT set to 1. 250 "/opt/i2TradeMatrix/dp/5.2/cola/ptab" is current directory. ftp> put 189318_dp.txt 200 PORT subcommand request successful. 150 Sending file to /opt/i2TradeMatrix/dp/5.2/cola/ptab/189318_dp.txt 250 File transfer completed successfully. ftp: 173 bytes sent in 0.00Seconds 173000.00Kbytes/sec. ftp> quit 221 QUIT subcommand received.
C:\i2 information\DP Information>

Figure 529. Using FTP from a PC to put the Demand Planner license key file on the iSeries server

 To verify that the Demand Planner license key text file is now on the system, use the EDTF command to view the contents of the /opt/i2TradeMatrix/dp/5.2/cola/ptab directory:

EDTF STMF('/opt/i2TradeMatrix/dp/5.2/cola/ptab')

An example is shown in Figure 530.

Directory: /opt/i2Trad	leMatrix/dp/5.	2/cola/ptab		
Position to :	Record	: 154 of	170	
New File :				
2=Edit 4=Delete File	5=Display 6	=Path Size	9=Recursive Dele	ete
Opt Name	Size	Owner	Changed	Used
clinst_g.cdx	16K	120WNER	12/09/01 14:39	9 12/09/01 14:39
clinst_p.dbf	8K	120WNER	12/09/01 14:39	9 12/09/01 14:39
clinst_p.cdx	16K	120WNER	12/09/01 14:39	9 12/09/01 14:39
clinst_t.dbf	8K	120WNER	05/11/01 10:2	7 12/09/01 14:36
clinst t.cdx	8K	120WNER	05/11/01 10:2	7 12/09/01 14:36
00000001.GBM	8K	120WNER	03/02/01 10:10	5 12/09/01 14:36
0000001.000	96K	120WNER	03/02/01 10:10	5 12/09/01 14:36
cl templ.dbf	8K	120WINER	05/11/01 10:2	7 12/09/01 14:36
cl templ.cdx	8K	120WINER	05/11/01 10:2	7 12/09/01 14:36
outofcnk.dbf	8K	120WNER	05/11/01 10:22	L 12/09/01 14:36
outofcnk.cdx	8K	120WNER	05/11/01 10:22	L 12/09/01 14:36
AUTOBOX	64K	120WNER	05/11/01 10:24	12/09/01 14:36
geoscope.dbf	8K	I20WNER	12/09/01 14:39	9 12/09/01 14:39
geoscope.cdx	16K	120WINER	12/09/01 14:39	9 12/09/01 14:39
prdscope.dbf	8K	120WINER	12/09/01 14:39	9 12/09/01 14:39
prdscope.cdx	16K	120WNER	12/09/01 14:39	9 12/09/01 14:39
	8K	I20WNER	01/24/02 09:35	5 01/24/02 09:38
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	n to F22=Disp	lay entire field

Figure 530. Using EDTF to display the contents of the /opt/i2TradeMatrix/dp/5.2/cola/ptab directory

- 10.On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 11.Use the cd command to change to the ptab directory:

cd /opt/i2TradeMatrix/dp/5.2/cola/ptab

12.Use the cat command to verify that the text file has the license key in it:

cat 189318_dp.txt

The license key has to be exactly as it was supplied from i2, which means one long string without any breaks.

13.Since Demand Planner expects the file to be called license.dp, use the mv command to rename the 189318_dp.txt file:

mv 189318_dp.txt license.dp

14. You can use the cat command to verify that the license key information is still in the correct format:

cat license.dp

An example is shown in Figure 531.

```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/i2TradeMatrix/dp/5.2/cola/ptab
  $
> cat 189318 dp.txt
318352908361717062810947611686324729123675825383865774875049612890527125710582913
52085805444195997826619384754837548938968068954063028319348139637947613537091
  $
> mv 189318_dp.txt license.dp
 $
> cat license.dp
318352908361717062810947611686324729123675825383865774875049612890527125710582913
52085805444195997826619384754837548938968068954063028319348139637947613537091
  $
===>
F3=Exit
           F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom F21=CL command entry
```

Figure 531. Renaming the Demand Planner license key file to license.dp

- 15.After you do all of this, it is possible that Demand Planner does not like the license key in the text file. Before you call i2 Support, make sure that the file has a CCSID of 819 and only uses Line Feed (LF) characters like the example shown in Figure 684 on page 640. Also verify that there are no extra lines or characters in the file other than the text string provided from i2.
- 16.If you need to insert a different license key later on, you can use the rm command to delete the file:

rm license.dp

Then you can send your new license key text file to the iSeries server and rename it to license.dp. You can also use the EDTF command to edit the license key text file:

EDTF STMF('/opt/i2TradeMatrix/dp/5.2/cola/ptab/license.dp')

An example is shown in Figure 532. Press the F3 function key twice to save and exit.

Edit File	e: /opt/i2Trade	Matrix/dp/5	.2/cola/r	otab/lic	ense.dp)
Record :	1 of	1 by	10		Column :	1	169 by 126
Control	•						
CMD	+1+ *****Beainni	.2+3 ng of data**	8 + * * * * * * * * *	.4+. ****	5+	6	.+7+.
31835	29083617170628	109476116863	324729123	67582538	3386577487504	496128	9052712571058
*****	*******End of 1	Data*******	*******	****			
F2=Save	F3=Save/Exit	F12=Exit	F15=Ser	vices	F16=Repeat :	find	
((C) COPYRIC	GHT IBM CORE	P. 1980,	2000.			

Figure 532. Editing the license.dp file to change Demand Planner license key information

Note

You should keep a backup copy of the license.dp file or the ptab subdirectory since it contains license key information.

Now go to 4.1.4, "Demand Planner/Demand Analyzer client installation" on page 98, and 4.1.5, "Demand Planner - Administrator client installation" on page 101, to complete the rest of the Demand Planner installation tasks.

11.2 Demand Planner demo CD-ROM

Starting with i2 Five.Two, Demand Planner now ships, on a separate CD-ROM, a demo database that can be used. This is different than the cola sample database that we have been using. This demo database was available previously in basic and advanced forms for Windows NT. It is now available for UNIX platforms (only the basic version of the demo is available for all UNIX platforms).

This section explains how to install the demo database on an iSeries server and then bring up the Demand Planner server using this demo database. The installation of the Demand Planner demo code requires approximately 773 MB of disk space.

The *i2 Demand Planner Demo Installation Guide - Version 5.2* (DPDemoInstall.pdf) manual is available on the Demand Planner demo CD-ROM in the \5.2 Release\SCM\GA Builds\Demand_Planner_all_GM_5\ DPDemosCD\Docs directory.

11.2.1 Installing the Demand Planner demo code on the iSeries server

To install the demo database on an iSeries server, follow these steps:

- 1. Place the CD-ROM containing the Demand Planner demo software in your iSeries CD-ROM drive.
- 2. The i2 Five.Two Demand Planner demo installation program is called Demo_Install.bin. You can find it in the \5.2 Release\SCM\GA Builds\Demand_Planner_all_GM_5\DPDemosCD\AIX directory. You can run the programs directly from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell. However, we noticed that it ran extremely slower compared to when the program was on disk. Therefore, we recommend that you copy the installation program to disk from CD-ROM before you run it.

To copy the installation program from CD-ROM, follow these steps:

a. Create a temporary directory on the iSeries server to hold the installation program. We recommend you use /opt/i2, but any one name will do. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The file on the CD-ROM that you are looking for is called Demo_Install.bin. You can find it in the \5.2 Release\SCM\GA Builds\ Demand_Planner_all_GM_5\DPDemosCD\AIX directory. You can load the CD-ROM into a PC and send the file using FTP (in binary format) to the iSeries server. Or, you can load the CD-ROM into the iSeries CD-ROM drive and copy it directly. We recommend you use the latter option, which is what we used.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or you can use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 533.

Work with Optical Files						
Directory /5~1.2RE/S Volume DP_52_DEMC	CM/GABUIL~1/DEMAN DSCD	System: 12 D~1/DPDEMO~1/AIX				
Type options, press Enter. 3=Copy 4=Delete 5=Display	6=Print 7=Rena	me				
Opt File Name	Size	Created				
DEMO_I~1.BIN	147147738	10/23/01 11:25:44				
Parameters or command		Bottom				
F3=Exit F4=Prompt F5=Refresh F16=Repeat position to F17=Posi	F6=Print list tion to	F9=Retrieve F12=Cancel F22=Display entire name				

Figure 533. DEMO_I~1.BIN installation program on the Demand Planner demo CD-ROM

Notice that when you view files that have names longer than eight characters, the iSeries server truncates the name to six characters. Then it uses the tilde (~) character and a number to distinguish files where the first six characters match. For example, Demo_Install.bin translates to Demo_I~1.bin. If this is too confusing, you can FTP the file to the iSeries server and the name does not truncate.

To copy the file directly, use the Copy Object (CPY) command:

CPY

OBJ('/qopt/DP_52_DEMOSCD/5~1.2RE/SCM/GABUIL~1/DEMAND~1/DPDEMO~1/AIX/DEMO I~1.BIN') TODIR('/opt/i2')

You should see a completion message stating that the object was copied.

- 3. After the installation program is on the iSeries server, start the product installation. Perform the i2 Five.Two pre-installation procedures described in Chapter 9, "i2 Five.Two pre-installation information" on page 417, if you have not already done them. This involves:
 - Loading a version 1.3.0 JRE in PASE
 - Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server

- · Making a connection from a client PC to the VNC server
- Setting up a symbolic link to /bin
- 4. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 5. Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation program is located:

cd /opt/i2

- 6. There are two ways to install using the Zero G InstallAnywhere product:
 - Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
 - Use a standard Telnet or console client to display plain text.

We use the X Window System or graphical interface with VNC to install i2 Five. Two on the iSeries server. If you prefer to use the console mode with plain text, see 11.1.3, "Installing Demand Planner using standard console mode" on page 470.

Call the i2 Five.Two Demand Planner demo installation program using a graphical interface:

demo_i~1.bin (or Demo_Install.bin)

You can ignore the message in the PASE QP2TERM shell demo_i~1.bin[321]: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling demo_i~1.bin as shown in Figure 534.

```
/QOpenSys/usr/bin/-sh
  Ś
> cd /opt/i2
  $
> ls -l
  total 1073728
  -rwxrwxrwx 1 I2OWNER 0 147147738 Jan 23 14:21 Demo_Install.bin
-rwxrwxrwx 1 I2OWNER 0 147147738 Oct 23 17:25 demo_i~1.bin
  Ŝ
> demo_i~1.bin
  Preparing to install...
  demo_i~1.bin[321]: test: syntax error
  InstallAnywhere 4.0.1 Enterprise
  No plugins installed
  Thu Jan 24 14:37:04 CST 2002
  Free memory = 13384 kB
  Total memory = 16382 kB
  No arguments.
  java.class.path =
      /tmp/install.dir.480/InstallerData
      /tmp/install.dir.480/InstallerData/installer.zip
  ZGUtil.CLASS PATH =
      /tmp/install.dir.480/InstallerData
      /tmp/install.dir.480/InstallerData/installer.zip
  java.version = 1.3.0
java.vendor = IBM Corporation
java.home = /tmp/install.dir.480/Solaris/resource/jre
  java.class.version = 46.0
  os.name
                    = OS400
  os.arch = ppc
os.version = 5.1
file.encoding = 8859_1
user.home = /home/120WNER
  user.home = /home/I2OWNER
user.dir = /tmp/install.dir.480
  user.language
                    = en
  user.region
                      = null
  java.compiler
                     = NONE
  seaFilename = demo i~1
  Default location = /opt/i2/
  UI Mode set to Default - AWT. No UI mode specification was given.
  Installer: InstallAnywhere 4.0.1 Enterprise Build 1012
===>
F3=Exit
         F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                         F18=Bottom F21=CL command entry
```

Figure 534. Calling demo_i~1.bin in a PASE QP2TERM shell using graphical mode

7. You briefly see the Demand Planner demo Installer splash panel (Figure 535) in your Web browser or vncviewer window (depends on how you connected to the VNC server).



Figure 535. i2 Five. Two Demand Planner demo Installer window

8. Read the information on the Introduction window (Figure 536) and click the **Next** button to continue the installation.



Figure 536. i2 Five. Two Demand Planner demo Introduction window

 Read the information on the License Agreement window (Figure 537) and select the I accept the terms of the License Agreement radio button. Click the Next button to continue the installation.



Figure 537. i2 Five. Two Demand Planner demo License Agreement window

10.On the Choose Install Folder window (Figure 538), type the directory path to which you want the installation to install. The default is /opt/i2TradeMatrix/dp/5.2, which we recommend and use. Click **Next**.



Figure 538. i2 Five. Two Demand Planner demo Choose Install Folder window

11.On the Pre-Installation Summary window (Figure 539), verify that the install folder is what you want and then click the **Install** button. Click the **Previous** button if you need to back up and make any changes.

	Pre-Installation Summary		
	Please Review the Following Before Continuing:		
R Five.Two	Product Name:		
	Install Folder:		
Total Contraction of Contraction	, (p), (20 0001100110, 0p) (12		
12 recimologies, Inc.			
Instellanywhere by zero t-			

Figure 539. i2 Five. Two Demand Planner demo Pre-Installation Summary window

12. The installation in progress window (Figure 540) appears where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system.



Figure 540. i2 Five. Two Demand Planner demo installation in progress window

13. When the installation is finished, you see the Install Complete window (Figure 541). Click **Done** to finish the installation.

The Install Complete window disappears. You can close the vncviewer window or Web browser, unless you have additional i2 Five.Two products to install.

UNDT's X desktop (RCHASSLH.RCHL	AND.IBM.COM:1)	_ 🗆 ×
		-
2 Domonyl Blownow Domo		
W IZ Demand Manner - Demo		<u> </u>
	install Complete	
	Congratulations! i2 Demand Planner – Demo version 5.2 has been successfully installed to:	
🛛 🕰. Five.Two	i unt l'atra de metrio (de /5 a	
	/opt/l2tradematrix/dp/5.2	
	Press "Done" to quit the installer.	
1100 Contract (1)		
i2 Technologies, Inc.		
InstallAnywhere by Zero G		_
Carricel	Previous Done]

Figure 541. i2 Five. Two Demand Planner demo Install Complete window

14. You can review the messages that the installation program generates in the PASE QP2TERM shell (as shown in Figure 542) where the installation started.
| /QOpenSys/usr/bin/-sh |
|--|
| Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/stab/, mode: 77
ExtractZip: 55.710308 e/s |
| Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/demo/susers/ |
| Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/susers/, mode: |
| Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/demo/bin/ |
| Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/bin/, mode: 777 |
| ExtractZip: 58.411213 e/s
Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/demo/ptab/
to 664 |
| Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/ptab/, mode: 77
ExtractZip: 32.786884 e/s |
| Setting UNIX perms for: /opt/i2TradeMatrix/dp/5.2/demo/stab/ |
| Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/stab/, mode: 77
Adding chmod command - filename: /opt/i2TradeMatrix/dp/5.2/demo/logs, mode: 777 |
| Retrying Installables deferred in pass 0
+ /bin/touch /tmp/cbe 549e23c7eb9a4aa09d.init |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/lax.jar |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/UninstallDPDemo.lax |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/uninstaller.jar |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/resource/i18nresour |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/resource/remove.sh |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/UninstallerData/resource/i18nresour |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/comment/ |
| + chmod 0777 /opt/121radeMatrix/dp/5.2/demo/dat/ |
| + chmod 0/// /opt/121radeMatrix/dp/5.2/demo/ib/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/ntab/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/pusers/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/sch/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/stab/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/susers/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/bin/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/ptab/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/stab/ |
| + chmod 0777 /opt/i2TradeMatrix/dp/5.2/demo/logs |
| + r=0 |
| che_FER: + ecilo U
che_FER: + 1> /trm/che_F49e22c7ch9a4aaTime_waited for evit file/evit process: 4 |
| Deferral retries done because: |
| There were no deferrals in the last pass. |
| ZGWin32LaunchHelper.exe does not exist at path: |
| /tmp/install.dir.480/Solaris/resource/ZGWin32LaunchHelper.exe |
| Resource may not have been needed for this installation. |
| invoker.exe does not exist at path: |
| /tmp/8086.tmp/invoker.exe |
| Resource may not have been needed for this installation. |
| Ş
Derctira Straditatin Zarredder ro Makintika |
| т |
| ===> |
| F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap |
| F13=Clear F17=Top F18=Bottom F21=CL command entry |

Figure 542. i2 Five. Two Demand Planner demo installation status messages

15. You can also review an installation log file that is generated and placed in the /opt/i2TradeMatrix/dp/5.2/demo/logs directory (and possibly in the home directory of the user that performed the installation, such as /home/I2OWNER).

To review the installation log file, follow these steps:

 a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 b. Use the cd command to change to directory /opt/i2TradeMatrix/dp/5.2/demo/logs where the installation log file is located:

cd /opt/i2TradeMatrix/dp/5.2/demo/logs

c. Use the cat command to view the installation log file:

cat i2_Demand_Planner_-_Demo_version_5.2_InstallLog.log

An example is shown in Figure 543.

/QOpenSys/usr/bin/-sh
<pre>\$ cd /opt/i2TradeMatrix/dp/5.2/demo/logs \$ ls i2_Demand_PlannerDemo_version_5.2_InstallLog.log \$ cat i2_Demand_PlannerDemo_version_5.2_InstallLog.log Install Begin: Thu Jan 24 14:37:18 CST 2002 Install End: Thu Jan 24 14:58:24 CST 2002 Created with Zero G's InstallAnywhere 4.0.1 Enterprise Build 1012</pre>
Summary
Installation: Successful with warnings.
1784 SUCCESSES 1 WARNINGS 0 NONFATAL ERRORS 0 FATAL ERRORS
Action Notes:
None.
Install Log Detail:
Custom Action: versions Status: SUCCESSFUL
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 543. Using cat to view the i2 Five.Two Demand Planner demo installation log file

16.If you want to see the results of the Demand Planner demo installation, you can use the EDTF command to view the contents of the /opt/i2TradeMatrix/dp/5.2/demo directory:

EDTF STMF('/opt/i2TradeMatrix/dp/5.2/demo')

An example is shown in Figure 544.

Directory: /opt/i2Tr	adeMatrix/	/dp/5.2/demc)	
Position to :	Recor	rd: 1 c	of 12	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Cizo	Oumor	Chanced	liced
UningtallerData	*DTP	TOWNER	$\frac{1}{1}\frac{1}{24}\frac{1}{12}$	03eu 01/24/02 15.41
comment	*DTP	TOWNER	01/24/02 15.41	01/24/02 15.40
dat	*DTR	T2OWNER	01/24/02 15.40	01/24/02 15.40
fb	*DTR	T2OWNER	01/24/02 15:40	01/24/02 15:40
inp	*DTR	T2OWNER	01/24/02 15:40	01/24/02 15:40
ptab	*DIR	120WNER	01/24/02 15:41	01/24/02 15:41
pusers	*DIR	I20WNER	01/24/02 15:41	01/24/02 15:41
sch	*DIR	120WNER	01/24/02 15:41	01/24/02 15:41
stab	*DIR	120WNER	01/24/02 15:41	01/24/02 15:41
susers	*DIR	120WNER	01/24/02 15:41	01/24/02 15:41
bin	*DIR	120WNER	01/24/02 15:41	01/24/02 15:41
logs	*DIR	120WNER	01/24/02 15:43	01/24/02 15:43
				Bottom
	E1C Cort	E17 Degition		u optimo fiold
ro=Exic Fiz=Cancei	FID=SOIL	F1/=POSILIO	r co rzz=Dispia	ay encire riera
(C) COPIRIO	JATI IBM CORP	. 1980, 2000.		

Figure 544. Using EDTF to display the Demand Planner demo directory after installation

11.2.2 Bringing up a Demand Planner server using the demo database

To bring up a Demand Planner server using the demo database you just installed, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the ptab directory in the demo directory structure, which is /opt/i2TradeMatrix/dp/5.2/demo/ptab:

cd /opt/i2TradeMatrix/dp/5.2/demo/ptab

3. Use the cp command to copy the license.dp file from the ptab cola sample database directory to the ptab demo database directory you are now in:

cp /opt/i2TradeMatrix/dp/5.2/cola/ptab/license.dp

4. Use the cd command to change to the sch directory in the demo directory structure, which is /opt/i2TradeMatrix/dp/5.2/demo/sch:

cd /opt/i2TradeMatrix/dp/5.2/demo/sch

5. Use the cp command to copy the start_dp startup shell script (or a custom one you may be using) from the sch cola sample database directory to the sch demo database directory you are now in:

cp /opt/i2TradeMatrix/dp/5.2/cola/sch/start_dp

An example is shown in Figure 545.

/QOpenSys/usr/bin/-sh > cd /tmp/i2TradeMatrix/dp/5.2/demo/ptab > cp /tmp/i2TradeMatrix/dp/5.2/cola/ptab/license.dp . > ls -l license.dp -rwxrwxrwx 1 I20WNER 0 170 Jan 25 11:16 license.dp Ŝ > cd /tmp/i2TradeMatrix/dp/5.2/demo/sch Ś > cp /tmp/i2TradeMatrix/dp/5.2/cola/sch/start_dp . > ls -l start dp -rwxrwxrwx 1 I20WNER 0 203 Jan 25 11:17 start dp Ś ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 545. Copying two cola database files in a PASE QP2TERM shell to the demo database

6. Use the EDTF command to edit the start_dp startup shell script in the /opt/i2TradeMatrix/dp/5.2/demo/sch directory:

EDTF STMF('/opt/i2TradeMatrix/dp/5.2/demo/sch/start_dp')

An example is shown in Figure 546.



Figure 546. Using EDTF to view the contents of the copied start_dp file before changes are made

- 7. You need to make two changes to the start_dp startup shell script:
 - a. Update the line that does the cd to change to the demo/sch directory:
 - cd /opt/i2TradeMatrix/dp/5.2/demo/sch/

 Update the line that calls the Demand Planner server planaxs executable to point to the configuration file cpg.cfg:

```
../../bin/planaxs cpg.cfg planner
```

An example is shown in Figure 547. Press the F3 function key twice to save and exit.



Figure 547. Using EDTF to change the contents of the copied start_dp file

8. You can now use the modified start_dp startup shell script to start a Demand Planner server using the demo database. Once the server is up, you need to start the Demand Planner client from a PC. You can read how to install the client in 4.1.4, "Demand Planner/Demand Analyzer client installation" on page 98.

To start the Demand Planner client and connect to the demo database, follow these steps:

- a. Start the Demand Planner client program from a PC. Click Start->
 Programs-> i2 Demand Planner 5.2-> i2 TradeMatrix Demand Planner.
 If this is something you are going to start often, you may want to create a shortcut to this program and put it on your PC desktop.
- b. Once you execute this program, a login information window appears where you need to specify:
 - The host name or TCP/IP address (Host Name/Address parameter) of the iSeries server where the Demand Planner server is running. In our case, it is called i2.
 - The port number (Server Name parameter) of the Demand Planner server on the iSeries server (the default is 55000). In our case, it is 55000.
 - The user name (Login parameter) for the user trying to connect to the Demand Planner server. For this demo database, USER1 is used.
 - The password (Password parameter) for the user trying to connect to the Demand Planner server. A password may not be required depending

on the installation. For this demo database, USER1 required a password of user1 (case sensitive).

• The name of the database (Database parameter) that you want to connect to. For this demo database, it is called cpgdemo.

Figure 548 shows an example of the Demand Planner client login information window.

i2 '	TradeMatrix Demand	Planner Sign In 🛛 🗙	
	Parameters Host Name/Address:	12	
	Server Name:	55000	
	Server Port:		
	Login:	USER1	
	Password:	****	
	Database Name:	cpgdemo	
	Edit Password	OK Cancel	

Figure 548. Demand Planner demo client login information window

 After you specify a host, port, user, password, and database name, click OK. A window (Figure 549) appears showing the client trying to connect to the server.



Figure 549. Demand Planner Demo client connecting to server status window

10.If the connection from client to server is established, the main Demand Planner window (Figure 550) appears.



Figure 550. Demand Planner Demo client window after successful connection to a server

At this point, your Demand Planner demo database environment is up and running.

Figure 551 shows an example of the Product dimension, Geography dimension, SpreadSheet, and Graph objects for the Item12 Product, in the ShipTo Cust100A view, and for the early 1999 timeframe.



Figure 551. Demand Planner demo client window



Chapter 12. i2 Five. Two Factory Planner

This chapter describes the iSeries server installation procedures for the i2 Five.Two Factory Planner product. It does not cover the same information, such as how to start, stop, and operate the Factory Planner environment because these processed have not changed. However, it covers differences in i2 Five.Two that are important to know.

For a description of the Factory Planner product, see 1.1.2.3, "i2 Factory Planner" on page 5. You can find installation information for the previous releases of i2 TradeMatrix Factory Planner in Chapter 5, "i2 TradeMatrix Factory Planner" on page 185.

12.1 Installation overview

This section contains information on how to install the 32-bit, AIX Version 4.3.3 of Factory Planner 5.2 on an iSeries server. As stated in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V5R1M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Factory Planner code requires approximately 54 MB of disk space.

After you order Factory Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Factory Planner are summarized here:

- 1. Install the Factory Planner code from the CD-ROM.
- 2. Run the rhythm_server program.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2 based on the host ID.
- 5. Activate the license key.
- 6. Install the Factory Planner client.

12.2 Factory Planner reference documentation

The following manuals are available on the Factory Planner CD-ROM in the \docs directory and on the iSeries server in the /opt/i2TradeMatrix/fp/5.2/docs directory after server installation:

- i2 Factory Planner Installation Manual Version 5.2 (fp_install.pdf)
- i2 Factory Planner Release Notes Version 5.2 (release_notes_5_2.pdf)
- *i2 Factory Planner User Guide Version 5.2* (help.zip)

After client installation, Web-based help is available for the Factory Planner user interface on a PC in the C:\i2tradematrix\FP\5.2\doc folder. You can access this by unzipping file help.zip and then opening the index.htm file. This appears to be the same for the *i2 Factory Planner User Guide - Version 5.2* (FP_Manual.pdf).

You can also find documentation on the i2 support Web site (http://support.i2.com). Log in and select the **Documentation** link.

12.3 Installing Factory Planner server code on the iSeries server

To install the Factory Planner server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Factory Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Factory Planner execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2TradeMatrix/fp. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

```
EDTF STMF('/opt/i2TradeMatrix/fp')
```

Figure 552 shows the EDTF command prompted with the F4 function key.

Edit File (EDTF)
Type choices, press Enter.
Stream file, or > '/opt/i2TradeMatrix/fp'
Data base file Name Library *LIBL Name *LIBL
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 552. Edit File (EDTF) command prompt of /opt/i2TradeMatrix/fp

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Factory Planner environment and start from the very beginning. This is shown in Figure 553.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 560 on page 509 shows where you can define this). You may want to do this if you want multiple Factory Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: /opt/i2Trad	eMatrix/fp			
Position to :	Recor	rd: 1 c	of 1	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
9 5.2	*DIR	120WNER	11/20/01 08:40	11/21/01 11:13
				Bottom
F3=Exit F12=Cancel (C) COPYRI	F16=Sort GHT IBM CORP	F17=Position . 1980, 2000.	to F22=Display	ventire field

Figure 553. Using EDTF to recursively delete an existing Factory Planner environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Factory Planner software in your iSeries CD-ROM drive.
- 7. The i2 Five.Two Factory Planner installation program is called *fp_engine.bin*. It is located in the \UNIX directory on the CD-ROM. You can run the program from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell. However, we noticed that it ran extremely slower compared to when the program was on disk. Therefore, we recommend that you copy the installation program to disk from CD-ROM before you run it.

To copy the installation program from CD-ROM, follow these steps:

a. Create a temporary directory on the iSeries server to hold the installation program. We recommend using /opt/i2, but any name will do. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The file on the CD-ROM that you are looking for is called **fp_engine.bin**. You can find it in the \UNIX directory. Load the CD-ROM into a PC and send the file (in binary format) using FTP to the iSeries server. Or load the CD-ROM into the iSeries CD-ROM drive and copy it directly. We recommend you use the latter option, which is what we use.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 554.

Work with Optical Files						
Directory /UNIX Volume FP_52	12					
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Rename						
Opt File Name SizeCreated						
FP_AIX~1.Z1488226210/18/0109:21:FP_ENG~1.BIN9773406110/18/0109:31:FP_HPU~1.Z1453948510/18/0109:20:FP_INT~1.Z1320088710/18/0109:28:FP_OSF~1.Z1557120510/18/0109:29:FP_SOL.Z1566060310/18/0109:19:TRANS.TBL48010/18/0109:35:	30 08 36 38 28 30 34 02 Pottom					
Parameters or command	Boccom					
===> F3=Exit F4=Prompt F5=Refresh F6=Print list F9=Retrieve F12 F16=Repeat position to F17=Position to F22=Display entir	2=Cancel re name					

Figure 554. The fp_eng~1.bin installation program on the Factory Planner CD-ROM

Notice that when you view files that have names longer than eight characters, the iSeries server truncates the name to six characters. Then it uses the tilde (~) character and a number to distinguish files where the first six characters match. For example, fp_engine.bin translates to fp_eng~1.bin. If this is too confusing, you can send the file using FTP to the iSeries server and the name does not truncate.

To copy the file directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/fp 52/unix/fp eng~1.bin') TODIR('/opt/i2')

You should see a completion message stating that the object was copied.

- 8. After the installation program is on the iSeries server, start the product installation. Perform the i2 Five.Two pre-installation procedures as described in Chapter 9, "i2 Five.Two pre-installation information" on page 417, if you have not already done them. This involves:
 - Loading Version 1.3.0 JRE in PASE
 - Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server
 - Making a connection from a client PC to the VNC server
 - Setting up a symbolic link to /bin
- 9. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

10.Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation program is located:

cd /opt/i2

11. There are two ways to install using the Zero G InstallAnywhere product:

- Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
- Use a standard Telnet or console client to display plain text.

We use the X Window System or graphical interface with VNC to install i2 Five.Two on the iSeries server. If you prefer to use the console mode with plain text, see 12.4, "Installing Factory Planner using standard console mode" on page 514.

Call the i2 Five.Two Factory Planner installation program using a graphical interface:

fp_eng~1.bin (or fp_engine.bin)

You can ignore the message in the PASE QP2TERM shell fp_eng~1.bin[318]: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling fp_eng~1.bin as shown in Figure 555.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2
  Ŝ
> ls -l
  -rwxrwxrwx 1 I2OWNER 0 97734061 Jan 24 16:51 fp_engine.bin
-rwxrwxrwx 1 I2OWNER 0 97734061 Oct 18 15:31 fp_eng~1.bin
> fp eng~1.bin
  Preparing to install...
  fp_eng~1.bin[318]: test: syntax error
  InstallAnywhere 4.0.1 Enterprise
  No plugins installed
  Mon Jan 28 10:49:46 CST 2002
  Free memory = 13093 kB
  Total memory = 16382 kB
  No arguments.
  java.class.path =
      /tmp/install.dir.1026/InstallerData
      /tmp/install.dir.1026/InstallerData/installer.zip
  ZGUtil.CLASS PATH =
      /tmp/install.dir.1026/InstallerData
      /tmp/install.dir.1026/InstallerData/installer.zip
  java.version = 1.3.0
java.vendor = IBM Corporation
java.home = /opt/jre1.3/jre
  java.class.version = 46.0
               = OS400
  os.name
 os.arch = ppc
os.version = 5.1
file.encoding = 8859_1
user.home = /home/I2OWNER
user.dir = /term /term 1
                     = /tmp/install.dir.1026
  user.language
                      = en
  user.region
                     = null
                  = NONE
  java.compiler
  seaFilename = fp_eng~1
  Default location = /opt/i2/
  UI Mode set to Default - AWT. No UI mode specification was given.
  Installer: InstallAnywhere 4.0.1 Enterprise Build 1012
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 555. Calling fp_eng~1.bin in a PASE QP2TERM shell using graphical mode

12. You see the Factory Planner Installer splash panel (Figure 556) in your Web browser or vncviewer window (depends on how you connected to the VNC server).



Figure 556. i2 Five. Two Factory Planner Installer window

13.Read the information on the Introduction window (Figure 557) and click the **Next** button to continue the installation.



Figure 557. i2 Five. Two Factory Planner Introduction window

14.Read the information on the License Agreement window (Figure 558) and click the I accept the terms of the License Agreement radio button. Click Next.

	License Agreement
	Installation and Use of Factory Planner Engine 5.2 Requires Acceptance of the Following License Agreement:
M. Five.Iwo	One i2 Place 11701 Luna Road Dallas. Tx 75234
	i2 Factory Planner
	© 1995–2001 i2 Technologies US, Inc. This software contains the following third party software files: Visbroker4.1 © 1994–2001 Inprise Corp.; log4j.jar © 1995–2001 International Business Machines Corporation; JDOM.jar © 1995–2001 JDOM; Saxon.jar © 1995–2001 Mozilla Organization; Xalan.jar, Xerces.jar © 1999–2001 Apache Software Foundation;
	∧ I accept the terms of the License Agreement
12 Technologies, Inc.	✓I do NOT accept the terms of the License Agreement
InstellAnywhere by Zero G	

Figure 558. i2 Five.Two Factory Planner License Agreement window

15.On the Choose Product Features window (Figure 559), click the button that corresponds to the type of installation that you want to perform. The Full option is selected by default. Click **Next**.



Figure 559. i2 Five. Two Factory Planner Choose Product Features window

16.On the Choose FP Engine Install Folder window (Figure 560), type the directory path to which you want the installation to install. The default is /opt/i2TradeMatrix/fp/5.2, which is what we recommend and use. Click **Next**.

NDT's X desktop (RCHASSLH.RCHLA	ND.IBM.COM:1)			
1 Factory Planner Engine 5.2			不 □ ×	1
	Choose	e FP Engine Instal	l Folder	
	Where Would You Like to	Install?		
🕖 Five.Two]/opt/i2tradematrix/fp/5.2			
		Restore Default Folder	Choose	
				_
12 Technologies, Inc.				
InstellAnywhere by Zero G				
Cancel		Previous	Next	

Figure 560. i2 Five. Two Factory Planner Choose FP Engine Install Folder window

17.On the Operating System window (Figure 561), click the **OS400** radio button. Click **Next**.

SUNDT's X desktop (RCHASSLH.RCHLA	ND.IBM.COM:1)		× 🗆 🛓
Factory Planner Engine 5.2		不 □ ×	
		Operating System	
Pive.Two	Select the Operating System		
	◇OSF (Tru64)		
	♦ AIX 4.3.3		
	◇ 05400		
	√Solaris 8		
	✓Solaris 2.6		
	♦ HPUX 11.0		
	♦ HPUX-SJIS		
	∻Windows NT/2k		
i2 Technologies, Inc.			
InstellAnywhere by Zero G			
Cancel		Previous Next	
			<u> </u>

Figure 561. i2 Five. Two Factory Planner Operating System window

18.On the CDM Schema / TMAPI window (Figure 562), click the **CDM Schema** radio button. Click **Next**.

INDT's X desktop (RCHASSLH.RCHL#	ND.IBM.COM:1)	
👪 Factory Planner Engine 5.2	不 □ ×	
	CDM Schema / TMAPI	
🕖 Five.Two	Select TMAPI or CDM Schema	
	♦ Neither	
i2 Technologies, Inc.		
InstallAnywhere by Zero G	Previous Next	

Figure 562. i2 Five. Two Factory Planner CDM Schema / TMAPI window

19.On the Pre-Installation Summary window (Figure 563), verify that the install folder is what you want. Click the **Install** button to continue the installation. Click the **Previous** button if you need to back up and make any changes.



Figure 563. i2 Five.Two Factory Planner Pre-Installation Summary window

20. You see the installation in progress window (Figure 564) where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system.



Figure 564. i2 Five. Two Factory Planner installation in progress window

🚾 SUNDT's X	desktop (RCH	ASSLH.RCHLAN	ND.IBMLCOM:1)	
	desktop (RCH ctory Planner 2. Five 1. Fir 12. Technologie	Engine 5.2 Two	The importance of the installer.	
	enenyw here i eneol	λ 7810 Γ.	Provious Done	
•	V			▼ //

Figure 565. i2 Five. Two Factory Planner Install Complete window

21.When the installation is finished, you see the Install Complete window (Figure 565). Click **Done** to finish the installation.

The Install Complete window disappears. You can close the vncviewer window or Web browser, unless you have additional i2 Five.Two products to install.

22. You can review the messages that the installation program generates in the PASE QP2TERM shell where the installation was started from. An example is shown in Figure 566.

			/QOpenSys	s/usr/bin/-sh
E S	ExtractZip Setting U	p: 6.289308 NIX perms f	5 e/s Cor: /opt/i2tra	adematrix/fp/5.2/logs/
I I I	dding chr dding chr dding chr	nod command nod command	l - filename: / l - filename: /	opt/i2tradematrix/fp/5.2/logs/, mode: 775 opt/i2tradematrix/fp/5.2/samples, mode: 775
ء 2 +	Setting U	NIX perms f	or: /opt/i2tra	adematrix/fp/5.2/def/
7 F	dding chr StractZin	nod command	l - filename: / 07 e/s	opt/i2tradematrix/fp/5.2/def/, mode: 775
- S	Setting UI	NIX perms f	or: /opt/i2tra	adematrix/fp/5.2/cdm/
7 E	dding ch xtractZij	mod command p: 30.84954	l - filename: / 8 e/s	'opt/i2tradematrix/fp/5.2/cdm/, mode: 775
t	etting U :o 664	NIX perms i	or: /opt/12tra	adematrix/fp/5.2/docs/
7 E	dding chr LxtractZig	mod command p: 9.68523	l - filename: / e/s	opt/i2tradematrix/fp/5.2/docs/, mode: 775
5	Setting U	NIX perms f	or: /opt/i2tra	adematrix/fp/5.2/i18n/
7 FF FF ++ ++ ++ ++ ++ ++ ++ ++ ++ ++ ++ C C C	adding chr actrying : - /bin/tou - chmod 0' - chmo	nod command Installable uch /tmp/cb 775 /opt/i2 775 /opt/i2 4 1> /tmp/c Time waited retries don	<pre>l - filename: / s deferred in e_d7balb5febae tradematrix/fg t</pre>	<pre>/opt/i2tradematrix/fp/5.2/i18n/, mode: 775 pass 0 224379d.init >/5.2/UninstallerData/lax.jar >/5.2/UninstallerData/Uninstall_fp_engine.lax >/5.2/UninstallerData/uninstaller.jar >/5.2/UninstallerData/resource >/5.2/UninstallerData/resource/i18nresources >/5.2/UninstallerData/resource/i18nresources >/5.2/UninstallerData/resource/i18nresources/c >/5.2/UninstallerData/resource/i18nresource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/i18nresource/c >/5.2/UninstallerData/resource/c >/5.2/UninstallerData/resource/c >/5.2/UninstallerData/resource/c >/5.2/UninstallerData/resour</pre>
נ 2 i	There were GWin32Lau /tmp, Resou nvoker.ez	e no deferr unchHelper. /install.di urce may no xe does not	als in the las exe does not e r.1026/resource of have been ne c exist at path	st pass. exist at path: re/ZGWin32LaunchHelper.exe weded for this installation.
	/tmp,	/9473.tmp/i	.nvoker.exe	
2	Setting \$	INSTALL_SUC	CESS\$ to SUCCE	22S
ר ג	ime waite	ed for exit	file/exit pro	ocess: 2500
	->			
F3= F13	Exit S=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry

Figure 566. i2 Five.Two Factory Planner installation status messages

23.You can also review an installation log file that is generated and placed in the /opt/i2TradeMatrix/fp/5.2/logs directory (and possibly in the home directory of the user that performed the installation, for example /home/I2OWNER).

To review the installation log file, follow these steps:

a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to directory /opt/i2TradeMatrix/fp/5.2/logs where the installation log file is located:

cd /opt/i2TradeMatrix/fp/5.2/logs

c. Use the cat command to view the installation log file:

cat Factory_Planner_Engine_5.2_InstallLog.log

An example is shown in Figure 567.

/Q0penSys/usr/bin/-sh
\$
> cd /opt/i2TradeMatrix/f/5.2/logs
Factory_Planner_Engine_5.2_InstallLog.log_README
<pre>> cat Factory_Planner_Engine_5.2 InstallLog.log Install Begin: Mon Jan 28 11:05:55 CST 2002 Install End: Mon Jan 28 11:28:49 CST 2002 Created with Zero G's InstallAnywhere 4.0.1 Enterprise Build 1012</pre>
Summary
Installation: Successful.
1080 SUCCESSES 0 WARNINGS 0 NONFATAL ERRORS 0 FATAL ERRORS
Action Notes:
None.
Install Log Detail:
Custom Action: com.i2.HostName Status: SUCCESSFUL
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 567. Using cat to view the i2 Five. Two Factory Planner installation log file

24.If you want to see the results of the Factory Planner installation, you can use the EDTF command to view the contents of the /opt/i2TradeMatrix/fp/5.2 directory:

EDTF STMF('/opt/i2TradeMatrix/fp/5.2')

An example is shown in Figure 568.

Directory: /opt/i2Trade Position to :	Matrix/fp/5 Recor	.2 d: 1 c	of 8	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
bin	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
UninstallerData	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
logs	*DIR	120WNER	01/28/02 11:31	01/28/02 11:54
samples	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
def	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
cdm	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
docs	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
i18n	*DIR	120WNER	01/28/02 11:28	01/28/02 11:28
				Bottom
F3=Exit F12=Cancel (C) COPYRIG	F16=Sort HT IBM CORP	F17=Position . 1980, 2000.	n to F22=Displa	ay entire field

Figure 568. Using EDTF to display contents of the Factory Planner directory after installation

25.Go to 5.1.3, "Obtaining a host ID and license key" on page 195, and complete the rest of the Factory Planner installation tasks. These include generating the host ID and obtaining a valid i2 license key, installing the Factory Planner client on a PC, and bringing up the Factory Planner server with sample data.

12.4 Installing Factory Planner using standard console mode

There are two ways to install using the Zero G InstallAnywhere product:

- Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
- Use a standard Telnet or console client to display plain text.

We use the X Window System or graphical interface with VNC to install i2 Five.Two on the iSeries server. However, you may prefer to use the console mode with a plain text interface if you don't want to spend the time loading an X Window System product on the iSeries server and on a PC, or if you like a simple plain text interface better than a graphical interface.

To install i2 Five. Two Factory Planner using console mode, follow these steps:

 After the installation program is on the iSeries server, make sure that you have completed all i2 Five.Two pre-installation procedures described in Chapter 9, "i2 Five.Two pre-installation information" on page 417, except for the sections regarding VNC and setting the DISPLAY environment variable. These are only needed when the graphical interface is being used.

- 2. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 3. Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation program is located:

cd /opt/i2

4. Call the i2 Five.Two Factory Planner installation program using the console mode:

fp_eng~1.bin -i console (or fp_engine.bin -i console)

You can ignore the message in the PASE QP2TERM shell fp_eng~1.bin[318]: test: syntax error because i2 forgot to remove it from their installation program. It appears right after calling fp_eng~1.bin as shown in Figure 569.

/QOpenSys/usr/bin/-sh
\$ > cd /opt/i2 \$ > 1s -1
-rwxrwxrwx 1 I20WNER 0 97734061 Jan 24 16:51 fp_engine.bin -rwxrwxrwx 1 I20WNER 0 97734061 Oct 18 15:31 fp_eng~1.bin \$
<pre>> fp_eng~1.bin -i console Preparing to install fp_eng~1.bin[318]: test: syntax error</pre>
InstallAnywhere 4.0.1 Enterprise
No plugins installed
Mon Jan 28 12:54:44 CST 2002
Free memory = 13093 kB Total memory = 16382 kB
2 arguments = 0 -i 1 console
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 569. Calling dp_ins~1.bin in a PASE QP2TERM shell using console mode

5. You now see panels similar to the ones displayed when using the graphical interface. Follow the instructions on each panel. Press Enter to continue with the installation, or type quit if you want to end the installation.

The first and last panels displayed are shown in Figure 570 and Figure 571.

/QOpenSys/usr/bin/-sh Introduction InstallAnywhere will guide you through the installation of Factory Planner Engine 5.2. It is strongly recommended that you quit all programs before continuing with this installation. Respond to each prompt to proceed to the next step in the installation. If you want to change something on a previous step, type 'back'. You may cancel this installation at any time by typing 'quit'. PRESS <ENTER> TO CONTINUE: Increasing VM Search ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry





Figure 571. Last panel displayed in a PASE QP2TERM shell using console mode installation

12.5 Factory Planner bin executable directory

We noticed that with i2 Five.Two, rhythm_server and other executables, such as batch_client, are now located in the bin subdirectory instead of in the main Factory Planner directory.

To view the contents of the bin subdirectory, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL QP2TERM
- 2. Use the cd command to change to the /opt/i2TradeMatrix/fp/5.2/bin directory: cd /opt/i2TradeMatrix/fp/5.2/bin
- 3. Use the ls command to view the contents of the bin subdirectory:

ls -1

An example is shown in Figure 572.

/QOpenSys/usr/bin/-sh
\$
> cd /opt/i2TradeMatrix/fp/5.2/bin
\$
> 1s -1
total 45728
-rwxrwxr-x 1 I20WNER 0 1817 Jan 28 11:28 COPYRIGHT
-rwxrwxr-x 1 I20WNER 0 2710940 Jan 28 11:28 batch_client
-rwxrwxr-x 1 I20WNER 0 2815722 Jan 28 11:28 cbc_launcher
-rwxrwxr-x 1 I20WNER 0 2863138 Jan 28 11:28 cbc_server
-rwxrwxr-x 1 I20WNER 0 2816 Jan 28 11:28 ds_spec_file
-rwxrwxr-x 1 I20WNER 0 14007920 Jan 28 11:28 rhythm_server
-rwxrwxr-x 1 I20WNER 0 33178 Jan 28 11:28 std_spec_file
\$
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 572. Viewing the contents of subdirectory bin in a PASE QP2TERM shell

12.6 Factory Planner client installation directory

The Factory Planner client installs into a slightly different directory structure compared to previous releases. For example, with version 5.0.1, the client installs into the C:\Rhythm\FP\5.0.1 directory. With version 5.2, it installs into the C:\i2tradematrix\FP\5.2 directory.



Chapter 13. i2 Five. Two Supply Chain Planner

This chapter describes the iSeries server installation procedures for the i2 Five.Two Supply Chain Planner product. It does not cover the same information, such as how to start, stop, and operate the Supply Chain Planner environment, because this has not changed. However, it covers the differences in i2 Five.Two that are important to know.

For a description of the Supply Chain Planner product, see 1.1.2.5, "i2 Supply Chain Planner" on page 6. You can find installation information for the previous releases of i2 TradeMatrix Supply Chain Planner in Chapter 7, "i2 TradeMatrix Supply Chain Planner" on page 323.

13.1 Installation overview

This section contains information on how to install a 64-bit, AIX Version 4.3.3 of Supply Chain Planner 5.2 on an iSeries server. As stated in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V5R1M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the Supply Chain Planner code requires approximately 186 MB (just the 5.2 schema) to 393 MB (all available schemas) of disk space depending on which schemas are installed.

After you order Supply Chain Planner from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install Supply Chain Planner are summarized here:

- 1. Install the Supply Chain Planner code from the CD-ROM.
- 2. Run the scp_engine program.
- 3. Record the generated host ID.
- 4. Obtain a license key from i2 based on the host ID.
- 5. Activate the license key.
- 6. Install the Supply Chain Planner client.

13.2 Supply Chain Planner reference documentation

The following manuals are available on the Supply Chain Planner CD-ROM in the root (\) directory and on the iSeries server in the /opt/i2TradeMatrix/scp/5.2/pdf directory after server installation:

- i2 Supply Chain Planner 5.2 README File (readme.txt)
- i2 Supply Chain Planner Installation Manual Version 5.2 (install.pdf)
- i2 Supply Chain Planner Model Reference Manual Version 5.2 (modelref.pdf)
- i2 Supply Chain Planner Release Notes Version 5.2 (relnotes.pdf)

After client installation, Web-based help is available for the Supply Chain Planner user interface on a PC in the C:\i2tradematrix\SCP\5.2\VB_UI\Help folder. You can access it by opening the index.htm file.

You can also find documentation on the i2 support Web site (http://support.i2.com). Log in and select the **Documentation** link.

13.3 Installing Supply Chain Planner server code on the iSeries server

To install the Supply Chain Planner server code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install Supply Chain Planner server code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- The Supply Chain Planner execution environment is placed, by default, into the iSeries Integrated File System (IFS) directory /opt/i2TradeMatrix/scp. You can use the Edit File (EDTF) command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2TradeMatrix/scp')

Figure 573 shows the EDTF command after prompting with F4.

Edit File (EDTF)
Type choices, press Enter.
Stream file, or > '/opt/i2TradeMatrix/scp'
Data base file Name Library *LIBL Name, *LIBL, *CURLIB
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 573. Edit File (EDTF) command prompt of /opt/i2TradeMatrix/scp

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the Supply Chain Planner environment and start from the beginning. This is shown in Figure 574.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 581 on page 527 shows where you can define this). You may want to do this if you want multiple Supply Chain Planner environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: /opt/i2Trad	eMatrix/scp			
Position to :	Recor	rd: 1 c	of 1	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
9 5.2	*DIR	120WNER	11/20/01 08:40	11/21/01 11:13
				Bottom
F3=Exit F12=Cancel (C) COPYRIG	F16=Sort GHT IBM CORP	F17=Position 9. 1980, 2000.	to F22=Display	ventire field

Figure 574. Using EDTF to recursively delete an existing Supply Chain Planner environment

- 5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.
- 6. Place the CD-ROM containing the Supply Chain Planner software in your iSeries CD-ROM drive.
- 7. The i2 Five.Two Supply Chain Planner installation program is called engine.bin. It is located in the \UNIX directory on the CD-ROM. You can run the program from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell. However, we noticed that it ran extremely slower compared to when the program was on disk. We recommend you copy the installation program to disk from CD-ROM before you run it.

To copy the installation program from CD-ROM, follow these steps:

a. Create a temporary directory on the iSeries server to hold the installation program. We recommend using /opt/i2, but another name will work. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The file on the CD-ROM that you are looking for is called **engine.bin**. You can find it in the \UNIX directory. Load the CD-ROM into a PC and FTP the file (in binary format) to the iSeries server. Or, load the CD-ROM into the iSeries's CD-ROM drive and copy it directly. We recommend you use the latter option, which is what we use.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 575.

Work with Optical Files				
Directory /UNIX Volume SCP_52	System: I2			
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Renar	ne			
Opt File Name Size	Created			
ENGINE.BIN 195126858 SCM.BIN 9476426 SCPWEBUI.BIN 33235331 TRANS.TBL 155	11/09/01 11:32:20 09/25/01 17:25:48 11/09/01 11:33:16 11/09/01 15:42:22			
Parameters or command	Bottom			
===> F3=Exit F4=Prompt F5=Refresh F6=Print list F16=Repeat position to F17=Position to	F9=Retrieve F12=Cancel F22=Display entire name			

Figure 575. The engine.bin installation program on the Supply Chain Planner CD-ROM

To copy the file directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/scp_52/unix/engine.bin') TODIR('/opt/i2')

You should see a completion message stating that the object was copied.

- 8. After the installation program is on the iSeries server, start the product installation. Perform the i2 Five. Two pre-installation procedures described in Chapter 9, "i2 Five. Two pre-installation information" on page 417, if you have not done so already. This involves:
 - Loading Version 1.3.0 JRE in PASE
 - Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server
 - Making a connection from a client PC to the VNC server
 - Setting up a symbolic link to /bin
- 9. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

10.Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation program is located:

cd /opt/i2

- 11. There are two ways to install using the Zero G InstallAnywhere product:
 - Use the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows.
 - Use a standard Telnet or console client to display plain text.

We use the X Window System or graphical interface with VNC to install i2 Five.Two on the iSeries server. i2 does not currently support the console mode with i2 Five.Two Supply Chain Planner, so the X Window System is the only installation option.

Call the i2 Five.Two Supply Chain Planner installation program using a graphical interface:

engine.bin

You can ignore the message in the PASE QP2TERM shell engine.bin[318]: test: syntax error because i2 forgot to remove it from their installation program. This appears right after calling engine.bin as shown in Figure 576.

```
/QOpenSys/usr/bin/-sh
> cd /opt/i2
  Ŝ
> ls -la
  total 383616

      drwxrwsrwx
      3 I2OWNER
      0
      45056 Dec
      06 13:04 .

      drwxrwsrwx
      47 QSYS
      0
      196608 Dec
      05 22:22 ..

      -rwxrwxrwx
      1 I2OWNER
      0
      195126858 Nov
      09 11:32 engine.bin

  Ŝ
> engine.bin
  Preparing to install...
  engine.bin[318]: test: syntax error
  InstallAnywhere 4.0.1 Enterprise
  No plugins installed
  Thu Dec 06 15:02:02 CST 2001
  Free memory = 13163 kB
  Total memory = 16382 kB
  No arguments.
  java.class.path =
        /tmp/install.dir.894/InstallerData
       /tmp/install.dir.894/InstallerData/installer.zip
  ZGUtil.CLASS PATH =
        /tmp/install.dir.894/InstallerData
        /tmp/install.dir.894/InstallerData/installer.zip
  java.version = 1.3.0
java.vendor = IBM Corporation
java.home = /opt/jre1.3/jre
  java.class.version = 46.0
  os.name = OS400
  os.arch = ppc
os.version = 5.1
file.encoding = 8859_1
user.home = /home/I2OWNER
  user.home = /home/I2OWNER
user.dir = /tmp/install.dir.894
user.language = en
user.region = null
java.compiler = NONE
  seaFilename = engine
  Default location = /opt/i2
  UI Mode set to Default - AWT. No UI mode specification was given.
===>
F3=Exit
                F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 576. Calling engine.bin in a PASE QP2TERM shell using the graphical mode

- 12. You see the Supply Chain Planner Installer splash panel (Figure 577) in your Web browser or vncviewer window (depends on how you connected to the VNC server).
- 13.Select the language for the installation (the default is English). Click **OK** to continue the installation.



Figure 577. i2 Five. Two Supply Chain Planner Installer window

14.Read the information on the Introduction window (Figure 578). Click the **Next** button to continue the installation.

NDT's X desktop (TSELPAR3,REHLAN	D.IBM.COM:1) T • × In trodu ction InstallAnywhere will guide you through the installation ofw. It is strongly recommended that you close all programs before continuing with this installation. Click the 'Next' button to proceed to the next screen. If you we to change something on a previous screen, click the 'Previous' button. You can cancel this installation at any time by clicking the 'Ca button.	
12 Technologies, Inc. InstellAnywhere by Zero C Cancel	Previous Next	

Figure 578. i2 Five. Two Supply Chain Planner Introduction window

15.Read the information on the License Agreement window (Figure 579). Select the I accept the terms of the License Agreement radio button. Click Next.



Figure 579. i2 Five. Two Supply Chain Planner License Agreement window

16.On the Choose Product Features window (Figure 580), click the button that corresponds to the type of installation that you want to perform. The Full option is selected by default. Click **Next**.



Figure 580. i2 Five.Two Supply Chain Planner Choose Product Features window

17.On the Choose the Root Installation Folder window (Figure 581), type the directory path to which you want the installation to append /i2TradeMatrix/scp/5.2. If you select the default, you end up with /i2TradeMatrix/scp/5.2.
We choose the recommendation to create everything off /opt. Therefore, we type opt next to the forward slash (/) character or root directory. This results in Supply Chain Planner installing in /opt/i2TradeMatrix/scp/5.2. Click **Next**.

DT's X desktop (TSCLPAR3.RCHLA	ND.IBM.COM:1)
🐠 i2 Supply Chain Planner	<u> </u>
	Choose the Root Installation Folder
🙋 Five.Two	Choose the root installation folder for SCP. A directory structure i2tradematrix/scp/5.2 will be created under this installation root. For example, if you choose /opt as the root installation directory, SCP Engine will be installed at /opt/i2tradematrix/scp/5.2/
	Root Installation Folder (See note abov <mark>e):</mark>
	/opt
	Restore Default Folde Choose
i2 Technologies, Inc.	
InstallAnywhere by Zero G Cancel	Previous

Figure 581. i2 Five. Two Supply Chain Planner Choose the Root Installation Folder window

18.On the Operating System window (Figure 582), click the **OS400** radio button. Click **Next**.

SUN	DT's X desktop (TSCLPAR3.RCHLA	ND.IBM.COM:1)		
	👔 i2 Supply Chain Planner		不 = × Operating System	
	E. Five.Two	Select the Operating System:		
		 ✓Solaris 2.6 ✓Solaris 8 ✓AIX 4.3.3 ✓OSF ✓HPUX 11.0 or HPUX 111 ▲OS400 		
	i2 Technologies, Inc. InstellAnywhere by Zero C ancel		Previous Next	
				-

Figure 582. i2 Five. Two Supply Chain Planner Operating System window

19.On the CDM Schema window (Figure 583), select the radio button for each CDM schema that you want to install. You can select only 5.2, all of them, or

any combination of them. We suggest you select all of them because they are located in separate directories after installation, and can easily be deleted if not needed. Also, there is no way to separately install them later. Therefore, you would have to perform the entire installation all over again. Click **Next**.

i2 Supply Chain Planner		不 □ ×	
		CDM Schema	
<i>B</i>. Five.Two	Select the CDM Schema		
and a state of the second s	4.3		
	⊒ 4.3.1		
	□ 5.0		
	□ 5.0.1		
	⊐ 5.1		
	□5.1.1		
	5.2		
i2 Technologies, Inc.			
InstellAnywhere by Zero			
Cancel		Previous Next	
Guilder		The vious in the vious	

Figure 583. i2 Five. Two Supply Chain Planner CDM Schema window

20.On the Required Disk Space window (Figure 584), select **Yes** to specify that the iSeries server has enough disk space for Supply Chain Planner code. Our installation has 186 MB with the 5.2 schema selected, and 393 MB with all schemas selected. These are the minimum and maximum amounts of disk space needed. Click **Next**.

🚛 iz ouppry chain manner	
	Required Disk Space
Erve.Two	The i2 Supply Chain Planner installation requires upto 85 MB for installation. Select Yes if you have the required disk space to continue with the Installation. ✓ Yes ✓ No
InstallAnywhere by Zero G	
Concol	Drouious Next

Figure 584. i2 Five. Two Supply Chain Planner Required Disk Space window

21.On the Pre-Installation Summary window (Figure 585), verify that the installation folder (root installation folder) is what you want. Click the **Install** button to continue the installation. Click the **Previous** button if you need to back up and make any changes.



Figure 585. i2 Five. Two Supply Chain Planner Pre-Installation Summary window

22.You now see the installation in progress window (Figure 586) where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system and the amount of CDM schemas that you selected to be installed.

NG SUNDT's X desktop (TSCLPAR3.RCHLAND.IBM.COM:1)		
🐠 i2 Supply Chain Planner 🔭 🗖	×	
B. Five.Two		
i2 Technologies Vnc.		
InstallAnywhere by Zero G		
Cancel		

Figure 586. i2 Five. Two Supply Chain Planner installation in progress window

23.When the installation is finished, you see the Install Complete window (Figure 587). Click **Done** to finish the installation.

The Install Complete window disappears. You can close the vncviewer window or Web browser, unless you have additional i2 Five. Two products to install.



Figure 587. i2 Five. Two Supply Chain Planner Install Complete window

24. You can review the messages that the installation program generates in the PASE QP2TERM shell (Figure 588) where the installation started.

/QOpenSys/usr/bin/-sh UI Mode set to Default - AWT. No UI mode specification was given. Installer: InstallAnywhere 4.0.1 Enterprise Build 1012 Installer: "resource" directory must be in the CLASSPATH or working folder. Java Info: javaHomePath = /opt/jre1.3/jre Java Info: javaHome = /opt/jre1.3/jre Java Info: jdkHome = Java Info: javaDotHome = /opt/jre1.3/jre Java Info: javaExe = /opt/jre1.3/jre/bin/java Increasing VM Search CDS: Assuming sufficient disk space. (V) Adding chmod command - filename: /opt/i2TradeMatrix, mode: 775 Adding chmod command - filename: /opt/i2TradeMatrix/VERSIONS, mode: 775 Adding chmod command - filename: /opt/i2TradeMatrix/scp, mode: 775 Adding chmod command - filename: /opt/i2TradeMatrix/scp/5.2, mode: 775 Adding chmod command - filename: /opt/i2TradeMatrix/scp/5.2/Uninstall_SCP_Engin InstallUninstaller: Retreiving classes from /tmp/install.dir.894/InstallerData/ The path from Uninstall engine52 to the VM is /opt/jre1.3/jre/bin/java Adding chmod command - filename: /opt/i2TradeMatrix/scp/5.2/Uninstall SCP Engin + /bin/touch /tmp/cbe_d07ccfa7ea9e06f806.init + chmod 0775 /opt/i2TradeMatrix + chmod 0775 /opt/i2TradeMatrix/VERSIONS + chmod 0775 /opt/i2TradeMatrix/scp + chmod 0775 /opt/i2TradeMatrix/scp/5.2 + chmod 0775 /opt/i2TradeMatrix/scp/5.2/Uninstall_SCP_Engine52 + chmod 0755 /opt/i2TradeMatrix/scp/5.2/Uninstall SCP Engine52/Uninstall engine + r = 0cbe-ERR: + 1> /tmp/cbe d07ccfa7ea9e06f806.exit + exit 0 Time waited for exit file/exit process: 3000 etc... + chmod 0775 /opt/i2TradeMatrix/scp/5.2/df/ + chmod 0775 /opt/i2TradeMatrix/scp/5.2/custom + r=0 cbe-ERR: + 1> /tmp/cbe 20a6c5cbea9e0b7b90.exit + exit 0 Time waited for exit file/exit process: 7500 Deferral retries done because: There were no deferrals in the last pass. ZGWin32LaunchHelper.exe does not exist at path: /tmp/install.dir.894/resource/ZGWin32LaunchHelper.exe Resource may not have been needed for this installation. invoker.exe does not exist at path: /tmp/4033.tmp/invoker.exe Resource may not have been needed for this installation. Setting \$INSTALL SUCCESS\$ to SUCCESS Time waited for exit file/exit process: 50250 \$ ===> F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F21=CL command entry F13=Clear F17=Top F18=Bottom

Figure 588. i2 Five. Two Supply Chain Planner installation status messages

25. You can also review an installation log file that is generated and placed in the /opt/i2TradeMatrix/scp/5.2/logs directory (and possibly in the home directory of the user that performed the installation, for example /home/I2OWNER).

To review the installation log file, follow these steps:

a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

b. Use the cd command to change to the /opt/i2TradeMatrix/scp/5.2/logs directory where the installation log file is located:

cd /opt/i2TradeMatrix/scp/5.2/logs

c. Use the cat command to view the installation log file:

cat i2_Supply_Chain_Planner_InstallLog.log

An example is shown in Figure 589.

/QOpenSys/usr/bin/-sh
<pre>\$ > cd /opt/i2TradeMatrix/scp/5.2/logs \$ > ls</pre>
<pre>> is i2_Supply_Chain_Planner_InstallLog.log \$ > cat i2_Supply_Chain_Planner_InstallLog.log Install Begin: Thu Dec 06 15:15:45 CST 2001 Install End: Thu Dec 06 15:25:25 CST 2001 Created with Zero G's InstallAnywhere 4.0.1 Enterprise Build 1012</pre>
Summary Installation: Successful. 113 SUCCESSES 0 WARNINGS 0 NONFATAL ERRORS 0 FATAL ERRORS
Action Notes: None. Install Log Detail:
Custom Action: versions Status: SUCCESSFUL
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 589. Using cat to view the i2 Five. Two Supply Chain Planner installation log file

26.If you want to see the results of the Supply Chain Planner installation, you can use the EDTF command to view the contents of the /opt/i2TradeMatrix/scp/5.2 directory:

EDTF STMF('/opt/i2TradeMatrix/scp/5.2')

An example is shown in Figure 590.

Directory, /opt/i2TradeMatrix/gap/5 2				
Degition to .	Decorri	1	f 15	
FUSILIUI LU :	RECOLD	i: 10	T TO	
NEW FILE :	E_Dignlarr	6-Dath Siga	0-Bogungium Dol	ata
Z=Edit 4=Derete File	5=DISPIAY	6=Pauli Size	9=Recursive Del	lele
Opt Name	Size	Owner	Changed	Used
<nstall engine52<="" scp="" td=""><td>*DIR</td><td>120WNER</td><td>12/06/01 15:25</td><td>12/06/01 16:17</td></nstall>	*DIR	120WNER	12/06/01 15:25	12/06/01 16:17
META-INF	*DIR	120WNER	12/06/01 15:20	12/06/01 16:17
COPYRIGHT	8K	120WNER	12/06/01 15:20	12/06/01 15:20
liborbst r.a	17,408K	120WNER	12/06/01 15:20	12/06/01 15:20
libvportst r.a	640K	120WNER	12/06/01 15:20	12/06/01 15:20
scp batch	20,480K	I20WNER	12/06/01 15:20	12/06/01 15:20
scp engine	82,944K	120WNER	12/06/01 15:20	12/06/01 15:20
lpopt	6,144K	120WNER	12/06/01 15:20	12/06/01 15:20
oil	*DIR	120WNER	12/06/01 15:20	12/06/01 16:17
5.2 schema	*DIR	120WNER	12/06/01 15:24	12/06/01 16:17
logs	*DIR	I20WNER	12/06/01 15:26	12/06/01 16:18
pdf	*DIR	120WNER	12/06/01 15:24	12/06/01 16:18
scp	*DIR	120WNER	12/06/01 15:24	12/06/01 16:18
df	*DIR	120WINER	12/06/01 15:24	12/06/01 16:18
custom	*DIR	120WNER	12/06/01 15:24	12/06/01 16:18
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	ay entire field
(C) COPYRIGE	T IBM CORP.	1980, 2000.		

Figure 590. Using EDTF to display the Supply Chain Planner directory after installation

27.Go to 7.1.3, "Obtaining a host ID and license key" on page 331, and complete the rest of the Supply Chain Planner installation tasks. This includes generating the host ID and obtaining a valid i2 license key, installing the Supply Chain Planner client on a PC, and bringing up the Supply Chain Planner server with sample data.

13.4 Supply Chain Planner client installation directory

The Supply Chain Planner client installs into a slightly different directory structure compared to previous releases. For example, with version 5.0.1, the client installs into the C:\Rhythm\SCP\5.0.1 directory. With version 5.2, it installs into the C:\i2tradematrix\SCP\5.2 directory.



Appendix A. Customer, IBM Business Partner support structure

This appendix describes the pre-sales and post-sales support available for i2 application products on the IBM iSeries server. It contains contact information for customers and IBM Business Partners.

References to IBM intranet Web sites

This appendix refers to several IBM intranet Web sites. Please note that access to these sites is restricted to authorized users only.

A.1 Problem reporting

If you encounter a problem with an i2 application running on the iSeries server, we recommend that your first service contact be with the i2 Global Customer Solutions Management team. You can find contact information for i2 Support in A.4, "i2 customer support contact information" on page 552.

When reporting a problem, please provide the following information:

- i2 application being used
- · Version and release of the i2 application being used
- · Customer data source if applicable
- · The platform on which the application is running
- The exact wording of any messages that appear on a terminal panel
- What action was being performed when the problem occurred
- How have you tried to solve the problem
- Error log information collected for the application, if any

A.1.1 Problem or potential defect customer support call flow

All problems and potential defect reports are usually channelled through the IBM and i2 global support organizations. A normal process of defect management and escalation is followed by IBM and i2. Figure 591 shows the typical flow of a customer call from initial problem inquiry time up to the final problem resolution.



Figure 591. IBM iSeries server and i2 defect support typical flow

A.2 IBM sales support organizations and contacts

IBM Global Technical Sales Support organizations are in place to provide technical sales support to IBM employees, Business Partners, and Customers. For additional information on IBM Global Technical Sales Support, visit the following Web sites:

- Internet: http://www.ibm.com/support
- Intranet (for IBM intranet users only): http://w3.ibm.com/support/

The mission of Americas Technical Sales Support (ATSS) is to deliver world class, seamless technical sales support to the Americas customers, Business Partners, and IBM sales teams through designing, implementing, and supporting solutions that contribute to revenue growth and customer loyalty. Americas Technical Sales Support is made up of the following organizations:

- Field Technical Sales Support (FTSS): Offloads technical sales support tasks from sales professionals, thereby improving their productivity. Field Technical Sales Support roles include Client IT Architects, Brand/Solution IT Architects, and Brand/Solution Field Technical Sales Specialists.
- Techline: Provides "one-stop shopping" so that IBM sales teams can reach strong technical skills to quickly engage with customers and Business
 Partners. Techline supports all product lines and brands, as well as all customer sets (integrated, aligned, and territory) and all entitled Business Partners.
- Advanced Technical Support (ATS): Supports complex opportunities for IBM hardware, software, and solutions (including Independent Software Vendor (ISV) solutions) portfolios. Advanced Technical Support technical experts deliver technical sales assistance including Proofs of Concept, Benchmarks,

Performance Analysis and Critical Situation support, and Skills Transfer to FTSS, Techline, and selected Partners.

- **Competeline**: Specializes in providing competitive information on IBM's major competitors through a telephony based pre-sales organization.
- Latin America Technical Sales Support: The Latin America (LA) center for Technical Support across the LA geography. America's Techline assists LA IBMers and Business Partners with pre-sales technical support.

Figure 592 shows the typical IBM/i2 Americas Technical Sales Support flow from initial customer contact or inquiry time to proposal or final sale time. This is different in other countries and regions. For example, Europe has combined the missions of Advanced Technical Support and Field Technical Sales Support.



Figure 592. IBM/i2 Americas Technical Sales Support flow

A.2.1 Contacting Americas Technical Sales Support

The fast-growing Americas Technical Sales Support intranet site's goal is to "fastpath" people to the help they need, while showcasing the latest initiatives and technologies. It is available for IBM intranet users only on the Web at: http://w3.ibm.com/support/americas/

In addition to local Sales Opportunity and Account Coverage technical support provided by Client IT Architects, Solution IT Architects, IT Specialists, and Technical Advocates for Business Partners, Americas Technical Sales Support offers several remote technical sales support options:

 A TechXpress Web form can be used to request ATSS assistance (for example, benchmarking/proofs of concept, sizings, ordering/configuration assistance, and New Workload Project Office nominations). Alternatively, you can submit the request via the SPC icon on Lotus Notes or by calling 1-877-707-2727 (US and Canada) or 770-858-5451 (Latin America). The TechXpress Web form is available on the Web at:

http://dalnotes1.sl.dfw.ibm.com/atss/techxpress.nsf/request?OpenForm

- The Sales Productivity Center (SPC) is a single point of access for assistance with sales tasks that don't directly involve a customer. Through the SPC, there are links to information, tools, and applications for increasing customer selling time. For additional information on the Sales Productivity Center, visit the following Web site, which is accessible to IBM intranet users only, at: http://w3.ibm.com/sales/support/americas/
- To search for information and ask questions supporting a sales effort, IBM Sales teams and selected Partners can access Worldwide Question and Answer (WWQ&A) support using ViewBlue. For additional information on ViewBlue, go to the IBM intranet site at: http://w3.viewblue.ibm.com/
- ATSS Subject Matter Experts (SMEs), who participate in the Solution Assurance process, have published review guides and checklists on the SAR Web site. They are available on the IBM intranet Web site only at: http://w3.ibm.com/support/solassure.html

These and other organizations are described further in the following sections.

A.2.2 Field Technical Sales Support

The key goals of IBM Technical Sales Support include:

- Improving sales productivity by offloading technical sales support tasks from sales professionals to technical sales support
- First level support to sales specialists
- Ensuring Business Partners maintain the required level of technical skills and the relevant technical support business processes
- · Second level support to business partners
- Helping customers on the Web translate their business requirements into IBM solutions through Technical Sales Support
- Providing customers real-time access to technical sales support

The roles fulfilled by Field Technical Sales Support (FTSS) include:

- Client/Coverage IT Architects that discuss business challenges and issues with the customer on technologies and solutions
- Brand/Solution IT Architects that design and architect solutions for the customer, and provide specialized expertise on specific hardware, software, or solution platforms
- Brand/Solution Field Technical Sales Specialists that provide technical skills in sales calls, write technical sections of proposals, and perform non-complex product proofs-of-concept

For additional information on Field Technical Sales Support, go to the IBM intranet site at: http://w3.ibm.com/support/americas/ftss.html

A.2.3 Techline

Americas Techline can:

- · Design solutions remotely
- Consult on competitive sales strategies
- · Provide technical information and recommendations
- Act as solution assurance SMEs
- Size and configure solution options
- Prepare orders

Americas Techline provides sales assistance with things such as:

- Solution design
- Product function/capability
- Configuration and ordering assistance
- · Research to help with customer proposals
- RFP responses

One great benefit of the Techline team is the hardware sizing estimates they provide. Techline has years of experience sizing IBM hardware for IBM and ISV applications, including software for e-business, Enterprise Application Systems (EAS), supply chain management (SCM), and customer relationship management (CRM) solutions. The team members have technical sales support experience with the full range of IBM hardware platforms.

Why size? To compete effectively for hardware sales, IBM must make credible hardware recommendations to support the applications that our customers want to implement. A sizing estimate is an approximation of the hardware resources required to support a specific implementation. IBM sales representatives, Business Partners, and customers use sizing estimates to compare server and configuration alternatives and to assist with server selection. Customers use sizings for budget and planning purposes, as well as for estimates and validation throughout the implementation life cycle.

Sizing application systems is an iterative process. Preliminary sizings, based on limited information, may be rough estimates. As more information about the implementation becomes available, sizing estimates provide a better understanding of hardware requirements, so multiple sizings may need to be run.

Why Techline for sizing support? Techline gives a sizing credibility. Using the latest sizing information and tools available, Techline analyzes the customer's requirements, processes those requirements, estimates and configures the hardware, and delivers the results in a high quality document. It has created *Quick eSizing Guides* to help people respond more effectively to customer requests for sizing information.

To have Techline provide a pre-sales sizing estimate, complete the appropriate sizing questionnaire. Follow the instructions in the questionnaire to submit the request to Techline. To obtain a copy of the sizing questionnaire, use one of the following methods:

 For self-service, call 800-IBM-4FAX or 1-408-256-4522 (if calling from outside the US). Choose option 2. Then, order document 7693, "IBM/i2 Sizing and Planning Questionnaire". The sizing questionnaire is also available on the Web at:

- Internet: http://www.ibm.com/erp/sizing
- Intranet (for IBM intranet users only):

http://w3.ibm.com/support/americas/sizing.html

- Contact the IBM Americas Techline Solution Sizing Team at 1-800-IBM-0222 or 1-770-835-6690 (if calling from outside the US)
- Send an e-mail to: eSizings@us.ibm.com

After you complete the sizing questionnaire, send it electronically to eSizings@us.ibm.com or fax it to 1-770-659-5245.

For additional information on Techline, see the following Web site for IBM intranet users only: http://w3.ibm.com/support/americas/atechline.html

A.2.4 Advanced Technical Support

The Advanced Technical Support (ATS) team provides sales support for complex opportunities. ATS technical experts deliver free technical sales assistance for IBM's hardware and software portfolio such as:

- Deliver Proof Of Concept And Technical Briefings
- Design Complex Solutions
- Inspect Technical Design Solution Assurance SME
- Support Product Introduction And Critical Situations
- Skills Transfer To FTSS, Techline And Selected Partners

For additional information on Advanced Technical Support, go to the following Web site for IBM intranet users only: http://w3.ibm.com/support/americas/ats.html

A.2.5 Competeline

When in a competitive situation with HP, Compaq, Dell, or Sun and one or more of the following items are needed, call Competeline:

- A comparison between the HP Vectra and the IBM equivalent offering
- Consultant reports on Compaq's SAN initiatives and how IBM storage products compare
- A comparable IBM system to compete against a Dell PowerEdge 4400
- Key attack points in battling Sun

Competeline is a telephony-based, one-stop shopping, pre-sales support organization. It specializes in providing competitive information on IBM's major competitors. It provides company and financial information, corporate strengths and weaknesses, consultant papers, product positioning, features and functions. performance data, and comparisons on these competitors and their products.

Over the last year, Competeline has assisted IBM sales representatives in closing over \$500 million in tough competitive opportunities. They work closely with Client Representatives, Inside Sales Representatives, Sales Specialists, and Business Partners in developing sales strategies and counterattacks.

No opportunity is too small or too big! If someone is willing to invest the time to compete for the business, CompeteLine is there to support them. Competeline provides coverage for the following targeted competitors:

- HP
- Compaq
- Sun
- Unisys
- EMC
- Microsoft
- Toshiba
- Dell
- SGI
- StorageTek
- Oracle
- BEA
- Other e-business software competitors

Some of the available Competeline services are:

- Company and Financial Data
- Features and Functions
- Selling Tactics
- Product Positioning and Comparisons
- How to Sell Against the Competitor
- Configurations
- Corporate Strategy
- · Benefits and Shortcomings
- Company Strengths and Weaknesses
- Published Performance Data
- Product Pricing
- Available Benchmarks
- Press Releases and Announcements
- Customer References
- Consultant Papers and Briefs
- Other Third-party Information

For additional information on Competeline, see the IBM intranet Web site at: http://w3.ibm.com/support/americas/competeline.html

A.2.6 Latin America Technical Sales Support

The Latin America (LA) Center for Technical Support spans across the Latin America geography. They aim to increase customer satisfaction and improve the field sales force productivity with tools and support made available in their countries.

North America Techline supports Latin America IBMers and Business Partners. They can receive pre-sales technical support for networking, software pillar products, servers like the IBM @server iSeries, pSeries, zSeries, and storage products from the North America Techline organization.

For additional information on Latin America Technical Sales Support, see the IBM intranet Web site at: http://w3.ibmla.ibm.com/technicalsales

A.2.7 IBM/i2 International Competency Center

The IBM/i2 International Competency Center (ICC) located onsite at i2 in Dallas, Texas, currently provides additional assistance to all IBM e-business, ERP/EAS, SCM, and B2B pre-sales teams involved in IBM/i2 sales. Some of the International Competency Centers many tasks include:

- Support for integration of IBM e-business technologies
- Benchmarking and performance optimization
- Complex sizing support
- Sizing guidelines, sizing guides, and sizing tools
- · Assist IBM sales in overall i2 sales issues
- IBM/i2 ICC intranet and Internet site content management

The IBM/i2 International Competency Center provides much of the content for the IBM Developer Relations, i2 sales information section of the ISV SolutionLink intranet site. It is available at from the IBM intranet Web site at: http://w3.developer.ibm.com/depts/spra/I2/i2.html

A.2.8 PartnerWorld

The PartnerWorld Web portal at http://www.ibm.com/partnerworld is available as the single point of electronic access for all IBM Business Partners. PartnerWorld is IBM's worldwide marketing and enablement program designed to create new revenue and market opportunities for IBM Business Partners. Together, IBM and IBM Business Partners can provide customers with e-business solutions encompassing the entire portfolio of IBM products, technologies, services, and financing.

A variety of communities and three membership levels provide the flexibility to support IBM Business Partner's unique needs:

- **Co-marketing**: Seize the opportunity and the advantage. Here are tools, information, and inspiration to help IBM Business Partners market products, services, and e-business solutions.
- Education and certification: IBM Business Partners can unlock their potential, expand their skills, and validate their expertise.
- **Technical support**: Technical support and information that IBM Business Partners require, including workshops, forums, fixes, and FAQs.
- **Incentives**: IBM Business Partners can decide for themselves how to invest incentive funding for their business.
- Financing: Benefit from the lower costs, improved cash flow and easier asset management that financing for IBM Business Partners and their customers brings.

For additional information on IBM PartnerWorld software programs and technical support benefits, visit the Web site at: http://www.ibm.com/partnerworld/software

A.2.8.1 PartnerWorld for Developers

Members of PartnerWorld for Developers (PWD) receive technical support in the areas of products and information for download and other technical resources to accelerate product development efforts. Developer Support Online offers developers the self-service technical support they need on the Web to help move their products to market faster. It includes:

• Self-service technical support: Software fixes, FAQs, information maps, sample code, integration starter kits for e-business, and white papers on the latest technologies.

- **Products for download**: The Developer Connection containing a broad selection of e-business tools across 14 platforms, available by download or by CD subscription.
- Other support and technical resources: Access to Solution Partnership Centers (SPCs) for technical briefings, hands-on workshops, and cross platform testing/porting facilities and member bulletin boards to allow developers to post questions and trade insights with other developers worldwide.

In addition, PartnerWorld for Developers offers:

- Invitations to technical conferences and events, early release and beta programs, remote S/390 access services, and technology specific consulting.
- *IBM Developer Directions*, a bi-monthly newsletter providing technical information for professional developers and *IBM Developer News*, a biweekly electronic newsletter highlighting the latest information for developers including a listing of events, classes, and technical support updates.

For additional information on PartnerWorld for Developers, see the Web at:

- http://www.developer.ibm.com/
- http://www.iseries.ibm.com/developer

A.2.9 International Technical Support Organization

The IBM International Technical Support Organization (ITSO) develops and transfers technical know-how and materials through IBM Redbooks, workshops, and residencies:

- **Redbooks**: These are practical "cookbooks" written by technical experts worldwide who develop, implement, and integrate IBM solutions. You can download the books electronically or order them in hardcopy form.
- Workshops: These classes focus on specific skills transfer.
- **Residencies**: These internships are based on IBM product and implementation plans, and contribute to IBM redbooks and workshops. Internship applications are available online.

You can review and apply for scheduled residencies or workshop sessions on the Web. You can also sign up to receive announcements of newly available redbooks, residencies, and workshops.

For additional information on the ITSO or redbooks, visit the following Web sites:

- Internet: http://www.redbooks.ibm.com
- Intranet (for IBM intranet users only): http://w3.itso.ibm.com/

A.2.10 IBMLink

IBMLink is the IBM electronic sales manual that provides both public and entitled information. It includes the following electronic support for software through *ServiceLink* in North America or similar services such as *Dial-IBM* in other countries and regions:

- PTF and APAR status tracking
- Defect submissions
- Program temporary fix (PTF) downloads

- Preventive service planning
- Technical Q&A databases
- · How-to electronic support through Support Line

For additional information on IBMLink, go to: http://www.ibmlink.ibm.com/

A.2.11 IBM Global Services

IBM Global Services (IGS) is available to work with business partners to ensure large and small companies direct access to innovative, value-added services and solutions, regardless of where they do business. It works with customers of all sizes in a variety of industries all over the world to achieve a competitive advantage.

IBM Global Services can deploy the knowledge and skills of experienced business and IT professionals to help customers build, integrate, and operate IT systems that run their businesses more successfully. It helps customers install, maintain, and derive maximum value from their IT hardware and software. It can also leverage the power of network computing to help customers reach new markets or do business in totally new ways.

IBM Global Services portfolios include:

- e-business Services
 - IBM e-commerce Services
 - IBM Enablement Services for e-business
 - IBM Hosted e-business Services
 - IBM Security and Privacy Services
 - IBM e-business Accelerator
- Business Consulting
 - IBM Strategy and Planning Consulting for e-business
 - IBM Business Performance Enhancement Consulting
 - IBM Knowledge Management Consulting
 - IBM e-business Accelerator
- IT Consulting
 - IBM Business Continuity and Recovery Services
 - IBM Network Consulting and Integration
 - IBM Systems Management Consulting and Design
- Business Transformation Services
 - IBM Business Management Services/ERP
 - IBM Global Transformation 2000 Services
 - IBM Business Intelligence Services
 - IBM Supply Chain Management Services
 - IBM Customer Relationship Management Services
 - IBM Enterprise Services for Microsoft Technologies
 - IBM EMU Transition Services
 - IBM Custom Systems Integration Services
- Total Systems Management Services
 - IBM Hardware and Software Support Services
 - IBM Site and Connectivity Services
 - IBM Systems Management and Networking Services

- IBM High Availability Services
- IBM Business Continuity and Recovery Services
- IBM IT Product Training Services
- Strategic Outsourcing Services
 - IBM Business Process Management Services
 - IBM IT Outsourcing Services
 - IBM Network Outsourcing Services
 - IBM Application Management Services

For additional information on IBM Global Services, go to:

- http://www.ibm.com/services
- http://www.ibm.com/services/bustran/supplychain.html

A.2.12 Specialty iSeries centers and support organizations

Other centers and Web sites provide specialized iSeries help for various technical areas, such as:

- Rochester Executive Briefing Center: http://www.ibm.com/servers/eserver/iseries/rebc/
- iSeries Benchmark Center: http://www.iseries.ibm.com/developer/cbc/
- Rochester Opportunity Center: http://www-912.ibm.com/supporthome.nsf/document/17081523
- Rochester iSeries Solution Center: http://www.ibm.com/services/its/us/as400solutionctr.html
- Rochester Customer Solution Center: http://www.ibm.com/servers/eserver/iseries/rcsc/
- iSeries Custom Technology Center: http://www.ibm.com/servers/eserver/iseries/service/ctc/
- iSeries Technical Studio: http://www.iseries.ibm.com/tstudio
- iSeries Information Center: http://publib.boulder.ibm.com/pubs/html/as400/infocenter.htm
- iSeries Online Library: http://publib.boulder.ibm.com/pubs/html/as400/onlinelib.htm
- iSeries University: http://www.ibm.com/servers/eserver/iseries/education/
- Guide to finding solutions on the iSeries server: http://www.ibm.com/servers/eserver/iseries/solutions/
- iSeries Network: http://www.iseriesnetwork.com/

A.3 IBM iSeries server support services

When a customer purchases software from IBM, they receive free support called *program services*. For an additional fee, they can receive access into the iSeries Support Line. This section goes into more detail regarding the various levels of support.

A.3.1 Program services

Program services are available to customers at no additional charge and can be used if an error is suspected in IBM software. Program services are not intended for usage support. iSeries server specialists help determine and solve the software problem. They also assist the customer in ordering software fixes (PTFs) from IBM. For program services support, customers can use Electronic Customer Support (or ECS, which is the OS/400 function that allows electronic communications between the iSeries server and IBM), facsimile, or the US mail. Here's how you can access them:

• ECS

1-800-527-8207 (used for ZIP codes 0XXXX-3XXXX) 1-800-327-0949 (used for ZIP codes 4XXXX-9XXXX)

• Fax

1-800-288-9584

• US mail

IBM Corporation 3605 Highway 52 North Dept 909 Rochester MN 55901

If a Support Line contract is purchased, customers can receive program services support over the telephone.

A.3.2 Support Line

Support Line provides support for usage issues such as problem determination, defect support, installation implementation, and product documentation questions. If a customer desires usage and voice support, they can use Support Line, which is available in both monthly or hourly forms. Depending on the contract, users can call with usage or defect questions 24 hours-a-day, seven days-a-week by calling 1-800-237-5511.

The following information is required when using Support Line:

- IBM customer number
- iSeries machine type
- iSeries serial number
- Support Line access number (Support Line hourly customers only)

To streamline support calls, when reporting a problem to IBM, the following information should be available:

- Problem software product name, version, and release level
- · Currently installed cumulative PTF number
- Problem symptom
- Message numbers (IDs) with message text and return codes
- The steps needed to recreate the problem (if possible)
- Actions already taken
- iSeries job log

Note

We highly recommend that i2 customers running on IBM hardware have an IBM Support Line contract. After you contact iSeries support, a Problem Management Record (PMR) number is assigned to the call. Always keep this number nearby in case you need to contact IBM to work on the problem further.

A.3.3 Consult Line

When the call goes beyond normal usage or software defects, Consult Line is available. Consult Line answers complex questions about system design planning, interoperability issues, performance and capacity tuning, and LAN/WAN design. It provides telephone access to a group of iSeries technical experts at the IBM Manufacturing and Development site in Rochester, Minnesota, on an hourly basis. Consult Line has consultants available in such areas as:

- Interpretations
- Recommendations
- Analysis
- Programming and application design
- Performance analysis and capacity planning
- Skill intensive items
- · Data recoveries such as tape, diskette, optical platter, an so on
- · Explanation of why things are the way they are
- "How to" and "step-by-step" help
- · Supported and unsupported products or releases
- · OEM devices with the iSeries server
- PRPQ support (many)

For additional information on iSeries support, in the US, call 1-888-426-4343.

A.3.4 iSeries support Web sites

All iSeries customers have access to iSeries worldwide technical services and support Web sites. Through the support Web sites, a customer can:

- Report a suspected software defect to IBM or ask technical questions directly to support personnel using the Internet if they are an iSeries Monthly Support Line customer and are registered to use the Internet Facility.
- Order PTFs by the Internet if they are an iSeries Monthly Support Line customer and are registered to use the Internet facility.
- · Find out the latest in iSeries news and events.
- Check out the iSeries Institute, which provides a single source of information to help individuals identify what is required to obtain new, or grow existing, iSeries skills.
- Link to technical information databases such as:
 - iSeries Software Knowledge Base
 - iSeries Software Problem Database (APARS)
 - iSeries PTF Cover Letters
 - Preventive Service Planning (PSP)

- Client Access Service Information
- US Support Center Direct Access Phone Codes
- Link to fixes, drivers, and updates such as:
 - The iSeries software download library
 - The IBM software download library
 - iSeries Freeware, Shareware, and Public Domain Software
- Link to technical publications such as:
 - iSeries Technical Overviews
 - iSeries Online Library
 - IBM Redbooks
 - IBM BookManager library
 - iSeries Magazine (an IBM publication)
 - News400 Magazine
 - Midrange Computing Magazine
 - White papers on data management
 - IBM Technical Journals
- Link to education and certification including:
 - iSeries Web Builder's Workshop
 - IBM Partners in Education
 - iSeries Sales School
 - iSeries Education, Certification, and Publications
 - iSeries Independent Training Providers
 - iSeries Curriculum Spotlight
 - Colleges and Universities providing iSeries curriculum
- Link to interesting sites, such as:
 - iSeries Year 2000 support
 - IBM Announcements
 - iSource (IBM Information Service)

To access this information, go to the iSeries Technical Support Web sites:

- http://www.as400service.ibm.com/
- http://as400service.rochester.ibm.com/

To use an iSeries-specific search engine, go to: http://www.search400.com/

A.3.5 General marketing or support contact phone numbers

Here is a convenient list of telephone reference numbers available from IBM that provide access to IBM product marketing or support information:

1-800-IBM-4YOU	Provides information about any IBM Solutions or Services.
1-800-IBM-2YOU	Provides information on PC products that you want to order.
1-800-IBM-CALL	This is IBM Direct. Provides information for other systems and software products.
1-800-237-5511	Provides IBM software technical services and support.
1-800-IBM-SERV	Provides IBM hardware technical services and support.

1-800-879-2755	Provides information about ordering IBM publications and media.
1-800-IBM-TEAC(H)	This is for the IBM Education and Training Customer Service. Provides information about IBM education or
	COURSES.

A.3.6 IBM Technical Support telephone numbers

This section contains IBM Technical Support contact phone numbers for different geographies. Table 16 contains a contact list of IBM Asia Pacific (AP) locations.

Country (region)	PartnerLine	Support Line
Australia	(61) 1-800-818-090	131-426
China (Hong Kong S.A.R)	(852) 2825-6222	2515-4333
Indonesia	(62) 21-523-8377	021-523-8000
Japan	(81) 0088-22-8107	0120-550-508
Korea	(81) 0088-22-8107	82-2-3779-5444
Malaysia	(60) 3-717-7788	603-717-7800
New Zealand	(64) 0800-426-111	04-576-5555
People's Republic of China	(800) 810-1166 98	800-810-6677
Philippines	(63) 2-819-2261	819-2271
Singapore	(65) 320-1976	1800-840-9020
Taiwan	(88) 080-011-011	02-776-7776
Thailand	(66) 2-273-4789	2-273-4333

Table 16. IBM Asia Pacific

Table 17 contains a contact list of major IBM locations in Europe, the Middle East, and Africa (EMEA).

Table 17. IBM EMEA locations

Country (region)	PartnerLine	Support Line
Austria Local	(43) 1 1706 0 0800 201403	1 21145 4400
Belgium	(32) 222 53535	2 718 4333
Denmark	(45) 4523 3277	4596 5050
Finland	(358) 09 4596 400	80014260
France Local	(33) 2 38 55 77 77 0801 801 426	08 01 63 10 20
Germany	(49) 1803 246 256	0511 516 6210
Israel	(972) 03 69 78888	03 69 78555
Italy Local	(39) 039 600 7666 167 015 338	16 782 0094
Netherlands	(31) 20 513 5155	030 285 3939

Country (region)	PartnerLine	Support Line
Norway	(47) 66 99 83 53	66 99 93 00
South Africa Local	(27) 11 302 9111 0800 426 426	0800 11 0756
Spain Local	(34) 91 590 5104 901 200 700	901 100 000
Sweden	(46) 0 8793 5008	8793 3000
Switzerland Local	(41) 844 80 30 30 08 44 80 30 30	0800 55 54 54
United Kingdom	(44) 01 256 344500	0345 151516

Table 18 contains a contact list of IBM locations in North America (NA).

Table 18. IBM North America

Country	PartnerLine	Support Line	
Canada	800-426-9990	800-IBM-SERV (426-7378)	
U.S.	800-426-9990	800-237-5511	

IBM Software Developers in North America is 800-627-8363.

Table 19 contains a contact list of IBM locations in Latin America (LA).

Table 19. IBM Latin America

Country	PartnerLine	Support Line
Argentina	0800 44 42675	Same
Brazil	0800 78 73 70	Same
Chile	0800 206 666	Same
Colombia	(571) 6230111	(571) 6231300 ext. 1682
Ecuador	(593-2) 565121	Same
Mexico - Mexico City National	(52-5) 2705911 01 800 426 1000 ext. 5911	
Paraguay	5 95 21 206708	Same
Peru	(511) 317 6677	(511) 349 0050
Uruguay	0004054101	Same
Venezuela	800 33426	908 8764 / 908 8295

A.3.7 PC HelpCenter

The IBM Personal Systems Group (PSG) PC HelpCenter provides post-sales technical support (both electronically and by phone). Entitled Business Partners are eligible to receive advanced technical support on all PSG hardware products, and problem determination assistance on pre-loaded and selected

shrink-wrapped software. Table 20 contains the telephone numbers of PC HelpCenters located in different geographies.

Table 20. IBM PC HelpCenters

Country	Phone
Argentina	11 4717 4357
Australia	800-062-038
Brazil	55 11 889 8986
Canada	800-426-9990
Colombia	800 188 11
Mexico	387 5991 (Mexico City) 01 800 426 1000 (National)
United Kingdom	(+44) 01475 555051
USA	800-IBM-PROD (426-7763)

A.3.8 IBM and iSeries Web sites

The main IBM Web site is located at: http://www.ibm.com

The main iSeries Web site is located at: http://www.iseries.ibm.com

You can also find iSeries information at: http://www.ibm.com/servers/eserver/iseries/

A.3.9 COMMON

COMMON is the world's largest group of IBM and IBM-compatible information technology users. It is an international professional association serving the global community of organizations and individuals who have an interest in IBM-related technology.

COMMON provides a member forum for developing proactive solutions to challenges attributed to technology evolution and business requirements, and provides pre-eminent leadership in education. Members receive unparalleled educational benefits that facilitate the effective use of information systems and enhance professional growth. It also promotes multiple vehicles for communication, an environment that encourages information exchange through interpersonal knowledge sharing, and a level of support otherwise unavailable in the information technology industry.

COMMON influences the information industry through its ability to synthesize and communicate member requirements representative of the information technology community. For iSeries users, COMMON is a way to meet with other companies and users that use the iSeries server.

Some of the benefits of becoming a COMMON member are:

• **COMMON national conferences**: Two national conferences are held each year. These five-day events feature more than 900 technical, management, and industry-related sessions, with lectures and labs, plus the COMMON Expo, the industry's largest vendor exhibition. More than 3500 attendees per

conference (industry peers, top IBM executives, and major vendors) participate in the ultimate learning experience. Only members can attend.

- COMMON regional events: Recognizing the need for timely knowledge, COMMON stages several regional events each year. These events provide the most up-to-date education for IBM users at a local level. Members have access to sessions at various geographic locations all year.
- **Publications**: *COMMONews* is COMMON's official quarterly member newsletter, providing relevant and timely information about the IT industry and the COMMON organization.
- Requirements system: The COMMON requirements process is being replaced by the new Global Idea Exchange (GLIDE) process. The Requirements Task Force presented the initial design for GLIDE to the COMMON Board of Directors at the fall 1998 conference in Anaheim. The design has also been previewed to COMMON Europe, COMMON Australasia, and IBM. The Requirements System enables members to submit major concerns about products and services to IBM and midrange vendors 365-days-a-year. More than 1000 COMMON member requests have become features, functions, products, and services as a result of this process.
- **Top Concerns process**: Top Concerns focuses on high-level strategic issues such as product direction and overall industry concerns. Members vote annually, and the results are presented to IBM and the midrange industry. You can find Top Concerns and Global Top Concerns from previous years on the COMMON Web site.
- **COMMON support network**: Discover an unparalleled pool of peers and experts (one of the unique features of COMMON is the willingness of members to share solutions and information). This sharing in itself is worth the membership fee!

For additional information about membership in COMMON, contact COMMON directly at:

COMMON Headquarters 230 West Monroe, Suite 220 Chicago, IL 60606 Phone: 800-777-6734 or 312-279-0192 Fax: 312-279-0227 E-Mail: common@common.org

For additional information on COMMON, visit their Web site at: http://www.common.org

A.4 i2 customer support contact information

Support issues can be logged with i2 Global Customer Solutions Management via the Web, e-mail, or telephone.

A.4.1 Web support

Customers can submit support issues through the i2 Support Web site at:

- http://www.support.i2.com
- http://support.i2.com

A.4.2 E-mail support

Customers sending a support issue to i2 by e-mail should use one of the following addresses based on the i2 product they are using:

- i2 general: support@i2.com
- Active Data Warehouse: cdmadw-support@i2.com
- Demand Fulfillment: df-support@i2.com
- Demand Planner: dp-support@i2.com
- Factory Planner: fp-support@i2.com
- Link/SequeLink: link-support@i2.com
- Supply Chain Planner: scp-support@i2.com

A.4.3 Telephone support

i2 Global Customer Solutions Management can be reached using the following telephone numbers:

- US and Canada: 1.469.357.3456
- EMEA: 32.2.717.66.77
- APAC: 91.80.5581487-90
- Japan: 81.3.5783.1212
- Australia: 61.3.9832.7654

A.5 i2 support services

i2 has packaged its support services into three programs, each tailored to a particular level of support. The Silver, Gold, and Platinum programs offer customers the ability to choose the level of service they want.

A.5.1 Program overview

This section provides an overview of the i2 customer support program.

A.5.1.1 i2Silver

The i2 standard level of customer support, i2Silver, is an easy-to-use service that helps customers access i2 Support consultants for timely, effective support that does not extend beyond normal business hours. It combines the advantages of i2 Web-based support with standard case escalation and resolution processes designed to adequately serve customers with basic service needs. i2Silver includes the following features:

- Support coverage eight hours a day, five days a week
- Software and documentation upgrades
- Access to i2's eSupport for 2 designated support contacts
- One year introductory membership to the RHYTHM Users Group
- Online customer feedback
- LiveCheck
- Proactive notification service
- Solution acceptance planning

A.5.1.2 i2Gold

The i2Gold program helps the customer develop a more personalized and consistent partnership with the i2 Customer Support Group. i2Gold is a comprehensive program that combines support during normal business hours

with a round-the-clock on call service to provide highly responsive and effective support to customers that depend on i2 to run their business. The i2Gold program offers all of the features within i2Silver. It includes the following additional benefits:

- Support coverage 24-hours-a-day, seven days-a-week on call for fatal production issues
- LiveCheckPlus
- Monthly status summary
- Assigned support consultant
- Mission critical access
- Priority case handling
- · Solution enhancement and upgrade support
- Early Availability Program Eligibility
- First line support for select third party products
- Access to i2 eSupport for up to six designated support contacts

A.5.1.3 i2Platinum

i2Platinum is i2's most comprehensive customer support program. It provides a proactive approach to problem prevention and resolution to customers that cannot afford downtime in their mission critical business applications. i2Platinum is designed to ensure maximum productivity in the business environment by promoting worldclass reliability through proven best practices, dedicated ownership, and round-the-clock support. The i2Platinum program offers all of the features within i2Gold and i2Silver. It includes the following additional benefits:

- Support coverage 24 hours-a-day, seven days-a-week
- Advanced solution acceptance planning
- Access to i2 eSupport for unlimited number of support contacts
- Yearly on-site reviews
- Dedicated support consultant
- Assigned customer success manager
- Parallel environment hosting
- Accelerated response and resolution
- Guaranteed 15 minute worldwide emergency response

A.5.2 Program details

This section provides details about the i2 customer support program.

A.5.2.1 Support coverage

The coverage that is available to customers varies with the support program. i2Silver customers are covered eight hours-a-day, five days-a-week. i2Gold customers have the added benefit of an on-call service that is available round-the-clock to address fatal production issues.

i2Platinum customers are entitled to 24 hours-a-day, seven days-a-week of support coverage. All issues reported to support are tracked and maintained on a central database that is accessible through eSupport. Once an issue is reported, a support consultant is assigned to the issue in accordance with the severity of the problem being encountered.

A.5.2.2 Software and documentation upgrades

i2 provides customers with free ongoing software and documentation upgrades for all the products that a customer has licensed as long as the customer maintains a valid and current maintenance agreement.

All supported upgrades include documentation. i2 ships one set of hardcopy documentation per customer when available. Additional copies of hardcopy documentation can be provided at an additional cost that is negotiated when the initial license contract is signed or at the time the request. First time shipments are automatically shipped once the license agreement is approved. Consequent shipments must be requested by the Designated Customer contact and are approved by the i2 legal department before shipping.

A.5.2.3 eSupport

i2 eSupport provides customers round-the-clock access to customer support through real-time issue monitoring, online case submissions, solution research capabilities, documentation downloads, and a host of other features. To request access to eSupport, log on to: http://www.support.i2.com

i2 restricts eSupport access to the two or six Designated Customer contacts for i2Silver and i2Gold, but it is unlimited for i2Platinum.

A.5.2.4 i2 User Group

The i2 User Group is a nonprofit organization that consists of i2 customers and partners (third-party vendors and consulting companies) who share the goal of partnering with i2 to improve the value delivery of i2 solutions. The i2 User Group creates forums in the form of meetings, conferences, and discussion groups to provide feedback that influences product/solution direction within i2.

i2 User Group members enjoy such privileges as online enhancement voting, preview to future enhancements and access to discussion groups. i2 sponsors a one-year introductory membership for all customers to the i2 User Group.

For additional information on the i2 User Group, see: http://www.i2-usergroup.org/

A.5.2.5 LiveCheck and LiveCheckPlus

i2's unique LiveCheck service evaluates the operation readiness and conducts a formal transition of customers going live with the i2 solution.

i2Gold and i2Platinum programs include LiveCheckPlus, which augments LiveCheck with an on-site readiness. LiveCheckPlus also involves a proactive role by the assigned support consultant in preparing for the go-live phase during which they participate in implementation/solution reviews and the evaluation and execution of implementation test plans.

On-site audits are conducted on a mutually agreed to, as needed, basis. i2Gold and i2Platinum customers are entitled to a pre-determined number of free consulting hours. This is based on the nature of the implementation and the details of the contract between i2 and the customer.

A.5.2.6 Proactive notification service

i2 proactively broadcasts important notifications to customers by e-mail. Notifications are tailored to the customer, based on i2 solutions that have been licensed. To receive these notifications, customers must register their designated customer contacts on eSupport.

A.5.2.7 Solution Acceptance, Advanced Solution Acceptance Planning

A successful rollout of the i2 solution involves careful planning for the acceptance process. Through the implementation phase, i2 customer support shares its extensive experience and proven i2 best practices, including the RHYTHM implementation test plan (RITP) methodology, to put a customer on course to a successful ownership of an i2 solution.

i2Platinum customers receive additional guidance and training through customized on-site workshops and acceptance test development sessions conducted by a dedicated customer solution management team. On-site sessions are conducted on a mutually agreed to, as needed, basis.

i2Platinum customers are entitled to a pre-determined number of free consulting hours. This is based on the nature of the implementation and the details of the contract between i2 and the customer.

A.5.2.8 Monthly status summary

i2Gold and i2Platinum customers receive a monthly summary of their cases from the support consultant assigned to them. The summary includes case statistics, status updates, and feedback on how we can continue to work together to further improve the response and resolution times of issues.

A.5.2.9 Assigned versus dedicated support consultant

i2Gold and i2Platinum customers are entitled to an assigned support consultant for each product/solution. The assigned support consultant is identified prior to the go-live phase. They work as a single point of contact to coordinate all issues reported by the customer.

A support consultant may be assigned to more than one customer. They prioritize the resolution of issues reported by their customer based on severity.

i2Platinum customers have the privilege of having a support consultant dedicated to their needs. The primary responsibility of a support consultant dedicated to a customer is to resolve the issues of their customer irrespective of other issues in their work queue. The dedicated support consultant is the first level of escalation for any customer issues.

A.5.2.10 Mission critical access

In a mission-critical environment, rapid resolution to fatal or critical issues may depend on the ability of the support consultant to have immediate access to the environment. In the case of i2Gold and i2Platinum customers, i2, with the cooperation of the customer, establishes remote access to the customer's development, QA, or test environment. i2 handles the cost of software and hardware required for this access at its end, provided the customer accepts similar costs at their end in addition to the cost of maintaining the access.

A.5.2.11 Priority case handling

Throughout the life cycle of a support issue, issues reported by i2Gold and i2Platinum customers are treated with higher priority than issues reported by i2Silver customers, given that the severity of the cases are identical.

A.5.2.12 Solution enhancement support

i2 is committed to the continuous improvement of its i2 solutions to help customers generate even greater value with each software upgrade. i2Gold and i2Platinum customers benefit from the experience of their assigned/dedicated support consultant. The consultant provides modeling support to continuously enhance and upgrade their i2 solution to use new features and functionality.

i2Gold and i2Platinum customers are entitled to a pre-determined number of free modeling support. This is based on the nature of the implementation and the details of the contract between i2 and the customer.

A.5.2.13 Early availability program eligibility

i2Gold and i2Platinum customers are eligible to apply for the early availability program. The early availability program provides the customer with the opportunity to test a software release in their own environment prior to the general customer release. The customer can ensure that the software meets their requirements and that it functions correctly in their environment.

The early availability program enables customers to identify and report problems with the software during the product development cycle. Acceptance into the early availability program is at i2's discretion.

A.5.2.14 First level support for third-party products

i2Gold and i2Platinum customers that want to work through i2 for all their application support needs that encompass their solution can now choose to do so. i2 publishes a list of the third-party products it currently supports. i2 works with customers to investigate the possibility of providing first-level support to additional third-party products on an as needed basis.

A.5.2.15 Yearly on-site reviews

Every year, an i2Platinum customer is entitled to a comprehensive on-site review. This review includes solution model and process reviews, discussions on the business value of available solution enhancements, and requirements gathering for future solution enhancements.

On-site reviews are conducted on a mutually agreed to, as needed, basis. i2Platinum customers are entitled to a pre-determined number of free consulting hours. This is based on the nature of the implementation and the details of the contract between i2 and the customer.

A.5.2.16 Assigned customer success manager

i2Platinum customers are entitled to an assigned customer success manager identified prior to the go-live phase who is responsible for providing short, medium, and long-term suggestions for the continued effective use of i2 software. The assigned customer success manager also plays the role of a program manager. They are dedicated to ensuring complete customer satisfaction and are a single point of contact for all second level escalations from the dedicated support consultant.

A.5.2.17 Parallel environment hosting

i2 hosts the environment of i2Platinum customers to proactively verify the impact of software upgrades and to quickly replicate issues that are particular to the customer environment. i2 supports the upgrade and maintenance, but the customer has to bear all costs associated with hardware, operating systems, third-party products, middleware, and setup of the environment.

A.5.2.18 Accelerated response and resolution

i2Platinum customers are entitled to accelerated response and resolution to their issues compared to similar issues reported by i2Silver and i2Gold customers. This, combined with priority case handling, ensures that i2Platinum customers are placed on the high velocity track to success with their RHYTHM solution.

A.5.2.19 Guaranteed fifteen minute worldwide emergency response

i2Platinum customers that encounter a fatal production issue are guaranteed a fifteen minute response irrespective of the geographical location where the emergency occurs.

A.5.2.20 i2 support response levels

Response levels from i2 customer support are defined in Table 21.

Support response level	
First Level	Verbal acknowledgement of receipt of problem report and identification of individual assigned to resolve problem
Second Level	Patch, fix or acceptable workaround provided
Final Level	Official correction, update, or new release including documentation

Table 21. Response levels

— Note

i2's ability to resolve customer issues depends, in some cases, on the ability of the Designated Customer Contacts to provide accurate and detailed information. They must also be able to conduct diagnostic and test activities that aid the i2 Support Consultant handling the issue to replicate/reproduce the issue. All Designated Customer Contacts be trained in using i2 solutions. They must also be prepared to devote time and resources to working with i2 Support to resolve issues.

Support response and resolution goals are defined in Table 22 and Table 23.

able 22.	Standard	response	and	resolution	for	i2Silver	and	i2Gol	а
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Severity code	First level	Second level	Final level	Service level goal
Now (Severity 1)	1-2 hours	72 hours	Next production or maintenance release	97.5%
High (Severity 2)	6 hours	96 hours	Next production or maintenance release	95%
Medium (Severity 3)	72 hours	60 days	Next Major Release	95%
Low (Severity 4)	5 days	90 days	To be agreed upon	95%

Severity code	First level	Second level	Final level	Service level goal
Now (Severity 1)	1 hour	24 hours	Within 30 days	99.9%
High (Severity 2)	2 hours	48 hours	Within 30 days	99%
Medium (Severity 3)	24 hours	30 days	Within 30 days	99%
Low (Severity 4)	24 hours	60 days	To be agreed upon	99%

Table 23. Accelerated response and resolution for i2Platinum

A.5.3 i2 corporate Web site, education, and training

The i2 corporate Web site is located at: http://www.i2.com

i2 Education Services offers a wide variety of classes to their customers and alliance partners presented in classroom and self-paced study formats. You can access class information as a training link at http://www.support.i2.com or directly at one of the following Web sites:

- http://i2u.i2.com/
- http://mach1.i2.com/i2training.nsf?OpenDatabase

A.5.4 PLANET

PLANET is a series of supply chain management user conferences. They are held year-round in various international locations sponsored by i2. They are becoming the premiere resource for information, education, and opportunities to help enterprises around the globe gain competitive advantage in the digital economy. For additional information on PLANET, visit the Web site at: http://www.planet.i2.com



Appendix B. Additional IBM products or utilities

This appendix presents installation and usage information for additional IBM products or utilities that can be used with or by the i2 products on the iSeries server.

B.1 iSeries Tools for Developers PRPQ (5799-PTL)

IBM has packaged some helpful tools together into a Product Request for Pricing Quote (PRPQ) called *iSeries Tools for Developers* (5799-PTL) that implementors or consultants may need when working with i2 products on the iSeries server. The tools include for example the Perl scripting language, the ez/Emacs editors, and the gzip compression/decompression utility.

This section explains how to install the PRPQ and offers usage information.

B.1.1 Overview

The IBM iSeries Tools for Developers contains various tools that are designed to improve and enhance the development environment of the iSeries server by providing a wide array of tools to aid in development, building, and porting of iSeries applications. New, existing, and enhanced tools are included that enable a developer to take advantage of iSeries server development capabilities.

The iSeries Tools for Developers package makes it possible to:

- · Improve the iSeries server development environment
- Increase the iSeries server application developer's productivity

A wide variety of tools are provided to aid in tasks, such as:

- Editing
- Managing files
- · Building applications

The tools come from a variety of sources. Some tools may be familiar to developers, because they were ported from other platforms. Other tools are newer and specific to the iSeries server.

This product takes advantage of the different environments found on the iSeries server, such as the command line, Qshell, and the OS/400 Portable Application Solutions Environment (OS/400 PASE). Developers who are accustomed to working in a certain environment can remain in that environment with some tools and take advantage of the tools and features from the other environments.

Note that the iSeries Tools for Developers PRPQ is not translated and remains English only. This PRPQ installs and runs correctly on any national language version, but all user interfaces are provided in the English language only. Due to the limited testing of PRPQs, most programs contained in the product are provided "as is".

For additional information on the PRPQ, see the iSeries Tools for Developers Web site at: http://www.iseries.ibm.com/developer/factory/tools/index.html

B.1.2 Tools list

The tables in this section list the tools that are currently shipped as part of the iSeries Tools for Developers PRPQ. They are grouped by functional category and contain the following information about each tool:

- Tool name
- The prerequisites for each tool, where:

```
-p = OS/400 PASE
```

- x = Xserver (for X-window based tools)
- The interface that the tool is callable from, where:

$$-c = CL$$

- q = Qshell
- -p = OS/400 PASE
- A description

OS/400 PASE is an integrated runtime environment that provides simplified porting of UNIX applications. It provides a broad set of AIX interfaces, in a runtime that allows many AIX binaries to execute directly on the PowerPC processor of the iSeries server. PASE is available as OS/400 option 33, a separately priced feature, in V4R5M0 and V5R1M0.

For additional information on PASE, go to the Web site at: http://www.iseries.ibm.com/developer/factory/pase/index.html

Qshell is a UNIX-style command environment. It consists of two parts:

- The shell interpreter (or qsh)
- A set of utilities (or commands)

Together, the shell interpreter and utilities provide a powerful, standards-based scripting environment. For additional information on Qshell, see the Web site at: http://www.iseries.ibm.com/developer/qshell/index.html

To run several tools in this PRPQ, you need software that runs on the client called an *Xserver*. Since ez, for example, is a UNIX-based application, it uses the X Window System to display its graphical windows.

X is a client server protocol. *Xclient* is actually the application that runs on the system (ez in our case). *Xserver* is the process that takes care of managing your screen, mouse, keyboard, and so on. If your client is a Linux or AIX box, the Xserver is included and runs as soon as you "start X" or enter the non-green screen graphical mode on your system.

If you are running on a Windows client, you need a product like Hummingbird Exceed, which emulates an Xserver. Freeware alternatives to Exceed include VNC and VNCviewer, both of which you can also use. For additional information on Exceed or VNC, visit the following Web sites:

- http://www.hummingbird.com/products/nc/exceed/
- http://www.uk.research.att.com/vnc/
For information on downloading and installing VNC on an iSeries server, see B.1.7, "Installing and using Virtual Network Computing (VNC)" on page 576. Table 24 lists the formatted output tools.

Table 24.	Formatted	output tools
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Tool name	Prerequisites	Interface Description	
getjoblog	p,x	С	Display job log in ez or other editor
getsplf	p,x	с	Display any spooled file in ez or other editor
getcmdsplf	p,x	С	Display results of commands such as WRKACTJOB in ez or other editor

For additional information on these formatted output tools, visit the following Web sites:

• getjoblog:

http://www.iseries.ibm.com/developer/factory/tools/getjoblog.html

• getsplf: http://www.iseries.ibm.com/developer/factory/tools/getsplf.html

• getcmdsplf:

http://www.iseries.ibm.com/developer/factory/tools/getcmdsplf.html

Table 25 lists the edit tools.

Table 25. Edit tools

Tool name	Prerequisites	Interface	Description
datacat	p	p	Used to concatenate two files that contain ez editor styles
delcr	р	p	Delete or add Carriage Returns or Line Feeds
edtmbr	p,x	с	Edit a database member in ez or other editor
edtstmf	p,x	c,q,p	Edit an IFS file in ez or other editor, optionally converting to different code page first
ez	p,x	c,q,p	ez editor
ez2ascii	р	р	ez2xxx convert stylized text to other formats
ez2other	р	р	ez2xxx convert stylized text to other formats
ez2plain	р	р	ez2xxx convert stylized text to other formats
ez2punchcard	р	р	ez2xxx convert stylized text to other formats
Emacs	p,x	c,p	Emacs text editor
ezmrg	p,x	c,q,p	Compare and merge files
mred	р,х	c,q,p	Edit ez files without styles (shows control characters)

Tool name	ol name Prerequisites		Description
mrhex	p,x	c,q,p	Edit files in ASCII or EBCDIC
review	p,x	c,p,q	Online review tools. Make view comments

For additional information on Emacs, you can view the GNU Emacs manual on the Web at: http://w3.pppl.gov/info/emacs/

Table 26 lists the build tools.

Table 26. E	Build tools
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Tool name	Prerequisites	Interface	Description
bison v1.25		c,q	GNU, parser generator and upwardly compatible with yacc
debugheap		с	Service program that searches for memory leaks
flex v2.5.4		c,q	GNU, produces lexical analyzers
gawk v3.0.3		c,q	GNU, pattern matching utility and upwardly compatible with awk
gmake v3.77		c,q	GNU version of make
icc		c,q	Invokes ILE C or ILE C++ compiler from Qshell
ld		c,q	Used to build iSeries service programs
makedepend		c,q	GNU, find file dependencies utility

For additional information on these build tools, you can visit the following Web sites:

- **bison**: http://www.gnu.org/manual/bison-1.25/html_mono/bison.html
- debughelp:
- http://www.iseries.ibm.com/developer/porting/debug_heap/index.html
- flex: http://www.gnu.org/manual/flex-2.5.4/html_mono/flex.html
- gawk: http://www.gnu.org/manual/gawk-3.0.3/html_mono/gawk.html
- gmake: http://www.delorie.com/gnu/docs/make/make_toc.html
- icc: http://www.iseries.ibm.com/developer/factory/tools/icc1.pdf
- Id: http://www.iseries.ibm.com/developer/factory/tools/icc1.pdf
- makedepend: http://hpcc.engin.umich.edu/CFD/local/makedepend.html

Table 27 lists the file management tools.

Table 27. File management tools

Tool name	Prerequisites	Interface	Description
cpio v2.4.2		c,q	GNU, copies file archives to and from disk
del		c,q	Similar to remove, but also removes symbolic links

Tool name	Prerequisites	Interface	Description
dspdirinf		c,q	Displays IFS directory sizes and structure
gzip v1.2.4		c,q	GNU, compresses and decompresses files
qar		c,q	Utility for creating, modifying, and extracting from archives
runcmddir		с	Allows a user to run a command against an entire IFS directory

For additional information on these file management tools, you can visit the following Web sites:

- cpio: http://www.delorie.com/gnu/docs/cpio/cpio_toc.html
- **del**: http://www.iseries.ibm.com/developer/factory/tools/icc1.pdf
- dspdirinf:

http://www.iseries.ibm.com/developer/factory/tools/dspdirinf.html

- gzip: http://www.gnu.org/manual/gzip-1.2.4/html_mono/gzip.html
- **qar**: http://www.iseries.ibm.com/developer/factory/tools/icc1.pdf
- runcmddir:

http://www.iseries.ibm.com/developer/factory/tools/runcmddir.html

Table 28 lists the miscellaneous tools.

Table 28. Miscellaneous tools

Tool name	Prerequisites	Interface	Description
ASCII Telnet server	p	с	Enablement for TTY-based, text mode, ASCII applications, like vi
Perl	р	р	Perl 5.005_03 scripting language
pflow	р	р	Flow a paragraph to remove new lines
pipescript	p,x	р	Dump stdout to a resizable window
ps		q	Displays job information from Qshell
unflow	р	р	Split stdout into lines
xcut	р	р	Send text to cut buffer or print out cut buffer

For additional information on these miscellaneous tools, you can visit the following Web sites:

ASCII Telnet server:

http://www.iseries.ibm.com/developer/factory/tools/telnet.pdf

- Perl: http://www.perl.org/
- **ps**: http://www.iseries.ibm.com/developer/factory/tools/ps.pdf

B.1.3 Installing the PRPQ

To install the PRPQ, follow these steps:

- 1. Verify that the following prerequisites for the PRPQ are installed on the iSeries server:
 - Operating system OS/400, V4R5M0 (5769-SS1) or V5R1M0 (5722-SS1)
 - Qshell Interpreter, option 30 of OS/400, must be installed to use some of the tools
 - PASE option 33 of OS/400 must be installed to use some of the tools
 - An X-windowing application must be running on the client to use some of the tools

To determine if these products are installed, you can go to the Work with Licensed Programs menu using GO MENU (LICPGM) and then select option 10 (Display installed licensed programs).

Or you can use the Display Software Resources (DSPSFWRSC) command and press Enter. Then you see a list of software products installed on the system (as shown in Figure 593). Page down and review the panels to verify that the required Licensed Program Products (LPPs) are installed.

Note that PASE appears as Private Address Space Environment on V4R5M0. This was the internal development name and when PASE was formally announced by IBM. It is officially named Portable Application Solutions Environment. On V5R1M0, it appears as Portable App Solutions Environment.

			Display Software Resources		
			Sys	stem:	I2
Resource					
ID	Option	Feature	Description		
5769SS1	30	5050	OS/400 - QShell Interpreter		
5769SS1	30	2924	OS/400 - QShell Interpreter		
5769SS1	31	2924	OS/400 - Domain Name System		
5769SS1	32	5050	OS/400 - Directory Services		
5769SS1	32	2924	OS/400 - Directory Services		
5769551	33	5111	OS/400 - Private Address Space Environment		
5769SS1	34	5050	OS/400 - Digital Certificate Manager		
5769SS1	34	2924	OS/400 - Digital Certificate Manager		
5769SS1	35	5050	OS/400 - Cryptographic Service Provider		
5769SS1	35	2924	OS/400 - Cryptographic Service Provider		
5769SS1	36	5112	OS/400 - PSF/400 1-20 IPM Printer Support		
5769SS1	37	5113	OS/400 - PSF/400 1-45 IPM Printer Support		
5769SS1	38	5114	OS/400 - PSF/400 Any Speed Printer Support		
				More.	• •
Press Ent	er to co	ntinue.			
F3=Exit	F11=Dis	play libr	aries/releases F12=Cancel		
F19=Displ	ay trade	marks			
	-				

Figure 593. DSPSFWRSC command results showing option 30 and option 33 of OS/400

To determine the software product release level, press the F11 function key. Then you see a panel such as the one in Figure 594. Verify that the release level for OS/400 and options 30 and 33 are V4R5M0 or V5R1M0.

			Display	Software Res	ources	Svatem.	т2
Resource			Feature			Бувсеш.	12
ID	Option	Feature	Type	Library	Release		
5769SS1	30	5050	*CODE	QSHELL	V4R5M0		
5769SS1	30	2924	*LNG	QSHELL	V4R5M0		
5769SS1	31	5050	*CODE	QDNS	V4R5M0		
5769SS1	31	2924	*LNG	QDNS	V4R5M0		
5769SS1	32	5050	*CODE	QDIRSRV	V4R5M0		
5769SS1	32	2924	*LNG	QDIRSRV	V4R5M0		
5769SS1	33	5111	*CODE	QPASE	V4R5M0		
5769SS1	34	5050	*CODE	QICSS	V4R5M0		
5769SS1	34	2924	*LNG	QICSS	V4R5M0		
5769SS1	35	5050	*CODE	QCCA	V4R5M0		
5769SS1	35	2924	*LNG	QCCA	V4R5M0		
5769SS1	36	5112	*CODE	QAFPLIB1	V4R5M0		
5769SS1	37	5113	*CODE	QAFPLIB2	V4R5M0		
5769SS1	38	5114	*CODE	QAFPLIB3	V4R5M0		
Press Ent	er to co	ntinue.					
F3=Exit	F11=Dis	play desc	riptions	F12=Cancel	F19=Display	trademarks	

Figure 594. DSPSFWRSC command results showing OS/400 version and release levels

See the documentation that comes with each product for instructions on installing the software on your iSeries server. Refer to *Software Installation*, SC41-5120, which contains information for installing OS400 and LPPs.

You can also go to the Work with Licensed Programs menu using GO MENU(LICPGM) and then select option 11 (Install licensed programs). Or you can use the Restore Licensed Program (RSTLICPGM) command directly.

- 2. To start the installation, enter the Restore Licensed Program (RSTLICPGM) command and press the F4 function key to prompt the command.
- 3. Type 5799-PTL for Product, OPT01 for Device, and 2924 for Language for licensed program.

If you are not sure what your optical device is named, you can use the Work with Configuration Status (WRKCFGSTS) command to verify the name of your optical device:

WRKCFGSTS CFGTYPE (*DEV) CFGD (*OPT)

This product is provided in English only. However, it installs and runs correctly on any national language version. The following national language versions are provided with the PRPQ:

- 2924 English mixed case, single byte character set
- 2984 English mixed case, double byte character set
- 2950 English upper case, single byte character set
- 2938 English upper case, double byte character set

If English is the primary language of your iSeries server, the default value LNG(*PRIMARY) is sufficient. An example is shown in Figure 595. Press Enter.

r		
Restore Licen	ised Program (F	RSTLICPGM)
Type choices, press Enter.		
Product	 5799PTL OPT01 *BASE *ALL 2924 *NONE *FIRST *ONLY *MOUNTED 	Character value Name, *SAVF *BASE, 1, 2, 3, 4, 5, 6, 7 *ALL, *PGM, *LNG Character value, *PRIMARY *NONE, *PRINT Character value, *FIRST Character value, *ONLY, *NO
End of media option	*REWIND	*REWIND, *LEAVE, *UNLOAD
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additiona F24=More keys	More al parameters F12=Cancel S

Figure 595. Prompt of the RSTLICPGM command to install 5799-PTL

You could also simply issue the following command:

RSTLICPGM LICPGM (5799PTL) DEV (OPT01) LNG (2924)

4. To verify that the licensed program restored correctly, you can use the Display Job Log (DSPJOBLOG) command and press Enter. Then press the F10 function key to display detailed messages. Press the F18 function key to go to the bottom of the panel. An example is shown in Figure 596.

		Displa	ay All Mes	sages		
Job	: QPADEV0005	5 User	: I20WN	ER Number	System:	I2 080724
Obje Link Obje Obje Obje Ubje Link Obje *LNG	ct changed. removed. ct copied. ct changed. ct not found. ct copied. ct changed. removed. ct copied. ct changed. objects for M stored.	EV 2924 for p	product 57	99PTL option *E	ASE releas	e *FIRST
Obje >> dspjo	cts for produc oblog	t 5799PTL opt	tion *BASE	release *FIRSI	' restored.	
Press En	- ter to continu	10.				Bottom
F3=Exit	F5=Refresh	F12=Cancel	F17=Top	F18=Bottom		

Figure 596. Using the DSPJOBLOG command to verify that the PRPQ installed correctly

- 5. The PRPQ is installed in the QSYS library file system in the product library QAPTL and in the Integrated File System (IFS). The two product directories created in the IFS are:
 - /QIBM/ProdData/DeveloperTools
 - /QOpenSys/QIBM/ProdData/DeveloperTools

To see the contents of the QAPTL library, you can use the Display Library (DSPLIB) command:

DSPLIB LIB (QAPTL)

An example is shown in Figure 597.

Display Library						
Libr Type Crea	Library : QAPTL Number of objects . : 101 Type : PROD ASP of library : 1 Create authority . : *CHANGE					
Type options, press Enter. 5=Display full attributes 8=Display service attributes						
Opt	Object	Туре	Attribute	Size	Text	
	ADDPATH	*PGM	CLE	40960		
	ATELNETD	*PGM	CLE	36864	ASCII TELNET DAEMON	
	BISON	*PGM		237568	BISON	
	BRKHEY	*PGM	CLLE	32768	BREAK HANDLING PROGRA	
	CHGPTLSSNA	*PGM	CLLE	36864	COMMAND PROCESSING PR	
	CPIO	*PGM	CLE	131072	CPIO	
	DEL	*PGM		36864	DEL	
	DSPDIRINF	*PGM	CLE	32768	DISPLAY DIRECTORY INF	
	EDIMBRCPP	*PGM	CLLE	40960	EDIT MEMBER CPP	
	EDISIMFCPP	*PGM	CLE	32768	EDIT STREAM FILE CPP	
	ENDMAIL	*PGM	CLLE	32768	END SENDMAIL	
					More	
F3=E	xit F12=Car	ncel F17	=Top F18=Bot	tom		
(C)	COPYRIGHT IB	M CORP. 19	80, 2000.			

Figure 597. Using the DSPLIB command to verify that library QAPTL exists and has objects in it

To see the contents of the directories, you can use the Edit File (EDTF) command:

EDTF STMF('/QIBM/ProdData/DeveloperTools/') EDTF STMF('/QOpenSys/QIBM/ProdData/DeveloperTools/')

Examples are shown in Figure 598 and Figure 599.

Directory: /QIBM/	ProdData/Develope	rTools/		
Position to :	Recon	d: 1	of 5	
New File :				
2=Edit 4=Delete	File 5=Display	6=Path Size	e 9=Recursive De	lete
Opt Name	Size	Owner	Changed	Used
qsh	*DIR	QSYS	11/12/01 13:36	11/12/01 13:36
pase	*DIR	QSYS	11/12/01 13:36	11/12/01 13:36
atk	*DIR	QSYS	11/12/01 13:36	11/12/01 13:36
license	*DIR	QSYS	11/12/01 13:38	11/12/01 13:38
readme.txt	16K	QSYS	11/12/01 13:48	11/12/01 13:48
				Bottom
F3=Exit F12=Ca (C) C	ncel F16=Sort OPYRIGHT IBM CORP	F17=Positi . 1980, 200	on to F22=Displ	ay entire field

Figure 598. Using the EDTF command to verify that /QIBM/ProdData/DeveloperTools/ exists

Directory: /QOpenSys/Q	Directory: /QOpenSys/QIBM/ProdData/DeveloperTools/						
Position to :	Recor	d: 1 c	of 13				
New File :							
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete			
Opt Name	Size	Owner	Changed	Used			
bin	*DIR	QSYS	11/12/01 13:38	11/14/01 16:19			
lib	*DIR	QSYS	11/12/01 13:38	11/14/01 16:19			
vnc	*DIR	QSYS	11/12/01 13:38	11/14/01 16:19			
bash	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
fonts	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
icewm	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
imapd	*DIR	QSYS	11/12/01 13:48	11/14/01 16:19			
squid	*DIR	QSYS	11/12/01 13:48	11/14/01 16:19			
php	*DIR	QSYS	11/12/01 13:48	11/14/01 16:19			
perl	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
sendmail	*DIR	QSYS	11/12/01 13:48	11/14/01 16:19			
emacs	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
ghostscript	*DIR	QSYS	11/12/01 13:36	11/14/01 16:19			
				Bottom			
F3=Exit F12=Cancel	F16=Sort	F17=Position	n to F22=Displa	ay entire field			
(C) COPYRI	GHT IBM CORP	. 1980, 2000.					
<u>,</u>							

Figure 599. Using EDTF to verify that /QOpenSys/QIBM/ProdData/DeveloperTools/ exists

B.1.4 Documentation

The only documentation available outside of the Web site is in the README member in the README file in the QAPTL library. You can access this same file through the Integrated File System in the directory and file name

/QIBM/ProdData/DeveloperTools/readme.txt. To view the file in the QAPTL library, you can use the Display Physical File Member (DSPPFM) command:

DSPPFM FILE (QAPTL/README)

To view this file in the IFS, you can use the EDTF command:

EDTF STMF('/QIBM/ProdData/DeveloperTools/readme.txt')

You can also go to the PTLMAIN menu by using GO MENU (QAPTL/PTLMAIN) and then selecting option 10 (Configuration and setup information). An example of using option 10 is shown in Figure 600.

Browse : /QIBM/PRODDATA/DEVELOPERTOOLS/README.TXT Record : 1 of 219 by 18 Control :	Column :	1 65 k	уy
+1+2+3+4+5+. **********Beginning of data***********************************	6+	7	3.
INSTALLATION AND SETUP			
Prerequisites			
o OS/400(R) V4R5M0 or later.			
o Portable Application Solutions Environment (PASE), option 33 of the Operating System (SS1), must be inst to use some of the tools.	alled		
Installation			
This product is provided in English only, however it wil	l install		
F3=Exit F10=Display Hex F12=Cancel F15=Services (C) COPYRIGHT IBM CORP. 1980, 2000.	F16=Repeat fi	nd F19=Le	∍£

Figure 600. Using option 10 from the QAPTL/PTLMAIN menu to view readme.txt

B.1.5 Setup

After the installation is complete, additional setup is required by the user. This is accomplished by using the Start Tools for Developers (STRPTL) command.

The STRPTL command sets certain environment variables that are unique to a user's job and modify the library list. The STRPTL command is provided to initialize these variables and perform the other setup tasks. Users are prompted to enter some values, while defaults are provided for all values except for the first parameter, the name of the client.

– Note –

The STRPTL command should be run each time a user signs on to the iSeries server to use the iSeries Tools for Developers PRPQ. It is not needed in all cases such as when using Perl.

The parameters for the STRPTL command are described in the following list:

• **CLIENT**: Specifies the name of the client device where you want to display X-window panels. Alternatively this can be the IP address of the client device. Typically this is the name of the PC or AIX box you are using to access the iSeries server.

The special value *VNC can be used to start a VNC server or connect to an existing VNC server session. If *VNC is specified, the DISPLAY environment variable is set to the first Xvnc process found for your user ID. If no Xvnc server is found, the vncserver command is run to start a server.

- EDITOR: Specifies the name of the Editor you want iSeries Tools for Developer commands to use. Possible choices are EZ or EMACS. This parameter defaults to EZ. For example, if this parameter is defaulted or EZ is specified, the GETJOBLOG command uses ez to display the job log requested.
- MNU: Specifies whether you want to view the main iSeries Tools for Developer menu (PTLMAIN) after setup is complete. This parameter defaults to *NO.
- **DSPNBR**: This value is optionally added to the DISPLAY environment variable. Some PC or AIX devices have more than one display. This parameter can be used to request that windows be presented on other than the default display. Generally you should leave this parameter as the default value of 0.

Figure 601 shows an example of using the F4 function key to prompt the Start Tools For Developers (STRPTL) command and pressing the F10 function key for additional parameters.

Start Tools	For Developers	s (SIRPIL)
Type choices, press Enter.		
Name of client or *VNC	120WNER	
Name of preferred editor Display main menu	EZ *NO	EZ, EMACS *NO, *YES
Additic	onal Parameters	5
Display number	0	0-9
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	Bottom F13=How to use this display

Figure 601. Prompt of the STRPTL command to set up the PRPQ for a user

Press Enter to run the command.

If you use *VNC instead of the name or IP address of a PC, then the system displays another panel with the results of its search for a running VNC server. This is just a status panel, as shown in the example in Figure 602, so press Enter to close it.

Running Xvnc job found, exiting 1 Found vncserver DISPLAY=I2:1 Press ENTER to end terminal session.
===>
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top F18=Bottom F19=Left F20=Right F21=User Window

Figure 602. Status panel from STRPTL *VNC showing results of VNC server search

After you run the STRPTL command, the setup is complete. It may perform some or all of the following actions:

- Create directory /home/I2OWNER/tdifs
- Create directory /home/I2OWNER/tpls
- Create directory /home/I2OWNER/notifs
- Create directory /home/I2OWNER/.icewm
- Create object /home/I2OWNER/.atkinit
- Create object /home/I2OWNER/.ezinit
- Create object /home/I2OWNER/preferences
- Create object /home/I2OWNER/bison.simple
- Create object /home/I2OWNER/tpls/wide.tpl
- Add environment variable ALTMACROPATH
- Add environment variable ANDREWDIR
- Add environment variable ATKSHELL
- Add environment variable DISPLAY
- Add environment variable HOME
- Add environment variable LOGNAME
- Add environment variable QIBM_IFS_OPEN_MAX
- Add environment variable QIBM_PASE_CCSID
- Add environment variable QIBM_PTL_EDITOR
- Add environment variable QIBM_PTL_SETUP
- Add environment variable PASE_LANG
- Add environment variable PASE LC FASTMSG
- Add environment variable PASE_LOCPATH
- Add environment variable PASE_NLSPATH
- Add environment variable PASE_PATH
- Add environment variable PATH
- Add library QAPTL to the library list

To verify that the directories and objects are created or are available, use the EDTF command:

EDTF STMF('/home/I2OWNER')

An example is shown in Figure 603.

Directo	ry: /home/120WNE	R								
Positio	n to :	Re	cor	d: 1	(of 9				
New Fil	e :									
2=Edit	4=Delete File	5=Displa	ay	6=Path Size	е	9=Recurs	ive De	lete		
Opt Nam	e	Size		Owner		Changed		Used		
tdif	s	*DIR		120WNER		11/15/01	13:25	11/15/01	13:25	
tpls		*DIR		120WNER		11/15/01	13:25	11/15/01	13:25	
.sh	history		8K	120WNER		11/15/01	13:25	11/15/01	13:25	
noti	fs	*DIR		120WNER		11/15/01	13:25	11/15/01	13:25	
.atk	init		8K	120WNER		09/12/01	13:53	09/12/01	13:53	
.ezi	nit		8K	120WNER		09/12/01	13:53	09/12/01	13 : 53	
pref	erences		8K	120WNER		09/12/01	13:53	09/12/01	13 : 53	
.ice	wm	*DIR		QSYS		11/12/01	13:41	11/14/01	16:19 /	′Q
biso	n.simple	3:	2K	120WNER		11/15/01	13:25	11/15/01	13:25	
								В	ottom	
F3=Exit	F12=Cancel	F16=Sor	t	F17=Posit	io	n to F22:	=Displ	ay entire	field	

Figure 603. Directories and objects created by the STRPTL command

To verify that the environment variables are created or are available, use the Work with Environment Var (WRKENVVAR) command:

WRKENVVAR LEVEL(*JOB)

An example is shown in Figure 604.

Work with Er	Work with Environment Vars (*JOB)						
Type options, press Enter. 1=Add 2=Change 4=Remove 5=	Display details 6=Print						
Opt Name V	Value						
QIEM_PTL_SETUP PASE_PATH PASE_LANG QIEM_PASE_CCSID PASE_LCCPATH PASE_NLSPATH PASE_LCFASTMSG LOGNAME HOME QIEM_IFS_OPEN_MAX ATKSHELL QIEM_PTL_EDITOR ANDREWDIR ALIMACROPATH DISPLAY PATH	<pre>1' /QOpenSys/usr/bin:/usr/ccs/bin:/us' > en_US.ISO8859-1' 819' /usr/lib/nls/loc' /usr/lib/nls/loc' /usr/lib/nls/msg/%L/%N:/usr/lib/nl' > true' 120WNER' /home/I20WNER' 33000' /QOpenSys/usr/bin/sh' /QIBM/ProdData/DeveloperTools/atk/' > /QIBM/ProdData/DeveloperTools/atk' /QIBM/ProdData/DeveloperTools/atk/' > 120WNER:0.0' .:/usr/bin:/QIEM/ProdData/Develope' > Bottom</pre>						
Parameters or command	Boccon						
F3=Exit F4=Prompt F5=F F12=Cancel F16=Print list F17=	Refresh F9=Retrieve F11=Display CCSIDs Top F18=Bottom F22=Display entire field						

Figure 604. Job environment variables set by the STRPTL command

For users that sign on from the same client system, we recommend that the user's initial program include the STRPTL command, along with the parameter values.

All values entered by the user as part of the STRPTL command can be changed at any time using the Change Session Attributes (CHGPTLSSNA) command found in library QAPTL or by selecting option 9 from the PTLMAIN menu.

B.1.6 Using the PRPQ main menu

The iSeries Tools for Developers PRPQ has a main menu called PTLMAIN located in library QAPTL. You can add this library to your library list using the Add Library List Entry (ADDLIBLE) command:

ADDLIBLE LIB (QAPTL)

You should see the message Library QAPTL added to library list. This is done automatically when the STRPTL command is run.

To access the menu, use the following command:

GO MENU(PTLMAIN)

An example is shown in Figure 605.

PTLMAIN	iSeries To	ools for Devel	lopers	tom: TO
Select one of the follow	ing:		Sys	Leiii: 12
 List All Tools Formatted Output Edit Tools Build Tools File Management Miscellaneous To Start Qshell Start OS/400 PAS Change Session A Configuration and 	Tools Tools ols E ttributes d Setup Ind	formation		
Selection or command ===>				Bottom
F3=Exit F4=Prompt F9 (C) COPYRIGHT IBM CORP.	=Retrieve 2000	F12=Cancel	F16=iSeries Main menu	

Figure 605. iSeries Tools for Developers PRPQ PTLMAIN main menu

Take some time to explore the various options and try different tools.

B.1.7 Installing and using Virtual Network Computing (VNC)

Some of the tools in the iSeries Tools for Developers PRPQ use the X Window System to display windows. This requires you to have a UNIX or Linux-based client as your desktop PC. Alternatively, you could run a product, such as Hummingbird Exceed, which emulates X on the Windows platform.

Yet another alternative is an open source product Virtual Network Computing. VNC is in essence a remote display system that allows you to view a computing "desktop" environment not only on the machine where it is running, but from anywhere on the Internet and from a wide variety of machine architectures. VNC source is freely available from the AT&T labs Web site at: http://www.uk.research.att.com/vnc/

However, to run this server in PASE, you need to compile the source on an AIX machine. IBM Rochester did this and packaged the files for download on a Web site. This section explains how you can download a pre-compiled OS/400 PASE ready version of VNC, restore it to a V4R5M0 or later system, and easily get started using VNC.

B.1.7.1 Installing VNC on an iSeries server and a PC

To install VNC, follow these steps:

1. Pre-create save files on your iSeries server to hold the data that is going to be downloaded from the Internet and sent to the iSeries server. Create a temporary library using the Create Library (CRTLIB) command. In our example, we use VNCSAVF.

In that library, create four save files using the Create Save File (CRTSAVF) command. Here are the commands that should be run to create the library and save files:

- CRTLIB LIB(VNCSAVF) TEXT('Library for VNC SAVFs')
- CRTSAVF FILE (VNCSAVF/VNCPASSWD)
- CRTSAVF FILE (VNCSAVF/VNC)
- CRTSAVF FILE (VNCSAVF/FONTS)
- CRTSAVF FILE (VNCSAVF/ICEWM)

You should see completion messages stating that the library and save files were created. An example of this is shown in Figure 606.

	Con	nmand Entry	D		12		
			Reques	st level:	T		
Previous commands and	l messages:						
> CRTLIB LIB (VNCSA	VF) TEXT('Lib	rary for VNC SAVFs')					
Library VNCSAVF	created.						
> CRTSAVF FILE (VNC	SAVF/VNCPASSWI)					
File VNCPASSWD o	reated in lib	rary VNCSAVF.					
> CRTSAVF FILE (VNC	SAVF/VNC)	-					
File VNC created	File VNC created in library VNCSAVF.						
> CRTSAVF FILE (VNC	SAVF/FONTS)						
File FONTS creat	ed in library	VNCSAVF.					
> CRTSAVF FILE (VNC	SAVF/ICEWM)						
File ICEWM creat	ed in library	VNCSAVF.					
	_						
				Bc	ottom		
Type command, press F	nter.						
>							
F3=Exit F4=Promot	F9=Retrieve	F10=Include detailed	message	eg			
F11-Dignlay full	F12-Cancel	F13-Information Assi	stant	F24-More k	eve		
TIT-Dispidy full	TIZ-CONCET	110-Intornacion Abbi	Deale	121-0010	CID		

Figure 606. Creating a library and save files to contain VNC code

2. On the PC to where you are going to download the files, create a folder to contain them. In our case, we call ours VNC. The four save files that you need to download are located as links from the Web site:

http://www.iseries.ibm.com/developer/factory/tools/vnc.html

Or you can access them directly from the following Web sites:

- vnc.savf: http://www.iseries.ibm.com/developer/factory/downloads/vnc.savf
- icewm.savf:
 - http://www.iseries.ibm.com/developer/factory/downloads/icewm.savf
- vncpasswd.savf:

http://www.iseries.ibm.com/developer/factory/downloads/vncpasswd.savf

fonts.savf:

http://www.iseries.ibm.com/developer/factory/downloads/fonts.savf

You also need to download the vncviewer executable and make it available on the PC or PCs that will be used with the VNC server running on the iSeries server. The executable is from the Web site:

http://www.iseries.ibm.com/developer/factory/downloads/vncviewer.exe

Or you can access it via a link from the Web at: http://www.iseries.ibm.com/developer/factory/tools/vnc.html Figure 607 shows an example of these files on a PC.

File Edit View Favorites	Tools H	Help			
່ ⇔ Back • → - 🔃 🔞 Search 📴 Folders 👹 History 📲 🧏 🗙 🕫 🕮 •					
Address C:\VNC					
Folders	x	Name 🛆	Size	Туре	Modified
🗄 🧰 TradeMatrix		fonts.savf	24,288 KB	SAVF File	11/8/2001 12:10 PM
		icewm.savf	10,791 KB	SAVF File	11/8/2001 12:10 PM
		🛋 vnc.savf	5,190 KB	SAVF File	11/8/2001 12:09 PM
🕀 📄 Windows Update Set	up File <u></u>	🔊 vncpasswd.savf	475 KB	SAVE File	11/8/2001 12:09 PM
	-	Notice viewer.exe	172 KB	Application	11/8/2001 12:09 PM
•	•	•			
5 object(s) (Disk free space: 537 MB)				39.9 MB	🛄 My Computer

Figure 607. Windows Explorer view of folder VNC after downloading files

Copy or transfer the four save files from your PC to the iSeries server. There
are different ways to accomplish this task. These may include mapping a
network drive, using Operations Navigator to drag the files from a PC to the
iSeries server, or using File Transfer Protocol (FTP), which is what we used.

To copy the files using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC to where you downloaded the files. Click Start-> Programs-> Accessories-> Command Prompt.
- b. Use the cd command to change to the directory where the files are located, which in our case is C:\VNC:

 $cd C: \setminus VNC$

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WINER in this example.
- e. Enter the password for your iSeries server user ID.
- f. Change to the iSeries server library that you created, which in our case is VNCSAVF. You have to use the FTP name format 1 (NAMEFMT 1) library system name format, which is /QSYS.LIB/LIBNAME.LIB:

cd /qsys.lib/vncsavf.lib

g. Change to binary mode:

bin

h. Transfer each save file to the iSeries server using the FTP PUT command:

```
put vnc.savf
put icewm.savf
put vncpasswd.savf
put fonts.savf
```

i. Exit FTP using the quit or bye command.

An example is shown in Figure 608.

 $C: \setminus > cd vnc$

C:\VNC>ftp i2 Connected to i2.domain.ibm.com. 220-QTCP at I2. 220 Connection will close if idle more than 5 minutes. User (i2.domain.ibm.com: (none)): **I20WNER** 331 Enter password. Password: 230 I2OWNER logged on. ftp> cd /qsys.lib/vncsavf.lib 250-NAMEFMT set to 1. 250 "/QSYS.LIB/VNCSAVF.LIB" is current library. ftp> bin 200 Representation type is binary IMAGE. ftp> put vnc.savf 200 PORT subcommand request successful. 150 Sending file to member VNC in file VNC in library VNCSAVF. 250 File transfer completed successfully. ftp: 5313792 bytes sent in 4.80Seconds 1107.96Kbytes/sec. ftp> put icewm.savf 200 PORT subcommand request successful. 150 Sending file to member ICEWM in file ICEWM in library VNCSAVF. 250 File transfer completed successfully. ftp: 11049984 bytes sent in 11.98Seconds 922.60Kbytes/sec. ftp> put vncpasswd.savf 200 PORT subcommand request successful. 150 Sending file to member VNCPASSWD in file VNCPASSWD in library VNCSAVF. 250 File transfer completed successfully. ftp: 485760 bytes sent in 0.55Seconds 881.60Kbytes/sec. ftp> put fonts.savf 200 PORT subcommand request successful. 150 Sending file to member FONTS in file FONTS in library VNCSAVF. 250 File transfer completed successfully. ftp: 24870912 bytes sent in 26.72Seconds 930.87Kbytes/sec. ftp> quit 221 QUIT subcommand received. $C: \setminus VNC >$

Figure 608. Using FTP from a PC to put the save files on the iSeries server

4. To verify that the save files on the iSeries server now contain data, use the Display Save File (DSPSAVF) command against the save files:

DSPSAVF FILE (VNCSAVF/ICEWM)

An example is shown in Figure 609.

Display Saved Objects - Save File Display level : 1 /QOpenSys/QIBM/ProdData/DeveloperTools Directory Type options, press Enter. 5=Display objects in subdirectory 8=Display object specific information Opt Object Туре Size Data Owner QSYS *DIR 65536 Yes icewm Bottom F3=Exit F11=View 2 F12=Cancel F16=Display header F22=Display entire field

Figure 609. Save file on the iSeries server after FTPing data from a PC to it

5. To restore the data out of the save files, use the Restore Object (RSTOBJ) command for the save file VNCPASSWD and the Restore Object (RST) command for the other three:

RSTOBJ OBJ (*ALL) SAVLIB (VNCSAVF) DEV (*SAVF) SAVF (VNCSAVF/VNCPASSWD)

RST DEV('/Qsys.lib/vncsavf.lib/vnc.file') OBJ(('/QOpenSys/QIBM/ProdData/DeveloperTools/vnc*')) ALWOBJDIF(*ALL)

RST DEV('/Qsys.lib/vncsavf.lib/icewm.file') OBJ(('/QOpenSys/QIBM/ProdData/DeveloperTools/icewm*')) ALWOBJDIF(*ALL)

RST DEV('/Qsys.lib/vncsavf.lib/fonts.file') OBJ(('/QOpenSys/QIBM/ProdData/DeveloperTools/fonts*')) ALWOBJDIF(*ALL)

Note that directory /QOpenSys/QIBM/ProdData/DeveloperTools is created as part of installing PRPQ iSeries Tools for Developers (5799-PTL). If you try to perform the above restores without the PRPQ installed, you will receive "object not found" errors. You can work around the error by manually creating the DeveloperTools directory using the mkdir command:

MKDIR DIR('/QOpenSys/QIBM/ProdData/DeveloperTools')

However, the recommended solution is to install the PRPQ first.

You should see completion messages stating that the objects were restored as shown in the example in Figure 610.

Command Entry I2
Request level: 1
Previous commands and messages:
> RSTOBJ OBJ (*ALL) SAVLIB (VNCSAVF) DEV (*SAVF) SAVF (VNCSAVF/VNCPASSWD)
8 objects restored from VNCSAVF to VNCSAVF.
> RST DEV('/Qsys.lib/vncsavf.lib/vnc.file') OBJ(('/QOpenSys/QIBM/ProdData/D
eveloperTools/vnc*')) ALWOBJDIF(*ALL)
Security changes occurred for 3 objects.
22 objects restored. U objects not restored.
> RST DEV('/QSys.110/VncsavT.110/10ewm.111e') OBJ(('/QUpenSys/QIBM/Produata
/Developer1001s/icewm*')) ALWOBUDIF(*ALL)
Security changes occurred for 3 objects.
32/ ODJECTS restored. U ODJECTS NOT restored.
<pre>> RST DEV('/QSys.lld/vncsavi.lld/ionts.lle') OBJ(('/Qopensys/QIBM/Produata /Devalerer#cols(fortet)) MWODDIE(tALL)</pre>
/Developer1001s/ionts*/) ALWOBODIF(*ALL)
Security changes occurred for 544 objects.
759 Objects restored. U objects not restored.
Bollom
Type command, press Enter.
F3=Exit F4=Promot F9=Retrieve F10=Include detailed messages
F11=Display full F12=Cancel F13=Information Assistant F24=More keys

Figure 610. Restoring data out of the save files using the RSTOBJ and RST commands

6. After the data is restored, you need to create a directory called .vnc off your home directory and a file called passwd in that directory that contains your encrypted iSeries server password. You can create the /home/I2OWNER/.vnc directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within a PASE QP2TERM shell:

MKDIR DIR('/home/I2OWNER/.vnc')

You should see a completion message stating that the directory was created.

7. To create the passwd file and put your password into it, use the Add Library List Entry (ADDLIBLE) command to add the VNCSAVF library to your library list:

ADDLIBLE LIB (VNCSAVF)

Then press the F4 function key to prompt the Set VNC Password (VNCPASSWD) command. Complete the following parameters:

- For the New password parameter, type your iSeries server password.
- For the New password (to verify) parameter, re-type your iSeries server password.
- For the Use HOME environment variable parameter, type *NO because we want to use the Password file name parameter to define the location of the VNC password file, which should be /home/I20WNER/.vnc/passwd.

An example is shown in Figure 611. Press Enter.

Note

The password specified in VNCPASSWD can be anything you want or different than your normal iSeries server password. As such, it does not follow normal password rules, like password expiration. Make sure that you remember this password because you need it each time you connect to a VNC server.



Figure 611. Command prompt of the VNCPASSWD command to create file .vnc/passwd

Or you could simply issue the following command:

VNCSAVF/VNCPASSWD PASSWORD(<password>) VERIFY(<password>) USEHOME(*NO) PWDFILE('/home/I2OWNER/.vnc/passwd')

You should see a completion message stating that the VNC password was successfully stored in the password file /home/I2OWNER/.vnc/passwd.

8. You must run a setup program to set up some symbolic links for the icewm window manager. Go into PASE using:

CALL QP2TERM

Then run the icewmsetup program found in directory /QOpenSys/QIBM/ProdData/DeveloperTools/icewm. Enter:

/QOpenSys/QIBM/ProdData/DeveloperTools/icewm/icewmsetup

B.1.7.2 Starting a VNC server

Start the VNC server by going into PASE using:

CALL QP2TERM

Then call the vncserver program found in the directory /QOpenSys/QIBM/ProdData/DeveloperTools/vnc:

/QOpenSys/QIBM/ProdData/DeveloperTools/vnc/vncserver

When the VNC server starts, you should see the message New 'X' desktop is <system_name>:<number>.

Each time another concurrent VNC server is started, you see a different incremental number. For example, the first server is number 1, the second server is number 2, and so on.

If you are on OS/400 V4R5M0, you may receive the error message \$ No such file or directory /QOpenSys/usr/bin/sh: /dev/null: cannot open when you try to start vncserver. In this case, you need to create the /dev/null file on your system using the touch command:

touch /dev/null

Starting vncserver now works. An example of starting vncserver is shown in Figure 612.

/QOpenSys/usr/bin/-sh								
> /QOpenSys/QIEM/ProdData/DeveloperTools/vnc/vncserver								
New 'X' desktop is I2.DOMAIN.IBM.COM:1								
Creating default startup script /home/I2OWNER/.vnc/xstartup Starting applications specified in /home/I2OWNER/.vnc/xstartup Log file is /home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.log								
\$								
> ps -elf								
FS UID PID PPID C PRI NI ADDR SZ WCHAN STIME TT	Y TIME CMD							
200000 A I20WNER 489 488 0 0 0 0 4780 16:41:07 -	0:00 /QOpenSys/usr/bin/-							
200000 A I20WNER 499 1 0 0 0 0 2716 16:41:23 -	0:00							
/QOpenSys/QIBM/ProdData/DeveloperTools/vnc/Xvnc :1 -desktop X -httpd								
/QOpenSys/QIBM/ProdData/DeveloperTools/vnc/classes -auth								
200000 A 120WNER 503 1 0 0 0 0 1316 16:41:27 -	0:00							
/QOpenSys/QIBM/ProdData/DeveloperTools/icewm/bin/icewm								
200000 A I20WNER 504 489 0 0 0 0 1836 16:41:31 -	0:00 ps -elf							
\$								
===>								
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap								
F13=Clear F17=Top F18=Bottom F21=CL command entry								

Figure 612. Starting a VNC server in a PASE QP2TERM shell

In this example, you can see that a default startup script called *xstartup* was created and placed in directory /home/I2OWNER/.vnc. This is only created the first time the VNC server is started, so you will not see this message each time. It can be used to start X Window applications each time the server starts. To see the contents of the startup script, use the EDTF command:

EDTF STMF('/home/I2OWNER/.vnc/xstartup')

An example is shown in Figure 613.

```
Browse : /home/I2OWNER/.vnc/xstartup
                                                                64 by
Record : 1 of
                       8 by 18
                                                 Column :
                                                           1
Control :
····+···1···+···2···+···3···+···4···+···5···+···6···+···7···+···8·
**********Beginning of data***********
#!/QOpenSys/usr/bin/ksh
# xrdb $HOME/.Xresources
# xsetroot -solid grey
# xterm -geometry 80x24+10+10 -ls -title "$VNCDESKTOP Desktop" &
# twm &
ez /HOME
/QOpenSys/QIBM/ProdData/DeveloperTools/icewm/bin/icewm &
 F3=Exit F10=Display Hex F12=Cancel F15=Services F16=Repeat find F19=Lef
```

Figure 613. EDTF display of VNC server startup file /home/I2OWNER/.vnc/xstartup

A log file is created each time the server starts and a message is shown with the exact name. This is located in the /home/I2OWNER/.vnc directory and is usually the iSeries server name, followed by the instance number of the VNC server, and .log:

/home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.log

If the log file already exists, it is cleared and then reused. You may want to create a startup script that creates a copy of the log file before the VNC server is started. This is handy when you want to compare log files from working and non-working VNC servers.

You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell, to view the log file:

EDTF STMF('/home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.log')

Figure 614 shows an EDTF example of the VNC server log file after starting the server and connecting to it through a browser (HTTP port).

Browse : /home/I20WNER/.vnc/I2.DOMAIN.IBM.COM:1.log			
Record: 1 of 56 by 18	Column :	1	79 b
Control :			
+1+2+3+4+5+	6+	.7+	8
************Beginning of data************			
08/11/01 16:41:24 Xvnc version 3.3.XvncRelease			
08/11/01 16:41:24 Copyright (C) AT&T Laboratories Cambrid	ge.		
08/11/01 16:41:24 All Rights Reserved.			
08/11/01 16:41:24 See http://www.uk.research.att.com/vnc	for informat	tion or	n VNC
08/11/01 16:41:24 Desktop name 'X' (I2.DOMAIN.IBM.COM:1)			
08/11/01 16:41:24 Protocol version supported 3.3			
08/11/01 16:41:24 Listening for VNC connections on TCP po	ort 5901		
08/11/01 16:41:24 Listening for HTTP connections on TCP p	ort 5801		
08/11/01 16:41:24 URL http://I2.DOMAIN.IBM.COM:5801			
/home/I2OWNER/.vnc/xstartup[7]: ez: not found.			
08/11/01 16:53:27 httpd: get '' for 9.10.240.57			
08/11/01 16:53:27 httpd: defaulting to 'index.vnc'			
08/11/01 16:53:33 httpd: get 'vncviewer.jar' for 9.10.240	.57		
08/11/01 16:53:41 Got connection from client 9.10.240.57			
08/11/01 16:53:41 Protocol version 3.3			
08/11/01 16:53:41 Using hextile encoding for client 9.10.	240.57		
08/11/01 16:53:41 Pixel format for client 9.10.240.57:			
F3=Exit F10=Display Hex F12=Cancel F15=Services F	'16=Repeat f:	ind I	719=Le:
(C) COPYRIGHT IBM CORP. 1980, 2000.			

Figure 614. Using the EDTF command to display the VNC server log file

The log file shows that the VNC server brings up TCP/IP port 5901 for VNC viewer connections and TCP/IP port 5801 for HTTP connections. One way to verify that the VNC server is running is to use the Work with TCP/IP Network Status (NETSTAT) command and select option 3 (Work with TCP/IP connection status). You can also use the NETSTAT OPTION(*CNN) command and look for these ports (5801, 5901, and 6001). An example is shown in Figure 615.

Work with TCP/IP Connection Status							
	System: I2						
Type options, press Enter.							
3=Enable debug 4=End 5=Display details 6=Disable debug							
8=Display jobs							
Remote Remote Local							
Opt Address Port Port Idle Time State							
* * 5801 000:03:52 Listen							
* * 5901 000:03:52 Listen							
* * 6001 000:03:52 Listen							
* * 6030 002:00:03 Listen							
* * 6060 001:59:59 Listen							
* * 6121 002:00:08 Listen							
* * 6676 002:00:06 Listen							
* * 7373 001:59:58 Listen							
* * 7755 002:00:01 Listen							
* * 8046 007:43:40 Listen							
* * 8292 002:00:04 Listen							
* * 8293 002:00:04 Listen							
	More						
F5=Refresh F11=Display byte counts F13=Sort by column							
F14=Display port numbers F22=Display entire field F24=More key	/S						

Figure 615. Using the NETSTAT *CNN command to verify VNC server ports are active

B.1.7.3 Ending a VNC server

When you are ready to shutdown the VNC server, one way is to first determine the process ID (PID) for the VNC server. You can use the process status command ps -elf as shown in Figure 612 on page 583, which in our case shows that the VNC server is running under PID 499.

Another way to determine this is to look in a file that is created each time the server starts. This is located in the .vnc directory off the home directory for the user who started the VNC server (in our case, this is /home/I2OWNER/.vnc). It is usually the iSeries server name, followed by the instance number of the VNC server and .pid, for example:

/home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.pid

If the file already exists, it is cleared and then reused. To see the contents of the file, use the EDTF command:

EDTF STMF('/home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.pid')

An example is shown in Figure 616.

Browse : Record : Control	/hame/I2OWNER/.vn 1 of :	c/12.DOMAIN.I 1 by 18	BM.COM:1.pid	Column :	1	59 by
+ ******* 499 *******	.1+2+. *****Beginning of *****End of Data**	3+ data********** *********	4+5+ ***** *****	6+	.7	.+8.
F3=Exit	F10=Display Hex	F12=Cancel	F15=Services	F16=Repeat f	ind	F19=Lef

Figure 616. EDTF display of the VNC server file that contains PID information

Once you know the PID information, you can end the VNC server using a command such as kill 499. The preferred way to end a VNC server is to use the vncserver program with the -kill option and specify the instance number:

/QOpenSys/QIBM/ProdData/DeveloperTools/vnc/vncserver -kill :1

In the example shown in Figure 617, a VNC server was started using vncserver and was instance number :1. The ps -elf command was used to verify that it was running. You can see that it was running under PID 5811 (which we really don't need to know when using vncserver to end a VNC server).

The vncserver command was then called with -kill and instance number :1, and completion message Killing Xvnc process ID 5811 appeared. This is the same PID that we determined the VNC server was running under. The ps -elf command was used again to verify that the VNC server ended.

/QOpenSys/usr/bin/-sh									
\$ > /QOpenSys/QIBM/ProdData/DeveloperTools/vnc/vncserver									
New 'X' desktop is I2.DOMAIN.IBM.COM:1									
Starting applications specified in /home/I2OWNER/.vnc/xstartup Log file is /home/I2OWNER/.vnc/I2.DOMAIN.IBM.COM:1.log									
\$									
<pre>> ps -elf</pre>									
200000 A I20WNER 5815 1 0 0 0 0 1908 10:21:06 - 0:05									
/QOpenSys/QIBM/ProdData/DeveloperTools/icewm/bin/icewm 200000 A I2OWNER 5955 5800 0 0 0 1832 12:24:21 - 0:00 ps -elf \$									
<pre>> /QOpenSys/QIEM/ProdData/DeveloperTools/vnc/vncserver -kill :1 Killing Xvnc process ID 5811 \$ > ns -elf</pre>									
FS UID PID C PRI NI ADDR SZ WCHAN STIME TTY TIME CMD 200000 A 120WNER 5800 5799 0 0 0 11144 10:20:47 - 0:00 /QOpenSys/usr/bin 200000 A 120WNER 5964 5800 0 0 1832 12:25:34 - 0:00 ps -elf \$ - 0:00 ps -elf									
===>									
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F13=Clear F17=Top F18=Bottom F21=CL command entry									

Figure 617. Ending a VNC server in a PASE QP2TERM shell using the vncserver program

B.1.7.4 Connecting to the VNC server from a PC using a Web browser There are two ways to connect to the VNC server from a PC desktop:

- Through a Web browser
- Through the vncviewer program

To connect using a Web browser, such as Microsoft Internet Explorer or Netscape Navigator, follow these steps:

1. Bring up a browser and change the address or location URL to the iSeries server name followed by HTTP port 5801:

http://I2.DOMAIN.IBM.COM:5801

Press Enter. An example is shown in Figure 618.

💥 i2 - Netscape						
File Edit View Go Commun	icator Help					
👔 🦋 Bookmarks 🤌 🛛	io to: http://RCH4	ASSLH.RCHLAND.IBM	.COM:5801			🖸 🍘 What's Related 🛛 🚺
Back Forward Rela	ad Home	🤌 📩 Search Netscape	A Print Securi	ity Shop	Stop	
Powering the Bottom Line TM						Contact Us Support
P solutions		2	Vision	Value	e Velocity	Spotlight 🔺
services alliances company	P	Five:	Two	-	Read press release Watch launch webcast	<u>2 Value Delivery Series</u> - <u>Europe</u> Deriving maximum value from today's dynamic value chain
i2 global	flexible	. intuitive. p	owerful.	-	 Read brochure 	Vision Value Velocity Discover How
enter search criteria: Search ▶		🔶 click h	ere to learn m	1ore.	 Check out solutions View Flash Movie I2:Five.Twp 	Measurable Value to YourOrganization using our <u>Value Calculator</u> .
	ocument: Done	^				

Figure 618. Entering the URL in a browser to connect to a VNC server using HTTP port 5801

2. You are asked to authenticate yourself to the iSeries server. Enter the iSeries server password provided to VNC via the Set VNC password (VNCPASSWD) command as shown in Figure 611 on page 582. An example is shown in Figure 619.

₩s	UNDT	's X d	eskto	p (R	CHASSLI	I.RCHLAN	D.IBM.CON	1:1) - Netsc	аре			_	
File	Edit	View	Go	Con	nmunicato	r Help							
	¥.	Bookm	arks	4	Location:	http://RC	HASSLH.RO	CHLAND.IBM	.COM:5801	/ 💽 🔇	🕽 🕻 Wha	t's Related	N
	Sack	· k F	orward	1	3. Reload	A Home	a Search	Mg. Netscape	di al constante da constante constante da co	💕 Security	<u>()</u> Sho	p Si	top
	1										0808080808		
D	iscon	nect	Optio	ons	Clipbo	ard Ser	nd Ctrl-Alt-D	Del					
			V	NC	Auth	entica	tion						
					Auto	chuot	uvii						
				_				-					
		Pas	swor	d: F	*****		OK						
			<u> </u>										
													-1
													النے ا
-		-			_								<u> </u>
-	-0								- E 💥		dP (\Lambda 🏑	_ //.
	_												

Figure 619. VNC server authentication window

3. Click **OK**. Then you are connected with the VNC server running on the iSeries server. This is your Xwindow desktop. Once you start an Xwindow application, the output from it appears in the browser (Figure 620).

赉	5UND1	l's X	deskto	op (F	CHASSLI	H.RCHLA	ND.IBM.COM	M:1) - Netse	саре			_ 0	
File	Edit	Vie	w Go	Cor	mmunicato	r Help							
1	¥.	Bool	kmarks	4	Location:	http://R0	CHASSLH.R	CHLAND.IBN	4.COM:580	17 💽 🔇	🗊 🕻 What's	Related	N
•			`		3		Ž	mg.	4	s.	<u>@</u>		
	Bac	k	Forwar	d	Reload	Home	Search	Netscape	Print	Security	Shop	Stop	
	Discor	nnec	t Opti	ons	Clipbo	ard Se	nd Ctrl-Alt-I	Del					-
								R					
													HI.
												•	
	-0-									¥. 4.€,	d® 🖬) 🏑	11.

Figure 620. Xwindow desktop within a browser after connecting to a VNC server

4. As an example, we used the ez word processor provided as part of the PRPQ to view the VNC server log file. Note that this is the same log file displayed in Figure 614 on page 585.

The ez example is displayed in Figure 621.

SUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1) - Netscape	
File Edit View Go Communicator Help	
👔 🏹 Bookmarks 🔬 Location: http://RCHASSLH.RCHLAND.IBM.COM:5801/ 📃 🍘 🏹 What's Relate	d N
Park Forund Dalard Home Castely Mathematic Date Control	
B back roweid netwar nume search wescape rink security shop stop	
Disconnect Options Clipboard Send Ctrl-Alt-Del	
× ez./home/sundt/.vnc/RCHASSLH.RCHLAND.IBM.COM:1.log	×
File Edit View Style Window Tools Help	
Auth Day Anany Come Child Colum Deater Comeshing Connection	
Quit Pop Open Save Cuit Copy Paste Search Search Again	
D8/11/01 16:41:24 Xvnc version 3.3.XvncRelease	-
08/11/01 16:41:24 Copyright (C) AT&T Laboratories Cambridge.	
08/11/01 16:41:24 All Rights Reserved.	
08/11/01 16:41:24 See http://www.uk.research.att.com/vnc for information	
on VNC	
08/11/01 16:41:24 Desktop name 'X' (RCHASSLH.RCHLAND.IBM.COM:I)	
06/11/01 16:41:24 Protocol Version supported 5.5	
08/11/01 16:41:24 Listening for WTD connections on TCP port 5801	
08/11/01 16:41:24 IIIEL http://RCHASSH.RCHLAND.IBM.COM:5801	
/home/SUNDT/.vnc/xstartup[7]: ez: not found.	
08/11/01 16:53:27 httpd: get '' for 9.10.240.57	
08/11/01 16:53:27 httpd: defaulting to 'index.vnc'	
08/11/01 16:53:33 httpd: get 'vncviewer.jar' for 9.10.240.57	
U8/11/U1 16:53:41 Got connection from client 9.10.240.57	
U8/11/U1 16:53:41 Protocol version 3.3	
08/11/01 16:53:41 Using nextile encoding for client 9.10.240.57	
08/11/01 16:53:41 Pixel format for Citent 9.10.240.37:	
08/11/01 16:53:41 true colour: may r 7 g 7 b 3 shift r 0 g 3 b 6	
08/11/01 16:53:41 no translation needed	
🖆 📲 🛛 Document: Done	/ //.

Figure 621. Using ez to display the VNC server log file through a HTTP connection desktop

B.1.7.5 Connecting to the VNC server from a PC using vncviewer

The vncviewer program was downloaded to a PC with the VNC server save files. It location is displayed in Figure 607 on page 578. You can use this as an alternative to using a browser, such as Microsoft Internet Explorer or Netscape Navigator, to connect to a VNC server.

To connect using the vncviewer program, after bringing up the server, follow these steps:

 To run the vncviewer program, click Start-> Programs-> Accessories-> Windows Explorer. Navigate to the folder where you put the program (VNC in our case), and double-click vncviewer.exe.

Or click **Start-> Run**. Type (drive):\vnc\vncviewer.exe, where (drive) is the drive letter assigned to your CD-ROM. Then, press Enter. Once you do this, a connection details window appears as shown in the example in Figure 622.

Connecti	on details		×
ΝĊ	VNC server:		ОК
		Use host:display	Cancel
		e.g. snoopy:2 (Display defaults to 0 if not given)	Options

Figure 622. vncviewer Connection details window

 For the VNC server field, provide the system name and number of the VNC server that was started and that you want to connect to in the form <system_name>:<number>:

12.DOMAIN.IBM.COM:1

An example is shown in Figure 623.

Connecti	on details		×
ΝĊ	VNC server:	I2.DOMAIN.IBM.COM:1	OK
-		Use host:display	Cancel
		e.g. snoopy:2 (Display defaults to 0 if not given)	Options

Figure 623. vncviewer Connection details window

 Click the OK button. You are then asked to authenticate yourself to the iSeries server. Enter the iSeries server password provided to VNC via the Set VNC password (VNCPASSWD) command as shown in Figure 611 on page 582. An example is shown in Figure 624.



Figure 624. VNC Authentication window

4. Click **OK**. You are connected with the VNC server running on the iSeries server. This is your Xwindow desktop. Once you start an Xwindow application, the output from it appears in the vncviewer (Figure 625).



Figure 625. Xwindow desktop within vncviewer after connecting to a VNC server

5. As an example, we used the ez word processor provided as part of the PRPQ to view the VNC server log file. Note that this is the same log file displayed in Figure 614 on page 585. The ez example is displayed in Figure 626.

ب د	SUNDT's X desi	ktop (RCHASSI	H.RCHLAND,IBM.COM:1)	_		×
X	ez /home/su	ndt/.vnc/RCH/	ASSLH.RCHLAND.IBM.COM:1.log 자 미			1
F	ile Edit View	Style Window	/ Tools Help			
Q	uit Pop Op	pen Save	Cut Copy Paste Search Search Again			
	08/11/01 08/11/01 08/11/01 08/11/01	16:41:24 16:41:24 16:41:24 16:41:24	Xvnc version 3.3.XvncRelease Copyright (C) AT&T Laboratories Cambridge. All Rights Reserved. See http://www.uk.research.att.com/vnc for information	-		
	on VNC 08/11/01 08/11/01 08/11/01	16:41:24 16:41:24 16:41:24	Desktop name 'X' (RCHASSLH.RCHLAND.IBM.COM:1) Protocol version supported 3.3 Listening for VNC connections on TCP port 5901			
	08/11/01 08/11/01 /home/SUI 08/11/01	16:41:24 16:41:24 NDT/.vnc/ 16:53:27	Listening for HTTP connections on TCP port 5801 URL http://RCHASSLH.RCHLAND.IEM.COM:5801 xstartup[7]: ez: not found. httpd://def.com/s10/240/57		-	
	08/11/01 08/11/01	16:53:27 16:53:33	httpd: defaulting to 'index.vnc' httpd: get 'vncviewer.jar' for 9.10.240.57			
	08/11/01 08/11/01 08/11/01	16:53:41 16:53:41 16:53:41	Got connection from client 9.10.240.57 Protocol version 3.3 Using hextile encoding for client 9.10.240.57			
	08/11/01 08/11/01 08/11/01 08/11/01	16:53:41 16:53:41 16:53:41 16:53:41 16:53:41	Pixel format for client 9.10.240.57: 8 bpp, depth 8 true colour: max r 7 g 7 b 3, shift r 0 g 3 b 6 no translation needed			•
•					F	1

Figure 626. Using ez to display the VNC server log file through a vncviewer connection desktop

Notice that the ez output displayed via a browser in Figure 621 on page 590 is the same as the ez output displayed via vncviewer in Figure 626. The only difference is the way the connection was made to the VNC server.

B.1.8 Running a demo using the PRPQ

After you install the PRPQ and have an X server running on a client, some demos are available in which you can see some of the tools in action.

To run the demos, follow these steps:

1. Sign on to the iSeries server and run the command Start Tools For Developers (STRPTL). As explained in B.1.5, "Setup" on page 571, this command adds the QAPTL library to your library list and sets several environment variables. One of these environment variables is the DISPLAY environment variable.

DISPLAY tells the X client which window to use as a display. If DISPLAY is not already set in your job, you are prompted for its value.

Type the name of your client desktop or the machine where the Xserver is running. Note that this command does not start any applications or servers (except vnc), but it does need to be run each time you sign on. You may want to consider adding it to your initial program.

2. From an OS/400 command line, type either of the following commands:

GO MENU(PTLDEMO) GO PTLDEMO

This menu (Figure 627) has a collection of some of the iSeries Tools for Developer tools ready to run. Option 1 starts an ez edit session on a Java file.

PTLDEMO iSeries Tools For Developers Demo							
Select one of the following:							
 Edit an IFS stream file Edit a file member Edit an IFS stream file in hex Compare two IFS stream files View joblog in an editor View last spooled file in an editor View a spooled file in an editor View command results in an editor Online review tool 	EDISTMF EDIMBR MRHEX EZWRG GETJOBLOG GETSPLF GETSPLF GETCMDSPLF REVIEW						
Selection or command	Bottom						
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F16=iSeries Mair (C) COPYRIGHT IBM CORP. 2000	n menu						

Figure 627. iSeries Tools for Developers PRPQ Demo menu

- 3. Select any option (1 through 9). Help files are available on the various Web sites listed in B.1.2, "Tools list" on page 562, that describe the function of each command.
- 4. From an OS/400 command line, you can also enter the PASE environment to run ez from a more UNIX-like environment. Type:

CALL QP2TERM

Then press Enter to go into the PASE environment. From within QP2TERM, you can type commands directly, such as ez -h and ezmrg -h and run commands.

B.1.9 Verifying that Perl loaded correctly

Since various i2 products and templates use the Perl scripting language and it was installed as part of the PRPQ, you may want to verify that Perl loaded successfully.

To verify that Perl is loaded, follow these steps:

1. Make sure that the /dev/null file exists and is an empty file. You can do this by going into PASE using CALL QP2TERM and then using the ls -l /dev/null command to look for /dev/null. If the file does not exist, use the touch command to create the file. Once the file exists, use the cat command to verify that it does not contain any data. An example is shown in Figure 628.



Figure 628. Using the PASE QP2TERM shell to verify that /dev/null exists and is empty

 While still in PASE, use the cd command to go to the /QOpenSys/QIBM/ProdData/DeveloperTools/perl/bin directory and run perl -v (note that this is an uppercase V). Perl should generate a bunch of information about how it was built and so on. As long as it doesn't generate any errors, it should work fine. An example is shown in Figure 629.



Figure 629. Using the PASE QP2TERM shell to verify that Perl runs correctly

B.1.10 Using Perl after installing the PRPQ

If you have problems using Perl after loading the PRPQ, it could be that your Perl script doesn't know where to look for the Perl code that was installed on the iSeries server. Typically, the first line in a Perl script points to the location where the Perl code is located (for example, /usr/local/bin/perl). With the PRPQ, it should be /QOpenSys/QIBM/ProdData/DeveloperTools/perl/bin/perl.

You can also set the PATH environment variable to the same directory. If you want to set the PATH environment variable to something that PASE will use for QP2TERM and QP2SHELL, set the PASE_PATH environment variable outside of PASE using the Work with Environment Var (WRKENVVAR) or Add Environment Variable (ADDENVVAR) commands. You can set these to be global for all users on the system (*SYS) or just for the user or job (*JOB). PASE_PATH sets PATH once PASE is started. For example, PASE_PATH defaults to /QOpenSys/usr/bin:/usr/ccs/bin:/usr/sbin:.:/usr/bin and if you use the env command once in PASE, you can see that PATH and PASE_PATH are the same. PATH tells the system where to find the executable code.

You can also create and call a startup shell script (like .profile used on UNIX systems) to set PATH once you are in PASE. This is a manual step, where with environment variables, once they are set up, they will work for everyone.

Another option is to create a symbolic link for the path that your existing scripts are trying to execute (/usr/local/bin/perl) to the location where the Perl code is really located (/QOpenSys/QIBM/ProdData/DeveloperTools/perl/bin/perl). You can use the ln command to create the link. The target directory must already exist, but the file does not have to, for example:

ln -s /QOpenSys/QIBM/ProdData/DeveloperTools/perl/bin/perl /usr/local/bin/perl

It may be easier to simply change the Perl script to hard qualify where the Perl code is located. It will then never have to use PATH or links to find the code, but the results are the same.

B.1.11 Using gzip after installing the PRPQ

Many of the files that are available from i2 Support come in a zipped format and have an extension of gz for GNU zip. You need the gzip utility to unzip these files; gzip version 1.2.4 (18 August 1993) is a part of the PRPQ. This section explains how to use gzip against a zipped file.

The gzip command is located in the QAPTL library. Many different options are available. To see a list of options available with the command, prompt the command using the F4 function key and then using the F1 function key on the Parameters or PARM field. Or, you can use the command with option -h. An example of gZIP PARM('-h') is shown in Figure 630.

gzip 1.2.4 (18 Au	g 93) hlinNrtväl9] [-S suffix] [file]							
-cstdout	write on standard output, keep original files unchanged							
-ddecompress	decompress							
-fforce	force overwrite of output file and compress links							
-hhelp	give this help							
-llist	list compressed file contents							
-Llicense	display software license							
-nno-name	do not save or restore the original name and time stamp							
-Nname	save or restore the original name and time stamp							
-qquiet	suppress all warnings							
-rrecursive	operate recursively on directories							
-S .sufsuffi	x .suf use suffix .suf on compressed files							
-ttest	test compressed file integrity							
-vverbose	verbose mode							
-Vversion	display version number							
-1fast	compress faster							
-9best	compress better							
file	files to (de) compress. If none given, use standard input.							
Press ENTER to en	d terminal session.							
===>								
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top								
F18=Bottom F19=Left F20=Right F21=User Window								

Figure 630. Results of gzip -h showing gzip command options

You can see that to unzip or decompress a file, you must use option -d.

To unzip a zipped file using gzip, follow these steps:

1. As a first step, you may want to verify the location and size of the zipped file so that after the file is unzipped, you can compare sizes. You can do this by using the EDTF command against the directory where the zipped file is located:

EDTF STMF('/opt/i2/TradeMatrix/5_1/SCP/OS400_450/')

An example is shown in Figure 631.

Directory: /opt/i2/TradeMatrix/5_1/SCP/OS400_450/									
Position to :	Record	: 17 0	£ 26						
New File :									
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	ete					
Opt Name	Circ	() mon	Changed	Ugod					
Opt Name	Size	Owner							
dÍ	*DIR	120WNER	07/09/01 16:32	07/09/01 16:32					
scp	*DIR	120WNER	07/09/01 16:33	07/09/01 16:33					
pdf	*DIR	120WNER	07/09/01 16:33	07/09/01 16:33					
web	*DIR	120WNER	07/09/01 16:34	07/09/01 16:34					
reports	*DIR	120WNER	07/10/01 16:48	07/10/01 16:48					
start scp	8K	120WNER	07/16/01 12:18	07/16/01 12:38					
<_5.1p1_aix32.tar.gz	z 18,432K	120WNER	07/16/01 13:33	07/16/01 14:34					
				Bottom					
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	y entire field					

Figure 631. EDTF display of a directory with a zipped file showing zipped size

2. As shown in Figure 630, you can use the -l option to view the contents of the zipped file and the size of it after it is unzipped:

```
GZIP PARM('-1
/opt/i2/TradeMatrix/5_1/SCP/OS400_450/scp_engine_5.1p1_aix32.tar.gz')
```

An example is shown in Figure 632.

```
compressed uncompr. ratio uncompressed_name
18504082 74951680 75.3% /opt/i2/TradeMatrix/5_1/scp/os400_450/scp_engine_5
.1p1_aix32.tar
Press ENTER to end terminal session.
===>
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top
F18=Bottom F19=Left F20=Right F21=User Window
```

Figure 632. Results of gzip -I to see the contents and unzipped size of a zipped file

3. To unzip the file, use the gzip command with the -d option and specify the location and name of the zipped file:

```
GZIP PARM('-d
/opt/i2/TradeMatrix/5_1/scp/os400_450/scp_engine_5.1p1_aix32.tar.gz')
```

An example of using the F4 function key to prompt the command is shown in Figure 633.



Figure 633. Prompted gzip command

Press Enter to run the command.

 After the command completes, use the Display Job Log (DSPJOBLOG) command to verify that it completed normally. Press the F10 function key to display detailed messages. An example is shown in Figure 634.
	Displ	av All Message	S	
Job : QPADEV00)B User	: I20WNER	System: Number :	I2 024258
<pre>> GZIP PARM('-d /opt/i2/TradeMatrix/5_1/scp/os400_450/scp_engine_5.1p1_aix32 .tar.gz') 83 - STRQSH CMD('gzip -d /opt/i2/TradeMatrix/5_1/scp/os400_450/scp_engine_5.1p1_aix32.tar.gz') Command ended normally with exit status 0.</pre>				
Press Enter to contin	ue.			Bottom
F3=Exit F5=Refresh	F12=Cancel	F17=Top F1	8=Bottom	

Figure 634. Job log display to verify gzip command completed successfully

5. Since you checked the size of the zipped file before using gzip, you can check the size of the file after it is unzipped to verify that it is larger. You can do this by using the EDTF command against the directory where the zipped file is located:

EDTF STMF('/opt/i2/TradeMatrix/5_1/SCP/OS400_450/')

An example is shown in Figure 635.

Directory: /opt/i2/Trade Position to : New File :	Mat rix/5_ 1/3 Record	SCP/OS400_450, : 17 of	26 E	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Dele	ete
Opt Name df scp pdf web reports <ine_5.1p1_aix32.tar start_scp</ine_5.1p1_aix32.tar 	Size *DIR *DIR *DIR *DIR 73,728K 8K	Owner 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER 120WNER	Changed 07/09/01 16:32 07/09/01 16:33 07/09/01 16:33 07/09/01 16:34 07/10/01 16:48 07/16/01 13:33 07/16/01 12:18	Used 07/09/01 16:32 07/09/01 16:33 07/09/01 16:33 07/09/01 16:34 07/10/01 16:48 07/16/01 14:34 07/16/01 12:38
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Display	y entire field

Figure 635. EDTF display of a directory with an unzipped file showing unzipped size

Note that the file is a lot larger now (73,728K versus 18,432K) and that the .gz extension has been dropped from the file. You are now ready to use the file on the system. Since the file in our example is a tar file, we may use the tar command to extract the contents of it, for example:

tar -xvf scp_engine_5.1p1_aix32.tar

B.2 Using the Remote Abstract Window Toolkit to install i2 templates

When working with i2 products, implementors or consultants may use i2-developed templates to provide a framework to start an implementation. This section goes through the installation of the i2 TradeMatrix Consumer Packaged Goods (CPG), SCM Solution, Release 5.0 and Release 5.1 templates on the iSeries server using a Java application called *Remote Abstract Window Toolkit* (RAWT).

B.2.1 i2 templates overview

The i2 Supply Chain Management (SCM) template defines and enables a set of core business functions and workflow between these functions. For example, it defines functions like Demand Forecasting and Master Planning and an associated workflow between them. i2 engines hold the business logic to enable these functions and integration transforms hold the logic for enabling the workflow between them.

Each industry like HighTech, Metals, Consumer Packaged Goods, and so on has specific business processes and associated workflow. i2 provides industry-specific templates for many of these.

After installing the SCM template, the iSeries server has a Standard Directory Structure (SDS) for the template. The Standard Directory Structure includes:

- Templates relevant to a particular product for an industry, such as Elops, MAP or LpOpt for Master Planning, DF template for Allocation Planning, and so on.
- Scripts to run the i2 engines for each business function, such as Supply Chain Planner for Master Planning.
- Integration transforms that enable the workflow between functions and the scripts to run them.
- A sample test dataset that can be loaded into a database and used for a quick check for running the engines and transforms.

The installation program for the template is a Java program and requires a graphical user interface (GUI). The iSeries server does not have a GUI interface outside of Operations Navigator. Therefore, to run this Java installation program, you can use RAWT.

You use RAWT with the installation and administration interfaces of server applications. These interfaces typically have a minimum of complex graphics and highly-interactive content. RAWT distributes processing between the iSeries server and a workstation. Therefore, responsiveness of graphic-intensive and highly-interactive operations are not as fast as AWT implementations on platforms with locally-attached graphic terminals. This did not seem to be a problem with the i2 SCM template installation program.

With the RAWT, you can run Java AWT graphical programs without making any changes on the iSeries server and display the graphics remotely. To use RAWT, you must have setup Transmission Control Protocol/Internet Protocol (TCP/IP) and installed Sun Microsystems, Inc., Java Development Kit (JDK) 1.1.x or Java 2 SDK (J2SDK), Standard Edition, version 1.2. on your iSeries server and the remote display.

You can use any graphics-capable hardware, including IBM Network Station, as a remote display for Remote AWT if it meets these requirements:

- Graphics-capable hardware that runs Windows 95, Windows NT 4.0, Windows 2000, IBM Operating System/2 (OS/2), Sun Solaris, or AIX
- · Configured hardware to access your iSeries server with TCP/IP
- Java Development Kit 1.1.x (JDK 1.1.7 or later is recommended) or J2SDK, version 1.2

RAWT is part of the IBM iSeries Developer Kit for Java Licensed Program Product (5769-JV1 or 5722-JV1), which is optimized for use in an iSeries server environment. It uses the compatibility of Java programming and user interfaces, so you can develop and run Java programs on the iSeries server. The iSeries Developer Kit for Java is a compatible implementation of the Sun Microsystems, Inc. Java Technology.

For more information on the iSeries Developer Kit for Java, see: http://publib.boulder.ibm.com/pubs/html/as400/v4r5/ic2924/info/java/rzaha/ whatitis.htm

The heading "Running on a host without a GUI" contains information about how to set up and run Java programs with the Remote Abstract Window Toolkit. It is what we used as a basis for this section.

B.2.2 Installing the CPG template from the installation CD-ROM

The i2 CPG template installation code and documentation are on separate CD-ROMs for release 5.0 or on one CD-ROM for release 5.1. You can copy documentation to your local drive from the CD-ROM (which is required for 5.1) or display it directly from the CD-ROM.

To display the documentation, for 5.0, go to the Docs\Template_for_Solution\ guide_to_consumer_packaged_goods directory and double-click **index.htm**.

For 5.1, unzip the \DOCUMENTATION\CPG_SOLUTION_51.ZIP file. Then go to the cpg_solution directory and double-click **index.htm**. This should bring up the complete template documentation. There is a section that provides details on the hardware and software requirements for the template. There is also an installation or implementation section that gives step-by-step instructions for the installation process. You may want to print the installation or implementation section and have it available during the installation.

To load the CPG template on the iSeries server, follow these steps:

 Copy the INSTALL or CPG_INSTALL directories from the template CD to a directory on the iSeries server. We recommend that you create a new directory to hold the files. We used the directory names /opt/i2/TradeMatrix/5_0/cpg_template and /opt/i2/TradeMatrix/5_1/cpg_template during our installations. You can create the directory with a Create Directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line:

MKDIR DIR('/opt/i2/TradeMatrix/5_0/cpg_template') MKDIR DIR('/opt/i2/TradeMatrix/5_1/cpg_template') You should see a completion message stating that the directory was created. You can also use mkdir from within the PASE QP2TERM shell.

- 2. For release 5.0, the files on the CD-ROM that you are looking for are located in the INSTALL directory. They are:
 - ALPLSETUP.CLASS
 - DMFCSETUP.CLASS
 - FCNTSETUP.CLASS
 - INSTALL.BAT
 - MSPLSETUP.CLASS
 - ORPLSETUP.CLASS
 - ORPMSETUP.CLASS
 - SUITE.CLASS
 - WFSETUP.CLASS

For release 5.1, the files on the CD-ROM that you are looking for are located in the CPG_INSTALL directory. They are:

- AB.JAR
- ALPL.JAR
- COMMON.JAR
- DMFC.JAR
- FCNT.JAR
- INPL.JAR
- INSTALL.BAT
- INSTALL.SH
- MSPL.JAR
- ORPL.JAR
- ORPM.JAR
- SUITE.JAR
- WF.JAR

You can either load the CD-ROM into a PC and FTP the files (in binary format) to the iSeries server, or load the CD-ROM into the iSeries CD-ROM drive and copy them directly. We recommend you use the latter option, which is what we used.

Use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or you can use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. Figure 636 shows an example of what is displayed for release 5.0.

Work with Optical Files	
Directory /INSTALL Volume SCM_CPG_1	System: I2
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Renam	ne
Opt File Name Size	Created
ALPLSETUP.CLASS827015DMFCSETUP.CLASS12687293FCNTSETUP.CLASS890426INSTALL.BAT330MSPLSETUP.CLASS2770691ORPLSETUP.CLASS2854856ORPMSETUP.CLASS790929SUITE.CLASS629280	11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 11/07/00 16:06:11 Nore
Parameters or command ===> F3=Exit F4=Prompt F5=Refresh F6=Print list F16=Repeat position to F17=Position to	F9=Retrieve F12=Cancel F22=Display entire name

Figure 636. Contents of the 5.0 i2 CPG template CD-ROM INSTALL directory

Figure 637 shows an example of what is displayed for release 5.1.

Work with Optical Files						
Directory /CPG_INSTALL Volume SCM_CPG51	System: I2					
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print 7=Rena	me					
Opt File Name Size	Created					
AB.JAR 1814	06/15/01 12:05:04					
ALPL.JAR 3654582	06/15/01 12:05:04					
COMMON.JAR 42648822	06/15/01 12:05:04					
DMFC.JAR 5149749	06/15/01 12:05:04					
FCNT.JAR 3762057	06/15/01 12:05:04					
INPL.JAR 3560180	06/15/01 12:05:04					
INSTALL.BAT 150	06/15/01 12:05:04					
INSTALL.SH 180	06/15/01 12:05:04					
	More					
Parameters or command ===>						
F3=Exit F4=Prompt F5=Refresh F6=Print list F16=Repeat position to F17=Position to	F9=Retrieve F12=Cancel F22=Display entire name					

Figure 637. Contents of the 5.1 i2 CPG template CD-ROM CPG_INSTALL directory

To copy the files directly use the Copy Object (CPY) command:

CPY OBJ('/qopt/scm_cpg_1/install/ALPLSETUP.CLASS') TODIR('/opt/i2/TradeMatrix/5_0/cpg_template')

CPY OBJ('/qopt/scm_cpg51/cpg_install/AB.JAR') TODIR('/opt/i2/TradeMatrix/5_1/cpg_template') You should see a completion message stating that the object was copied. You need to repeat this until all files are copied.

3. To verify that the files are copied successfully, use the EDTF command:

EDTF STMF('/opt/i2/TradeMatrix/5_0/cpg_template') EDTF STMF('/opt/i2/TradeMatrix/5_1/cpg_template')

An example of the 5.0 directory is shown in Figure 638.

Directory: /opt/i2/TradeMatrix/5_0/cpg_template					
Position to :	Recor	d: 1	of 9		
New File :					
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive De	elete	
Opt Name	Size	Owner	Changed	Used	
ALPLSETUP.CLASS	896K	I20WNER	11/07/00 16:06	11/07/00 16:06	
DMFCSETUP.CLASS	13,312K	I20WNER	11/07/00 16:06	11/07/00 16:06	
FCNTSETUP.CLASS	896K	I20WNER	11/07/00 16:06	11/07/00 16:06	
INSTALL.BAT	8K	I20WNER	11/07/00 16:06	11/07/00 16:06	
MSPLSETUP.CLASS	2,816K	I20WNER	11/07/00 16:06	11/07/00 16:06	
ORPLSETUP. CLASS	2,816K	I20WNER	11/07/00 16:06	11/07/00 16:06	
ORPMSETUP.CLASS	896K	I20WNER	11/07/00 16:06	11/07/00 16:06	
SUITE.CLASS	640K	I20WNER	11/07/00 16:06	11/07/00 16:06	
WFSETUP.CLASS	88,064K	I20WNER	11/07/00 16:06	11/07/00 16:06	
				Bottom	
F3=Exit F12=Cancel F16=Sort F17=Position to F22=Display entire field (C) COPYRIGHT IBM CORP. 1980, 2000.					

Figure 638. Using the EDTF command to display the contents of the 5.0.1 cpg_template directory

An example of the 5.1 directory is shown in Figure 639.

Directory: /opt/i2/Tra	deMatrix/5 1/	'cpg template		
Position to :	Record	l: 1 c	of 14	
New File :				
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name	Size	Owner	Changed	Used
AB.JAR	8K	120WNER	06/15/01 12:05	06/15/01 12:05
ALPL.JAR	3,584K	120WNER	06/15/01 12:05	06/15/01 12:05
COMMON.JAR	41,984K	120WNER	06/15/01 12:05	06/15/01 12:05
DMFC.JAR	5,120K	120WNER	06/15/01 12:05	06/15/01 12:05
FCNT.JAR	4,096K	120WNER	06/15/01 12:05	06/15/01 12:05
INPL.JAR	3,584K	120WNER	06/15/01 12:05	06/15/01 12:05
INSTALL.BAT	8K	120WNER	06/15/01 12:05	06/15/01 12:05
INSTALL.SH	8K	120WNER	06/15/01 12:05	06/15/01 12:05
MSPL.JAR	7,168K	120WNER	06/15/01 12:05	06/15/01 12:05
ORPL.JAR	6,656K	120WNER	06/15/01 12:05	06/15/01 12:05
ORPM.JAR	4,096K	120WNER	06/15/01 12:05	06/15/01 12:05
SUITE.JAR	2,304K	120WNER	06/15/01 12:05	06/15/01 12:05
WF.JAR	4,608K	I20WNER	06/15/01 12:05	06/15/01 12:05
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	to F22=Displa	ay entire field
(C) COPYRI	GHT IBM CORP.	1980, 2000.		
l				,

Figure 639. Using the EDTF command to display the contents of the 5.1 cpg_template directory

You can use option 5 from EDTF to display INSTALL.BAT. Then you see the Java class file or command line syntax that we eventually will run.

- 4. Make the RAWT class files accessible to the remote display by copying them from the iSeries server to a remote display. The RAWT files are installed with the IBM iSeries Developer Kit for Java (5769-JV1 or 5722-JV1) in the following two JAR files:
 - /QIBM/ProdData/Java400/jdkxxx/RAWTApplHost.jar
 - /QIBM/ProdData/Java400/jdkxxx/RAWTGui.jar

Here *xxx* is the version of Java like 118 or 12. The RAWTApplHost.jar file contains the Remote AWT classes for the iSeries server. The RAWTGui.jar file contains the RAWT classes for the remote display.

You can use the EDTF command to verify that these are on your system:

EDTF STMF('/QIBM/ProdData/Java400/jdk12')

An example is shown in Figure 640.

Directory: /QIBM/ProdD Position to :	ata/Java400/j Record	jdk12 d: 1 c	of 9	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name bin lib COPYRIGHT License Readme demo.zip src.jar RAWTAHOSt.jar RAWTGui.jar	Size *DIR *DIR 8K 16K 2,816K 17,408K 20,216K 1,536K	Owner QSYS QSYS QSYS QSYS QSYS QSYS QSYS QSY	Changed 03/06/01 15:25 03/06/01 15:26 10/12/00 08:23 10/12/00 08:23 10/12/00 08:22 10/12/00 08:22 10/12/00 08:21 01/12/01 15:30 12/03/00 14:50	Used 03/06/01 15:25 03/06/01 15:26 10/12/00 08:23 10/12/00 08:23 10/12/00 08:22 10/12/00 08:21 01/12/01:15:59 12/03/00 14:50
				Bottom
F3=Exit F12=Cancel	F16=Sort	F17=Position	n to F22=Displa	ay entire field

Figure 640. Using the EDTF command to verify the existence of RAWTAHost.jar and RAWTGui.jar

To copy the files from the iSeries server to a PC, using FTP, follow these steps:

- a. Open an MS-DOS command prompt window on the PC that you want to use to perform the installation. Click Start-> Programs-> Accessories-> Command Prompt.
- b. Use the cd command to change to the directory where you want to put the RAWT files (assuming you want to place them in a specific location on the PC):

CD C:\<some directory>

c. Connect to the iSeries server using FTP:

ftp i2

- d. Enter your iSeries server user ID, which is 120WNER in this example.
- e. Enter the password for your iSeries server user ID.
- f. Use the cd command to change to the iSeries server directory where the RAWT programs are located:

cd /qibm/proddata/java400/jdk12

g. Change to binary mode:

bin

h. Transfer the iSeries server RAWT files to your PC using the FTP get command:

get rawtahost.jar get rawtgui.jar

- i. Exit FTP using the quit command.
- j. Verify that the RAWT files are now located on your PC using the dir command:

dir rawt*.*

An example is shown in Figure 641.

```
C:\>ftp i2
Connected to i2.domain.ibm.com.
220-QTCP at i2.domain.ibm.com.
220 Connection will close if idle more than 5 minutes.
User (i2.domain.ibm.com: (none)): i2owner
331 Enter password.
Password:
230 I2OWNER logged on.
ftp> cd /qibm/proddata/java400/jdk12
250-NAMEFMT set to 1.
250 "/gibm/proddata/java400/jdk12" is current directory.
ftp> bin
200 Representation type is binary IMAGE.
ftp> get rawtahost.jar
200 PORT subcommand request successful.
150 Retrieving file /qibm/proddata/java400/jdk12/rawtahost.jar
250 File transfer completed successfully.
ftp: 1202937 bytes received in 5.56Seconds 216.43Kbytes/sec.
ftp> get rawtgui.jar
200 PORT subcommand request successful.
150 Retrieving file /qibm/proddata/java400/jdk12/rawtqui.jar
250 File transfer completed successfully.
ftp: 1543408 bytes received in 3.28Seconds 469.98Kbytes/sec.
ftp> quit
221 QUIT subcommand received.
C: \>dir rawt*.*
 Volume in drive C is C DRIVE
Volume Serial Number is 14D9-BA67
Directory of C:\
03/14/2001 06:02p
                            1,202,937 rawtahost.jar
03/14/2001 06:02p
                           1,543,408 rawtgui.jar
              2 File(s)
                            2,746,345 bytes
               0 Dir(s) 1,071,001,600 bytes free
```

Figure 641. Using FTP from a PC to get the RAWT files from the iSeries server to a PC

 After the files are copied to a remote display or PC, run RAWTGui.jar. Click Start-> Programs-> Accessories-> Windows Explorer. Navigate to the folder where you downloaded the files (C:/ in our case) and then double-click RAWTGui.jar.

Or you can click **Start-> Run**. Type the qualified program name where you downloaded the files to (C:/RAWTGui.jar in our case) and press Enter. This should start the RAWT server daemon and display a window like the example shown in Figure 642.



Figure 642. Remote AWT for Java 2 server daemon window

Notice that the bottom of the window shows the TCP/IP address of the remote display or PC and the port that was made active. The server daemon stays active until you end it.

Java programs that exit on the iSeries server do not end the server on the remote display. The server daemon selects the first free port above 2000 when the Java application connects using RAWT and the Java application uses this port until the application ends. Additional Java applications are connected to subsequent free ports above 2000. The available range of ports goes up to 9999.

6. Before you can start the Java installation program, use the Add Environment Variable (ADDENVVAR) command to set the CLASSPATH environment variable. It needs to point to the RAWTAHost.jar file on the iSeries server and where you copied the .class or .jar files from the template CD-ROMs to the iSeries server:

ADDENVVAR ENVVAR(CLASSPATH) VALUE('.:/QIBM/ProdData/Java400/jdk12/RAWTAHost.jar:/opt/i2/TradeMatrix/5_0 /cpg_template')

ADDENVVAR ENVVAR(CLASSPATH) VALUE('.:/QIBM/ProdData/Java400/jdk12/RAWTAHost.jar:/opt/i2/TradeMatrix/5_1 /cpg_template')

The default for the LEVEL parameter on the ADDENVVAR command is *JOB. This environment variable disappears once the job ends. To see the level parameter, press F4 to prompt the command and then press F10 to see additional parameters. You can use LEVEL(*SYS) if you want this environment variable to stay on the system and be used by everyone on the system. An example is shown in Figure 643.

Add Environment Variable (ADDENVVAR) Type choices, press Enter. Environment variable > CLASSPATH r:/opt/i2/TradeMatrix/5 0/cpg template' . . . Additional Parameters *JOB, *HEX... *JOB, *SYS Coded character set ID *JOB *JOB Level Replace existing entry *NO *NO, *YES Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 643. Using the ADDENVVAR command to add CLASSPATH

You can use the Work with Environment Var (WRKENVVAR) command to verify that the environment variable is set correctly or to make changes to it.

7. The current work directory needs to be set to the directory where you installed or copied the CPG template files to (/opt/i2/TradeMatrix/5_x/cpg_template in our case). You can use the Display Current Directory (DSPCURDIR) command to view what it is currently set to. An example is shown in Figure 644.

```
Display Current Working Directory
Directory . . . . . : /home/I2OWNER
Press Enter to continue.
F3=Exit F12=Cancel
```

Figure 644. Using DSPCURDIR to display the current working directory

Use the Change Current Directory (CHGCURDIR) command to change it to the desired directory:

```
CHGCURDIR DIR('/opt/i2/TradeMatrix/5_1/cpg_template')
```

Figure 645 shows an example after using F4 to prompt the CHGCURDIR command.

Change Current Directory (CHGCURDIR)
Type choices, press Enter.
Directory > '/opt/i2/TradeMatrix/5_1/cpg_template'
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 645. Using CHGCURDIR to change the current working directory

Press Enter. You should see a completion message stating that the current directory was changed.

- 8. To start the installation, use the Run Java (RUNIVA) command and press F4 to prompt the command. Complete the following steps:
 - a. Enter the Java program class name on the class parameter line, which is suite for 5.0 and suite.jar for 5.1.
 - b. Press F10 for additional parameters and then press the Page Down key.
 - c. Enter RmtAwtServer on the property name parameter line, and enter the Transmission Control Protocol/Internet Protocol (TCP/IP) address (for example, 9.5.11.72 in our case) of the remote display or PC on the property value parameter line.
 - d. Enter + for more properties.

- e. Enter os400.class.path.rawt on the property name parameter line, and enter 1 on the property value parameter line.
- f. Enter java.version on the property name parameter line, and enter 1.2 on the property value parameter line.

An example is shown in Figure 646 and Figure 647. Press Enter.

Run Jav	ra Program (RI	(AVL/R			
Type choices, press Enter.					
Class file or JAR file >	suite				
Parameters	*NONE				
+ for more values					
Classpath	* ENV VAR				
Additional Parameters					
Classpath security check level	*WARN	*WARN, *SECURE, *IGNORE More			
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	F13=How to use this display			

Figure 646. The first page of a prompted RUNJVA command

Run Java Program (RUNJVA)
Type choices, press Enter.
Properties: Property name > RmtAwtServer
Property value > '9.5.11.72'
Property name > os400.class.path.rawt
Property value > 1
Property name > java.version
Property value > 1.2
+ for more values
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 647. The second page of a prompted RUNJVA command

You could also simply issue the following commands:

RUNJVA CLASS(suite) PROP((RmtAwtServer '9.5.11.72') (os400.class.path.rawt 1) (java.version 1.2))

RUNJVA CLASS(suite.jar) PROP((RmtAwtServer '9.5.11.72') (os400.class.path.rawt 1) (java.version 1.2))

9. At this point, the iSeries server should display a Java Shell Display window, and MS-DOS Java window. Then the template installation program window should appear. You do not need to do anything with the Java Shell Display (Figure 648) or the empty MS-DOS window that should show something like C:\Program Files\JavaSoft\JRE\1.2\bin\java.exe.

Java Shell Display
Remote-AWT version is AWT 2.0 - R2.0.2 running under 1.2
==>
F3=Exit F6=Print F9=Retrieve F12=Exit F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 648. Java Shell Display window shown after starting the RUNJVA command

An example of the 5.0 template installation program window is shown in Figure 649.



Figure 649. i2 TradeMatrix CPG Solution 5.0 installation welcome window

An example of the 5.1 template installation program window is shown in Figure 650.

🔊 Installer		
	Welcome to the InstallShield Wizard for SCM Consumer Packaged Goods Template 5.1 The InstallShield Wizard will install on your computer. To continue, click Next.	
la stall Object		
instalishield —	Next > Car	ncel

Figure 650. i2 SCM CPG Template 5.1 installation welcome window

10.Click the **Next** button and continue with the installation. You may need to reference the i2 SCM template installation instructions at times, so be sure to have them available in a browser or PDF window or as a printed copy.

For 5.0, this is available on the 5.0 template documentation CD. Follow these steps:

- a. Go to Docs\Template_for_Solution\guide_to_consumer_packaged_goods and double-click **index.htm**. This brings up a browser window.
- b. Click the arrow to the right of the **Technical Specifications** section and click **Installation**.

The heading "Using the SCM Installshield on UNIX/NT" contains more information on each installation panel.

For 5.1, follow these steps:

- a. Unzip the /DOCUMENTATION/CPG_SOLUTION_51.ZIP file.
- b. Go to the cpg_solution directory and double-click **index.htm**. This brings up a browser window.
- c. Click Implementor at the top of the panel.
- d. Click the arrow to the left of the Technical Architecture of SCM section.
- e. Click Installation and Deployment and then Installation and Deployment Guide.

The *Installation and Deployment Guide* is a PDF file that you can find directly in the common_html\implementor\i_cpg_html subdirectory on your PC as implementation_guide.pdf. The heading "Installing the SCM Template" contains more information on each installation panel.

11. While the installation is running, the job that is performing the installation on the iSeries server is called QJVACMDSRV in case you want to look at it for any reason. You can use one of the following commands to view this job:

WRKACTJOB SBS (QINTER) WRKSBSJOB SBS (QINTER)

An example of WRKACTJOB SBS (QINTER) is shown in Figure 651.

	Work with Acti	ve Jobs	I2 03/14/01 18-48-29
CPU %: .4 Elapse	ed time: 00:00:16	Active jobs:	176
Type options, press Ente 2=Change 3=Hold 4= 8=Work with spooled fi	er. End 5=Work with les 13=Disconnec	6=Release 7=Di t	splay message
Opt Subsystem/Job User	Type CPU	% Function	Status
			TYAW
			DINI
QIILLUUUU IIU			
Parameters or command			More
===>			
F3=Exit F5=Refresh F11=Display elapsed data	F7=Find F1 F12=Cancel F2	0=Restart statisti 3=More options F	.cs '24=More keys

Figure 651. Using the WRKACTJOB SBS(QINTER) command to display job QJVACMDSRV

12. When the installation is complete, the Java Shell Display is updated, and you see the message Java program completed. You can use the F3 or F12 function key or press Enter to exit the Java Shell Display.

B.3 i2 Five.Two CPG template installation

This section contains information on how to install the i2 Five.Two version of the i2 Supply Chain Management Solution (CDM/ADW Architecture) Consumer Packaged Goods, Pharmaceuticals, and Process (CPG) template, on an iSeries server. As stated in 2.1, "iSeries server requirements" on page 11, the iSeries server must be running OS/400 V5R1M0 (License Program 5769-SS1), with the Qshell Interpreter (option 30), and the OS/400 Portable Application Solutions Environment (OS/400 PASE) environment (option 33). The installation of the CPG template code requires approximately 118 MB of disk space.

After you order the CPG template from i2, you receive a CD-ROM that contains everything you need to install the product. The steps to install the CPG template are summarized here:

- 1. Copy the setup.jar and utils.jar files from the CPG template code CD-ROM.
- 2. Use the Java program with the two copied jar files to perform the installation.

B.3.1 CPG template reference documentation

Web-based documentation is available on the installation CD-ROM in the 5.2 Release\Industry_Solutions\SCM_Solutions_CDM\cpg_final directory. We followed the instructions in the readme.txt file to create a folder named scm_solution_5.2 on a PC, and then used an unzip program, such as WinZip, to extract file <template>_52_cdm.zip on the CD-ROM to scm_solution_5.2 on a PC. <template> is one of the following industry identifiers:

- auto_oem (Automotive)
- ce (High Technology, Computer, Electronics and Telecom OEM)
- cecd (Consumer Electronics and Consumer Durables)
- cpg (Consumer Packaged Goods, Pharmaceuticals and Process)
- me (Metals & Paper)
- semi (Semiconductor)
- sg (Softgoods)
- ind_oem (Industrial)

Since we are installing the CPG template, our zip file is called cpg_52_cdm.zip. Follow these steps:

- 1. Unzip the file and double-click **index.htm**. This should bring up the complete template documentation.
- 2. For installation information, click the plus sign (+) to the left of Implementor.
- 3. Click the plus sign (+) to the left of Technical Architecture of SCM.
- 4. Click Installation and Deployment and then click the Installation and Deployment Guide link.

This takes you to the scm_solution_5.2/cpg/content/pdfs/imp_guide_52.pdf file, which contains detailed instructions for installing and deploying all of the different software required for using the template. One of the sections in this document details the installation of the template itself.

You may want to print this manual or the SCM template installation section and have it available during the installation. The Technical Architecture of SCM page also has sections on Environment Setup, Hardware Specs and Sizing, and Software Specs that you may want to review.

B.3.2 Installing the CPG template code on the iSeries server

To install the CPG template code on your iSeries server, follow these steps:

- Bring up a 5250 terminal session to the iSeries server where you want to install CPG template code. The IBM Personal Communications and IBM Client Access products can provide 5250 support.
- 2. Log on to the iSeries server with a user profile designated to own all i2 objects that are created during the installation. The name that we recommend and use throughout this redbook is *I2OWNER*. For a description of how to create the user profile I2OWNER, see 2.4.1, "User profile creation" on page 33.
- 3. The CPG template environment is placed, by default, into the iSeries Integrated File System (IFS) directory /i2TradeMatrix/scm_cpg or /opt/i2TradeMatrix/scm_cpg. You can use the EDTF command to check whether this directory structure already exists on your system:

EDTF STMF('/opt/i2TradeMatrix/scm_cpg')

Figure 652 shows the EDTF command after prompting with F4.

Edit File (EDTF)
Type choices, press Enter.
Stream file, or > '/opt/i2TradeMatrix/scm_cpg'
Data base file Name Library *LIBL Name, *LIBL, *CURLIB
Bottom F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display F24=More keys

Figure 652. Edit File (EDTF) command prompt of /opt/i2TradeMatrix/scm_cpg

- 4. If the directory structure already exists, you can select from one of three options to continue:
 - Use the Recursive Deletion function of the EDTF command (option 9) to delete the CPG template environment and start from the beginning. This is shown in Figure 653.
 - Continue with the installation defaults to overwrite the existing environment. i2 recommends that you do not overwrite an existing directory.
 - Specify a new target directory on the iSeries server during the installation procedure (Figure 659 on page 620 shows where you can define this). You may want to do this if you want multiple CPG template environments on the same system such as for development, test/quality assurance, production, or "what if" cases.

Directory: /opt/i2Tr Position to : New File :	adeMatrix, Record	/scm_cpg l: 1 d	of 1	
2=Edit 4=Delete File	5=Display	6=Path Size	9=Recursive Delete	
Opt Name 9 5.2	Size *DIR	Owner I2OWNER	Changed Used 02/19/02 11:30 02/19/02 11:30	
			Bottom	
F3=Exit F12=Cancel (C) COPYRI	F16=Sort GHT IBM CORI	F17=Position P. 1980, 20	n to F22=Display entire field 00.	,

Figure 653. Using the EDTF command to recursively delete an existing CPG template environment

5. Before you begin, ensure that your iSeries server is setup correctly. For details on how to set up the iSeries server, see 2.4, "iSeries server setup" on page 33.

- 6. Place the CD-ROM containing the CPG template software in your iSeries CD-ROM drive.
- The i2 Five.Two CPG template installation programs are called *setup.jar* and *utils.jar*. They are located in the 5.2 Release\Industry_Solutions\SCM_Solutions_CDM\cpg_final directory on the CD-ROM.

You can run the programs from the CD-ROM by changing to the /QOPT file system in the PASE QP2TERM shell. However, we noticed that it ran extremely slower compared to when the program was on disk. We recommend you copy the installation programs to disk from CD-ROM before you run it.

To copy the installation programs from CD-ROM, follow these steps:

a. Create a temporary directory on the iSeries server to hold the installation program. We recommend using /opt/i2, but any name will work. You can create the directory with a create directory command, such as CRTDIR, MD, or MKDIR from an OS/400 command line or mkdir from within the PASE QP2TERM shell:

mkdir /opt/i2

b. The files on the CD-ROM that you are looking for are called **setup.jar** and **utils.jar**. They are located in the 5.2 Release\Industry_Solutions\SCM_Solutions_CDM\cpg_final directory. You

can load the CD-ROM into a PC and send the files (in binary format) using FTP to the iSeries server. Or, you can load the CD-ROM into the iSeries CD-ROM drive and copy them directly. We recommend you use the latter option, which is what we used.

You can use the GO OPTICAL menu and select option 1 (Work with optical volumes). Or use the Work with Optical Volumes (WRKOPTVOL) command and select option 8 (Work with directories) to view the contents of the CD-ROM. An example is shown in Figure 654.

Work with Opti	cal Files		Crash and	то
Directory /5~1.2RE/INDUST~1/ Volume CPG_52	'SCM_S0~1/0	CPG_FI~1	system:	12
Type options, press Enter. 3=Copy 4=Delete 5=Display 6=Print	7=Renar	ne		
Opt File Name	Size	Crea	ted	
CPG_52~1.ZIP	31420375	11/05/01	18:36:26	
README . TXT	7827	11/08/01	09:29:52	
UTILS.JAR	19515317	11/16/01	09:40:32 09:40:36	
		, , , -		
Parameters or command				Bottom
===>				
F3=Exit F4=Prompt F5=Refresh F6=Pri F16=Repeat position to F17=Position to	nt list	F9=Retriev F22=Displa	e F12=Ca yentire n	ncel ame

Figure 654. The setup.jar/utils.jar installation programs on the CPG template CD-ROM

Notice that when you view directories and files that have names longer than eight characters, the iSeries server truncates the name to six characters. Then it uses the tilde (~) character and a number to distinguish files where the first six characters match. For example, cpg_52_cdm.zip translates to cpg_52~1.zip. If this is too confusing, you can send the file using FTP to the iSeries server and the name does not truncate.

To copy the files directly, use the Copy Object (CPY) command:

CPY OBJ('/qopt/CPG_52/5~1.2RE/INDUST~1/SCM_SO~1/CPG_FI~1/setup.jar') TODIR('/opt/i2')

CPY OBJ('/qopt/CPG_52/5~1.2RE/INDUST~1/SCM_SO~1/CPG_FI~1/utils.jar') TODIR('/opt/i2')

You should see completion messages stating that the objects were copied.

- 8. After the installation programs are on the iSeries server, start the product installation. Performed the i2 Five. Two pre-installation procedures described in Chapter 9, "i2 Five. Two pre-installation information" on page 417, if you have not yet done so. This involves:
 - Loading a version 1.3.0 JRE in PASE
 - · Setting the PATH environment variable to find it
 - Starting a VNC server
 - Setting the DISPLAY environment variable to point X Window output to the VNC server
 - Making a connection from a client PC to the VNC server
 - Setting up a symbolic link to /bin
- 9. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

10.Use the cd command to change to directory /opt/i2 where the i2 Five.Two installation programs are located:

cd /opt/i2

11. The CPG template is installed using the InstallShield product. This requires the X Window System with a product like Hummingbird Exceed or VNC (open source or freeware) to display graphical windows. It does not support a standard Telnet or console client to display plain text like some of the other i2 Five. Two products can use with the InstallAnywhere product.

Call the i2 Five. Two CPG template installation programs:

java -classpath .:setup.jar:utils.jar run

An example is shown in Figure 655.

	/QOpenSys/usr/bin/-sh		
<pre>> cd /opt/i \$ > ls -1 total 390</pre>	2 48		
-rwxrwxrw -rwxrwxrw \$ > java -cla	x 1 I20WN x 1 I20WN sspath .:se	ER O ER O tup.jar:uti	19515317 Nov 16 15:40 setup.jar 758 Nov 16 15:40 utils.jar ls.jar run
===>			
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retriev F18=Bottom	re F11=Truncate/Wrap n F21=CL command entry

Figure 655. Calling setup.jar/utils.jar in a PASE QP2TERM shell

12. You see the CPG template Installer splash panel (Figure 656) in your Web browser or vncviewer window (depends on how you connected to the VNC server).



Figure 656. i2 Five. Two CPG template Installer window

13.Read the information on the welcome window (Figure 657) and click the **Next** button to continue the installation.

🔀 SUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1)			
4 Installer			
🙆 Five.Two	Welcome to the InstallShield Wizard for SCM CPG template 5.2 The InstallShield Wizard will install SCM CPG template 5.2 on your computer.		
i2 Technologies, Inc.	To continue, click Next. SCM CPG template 5.2		
InstallShield	Next > Cancel		

Figure 657. i2 Five. Two CPG template welcome window

14.Read the information on the license agreement window (Figure 658). Select the **I accept the terms of the license agreement** radio button. Click **Next**.

SUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1)				
🔹 Installer	▼ □ □	×		
	Please read the following license agreement carefully.			
Eine True	9 1995–2001 i2 Technologies US, Inc. ALL RIGHTS RESERVED.			
CA. FIVE.IVVO	his notice is intended as a precaution against inadvertent publication and does n			
	his software and/or database are furnished under a license agreement. It is again			
	This software is Unpublished—rights reserved under the copyright laws of the Un The text and drawings set forth in this software or database are the exclusive prop			
	'he brand names and product names used in this software or database are the tra			
Constanting in such as an	"he following trademarks and service marks are the property of i2 Technologies US			
	"he following registered trademarks are the property of i2 Technologies US, Inc.: i2			
	'his product is protected by one or more of the following patents:	-		
	J. S. Patent No. 5,630,123 U. S. Patent No. 5,937,155 PATENTED NO. EP0776508 J. S. Patent No. 6,188,989 U. S. Patent No. 6,119,149 Singapore PATENT NO. 379(
i Vichnologios, Inc.	J. S. Patent No. 5,764,543 U. S. Patent No. 6,233,572 Singapore PATENT NO. 3791 J. S. Patent No. 5,832,532 U. S. Patent No. 6,233,493 Singapore PATENT NO. 5104			
iz recinitiongies, nic.	J. S. Patent No. 5,845,258 U. S. Patent No. 6,085,220 Singapore PATENT NO. 5105 J. S. Patent No. 5,974,395 U. S. Patent No. 6,076,108 Singapore PATENT NO. 6404			
	▲ I accept the terms of the license agreement.			
	↓ Joint accept the terms of the license agreement.			
InstallShiel d				
	< Back Next > Cancel			
1				

Figure 658. i2 Five. Two CPG template license agreement window

15.On the choose installation folder window (Figure 659), type the directory path that you want the installation to install to. The default is c:/i2tradematrix/scm_cpg/5.2. You need to remove the c:, which is only valid for PCs, and then add /opt to the beginning. You then end up installing into the /opt/i2tradematrix/scm_cpg/5.2 directory structure. Click the **Next** button to continue the installation.

If the desired directory structure does not exist, another small window opens and asks if you want to create the directory structure. Click **Yes** to continue the installation.

🔁 SUNDT's X desktop (RCHASSLH.	RCHLAND.JBM.COM:1)	
🐠 Installer	不 🗆	
Eive.Two	Click Next to install "SCM CPG template 5.2" to this folder, or click Browse to inst a different folder. Please do not use the Browse button on Solaris Platform Directory name	tall to
	/op∯i2tradematrix/scm_cpg/5.2	
	Browse	
4	Create the directory Transfer Double want to grade it?	
	Yes No	
i2 Technologies, Inc.		
InstallShield		
	< Back Next > Cance	
		•

Figure 659. i2 Five. Two CPG template choose installation folder window

16.On the pre-installation summary window (Figure 660), verify that the installation location or folder is what you want. Click **Next**. Click the **Back** button if you need to back up and make any changes.

🚾 SUNDT's X desktop (RCHASSLH.RI	CHLAND.IBM.COM:1)
Installer Description: Description: The Installer	Total Total SCM CPG template 5.2 will be installed in the following location: /opt/i2tradematrix/scm_cpg/5.2 for a tatal size: for a tatal size:
i2 Technologies, Inc.	4.5MB
InstallShiel d	< Back Next > Cancel

Figure 660. i2 Five. Two CPG template pre-installation summary window

17. You now see the installation in progress (Figure 661) where jar files are expanded, authorities are set, and so on. This takes some time depending on the speed of your system.

NC J	SUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1)	
	Zechnologies, Int	
•		•

Figure 661. i2 Five. Two CPG template installation in progress window

18.Complete the database parameters such as the location of the Java JRE (/opt/jre1.3/jre/bin in our case), database type (DB2), Visibroker location (which would be /opt/vbroker4.1 in our case), and so on as shown in Figure 662. Note that the default values are in a PC directory format (\) and not a UNIX format (/). Keep this in mind when you are typing iSeries server directory locations. Fill in the appropriate values and click **Next**.

SUNDT's X desktop (RCHASSLH.I	RCHLAND.IBM.COM:1)	
🔰 Installer		★ □□×
	Select JRE HOME	IC:\jdk1.3\jre\bin
😰 Five.Two	Database Type for ADW	Oracle
	Select Database HOME	IC:\Oracle\Ora81
	Database Username for ADW	Idefault username
	Database Password for ADW	Idefault password
	Database alias for ADW	DB Alias (if applicable)
	Database owner for ADW	Idefault Owner
	Temporary Tablespace for SCM Transforms	Idefault tablespace
	Temporary Indexspace for SCM Transforms	Idefault indexspace
i2 Technologies, Inc.	Database connect string (URL) for ADW]]dbc:oracle:thin:@ <hostname>:<port>:<s< td=""></s<></port></hostname>
	Database driver for ADW	joracle.jdbc.driver.OracleDriver
	Select SequeLink Home	Imodify this only if using Sequelink
	Select Visibroker Home	[C:\Inprise\vbroker4.1
InstallShield		
		< Back Next > Cancel

Figure 662. i2 Five. Two CPG template database parameters window

19. Specify the directory paths (as shown in Figure 663) to the directories in which each i2 engine executable exists. For example, i2 Five. Two Factory Planner is in /opt/i2TradeMatrix/fp/5.2/bin in our case. Note that the default values are in a PC directory format (\) and not a UNIX format (/). Keep this in mind when you are typing iSeries server directory locations. Fill in the appropriate values and click **Next**.

SUNDT's X desktop (RCHASSLH.RCHLAND.IBM.COM:1)				
installer				
	Select FP	[C:\i2tradematrix\fp\5.2\bin		
🙆 Five.Two	Select SCP	[C:\i2tradematrix\scp\5.2		
	Select SC	[C:\i2tradematrix\sc\5.2		
	Select DC	[C:\i2tradematrix\tm-dc\5.2		
	Select TP	C:\i2tradematrix\tp\5.2		
	Select Link	[C:\i2tradematrix\tm-link\5.2		
	Select DF	[C:\i2tradematrix\df\5.2\bin		
	Select DP	[C:\i2tradematrix\dp\5.2		
i2 Technologies, Inc.	Select LP-OPT	[C:\i2tradematrix\scp\5.2		
	Select IP	[C:\i2tradematrix\ip\5.2		
Select locations where SCM Engines are in:				
InstallShield				
		< Back Next > Cancel		
·				

Figure 663. i2 Five. Two CPG template i2 engine locations window

20.When the installation is finished, you see an installation complete window (Figure 664). Click **Finish** to complete the installation.

CUNDT's X desktop (RCHASSLH.RCHL	AND.IBM.COM:1)	
Installer Die Five.Two 12 Technologies, Inc.	 The InstallShield Wizard has successfully installed SCM CPG to exit the wizard. However, the following warnings were gene available. File attributes could not be set because native support available. File times could not be set because native support for t available. 	★ □ □ X emplate 5.2. Click Fini erated: for that operation is n• hat operation is not
InstallShiel d		Finish

Figure 664. i2 Five. Two CPG template installation complete window

The installation complete window disappears. You can close the vncviewer window or Web browser, unless you want to install any i2 Five.Two products.

21. You can review an installation log file called log.txt that is generated and placed in directory /opt/i2TradeMatrix/scm_cpg/5.2/ (and possibly in the home directory of the user that performed the install, for example, /home/I2OWNER).

To review the installation log file, follow these steps:

 a. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 b. Use the cd command to change to directory /opt/i2TradeMatrix/scm_cpg/5.2/ where the installation log file is located:

cd /opt/i2TradeMatrix/scm cpg/5.2/

c. Use the cat command to view the installation log file:

```
cat log.txt
```

An example is shown in Figure 665.

```
/QOpenSys/usr/bin/-sh
 $
> cd /opt/i2TradeMatrix/scm_cpg/5.2
> ls -l loq.txt
  -rw-rw-rw-
             1 I2OWNER 0
                                      876 Feb 20 08:45 log.txt
> cat log.txt
  (Feb 20, 2002 8:36:18 AM), Setup.product.install,
com.installshield.product.service.product.PureJavaProductServiceImpl$DiskSpaceChe
Checking required disk space requires file service native support.
   (Feb 20, 2002 8:36:27 AM), Setup.product.install, com.installshield.product.ac
wrn, Cannot set file attributes: operation is not supported by the current file s
implementation.
   (Feb 20, 2002 8:39:43 AM), Setup.product.install, com.installshield.product.ac
wrn, Cannot set file times: operation is not supported by the current file servic
implementation.
   (Feb 20, 2002 8:45:02 AM), Setup.product.install,
com.installshield.wizard.service.file.PureJavaFileServiceImpl, wrn, Unable to dup
attributes when copying file(s): ServiceException: (error code = 305; message =
"getFileAttributes requires native support. "; severity = 0)
 Ś
===>
           F6=Print F9=Retrieve F11=Truncate/Wrap
F3=Exit
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 665. Using cat to view the i2 Five.Two CPG template installation log file

22.If you want to see the results of the CPG template installation, you can use the EDTF command to view the contents of the directory /opt/i2TradeMatrix/scm_cpg/5.2:

EDTF STMF('/opt/i2TradeMatrix/scm_cpg/5.2')

An example is shown in Figure 666.

Directory	y: /opt/i2Trade	Matrix/scm_	cpg/5.2		
Position	to :	Record	d: 1 c	of 10	
New File	:				
2=Edit 4	4=Delete File	5=Display	6=Path Size	9=Recursive Del	lete
Opt Name		Size	Owner	Changed	Used
log.t	txt	8K	120WNER	02/20/02 08:45	02/20/02 08:45
DF		*DIR	120WNER	02/20/02 08:36	02/20/02 08:36
DP		*DIR	120WNER	02/20/02 08:37	02/20/02 08:37
SP		*DIR	120WNER	02/20/02 08:38	02/20/02 08:38
adw_o	data	*DIR	120WNER	02/20/02 08:38	02/20/02 08:38
commo	on	*DIR	120WNER	02/20/02 08:38	02/20/02 08:38
log		*DIR	120WNER	02/20/02 08:42	02/20/02 08:42
pc_da	ata	*DIR	120WNER	02/20/02 08:42	02/20/02 08:42
workt	Elows	*DIR	120WNER	02/20/02 08:42	02/20/02 08:42
_unir	nst	*DIR	120WINER	02/20/02 08:42	02/20/02 08:42
					Bottom
F3=Exit	F12=Cancel	F16=Sort	F17=Position	to F22=Displa	ay entire field

Figure 666. Using EDTF to display contents of the CPG template directory after installation



Appendix C. Tips and techniques

This appendix contains various tips and techniques that i2 on iSeries server customers may find useful. The information is broken down into basic and advanced sections.

C.1 Basic tips and techniques

This section describes basic tips and techniques and includes information on:

- Creating an OS/400 library
- Creating an OS/400 source physical file
- Adding a member to an OS/400 source physical file
- Editing a member of an OS/400 source physical file
- Creating a CL program
- · Creating and editing stream files and scripts
- Basic problem determination
- Security considerations
- Save and restore considerations

C.1.1 Creating an OS/400 library

To create a library on the iSeries server, follow these steps:

- 1. Enter the Create Library (CRTLIB) command and press the F4 function key to prompt the command.
- 2. For the Library parameter, specify the name of the library to be created. In our example, we create a library called 12.
- 3. For the Text 'description' parameter, provide a brief description for the library. The completed Create Library display is shown in Figure 667.
- 4. Press Enter.

Create Library (CRTLIB) Type choices, press Enter. Library 12 Name *PROD, *TEST *PROD Library type i2 OS/400 utility library Text 'description' Bottom F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More keys

Figure 667. Using the Create Library (CRTLIB) command to create the I2 library

Or you can simply issue the following command:

CRTLIB LIB(I2) TEXT('i2 OS/400 utility library')

You should see the completion message Library I2 created.

C.1.2 Creating an OS/400 source physical file

To create a source physical file on the iSeries server, follow these steps:

- 1. Enter the Create Source Physical File (CRTSRCPF) command and press F4 to prompt the command.
- 2. For the File parameter, specify the name and library where the source physical file should be created. In our example, we create 12SOURCE in library 12.
- 3. For the Text 'description' parameter, provide a brief description for the source physical file. The completed Create Source Physical File is shown in Figure 668.
- 4. Press Enter.

Create Source	Physical File	(CRTSRCPF)
Type choices, press Enter.		
File	I2SOURCE I2 92 *NONE CL source for	Name Name, *CURLIB Number Name, *NONE, *FILE : i2 utilities
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additiona F24=More keys	Bottom al parameters F12=Cancel

Figure 668. Using the Create Source Physical File (CRTSRCPF) command to create I2SOURCE

Or you can simply use the following command:

CRTSRCPF FILE(I2/I2SOURCE) TEXT('CL source for i2 utilities')

You should see the completion message File I2SOURCE created in library I2.

C.1.3 Adding a member to an OS/400 source physical file

To add a member to a source physical file on the iSeries server, follow these steps:

- 1. Enter the Add Physical File Member (ADDPFM) command and press F4 to prompt the command.
- 2. Press F10 to show additional parameters.
- 3. For the Physical file parameter, specify the name of the source physical file where the member will be added to. In our example, we use I2SOURCE in library I2.
- 4. For the Member parameter, specify the name of the member to be created. In our example, we use TESTPGM.
- For the Source type parameter, specify CLP because we want to create a CL program. The completed Add Physical File Member display is shown in Figure 669.
- 6. Press Enter.

Add Physica	al File Member	(ADDPFM)
Type choices, press Enter.		
Physical file	I2SOURCE I2 TESTPGM i2 test prog onal Parameter	Name Name, *LIBL, *CURLIB Name rram utility rs
Expiration date for member Share open data path Source type	*NONE *NO CLP	Date, *NONE *NO, *YES Name, *NONE
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	Bottom F13=How to use this display

Figure 669. Using Add Physical File Member (ADDPFM) to add TESTPGM to I2/I2SOURCE

Or you can simply issue the following command:

ADDPFM FILE(12/12SOURCE) MBR(TESTPGM) TEXT('i2 test program utility') SRCTYPE(CLP)

You should see the completion message Member TESTPGM added to file I2SOURCE in I2.

C.1.4 Editing a member of an OS/400 source physical file

There are two common ways to edit an OS/400 source physical file member:

- Source Entry Utility (SEU): Comes as part of Licensed Program Product (LPP) Application Development ToolSet/400 (5769-PW1) on OS/400 V4R5M0, or as part of LPP WebSphere Development Studio (5722-WDS) on OS/400 V5R1M0. This product is available for an additional cost to the base OS/400 operating system.
- Edit File (EDTF) native OS/400 CL command: Comes as part of the base OS/400 operating system.

C.1.4.1 Editing using the SEU utility

You can initiate the SEU utility directly from the OS/400 command line or from Program Development Manager (PDM), which comes as part of the 5769-PW1 or 5722-WDS LPPs.

Using SEU from an OS/400 command line

To edit a source member directly from the OS/400 command line, follow these steps:

1. Enter the Start Source Entry Utility (STRSEU) command and press F4 to prompt the command.

For the Source file parameter, specify the name of the source physical file and library. In our example, we use <code>l2SOURCE</code> in library <code>l2</code>.

For the Source member parameter, specify the name of the member in the source physical file that you want to edit. In our example, we use TESTPGM. The completed Start Source Entry Utility display is shown in Figure 670.

Press Enter.

Start Source Entry Utility	(STRSEU)
Type choices, press Enter.	
Source file	Name, *PRV Name, *LIBL, *CURLIB, *PRV Name, *PRV, *SELECT Name, *SAME, BAS, BASP *BLANK, ' ', 2, 5, 6
F3=Exit F4=Prompt F5=Refresh F12=Cancel F F24=More keys	Bottom 13=How to use this display

Figure 670. Using the Start Source Entry Utility (STRSEU) command against TESTPGM

Or you can simply enter the following command and press Enter:

STRSEU SRCFILE (12/12SOURCE) SRCMBR (TESTPGM)

- The Edit display shown in Figure 671 should appear. Type Ixx in the left-most column on the Beginning of data line where xx is the amount of lines to (I)nsert. For example, 19 inserts nine new lines.
- You can now start entering CL source code on the blank lines. Each time you
 press Enter after you add a line of source code, an additional blank line is
 inserted.

You can press F1, with your cursor in the left-most column, to see other line commands available in SEU, for example Cxx for copy and Dxx for delete.

Columns SEU==>	: 1	80	Edit		I2/I2SOURCE TESTPGM	[
FMT **	+ 1	+ 2+	3+ 4	+ 5+	6+ 7	
I9	*********	** Beginning	of data *****	******	*****	*
	******	***** End of	data ********	************	*****	*
F3=Exit	F4=Promot	F5=Refresh	F9=Retrieve	F10=Cursor	F11=Togale	
F16=Repe	at find	F17=Repeat of	change	F24=More kevs		
Cincpe		· · · · · · · · ·		121 1.010 1.070		

Figure 671. SEU Edit display started from an OS/400 command line

4. When you are done editing the file, press F3 to end the edit session. The Exit display is shown in Figure 672.

Exit				
Type choices, press Enter.				
Change/create member	Y Y=Yes, N=No TESTPGM Name, F4 for list I2SOURCE Name, F4 for list I2 Name i2 test program utility			
Resequence member	Y Y=Yes, N=No 0001.00 0000.01-9999.99 01.00 00.01-99.99			
Print member	N Y=Yes, N=No			
Return to editing	N Y=Yes, N=No			
Go to member list	N Y=Yes, N=No			
F3=Exit F4=Prompt F5=Refresh F12=0	Cancel			

Figure 672. SEU Exit display

5. Make sure that you specify Y for Yes on the Change/create member field so that you save the changes made during your edit session. You can leave all other values default. Press Enter to save the source code you entered in the specified source member.

You should see the completion message Member TESTPGM in file 12/12SOURCE changed with x records.

Using SEU from PDM

To edit your source member using PDM, follow these steps:

- 1. Enter the Start PDM (STRPDM) command and press Enter.
- 2. Select option 3 (Work with members) from the PDM menu shown in Figure 673. Press Enter.

AS/400 Programming Development Manager (PDM)
Select one of the following:
 Work with libraries Work with objects Work with members Work with projects Work with groups Work with parts
9. Work with user-defined options
Selection or command ===> 3
F3=ExitF4=PromptF9=RetrieveF10=Command entryF12=CancelF18=Change defaults(C) COPYRIGHT IBM CORP. 1981, 2000.

Figure 673. Programming Development Manager (PDM) main menu

3. The Specify Members to Work With display (Figure 674) opens. For the File and Library parameters, specify the name of the source physical file to work with. In our example, we use the <code>l2SOURCE</code> file in the <code>l2</code> library that was previously created. Press Enter.

Specify Members to Work With				
Type choice	es, press Enter	c.		
File .		I2SOURCE	Name, F4 for list	
Librar	у	12	*LIBL, *CURLIB, name	
Member: Name Type		*ALL • • *ALL	*ALL, name, *generic* *ALL, type, *generic*, *BLANK	
F3=Exit	F4=Prompt	F5=Refresh	F12=Cancel	

Figure 674. Using PDM to work with members in I2/I2SOURCE

4. Type option 2 under the Opt column in front of the member you want to edit. In our example, we want to edit TESTPGM as shown in the example in Figure 675. Press Enter.

	Work with Me	mbers Using PDM	I2
File Library	. I2SOURCE . I2	Position to	
Type options, pr 2=Edit 8=Display descr	ess Enter. 3=Copy 4=Delete 5=Dis iption 9=Save 13=Cha	play 6=Print nge text 14=Compile	7=Rename 15=Create module
Opt Member <u>2</u> TESTPGM	Type Text CLP i2 test p	program utility	
Parameters or co	mmand		Bottom
===> F3=Exit	F4=Prompt	F5=Refresh	F6=Create
F9=Retrieve	F10=Command entry	F23=More options	F24=More keys

Figure 675. Work with Members Using PDM display to edit TESTPGM

- 5. The Edit panel shown in Figure 676 appears. Type Ixx in the left-most column on the "Beginning of data" line, where xx is the amount of lines to (I)nsert. For example, I9 inserts nine new lines.
- 6. You can now start entering CL source code on the blank lines. Each time you press Enter after adding a line of source code, an additional blank line is inserted.

Press F1, with your cursor in the left-most column, to see other line commands available in SEU, for example Cxx for copy and Dxx for delete.

Columns : 1 SEU==>	80 Edit	I2/I2SOURCE TESTPGM
FMT **+ 1 I9 ************************************	+ 2+ 3+ 4+ ** Beginning of data ********* ***** End of data *************	5+ 6+ 7 **********************************
F3=Exit F4=Prompt F16=Repeat find	F5=Refresh F9=Retrieve F10 F17=Repeat change F24	=Cursor F11=Toggle =More keys

Figure 676. Example of SEU edit panel started from PDM

7. When you are done, press the F3 function key to end the edit session. The Exit display appears as shown in Figure 677.

Exit	
Type choices, press Enter.	
Change/create member Y Member T File I Library	Y=Yes, N=No ESTPGM Name, F4 for list 2SOURCE Name, F4 for list I2 Name 2 test program utility
Resequence member 0 Start 0 Increment 0	Y=Yes, N=No 001.00 0000.01-9999.99 1.00 00.01-99.99
Print member N	Y=Yes, N=No
Return to editing N	Y=Yes, N=No
Go to member list N	Y=Yes, N=No
F3=Exit F4=Prompt F5=Refresh F12=Ca	ncel

Figure 677. SEU Exit display

8. Make sure that you specify x for Yes on the Change/create member field so that you save the changes made during your edit session. You can leave all other values as the default. Press Enter to save the source code you entered in the specified source member.

You should see the message Member TESTPGM in file 12/12SOURCE changed with ${\rm x}$ records.

C.1.4.2 Editing using EDTF

To edit a source member using the EDTF command, follow these steps:

- 1. Enter the Edit File (EDTF) command and press F4 to prompt the command.
 - a. Press the F9 function key to see additional parameters.
 - b. Enter values for the Database file, Library, and File member parameters. In our example, we specify TESTPGM in 12/12SOURCE that we created earlier.
 - c. The completed Edit File display is shown in Figure 678. Press Enter.
| Edit Fi | ile (EDTF) |
|---|--|
| Type choices, press Enter. | |
| Stream file, or | |
| Data base file | SOURCE Name
12 Name, *LIBL, *CURLIB
STPGM Name, *FIRST |
| F3=Exit F4=Prompt F5=Refresh F12
F24=More keys | Bottom
2=Cancel F13=How to use this display |

Figure 678. Using the EDTF command to edit TESTPGM in I2/I2SOURCE

Or, you can simply enter the following command and press Enter:

EDTF FILE(12/12SOURCE) MBR(TESTPGM)

The Edit File display in Figure 679 appears.

Edit File: 12/12SOURCE Record . : 1 of Control :	(TESTPGM) 1 by	8 C	Column: 13 of	92 by 126
CMD+3	+4 ning of data	+5+ ****	6+7	+8+
19 ********End of	E Data******	****		
F2=Save F3=Save/Exit F17=Repeat change F19= (C) COPYRIC	F12=Exit =Left F20=Ri HT IBM CORP.	F15=Services ight . 1980, 2000.	F16=Repeat fi	nd

Figure 679. Editing TESTPGM using the EDTF command

- 2. Type Ixx in the left-most column after the "Beginning of data" line, where xx is the amount of lines to (I)nsert. For example, 19 inserts nine new lines.
- 3. You can now start entering CL source code on the blank lines. Press F1, with your cursor in the left-most column, to see other line commands available in Edit File, for example Cxx for copy and Dxx for delete.
- 4. Press F3 twice to save and exit.

C.1.5 Creating a CL program

To create a CL program, follow these steps:

1. Enter the Create CL Program (CRTCLPGM) command and press F4 to prompt the command.

- 2. For the Program parameter, specify the name and library of the CL program being created. In our example, we use TESTPGM in library 12.
- 3. For the Source file parameter, specify the name and library of the source physical file. In our example, we use I2SOURCE in library I2.
- 4. For the Text 'description' parameter, provide a brief description for the CL program being created.
- 5. An example of the completed display is shown in Figure 680. Press Enter.

Create CL Program (C	RTCLPCM)
Type choices, press Enter.	
Program	Name Name, *CURLIB Name Name, *LIBL, *CURLIB Name, *PGM program utility'
F3=Exit F4=Prompt F5=Refresh F10=Additi F13=How to use this display F24=More k	Bottom Lonal parameters F12=Cancel teys

Figure 680. Using the CRTCLPGM command to create TESTPGM as a CL program

Or you can simply enter the following command:

CRTCLPGM PGM(I2/TESTPGM) SRCFILE(I2/I2SOURCE) TEXT('i2 test program utility')

You should see the completion message Program TESTPGM created in library 12.

If you are using Programming Development Manager (PDM), you can use option 14 next to a CL program to compile the program. This completes the Create CL Program (CRTCLPGM) parameters for you.

If for any reason you are not able to successfully create the CL program, review the spooled file called TESTPGM created during the compilation process.

C.1.6 Creating and editing stream files and scripts

The UNIX environment uses flat files or stream files. These could contain data or be shell scripts that run a series of commands or programs.

The EDTF command on the iSeries server is the standard editor for editing files that reside in the Integrated File System. You can also use it to browse a file or directory.

You can also use the Work with Object Links (WRKLNK) command. From there, you can select the option to edit a file, and the EDTF command invokes.

EDTF is the only native editor available on the iSeries server to edit stream files. vi or Emacs is not available within OS/400 PASE by default. However, PRPQ iSeries Tools for Developers (5799-PTL) is available to provide the ez and Emacs

editors. This is described in more detail in B.1, "iSeries Tools for Developers PRPQ (5799-PTL)" on page 561.

Most UNIX systems historically run on hardware that uses ASCII character C encoding by default, although all objects can be tagged with specific code pages. Files used by OS/400 PASE applications (therefore by i2) must be ASCII files that are represented as Coded Character Set ID (CCSID) 00819. Extended Binary Coded Decimal Interchange Code (EBCDIC) files have a CCSID of 00037 or 65535. Files used by PASE applications must not contain carriage returns.

This section explains some idiosyncrasies and workarounds regarding file creation and manipulation.

C.1.6.1 Creating a file using echo or touch

If a new file needs to be created for use in the PASE environment, you can use the touch or echo commands within PASE to do this. The echo command is recommended over the touch command.

If you use the touch command, it creates the file with carriage returns and line feeds by default (CRLF), and you have to use echo to enter the first text or data in it. If you don't and use the EDTF command to enter the first text into a file created using touch, then you need to manually remove the carriage return characters before using the file.

It is easier to simply use echo to create the file (with just line feed (LF) characters), enter some initial text into it, and then use the EDTF command to edit the file. Creating the file in the PASE environment ensures that the file is created with the correct ASCII CCSID. Using the EDTF command to create a file associates it with an EBCDIC CCSID, which causes many problems in the PASE environment, so do not "create" a file using the EDTF command.

To create a file in PASE, follow these steps:

- 1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library: CALL OP2TERM
- 2. Use the cd command to change to the desired directory to contain the file. We use /home/I2OWNER:

cd /home/I2OWNER

3. Use the echo command to create a file:

echo > newfile1.txt

If you want to create a file with some initial text into it, enter some text before the greater than (>) character:

echo Some initial text > newfile2.txt

4. Use the cat command to view the contents of the files:

cat newfile1.txt
cat newfile2.txt

5. If the file is going to be a shell script, use the chmod command to give the file execute authority:

chmod +x newfile1.txt

Figure 681 shows an example of steps two through five.



Figure 681. Using the echo command in a PASE QP2TERM shell to create files

C.1.6.2 Editing files using EDTF

To edit a file using the EDTF command, follow these steps:

- 1. Enter the Edit File (EDTF) command and press F4 to prompt the command.
- For the Stream file parameter, specify the directory name where the file resides, or the fully qualified path name to the file. In our example, we use /home/I2OWNER/newfile2.txt.

An example is shown in Figure 682.

Ed	it File (EDTF)	
Type choices, press Enter.		
Stream file, or	> '/home/I20W1	WER/newfile2.txt'
Data base file	*LIBL	Name, *LIBL, *CURLIB
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	Bottom F13=How to use this display

Figure 682. Edit File (EDTF) display prompt specifying /home/i2owner/newfile2.txt

The stream file path name can be either a simple name or a name that is qualified with the name of the directory in which the object is located. A pattern can be specified in the last part of the path name. An asterisk (*)

matches any number of characters. A list of all files or subdirectories that match the specified characters displays. If the file name specified is a directory, then a list of the files and subdirectories displays. From this list, you can edit or display the files in the directory. If you specify a file name that does not exist, it is created, but this creates the file with an EBCDIC CCSID, which causes many problems in the PASE environment.

3. Press Enter.

Note

If the path name is qualified or contains a pattern, ensure that it is enclosed in quotation marks.

4. You should see a panel like the example shown in Figure 683. Press F1, with your cursor in the left-most column, to see the line commands that are available in Edit File.

Use Ixx to insert new lines, Cxx to copy lines, and Dxx to delete lines. For more information on the Edit File command, refer to *CL Reference*, SC41-5722.

Edit File: /home/12OWNER/newfile2.txt Record .: 1 of 1 by 10 Control :	Column:	1 of 59 by
<pre>CMD+1+2+3+ **********Beginning of data****** Some initial text ***********************************</pre>	.4+5+6 ******	+7+
F2=Save F3=Save/Exit F12=Exit F15=Se (C) COPYRIGHT IBM CORP. 1980	rvices F16=Repeat find	. F17=Repeat ch

Figure 683. Edit File (EDTF) display of /home/i2owner/newfile2.txt

5. Once you are in the editing file mode, press F15 for services. You should see the EDTF Options Screen as shown in Figure 684.

EDTF (Options Screen
Selection	
1. Copy from stream file	/home/I20WNER/newfile2.txt
2. Copy from database file Library	Name, *LIBL, *CURL Name, *FIRST
5. Change CCSID of file	Job CCSID: 00037
6. Change CCSID of line	*NONE
9. Stream file EOL option User defined	*LF *CR, *LF, *CRLF, *LFCR, *USRDFN Hexadecimal value
F3=Exit F12=Cancel	

Figure 684. Edit File (EDTF) options panel showing CCSID 00819 and LF

It is critical that the file CCSID be 00819, which is ASCII. Also verify that the Stream file EOL option reflects *LF only. If it contains CR also, then do not use this file in PASE because you have to manually remove the carriage return characters, which is a tedious task.

- Note

Once a file is created with an EBCDIC CCSID of 00037 or any CCSID for that matter, you cannot change it to 00819.

6. Press F3 or F12 to return to the editing panel. Make your changes or enter your text. Then press F3 twice to save the file and exit.

C.1.6.3 Removing carriage return characters from files

It is possible to use a Microsoft Windows editor, such as WordPad or Notepad on files, and then move them to the iSeries server. However, they sometimes add carriage return (CR) characters to the file that must be removed before the file is usable in PASE. The same is true if you use the touch command to create a file and don't use echo to enter the first text into the file.

You can remove carriage returns using the UNIX tr command in the PASE environment. Table 29 shows many of the ways that carriage return and line feed characters may be displayed. You can find complete ASCII character set information in C.2.10, "ASCII character set tables" on page 695.

	Character	Hexadecimal	tr command	Octal
Carriage return	^M	x'0D'	\r	\015
Line feed	۸J	x'0A'	∖n	\012

Table 29. Carriage return and line feed representations

One way to view carriage returns in a file is to use the cat command with the $-{\rm v}$ option to display non-printing characters as visible characters. Carriage returns appear at the end of files as ^M characters.

Carriage return characters are represented by \r characters when using the od command to view a file. Line feed characters are represented by \n characters. To display the carriage returns in a file, use one of the following commands:

od -t cx filename od -xc filename od -t cx filename | grep \r

Figure 685 show an example of using the $_{\rm cat}$ and $_{\rm od}$ commands to view carriage returns.

/QOpenSys/usr/bin/-sh	`
\$	
> cat -v crtest.txt	
Some EDIF text ^M	
\sim od -t cx crtest txt	
0000000 Some EDTF text\r\n	
536f6d65 20454454 46207465 78740d0a	
0000020	
\$	
> od -xc crtest.txt	
0000000 536f 6d65 2045 4454 4620 7465 7874 0d0a	
Some EDTF text\r\n	
\$	
$> $ od -t cx crtest.txt grep \r	
0000000 Some EDTF text\r\n	
\$	
===>	
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap	
F13=Clear F17=Top F18=Bottom F21=CL command entry	

Figure 685. Using cat and od to view carriage returns in a file in a PASE QP2TERM shell

To remove the carriage returns from a file, use the following command:

tr -d $' \ r' < filename$

To create a new file with the carriage returns removed while leaving the existing file intact, use the following command:

tr -d '\r' < existingfile > newfile

PRPQ iSeries Tools for Developers (5799-PTL), discussed in B.1, "iSeries Tools for Developers PRPQ (5799-PTL)" on page 561, contains a tool called delcr that you may also use to delete carriage returns from a file.

C.1.7 Basic problem determination

You should use standard OS/400 problem determination techniques to identify and debug PASE problems. There are no direct logging facilities, such as the syslog daemon, in the PASE runtime environment. Applications that need such services can use existing facilities in OS/400, such as job logs for diagnostic messages and sending severe messages to the OS/400 system operator message queue, QSYSOPR. To display messages for QSYSOPR, use the Display Messages (DSPMSG) command:

DSPMSG MSGQ(QSYSOPR)

To display your job log, use the Display Job Log (DSPJOBLOG) command. Then press F10 to display detailed messages. If the job log is long, then use F18 to go to the bottom. Function key F5 is available to refresh the job log you are looking at.

The Work with Active Jobs (WRKACTJOB) command shown in Figure 13 on page 26 allows you to look at all jobs on the system. You can also select option 5 to work with a job and then select option 10 to look at the job log for that job.

If in-depth problem determination is needed, you may want to change the logging level of the job description for the job in question. You can display a user profile using the Display User Profile (DSPUSRPRF) command or display a job using the Display Job (DSPJOB) command to determine the job description that is being used. The OS/400 default job description is QDFTJOBD in the QGPL library. This is what PASE jobs, such as QP2SHELL and QP2FORK, use by default.

To change logging level, use the Change Job Description (CHGJOBD) command and press F4 to prompt the command. In our example, we use QDFTJOBD for the job description and QGPL as the library. Press Enter and then press F10 for additional parameters. The completed Change Job Description display is shown in Figure 686.

Change Job	Description	(CHGJOBD)
Type choices, press Enter.		
Job description	QDFTJOBD QGPL QBATCH QGPL 5 5 *USRPRF *USRPRF	Name Name, *LIBL, *CURLIB Name, *SAME Name, *LIBL, *CURLIB 1-9, *SAME 1-9, *SAME Name, *SAME, *USRPRF Name, *SAME, *USRPRF, *DEV
Text 'description'	'Default job	Name, *LIBL, *CURLIB description'
Additic	nal Parameter	rs
User	*RQD *SYSVAL	Name, *SAME, *RQD
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	F13=How to use this display

Figure 686. CHGJOBD prompt showing job description QDFTJOBD in QGPL

Page down until you see the Message logging parameter. While debugging a problem, you may want to change the parameter to receive additional messages. The recommended values are Level=4, Severity=00, and Text=*SECLVL as shown in Figure 687. Return the values to their original state once problem

determination is complete, because these settings create many extra job logs on the system.

Change Job	Description	(CHGJOBD)
Type choices, press Enter.		
Accounting code	*USRPRF 'QCMDI'	
Request data or command	*NONE	
CL syntax check	*NOCHK *SYSVAL	0-99, *SAME, *NOCHK Name, *SAME, *SYSVAL, *NONE
End severity	30 4	0-99, *SAME
Severity	00 *SECLVL	0-99, *SAME *SAME, *MSG, *SECLVL, *NOLIST
Log CL program commands	*YES	*SAME, *NO, *YES More
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	F13=How to use this display

Figure 687. Changing QDFTJOBD message logging to 4, 00, *SECLVL for problem determination

When an i2 server or engine is started, there may be an option for additional logging by adding a startup parameter, or by sending engine output to a log file. For example, to start the Link engine with logging information, use the diagnostic and log_file parameters:

rl_engine as400_startup_name i2 as400_owner_separator / +diagnostic -log_file
/link_log/log.dat

Some of the i2 client products allow for additional messaging and logging to be used in problem determination. For example, when starting the Link client, the options box allows you to select "enable logging" and "verbose messages". If the client is started with these options selected, additional messages are sent to log files on the PC client.

See the individual product chapters in this redbook for additional information on each product.

C.1.8 Security considerations

From a security point of view, OS/400 PASE programs are subject to the same security restrictions as any other programs on the iSeries server. To run an OS/400 PASE program on an iSeries server, you must have authority to the AIX binary in the Integrated File System. You must also have the proper level of authority to each of the resources accessed by that program, or the program will receive an error when you attempt to access those resources.

Figure 688 shows how UNIX permissions map to iSeries server security.

		iS	eries			
UNIX			Data Authority			
	ODJOPH	*READ	*ADD	*UPD	*DLT	*XEQ
r(read)	X	X	-	-	-	-
w(write)	X	-	Х	Х	x	-
x(execute)	X	-	-	-	-	X
No Authority	-	-	-	-	-	-
(*OBJOPR=Use object, *EXCLUDE=No Authority)						

Figure 688. Mapping UNIX permissions to iSeries server security

When you create a stream file in the Integrated File System, the file is created with a default of read and write. If a script is created, you need to change the authority to include execute. You can change authority while in the OS/400 PASE environment or by using the Work with Object Links (WRKLNK) command.

To change object authority while in a PASE QP2TERM shell, for example to grant execute authority to a file, use the following command:

chmod +x <filename>

You can use the UNIX ls -1 command to see detailed object authorities while in OS/400 PASE as shown in Figure 689.

```
/QOpenSys/usr/bin/sh
  Ś
> ls -1
 total 368
                                       1 Mar 26 15:10 newfile1.txt
  -rw-rw-rw- 1 I20WNER 0
  -rw-rw-rw- 1 I20WNER 0
                                       10 Mar 26 15:11 newfile2.txt
> chmod +x newfile1.txt
 $
> ls -1
 total 368
  -IWXIWXIWX 1 I20WNER 0
                                      1 Mar 26 15:10 newfile1.txt
                                       10 Mar 26 15:11 newfile2.txt
  -rw-rw-rw- 1 I20WNER 0
  $
===>
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 689. Using Is -I to see object authority and chmod +x to add execute authority

To change object authority outside of OS/400 PASE using the Work with Object Links (WRKLNK) command, use the following command:

WRKLNK OBJ('/home/i2owner/newfile2.txt')

Enter option 9 (Work with authority) next to the file as shown in Figure 690.

Work with Object Links
Directory : /home/i2owner
Type options, press Enter. 9=Work with authority 10=Move 12=Work with links 13=Change directory attributes
Opt Objectlink Type Attribute Text 9 newfile2.txt STMF
Parameters or command
F3=ExitF4=PromptF5=RefreshF9=RetrieveF12=CancelF17=Position toF22=Display entire fieldF23=More options

Figure 690. WRKLNK option 9 to work with object authorities

Press Enter. Then you see the Work with Authority display (Figure 691).

Work with Authority	
Object	
Type options, press Enter. 1=Add user 2=Change user authority 4=Remove user	
DataObject Authorities Opt User Authority Exist Mgt Alter Ref	
*PUBLIC *RW X X X X I2OWNER *RW X X X X	
Parameters or command	Bottom
===> F3=Exit F4=Prompt F5=Refresh F9=Retrieve F11=Display detail data authorities F12=Cancel F24=More keys (C) COPYRIGHT IBM CORP. 1980, 2000.	,

Figure 691. Object authorities for /home/i2owner/newfile2.txt

Notice that the file only has *RW data authority. This matches what we saw in Figure 689. Press F11 to see detailed data authorities as shown in Figure 692.

Wo	ork with Authority
Object	: /home/i2owner/newfile2.txt : I2OWNER : *NONE : *NONE
Type options, press Enter. 1=Add user 2=Change user au	thority 4=Remove user
Data	Data Authorities
Opt User Authority Ob	opr Read Add Update Delete Execute
*PUBLIC *RW >>	x x x x
I2OWNER *RW >	X X X X
	Bottom
Parameters or command	
===>	
F3=Exit F4=Prompt F5=Refres F11=Display object authorities	f9=Retrieve F12=Cancel F24=More keys

Figure 692. Detailed data authorities for /home/i2owner/newfile2.txt

To change authorities, you can use option 2 (Change user authority) on the Work with Object Links display (Figure 690).

C.1.9 Save and restore considerations

Since PASE applications and files are stored in directories in the Integrated File System, be sure to include the files and directories in your backup procedures. The Save Object (SAV) command is used to save objects in the Integrated File System, and the Restore Object (RST) command is used to restore objects saved with the SAV command.

For complete details, see *Backup and Recovery*, SC41-5304, or the Backup, Recovery, and Availability topic in the iSeries Information Center at: http://publib.boulder.ibm.com/html/as400/v5r1/ic2924/index.htm

Here are some SAV examples:

 To save all objects that are not in libraries and are not document library objects (basically the entire Integrated File System):

```
SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/*') ('/QSYS.LIB' *OMIT) ('/QDLS' *OMIT))
```

 To save all objects that are not in libraries, that are not document library objects, and that have changed since the last time they were saved with UPDHST(*YES) specified:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/*') ('/QSYS.LIB' *OMIT) ('/QDLS'
*OMIT)) CHGPERIOD(*LASTSAVE)

 To save the active user's home directory and everything underneath the home directory to a tape device named TAP01:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ('~')

If the active user is I2OWNER, then this is the same as the following command:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ('/home/I2OWNER')

 To save all objects in the current directory and its subdirectories, use the default value of ^{1*1} on the OBJ parameter:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ('*')

This is not valid if the current directory is the root directory or if the current directory is in the QDLS file system. To determine what the current directory is, you can use the Display Current Directory (DSPCURDIR) command. You can change the current directory using the Change Current Directory (CHGCURDIR) command.

 To save all objects in the /opt/i2tradematrix/scp/5.2 directory and its subdirectories:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/opt/i2tradematrix/scp/5.2'))

 To save all objects in the directory /opt/i2tradematrix/scp/5.2 but not in any subdirectories:

```
SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/opt/i2tradematrix/scp/5.2'))
SUBTREE(*NONE)
```

 To save all objects in the directory /opt/i2tradematrix/scp/5.2, except those with extensions of .txt and .def (the entire subtrees of directories with these extensions are omitted):

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/opt/i2tradematrix/scp/5.2')
('/opt/i2tradematrix/scp/5.2/*.txt' *OMIT)
('/opt/i2tradematrix/scp/5.2/*.def' *OMIT))

 To save all objects in the current directory except those with extensions of .BACKUP and .TEMP (the entire subtrees of directories with these extensions are omitted):

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('*') ('**.BACKUP' *OMIT) ('**.TEMP' *OMIT))

 To save all objects in directory /opt/i2tradematrix/scp/5.2 and its subdirectories, except subdirectory 5.2_schema:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/opt/i2tradematrix/scp/5.2') ('/opt/i2tradematrix/scp/5.2/5.2_schema' *OMIT))

• To save an individual object called scp_engine from the /opt/i2tradematrix/scp/5.2 directory:

SAV DEV('/QSYS.LIB/TAP01.DEVD') OBJ(('/opt/i2tradematrix/scp/5.2/scp_engine'))

 To save an individual object called newfile2.txt from the /home/I2OWNER directory to a save file (SAVF) called IFSSAVF in library QGPL instead of to a tape drive:

SAV DEV('/qsys.lib/qgpl.lib/ifssavf.file')
OBJ(('/home/i2owner/newfile2.txt'))

C.2 Advanced tips and techniques

This section describes advanced tips and techniques. It includes information on:

- Creating a command to issue CALL QP2TERM
- Associating iSeries server jobs and PASE jobs
- Determining process memory size
- Automating tasks within CALL QP2TERM
- Transferring files between servers using FTP
- Active Data Warehouse SQL versus system table names
- Unzipping zip files in the IFS
- Copying data between DB2 UDB for iSeries and stream/flat files
- Advanced problem determination
- ASCII character set tables

C.2.1 Creating a command to issue CALL QP2TERM

The PASE interactive environment is started by issuing CALL QP2TERM. To create a custom command and program so that you can issue a different or shorter name, follow these steps:

1. Create a source physical file, add a member to it, and create a CL program in it issuing CALL QP2TERM (explained in C.1, "Basic tips and techniques" on page 627). Figure 693 shows an example program called STRPASECPP.

Columns : 1 80 Edit	12/12SOURCE
SEU==>	STRPASECPP
FMT **+ 1+ 2+ 3+ 4+ 5+ 6	+ 7
**************************************	******
0001.00 /***********************************	********/
0002.00 /*	*/
0003.00 /* PROGRAM NAME	*/
0004.00 /* LIBRARY NAME	*/
0005.00 /* ORIGINAL SOURCE FILE	*/
0006.00 /* LIBRARY NAME	*/
0007.00 /* CREATION DATE	*/
0008.00 /* REVISION DATE/TIME	.1:28 */
0009.00 /* CREATOR	IDT */
0010.00 /* COMPANY	; */
0011.00 /* ADVANCED TECHNICAL SUPPORT (ATS) SOLUTIONS CENTE	IR - I2 */
0012.00 /*	*/
0013.00 /* TEXT : CPP PROGRAM TO CALL QP2TERM PROGRAM TO STAR	T PASE */
0014.00 /* ENVIRONMENT	*/
0015.00 /*	*/
0016.00 /***********************************	********/
0017.00 PGM	
0018.00 MONMSG MSGID(CPF0000) EXEC(GOTO CMDLBL(ERRC)R)) /* +
0019.00 MONITOR FOR ERRORS */	
0020.00 CALL PGM (QP2TERM)	
0021.00 RETURN /* NORMAL END OF PROGRAM	1 */
0022.00 ERROR: SNDPGMMSG MSGID(CPF9999) MSGF(QCPFMSG) +	
0023.00 MSGTYPE (*ESCAPE) /* AN ERROR HAS C	CCURRED */
0024.00 ENDPGM	
********************** End of data **********************************	*****
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=C	lancel
F16=Repeat find F24=More keys	
(C) COPYRIGHT IBM CORP. 1981, 2000.	

Figure 693. Creating a CL program called STRPASECPP to CALL QP2TERM

2. After you create and compile the program (explained in C.1.5, "Creating a CL program" on page 635), create the command program. Figure 694 shows an example command program called STRPASE.

Columns	: 1 80 Edit I2/I2	SOURCE
SEU==>	S	TRPASE
FMT **	+ 1+ 2+ 3+ 4+ 5+ 6+	7
	**************************************	*****
0001.00	/**************************************	**/
0002.00	/*	*/
0003.00	/* PROGRAM NAME STRPASE	*/
0004.00	/* LIBRARY NAME	*/
0005.00	/* ORIGINAL SOURCE FILE	*/
0006.00	/* LIBRARY NAME	*/
0007.00	/* CREATION DATE	*/
0008.00	/* REVISION DATE/TIME	*/
0009.00	/* CREATOR	*/
0010.00	/* COMPANY	*/
0011.00	/* ADVANCED TECHNICAL SUPPORT (ATS) SOLUTIONS CENTER - 12	*/
0012.00	/*	*/
0013.00	/* TEXT : COMMAND TO CALL QP2TERM PROGRAM TO START PASE	*/
0014.00	/* ENVIRONMENT	*/
0015.00	/*	*/
0016.00	/**************************************	**/
0017.00		
0018.00	CMD PROMPT ('START PASE TERMINAL ENV')	
	**************************************	*****
F3=Exit	F5=Refresh F9=Retrieve F10=Cursor F11=Toggle F12=Cancel	
F16=Rep	eat find F24=More keys	
	(C) COPYRIGHT IBM CORP. 1981, 2000.	

Figure 694. Creating a command called STRPASE to CALL QP2TERM

- 3. After you create the command program, create the command. Use the Create Command (CRTCMD) command and press F4 to prompt the command.
 - a. For the Command parameter, specify the name and library of the command being created. In our example, we use STRPASE in library 12. You could shorten this even further to just PASE or QP2.
 - b. For the Program to process command parameter, specify the name and library of the command processing program (CPP) used to process the command. In our example, we use STRPASECPP in library 12.
 - c. For the Source file parameter, specify the name and library of the source physical file that contains the command definition statements. In our example, we use I2SOURCE in library I2.
 - d. For the Source member parameter, specify the name and library of the source file member that contains the command definition statements used to create the command. In our example, we use STRPASE. You can also optionally enter a text description for the command.

An example is shown in Figure 695. Press Enter.

Create	Command (CRTC	IMD)
Type choices, press Enter.		
Command	STRPASE 12 STRPASECPP 12 12SOURCE 12 STRPASE *NO *SYSVAL 'STRPASE Comm	Name Name, *CURLIB Name, *REXX Name, *LIBL, *CURLIB Name, *LIBL, *CURLIB Name, *CMD *YES, *NO, *COND *SYSVAL, *RUN, *MSG, *NORUN mand to Issue CALL QP2TERM'
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additiona F24=More keys	Bottom al parameters F12=Cancel

Figure 695. CRTCMD details for creating a command called STRPASE

Or you can simply use the following command:

CRTCMD CMD(12/STRPASE) PGM(12/STRPASECPP) SRCFILE(12/12SOURCE) SRCMBR(STRPASE) TEXT('STRPASE Command to Issue CALL QP2TERM')

You should see the completion message Command STRPASE created in library I2.

 To run the command, if the library that the command and program are in is in your library list, type STRPASE and press Enter. The menu is shown in Figure 696.

You can use the Display Library List (DSPLIBL) command to verify that your library is added to the list, and you can use the Add Library List Entry (ADDLIBLE) command such as ADDLIBLE LIB(I2) to add the library to the list.

MAIN	AS/400 Main Menu	Gizetom, I2
Select one of the following:		ByBCCIII. 12
 User tasks Office tasks General system tasks Files, libraries, and Programming Communications Define or change the Problem handling Display a menu Information Assistant Client Access/400 task 	ł folders system : options sks	
90. Sign off		
Selection or command ===> STRPASE		
F3=Exit F4=Prompt F9=Ret: F23=Set initial menu	vieve F12=Cancel F13=Inform	mation Assistant

Figure 696. Starting the PASE interactive environment using STRPASE

5. If you press F4 to prompt the STRPASE command, you see the command as it was designed in Figure 694 on page 649. The STRPASE display is shown in Figure 697.

	START PASE 7	TERMINAL ENV (STRPASE)	
F3=Exit F5=Refresh	F12=Cancel	F13=How to use this display	F24=More keys
No parameters to show;	press Enter	to run, F3 to exit.	

Figure 697. Using F4 to prompt the STRPASE command

6. After you use the STRPASE command, notice that it does the exact same thing as CALL QP2TERM as shown in Figure 698.

		/QOpenSys	s/usr/bin/-sh	
\$				
===>				
F3=Exit F13=Clear	F6=Print F17=Top	F9=Retrieve F18=Bottom	F11=Truncate/Wrap F21=CL command entry	

Figure 698. PASE QP2TERM environment started from STRPASE command

Again, if you don't like the command name STRPASE, you can change it to anything that you want by specifying something different on the CRTCMD shown in Figure 695.

C.2.2 Associating iSeries server jobs and PASE jobs

Jobs that are started from CALL QP2TERM or CALL QP2SHELL appear as normal OS/400 jobs when viewed from such commands as Work with Active Jobs (WRKACTJOB), Work with User Jobs (WRKUSRJOB), or Work with Submitted Jobs (WRKSBMJOB). They appear as processes when viewed inside the PASE environment using a command such as ps. It can be difficult at times to match the jobs and processes, because the jobs only show such functions as PGM-QP2SHELL or PGM-QP2FORK.

OS/400 jobs are identified by a unique job name, user, and number. Processes are identified by a unique process ID (PID). The Qshell command named getjobid can be used to correlate the jobs and PIDs. The Qshell syntax is:

getjobid <PID>

This is normally called from the shell started by the QSH or STRQSH commands. Qshell commands aren't directly supported in PASE, so you can enter the following command from within PASE to find out the job name, user, and number based on PID:

system qsh "cmd('getjobid <PID>')"

To associate a job with a PID, follow these steps:

- 1. Find the job name and then associate this with a PID, or find the PID and then associate this with a job name. It does not make a difference, but we start with the PID.
- On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

3. Use the ps command to view the processes currently running on the system:

ps -ef

- 4. Look under the CMD column for the process that you are interested in. Then look under the PID column to find the PID for it. In the example shown in Figure 699, the start_dp shell runs under PID 163, the VisiBroker OSAgent program runs under PID 164, and the Demand Planner server planaxs program runs under PID 165.
- 5. Now that you have the PIDs, run the getjobid program:

system qsh "cmd('getjobid 163')"

This returns a result such as:

Process identifier 163 is 077705/I2OWNER/DP55000

Here *DP55000* is the job name, *I2OWNER* is the job user, and *077705* is the job number. This is shown in Figure 699.

Table 30 shows a table that could be built associating PIDs and job names.

Table 00	A		:
Table 30.	Associating	PIDs and	job names

Command	PID	Job number/user/name
start_dp script	163	077705/I2OWNER/DP55000
osagent	164	077706/I2OWNER/DP55000
planaxs	165	077707/I2OWNER/DP55000

/QOpenSys/usr/bin/-sh		
\$ > ng _of		
אר איז		
TOURIED IS 152 0 16.54.20 0.00 (Cooperstrature view) ab i		
$\frac{120000000}{1200000000000000000000000000$		
120 MILER 105 I 0 I/:12:55 - 0:00 / Q0 perioys/usi/DII/SII		
$12/11ademac11X/5_1_1/dill/03400_430/001a/Sch/Scale_qp$		
120MER 165 163 0 17.12.36 = 0.00 / (bin/n)anava cola cfa n)anner		
120MIER 166 153 0 17.12.56 - 0.00 mg -ef		
S		
> system ash "and('actionid 163')"		
Process identifier 163 is 077705/T20WNER/DP55000		
OSH0005: Command ended normally with exit status 0		
Ś		
> system ash "and('getiobid 164')"		
Process identifier 164 is 077706/I2OWNER/DP55000		
OSH0005: Command ended normally with exit status 0.		
Ś		
> system ash "and('getiobid 165')"		
Process identifier 165 is 077707/I20WNER/DP55000		
OSH0005. Command ended normally with exit status 0		
Ś		
Ŷ		
F3=Exit F6=Print F9=Retrieve F11=Truncate/Wrap		
F13=C1 ear $F17=Top$ $F18=Bottom$ $F21=C1 command entry$		

Figure 699. Using ps -ef to get PIDs and getjobid to place job information in PASE QP2TERM

6. Now that you have job name, user and number information for the PIDs you are interested in, use a command such as Work with Active Jobs (WRKACTJOB) to bring up a list of the jobs running on your system (Figure 700).

Work with Active Jobs I2
CPU %: 21.7 Elapsed time: 00:00:00 Active jobs: 363
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message 8=Work with spooled files 13=Disconnect
OptSubsystem/JobUserTypeCPU %FunctionStatusQBATCHQSYSSBS.0DEQWDP55000I20WNERBCH.0PGM-DP_STARTTHDWDP55000I20WNERBCI.0PGM-QP2FORKSELWDP55000I20WNERBCI.0PGM-QP2FORKTHDW
Parameters or command
===> F3=Exit F5=Refresh F7=Find F10=Restart statistics F11=Display elapsed data F12=Cancel F23=More options F24=More keys

Figure 700. WRKACTJOB display for subsystem QBATCH showing PASE jobs by status

7. From the WRKACTJOB display, press F11 twice until you see job number information as shown in Figure 701.

Work with Active Jobs I2 09/07/01 12:28:48
CPU %: 21.7 Elapsed time: 00:00:00 Active jobs: 363
Type options, press Enter. 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message 8=Work with spooled files 13=Disconnect
Opt Subsystem/Job User Number Type CPU % Threads
QBATCH QSYS 077226 SBS .0 1
DP55000 I20WNER 077705 BCH .0 1
DP55000 I20WNER 077706 BCI .0 1
DP55000 I20WNER 077707 BCI .0 6
Bottom
Parameters or command ====>
F3=Exit F5=Refresh F7=Find F10=Restart statistics F11=Display status F12=Cancel F17=Top F18=Bottom F23=More options F24=More keys

Figure 701. WRKACTJOB display for subsystem QBATCH showing PASE jobs by job number

8. Now that you know what PIDs associate with what jobs (shown in Figure 699 on page 653), you can work with any job you are interested in. For example, if you want to end the VisiBroker OSAgent job for some reason, you now know that PID 164 is job 077706/I2OWNER/DP55000. This is the middle job on the WRKACTJOB list, so you could enter option 4 next to it to end it.

C.2.3 Determining process memory size

i2 planning engines, such as Demand Planner, Factory Planner, and Supply Chain Planner, build in-memory models once they are up and running. IBM and i2 have developed "Rules of Thumb" guidelines, i2 has also developed worksheets or spreadsheets, to try and guess the amount of memory or main storage that will be required for the models so that the iSeries server can be correctly sized.

Once the products are loaded and the engines brought up, their memory utilization is checked to see how they compare to the pre-installation guess. This is nice information to know during development or implementation time, and after a customer moves into production mode. If there is not enough memory on the system to support the model (or multiple concurrent models), then memory paging occurs, which drastically affects the time it takes to bring up the model. This section shows how to determine job or Process ID (PID) memory sizes in the PASE environment.

To find job or PID memory size, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

- 2. Assuming that an i2 planning engine is already up and running, you can use the Process Status (ps) command in different ways to show memory size:
 - ps -elf

This shows the status for all processes (-e flag), in a full (-f flag) and long (-l flag) listing format.

• ps guw

This shows the status for all processes (g flag), in a user-oriented (u flag) and wide (w flag) format.

Note

Some options or flags for the ps command are preceded by the minus sign (-) character (like -f) and some are not (like v), and the flags are case-sensitive (-F is different than -f). Make sure you specify the flags exactly as shown.

 The output from these commands contain a field called SZ, which is the size in 1 KB units of the core image of the process. An example of these is shown in Figure 702.

```
/QOpenSys/usr/bin/-sh
    Ŝ
> ps -elf
                                   UID PID PPID C PRI NI ADDR SZ WCHAN STIME TTY TIME CMD
                  FS

      200000 A
      120WNER 26365 26364
      0
      0
      0
      26088
      14:10:10
      -
      0:00 /Q0penSys/usr/b

      200000 A
      120WNER 26420 26365
      0
      0
      0
      2908
      14:37:34
      -
      0:00 ksh start_dp

      14:37:35
      -
      0:00
      /opt/vbroker/os

      14:37:36
      -
      0:00
      .../.bin/planax

      17:28:14
      -
      0:00
      ps

        200000 A I20WNER 26421 26420 0 0 0 796
        200000 A I20WNER 26422 26420 0 0 0 0 6556
        200000 A I20WNER 26648 26365 0 0 0 0 1696
    $
> ps guw
                         PID % CPU % MEM SZ RSS TTY STAT STIME TIME COMMAND
   USER

        USER
        PID %CPU %MEM
        SZ
        KSS
        HIT SIAL
        SIAL
        SIAL
        SIAL
        Contract

        I2OWNER
        26421
        0.0
        0.0
        796
        0
        - A
        14:37:35
        0:00 /opt/vbroker/osagent

        I2OWNER
        26420
        0.0
        0.0
        2908
        0
        - A
        14:37:34
        0:00 ksh start_dp

        I2OWNER
        26652
        0.0
        0.0
        1696
        0
        - A
        17:31:04
        0:00 ps guw

        I2OWNER
        26422
        0.0
        0.0
        6556
        0
        - A
        14:37:36
        0:00
        ./../bin/planaxs cola.cfg planner

    I20WNER 26365 0.0 0.0 26540 0 - A 14:10:10 0:00 /Q0penSys/usr/bin/-sh -i
    Ś
===>
F3=Exit
                        F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                                                F18=Bottom F21=CL command entry
```

Figure 702. Using the ps command to obtain PID memory size information in PASE QP2TERM for all PIDs

In Figure 702, the Demand Planner planaxs executable, which is PID 26422, shows SZ equal to 6556. This value is in KB or 1000 bytes. Add three 0s to this number and you get 6,556,000 or around 6.5 MBs in size.

- 4. If you already know the PID or determined it using the ps command, you can issue a specific ps command for just that PID:
 - ps -lfp <PID>

This shows the status for a specific PID (-p flag followed by the PID), in a full (-f flag) and long (-l flag) listing format.

• ps guw <PID>

This shows the status for all processes (g flag), in a user-oriented (u flag) and wide (w flag) format, narrowed down to a specific PID.

• ps v <PID>

This shows certain fields for just the PID provided. One of the fields is SIZE, which is the virtual size of the data section of the process in 1 KB units. This is usually the same as the SZ field.

An example of these is shown in Figure 703.

/QOpenSys/usr/bin/-sh			
\$			
> ps -lfp 26422			
FS UID	PID PPID C PRI NI A	ADDR SZ WCHAN STIME	TTY TIME CMD
200000 A 120000ER	26422 26420 0 0 0	0 6556 14:37:36	- 0:00//bin/planax
\$			
> ps guw 26422			
USER PID %CPU	MEM SZ RSS TTY ST	TAT STIME TIME COMMAND	
I20WNER 26422 0.0	0.0 6556 0 - A	14:37:36 0:00//bin/	planaxs cola.cfg planner
Ś			51
> ps v 26422			
PTD TTY STAT	TIME PGIN SIZE RSS	LIM TSTZ TRS %CPU %MEM CC	MMAND
26422 - A	0:00 0 6556 0	xx 0 0 0 0 0 0	/ /bin
<u>د</u>	0.00 0 0000 0		/ • • / 2011
Ŷ			
===>			
E2 Estit EC Drint	EQ Dotation E11 Trains	asts /Warsh	
F3=EXIC F0=PIIIIC	FJR Dottom ED1 (T ra	cale/wiap	
FIS=Clear FI/=10p	FIG=BOLLOIII FZI=CL CC	onnano entry	

Figure 703. Using the ps command to obtain PID memory size information in PASE QP2TERM for a specific PID

- 5. If the engine or model is actively running, repeat the ps command multiple times to watch memory size increase over time.
- 6. If you want to record the memory size of an engine or model to a file for future reference, one easy way to do this is to pipe or redirect the output of one of the previously mentioned ps commands to a file instead of standard output, which by default is the display. This is done by using the greater than (>) character after the ps command and then specifying the name of a new or existing file:

ps guw 26422 > dp_memory_size.out

You can use the EDTF or Work with Object Links (WRKLNK) commands from a command line, or the cat command from within the PASE QP2TERM shell to view the file:

cat dp_memory_size.out

An example is shown in Figure 704.

```
/QOpenSys/usr/bin/-sh
 $
> ps guw 26422 > dp memory size.out
 Ŝ
> cat dp memory size.out
          PID % CPU % MEM SZ RSS
                                  TTY STAT STIME TIME COMMAND
 USER
 I20WNER 26422 0.0 0.0 6556 0
                                 - A 14:37:36 0:00 ../../bin/planaxs cola.cfg planner
 $
===>
F3=Exit
          F6=Print F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                     F18=Bottom
                                   F21=CL command entry
```

Figure 704. Using the ps command to send the PID memory size information in PASE QP2TERM to a file

C.2.4 Automating tasks within CALL QP2TERM

UNIX shells have the ability to run shell scripts each time you open the shell. The shells available in PASE are no different. These can perform such actions as setting environment variables, adding custom paths to your environment, or setting up any aliases in which you may be interested.

This section shows you how to create a shell script called .profile and some common things you may want to add to it.

C.2.4.1 Changing the prompt within a QP2TERM interactive shell

The default primary prompt string within the CALL QP2TERM shell is the dollar sign character (\$). You can change this to something different by setting the shell variable \$PS1. Here are some possible combinations that we found interesting. You can change them to meet your needs.

 If you want to always see what directory you are currently in without having to manually issue the pwd command, you can have the prompt string issue pwd.
 We also added the greater than (>) character to the end because this matches the default secondary prompt string character (which incidentally can be changed by setting shell variable \$PS2):

```
PS1='$PWD> '
```

 If you want to have your own text string appear as the prompt string, simply type the string. Again, we added the greater than (>) character to the end of the string:

PS1='Some Text String> '

 If you want to see who you are signed on as, with the system name you are currently on, then the path followed by the greater than (>) character, enter:

PS1='\$LOGNAME@'`hostname`':\$PWD> '

This may be nice when you are using multiple systems or LPAR partitions on one system and forget where you are or who you are currently signed on as.

• You can also set your own shell variables based on the output of a program and then include this in the prompt string:

```
export CUSTOM=$(/QOpenSys/usr/bin/echo Hello World)
PS1='$CUSTOM> '
```

Figure 705 shows examples of setting the \$PS1 shell variables and their results.



Figure 705. Examples of changing the primary prompt string by setting the \$PS1 shell variable

C.2.4.2 Setting aliases

You can set up aliases to assign a shorthand name as a synonym for a command. The syntax is:

alias name='command'

This is nice when you have long strings to type, such as when changing directories or calling programs. Here are some examples that are useful on a system where i2 applications are loaded:

```
alias adw='cd /opt/i2/TradeMatrix/5_0/adw/OS400_450'
alias adw52='cd /opt/i2TradeMatrix/adw/5.2'
alias dp='cd /opt/i2/TradeMatrix/5_1_1/dm/OS400_450'
alias dp52='cd /opt/i2TradeMatrix/dp/5.2'
alias fp='cd /opt/i2/TradeMatrix/5_0/fp/OS400_450'
alias fp52='cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450'
alias link52='cd /opt/i2/Link/Five.Two'
alias scp='cd /opt/i2/TradeMatrix/5_0_1/scp/OS400_450'
alias scp52='cd /opt/i2/TradeMatrix/5_0_1/scp/OS400_450'
alias scp52='cd /opt/i2/TradeMatrix/5_0_1/scp/OS400_450'
alias scp52='cd /opt/i2/TradeMatrix/scp/5.2'
alias sqlnk='cd /sqlnk45/4_51_00'
alias strlink='/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh'
```

Notice that the first ones are used to change directories and that the last one calls a startup shell script to start i2 Link. Since every system may be different, you may need to change these to match your system and start scripts.

C.2.4.3 Creating the .profile shell script

To create the .profile shell script, follow these steps:

 Start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

 Use the cd command to change to your home directory, which is /home/<user>, if you are not already in it. By default, CALL QP2TERM takes you to the home directory specified in your user profile. Use the following command and look on the last panel to check this:

DSPUSRPRF USRPRF (I20WNER)

If /home/<user> is not created, use the following command to create it:

MKDIR DIR('/home/I2OWNER')

There are three ways to change to your home directory. The first is to use the normal cd command and specify the /home/<user> directory. The other two also use the cd command, but you can use the tilde (~) character or \$HOME instead of the qualified directory name:

```
cd /home/I2OWNER
cd ~
cd $HOME
```

3. Use the echo command to create an empty file:

echo > .profile

4. Use the chmod command to give the file execute authority:

chmod +x .profile

Figure 706 shows an example of steps two through four.



Figure 706. Using a PASE QP2TERM shell to create .profile

5. Use the EDTF command to modify it:

EDTF STMF('/home/I2OWNER/.profile')

6. Go to C.2.4.1, "Changing the prompt within a QP2TERM interactive shell" on page 658, and C.2.4.2, "Setting aliases" on page 659, to see some examples of what you can define in the file. An example is shown in Figure 707.

```
Edit File: /home/I2OWNER/.profile
                                                                 65 by
Record :
          1 of
                      18 by 10
                                                 Column :
                                                            1
Control :
# .profile By Daniel R Sundt - IBM 09/13/2001
  # Americas Advanced Technical Support (ATS) Solutions Center - i2
  # This script is used to perform actions each time CALL QP2TERM
  # is issued or started.
  # Set primary prompt string
  PS1='$PWD> '
  #
  # Set aliases
  alias adw='cd /opt/i2/TradeMatrix/5_0/adw/OS400_450'
  alias dp='cd /opt/i2/TradeMatrix/5 1 1/dm/OS400 450'
  alias fp='cd /opt/i2/TradeMatrix/5_0/fp/OS400_450'
  alias link='cd /opt/i2/TradeMatrix/5_0_1/link/OS400_450'
  alias scp='cd /opt/i2/TradeMatrix/5 0 1/scp/OS400 450'
  alias sqlnk='cd /sqlnk45/4 51 00'
  alias strlink='/opt/i2/TradeMatrix/5_0_1/link/OS400_450/.rl.sh'
F2=Save F3=Save/Exit F12=Exit F15=Services
                                          F16=Repeat find
                                                          F17=Repeat ch
           (C) COPYRIGHT IBM CORP. 1980, 2000.
```

Figure 707. Using the EDTF command to update the .profile script setting \$PS1 and aliases

When you are done updating the shell script, press F3 twice to save and exit.

 The next time you use CALL QP2TERM after creating and updating .profile, everything should be set up (OS/400 V5R1M0 or later) as shown in Figure 708.

	/QOper	nSys/usr/bin/-sh
<pre>/hcme/I2OWNER> > dp /opt/i2/TradeMat ===></pre>	crix/5_1_1/dm/0S400	0_450>
F3=Exit F6=Pr: F13=Clear F17=Te	int F9=Retrieve pp F18=Bottom	F11=Truncate/Wrap F21=CL command entry

Figure 708. Using a PASE QP2TERM shell after creating and updating .profile

You can see that the primary prompt string is no longer the dollar sign (\$) character, but the current directory that you are in (the result of the pwd command). You also see that dp now does the same thing as changing to directory /opt/i2/TradeMatrix/5_1_1/dm/OS400_450.

On OS/400 V4R5M0, you have to manually call .profile each time you use CALL QP2TERM:

. .profile

Note that there is a dot and a space before the .profile shell script name.

C.2.5 Transferring files between servers using FTP

To transfer files between iSeries servers, or between an iSeries server and a UNIX server like the pSeries server, you need to use the File Transfer Protocol (FTP) subcommand NAMEFMT (Select File Naming Format). This allows you to specify which file naming format to use on the local and remote system. The syntax of the NAMEFMT subcommand is:

NAmefmt [0 | 1]

The current setting is displayed when no parameter is specified. Descriptions for the two parameters are:

0 A naming format for the traditional library file system database files, which includes libraries, files, and members. The general format is:

libname/filename.mbrname

1 A naming format for all file systems supported by FTP including the hierarchical file systems, the integrated file systems, and the library file system. This naming format first became available with OS/400 V3R1M0.

The library file system files in this naming format are:

/QSYS.LIB/libname.LIB/filename.FILE/mbrname.MBR

The hierarchical file system files in this naming format are:

/dirname/filename.ext

For optical, the format is:

/QOPT/volname/dirname/filename.ext

You can abbreviate subcommands to the most unique series of characters, which in this case is NA for NAmefmt.

This section explains the procedure to transfer the .profile script or file created in C.2.4.3, "Creating the .profile shell script" on page 659, from one iSeries server to another. To transfer a file from one iSeries server to another using FTP, follow these steps:

1. From an OS/400 command line, use the Start TCP/IP File Transfer (FTP or STRTCPFTP) command followed by the name of the remote server to initiate a FTP session:

ftp i2

Once you are connected, if you want to go to another system without starting all over again, use the CLOSE subcommand to end the current session, and then use the OPEN or CONNECT subcommands to go to a different system.

- 2. Upon a successful connection, the remote server requests user identification by asking for a user ID. Enter your iSeries server user ID, which is I20WNER in this example.
- The remote server then asks for the password for the user ID provided. Enter the password for your iSeries server user ID.
- Issue the FTP subcommand NAMEFMT 1 to place the client (source server) and server (target server) into file naming format 1 needed for hierarchical and integrated file systems:

namefmt 1

5. Before you actually transfer the files, you can verify the local present working directory on the client (source server) using the LPWD subcommand. You can change it to the desired directory using the lcd subcommand:

lcd /home/I2OWNER

6. You can verify the server (target server) directory using the present working directory (PWD) subcommand. You can change it to the desired directory using the cd subcommand:

cd /home/I2OWNER

Note that when using the subcommand CD (or LCD) to change from one file system to another file system, you must specify the root directory for the particular file system.

7. Change the file transfer type or representation to ASCII or BINARY based on the type of file or files being moved around:

binary

The ASCII transfer type is used when transferring document files to or from an ASCII system that does not support EBCDIC representation. ASCII is the default transfer type.

If you are transferring binary data to an existing iSeries file, such as save files and hierarchical file system files (QDLS documents), or transferring program objects, then binary image transfer is required. If the type is not set to *binary* when attempting to transfer such files, a message appears indicating that binary is required.

You can abbreviate subcommands to the most unique series of characters, for example, AS for ASCII and B for binary.

8. You can transfer files to the server (from the client or source server) with the put or APPEND subcommands. Files are obtained from the server (to the client or source server) by using the get subcommand. You can transfer multiple files using the mget and mput subcommands. In our case, we want to put file .profile from the source server to the remote server:

put .profile

9. To terminate an FTP session, issue the quit subcommand. You can also press F3 (Exit) and then confirm to end the FTP client session.

To conclude a server session because you want to go to another remote system from this client or source system, issue the CLOSE subcommand. A connection to another server can then be initiated with the OPEN OR CONNECT subcommands.

An example is shown in Figure 709.

File Transfer Protocol
Previous FTP subcommands and messages: Connecting to host i2.domain.ibm.com at address 1.2.345.678 using port 21. 220-QTCP at I2. 220 Connection will close if idle more than 5 minutes.
> I20WNER
 230 I2OWNER logged on. OS/400 is the remote operating system. The TCP/IP version is "V4R5M0". 250 Now using naming format "0". 257 "QGPL" is current library.
> namefint 1
Server NAMEFMT is 1.
Client NAMEFMI' is 1.
Local working directory is /home/I2OWNER
> cd /home/I2OWNER
250 "/home/I2OWNER" is current directory.
> bin
200 Representation type is binary image.
250 Now using naming format "1".
257 "/home/I2OWNER" is current directory.
227 Entering Passive Mode (1,2,345,678,19,140).
150 Sending file to /home/I2OWNER/.profile
250 File transfer completed successfully.
631 bytes transferred in 0.050 seconds. Transfer rate 12.669 KB/sec.
Fater an FTP subcommand
F3=Exit F6=Print F9=Retrieve
F17=Top F18=Bottom F21=CL command line

Figure 709. Using FTP to transfer a file between iSeries servers

C.2.6 Active Data Warehouse SQL versus system table names

Active Data Warehouse SQL tables may result in file names that have lengths greater than 10 characters. When DB2 UDB for iSeries encounters these long file names, it maps them into file names of 10 characters. Therefore, an examination of the files contained in an SQL collection created for Active Data Warehouse tables does not provide easy identification of the file's content. This section tries to explain why this is.

C.2.6.1 OS/400 database cross-reference function

Starting around OS/400 V3R1M0, the OS/400 database was enhanced by adding a database cross-reference function that tracks database related information. Such information as what database files exist on the system, the owner of each file, database file dependencies, and so on are all maintained in as near as possible real-time. The changes were made to enable faster access from SQL catalog files and to meet SQL standards.

The information being maintained is stored in several database files called QADB* in the QSYS library that contain cross-reference information about database files and SQL information across the system. The main files are QADBFDEP, QADBPKG, QADBXRDBD, QADBXREF, QADBIFLD, QADBKFLD,

QADBCCST, and QADBFCST. The primary file that must be maintained is QADBXREF, the cross-reference file, which contains a record of each physical database, logical database, DDM, and Alias file on the system. These files are used as based-on physical files for SQL VIEW files that are created for the SQL CATALOG.

This is all handled through a system job named QDBSRVXR, which is responsible to run program QDBXREF. This program updates the system database cross-reference files with information queued by either system or user initiated database requests, or generic object functions affecting database file objects (create, modify, delete, restore, rename, or ownership change). Information about relational database directories (Work with RDB Directory Entry (WRKRDBDIRE) command) and SQL package objects is also maintained by this job.

Job QDBSRVXR2 (note the 2) maintains the two field level cross-reference files, QADBIFLD (field cross-reference file) and QADBKFLD (key field cross-reference file). It is activated when a file is created, modified, or deleted. You can use the WRKOBJ OBJ(QSYS/QADB*) command, for example, to see all of the files on the system. You can also use the Work with Active Jobs (WRKACTJOB) command, for example, to see the system jobs running on the system.

The iSeries server can only display table names less than or equal to 10 characters in length. Therefore, when a name is longer than 10, the system then adds a five-digit numeric number starting with 00001 to the first five characters of the name. For every match of the first five characters, it adds an increment to the fifth digit. For example, SQL table name DEMAND_LINE_ITEM becomes system table name DEMAN00001. If you created a table name of DEMAND_LINE_ORDERS, it would become system table name DEMAN00002, and so on.

If you have Licensed Program Product (LPP) DB2 Query Manager and SQL Development Kit for iSeries (5769-ST1 or 5722-ST1), on your system, then you can use the Start SQL Interactive Session (STRSQL) command to run SQL statements interactively on your iSeries server. You can also create a query using the Start Query (STRQRY) command if you have LPP Query for iSeries (5769-QU1 or 5722-QU1) on your system. Operations Navigator also has the ability to run SQL statements. Running SQL statements using these tools is described later in this section.

A simple query against the iSeries server file SYSTABLES selecting the fields SYS_TNAME (System Table Name) and NAME (Table Name) shows the relationship between all SQL table names and the iSeries system file names:

SELECT SYS_TNAME, NAME FROM SYSTABLES

To see these names for an Active Data Warehouse collection (called ADW50 in our case), you can use an SQL statement such as the following example against the system catalog tables or views:

SELECT TABLE_NAME, SYSTEM_TABLE_NAME FROM QSYS2/SYSTABLES WHERE TABLE_SCHEMA = 'ADW50'

SELECT TABLE NAME, SYSTEM TABLE NAME FROM ADW50/SYSTABLES

An example is shown in Figure 710.

		Display Da	ata		
				Data width	
Position to	oline			Shift to colum	n
+1	+2+.		+5+	6+7	+8.
TABLE NAME			SYSTEM	TABLE NAME	
ADW_CTRL			ADW_CT	RL	
ADW_CTRL_H			ADW_CT	RL_H	
ADW_HIST			ADW_HI:	ST	
ADW_H_HIST_	DEF		ADW_H0	0001	
ADW_H_TABLE	E_DEF		ADW_H0	0002	
ADW_H_SEL_O	CRIT		ADW_H0	0003	
ADW_H_HIST_	_DEF_H		ADW_H0	0004	
ADW_H_TABLE	E_DEF_H		ADW_H0	0005	
ADW_H_SEL_O	CRIT_H		ADW_H0	0006	
ADW_MESG_LO	DG		ADW_M0	0001	
ADW_MESG_LO	ЪG_Н		ADW_M0	0002	
ADW_NET_CHO	3		ADW_N0	0001	
ADW_NET_CHO	G_DEF		ADW_N0	0002	
ADW_NET_CHO	<u>G</u> MAP		ADW_N0	0003	
ADW_NET_CHG_H		ADW_N0	0004		
ADW_NET_CHG_DEF_H		ADW_N0	0005		
ADW_NET_CHG_MAP_H		ADW_N0	0006		
ADW_S_CRIT			ADW_S_	CRIT	
ADW_S_PROP			ADW_S_	PROP	
					More
F3=Exit	F12=Cancel	F19=Left	F20=Right	F21=Split	F22=Widt

Figure 710. Interactive SQL result of showing SQL and system table names for collection ADW50

To see SQL and system column names for a table called DEMAND_LINE_ITEM, you can use an SQL statement such as the following example against the system catalog tables or views (see Figure 711):

SELECT TABLE_NAME, SYSTEM_TABLE_NAME, COLUMN_NAME, SYSTEM_COLUMN_NAME FROM QSYS2/SYSCOLUMNS WHERE TABLE_NAME = 'DEMAND_LINE_ITEM' AND TABLE_SCHEMA = 'ADW50'

	Display	Data	
		I	Data width
Position to line		Shift	to column
+1+	.2+3+	4+5+6	+7+8.
TABLE_NAME	SYSTEM_TABLE_NAME	COLUMN_NAME	SYSTEM_COLUMN_NAME
DEMAND_LINE_ITEM	DEMAN00002	CTRL_ID	CTRL_ID
DEMAND_LINE_ITEM	DEMAN00002	PLAN_ID	PLAN_ID
DEMAND_LINE_ITEM	DEMAN00002	DEMAND_NAME	DEMAN00001
DEMAND_LINE_ITEM	DEMAN00002	DEMAND_SHPMNT_NAME	DEMAN00002
DEMAND_LINE_ITEM	DEMAN00002	DEMAND_LI_NAME	DEMAN00003
DEMAND_LINE_ITEM	DEMAN00002	PLANNED_FCLTY	PLANN00001
DEMAND_LINE_ITEM	DEMAN00002	PLANNED_ITEM	PLANN00002
DEMAND LINE ITEM	DEMAN00002	ACPT_FCLTY	ACPT_FCLTY
DEMAND_LINE_ITEM	DEMAN00002	ACPT_ITEM	ACPT_ITEM
DEMAND_LINE_ITEM	DEMAN00002	PROD_NAME	PROD_NAME
DEMAND LINE ITEM	DEMAN00002	PROMISE_FCLTY	PROMI00001
DEMAND_LINE_ITEM	DEMAN00002	PROMISE_ITEM	PROMI00002
DEMAND_LINE_ITEM	DEMAN00002	DOMAIN_NAME	DOMAI00001
DEMAND_LINE_ITEM	DEMAN00002	REQUESTED_FCLTY	REQUE00001
DEMAND_LINE_ITEM	DEMAN00002	REQUESTED_ITEM	REQUE00002
DEMAND_LINE_ITEM	DEMAN00002	REQ_CONFIG_NAME	REQ_C00001
DEMAND_LINE_ITEM	DEMAN00002	PROD_CONFIG_NAME	PROD_00001
DEMAND LINE ITEM	DEMAN00002	REQUEST_QTY_MIN	REQUE00003
DEMAND_LINE_ITEM	DEMAN00002	REQUEST_QTY_MAX	REQUE00004
			More
F3=Exit F12=C	ancel F19=Left	F20=Right F2	l=Split F22=Widt

Figure 711. Interactive SQL result of showing SQL and system column names for an SQL table

For additional information on the OS/400 database cross-reference function or SQL catalog views, visit the following Web sites:

• Appendix G, "DB2 UDB for iSeries Catalog Views" in the V5R1M0 DB2 Universal Database for iSeries SQL Reference:

http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/info/db2/ rbafzmst.pdf

• Database Jobs on the iSeries Information Center:

http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/index.htm?info/rz
aks/rzakssystemjob.htm

Informational APAR II08311

http://as400service.ibm.com/s_dir/slkbase.nsf/1ac66549a21402188625680b00020 37e/4d153aecc63a07238625692f006f6448?OpenDocument&Highlight=0,II08311

C.2.6.2 Using the STRSQL command

To run an SQL statement using the STRSQL command, follow these steps:

- 1. Issue the Start SQL Interactive Session (STRSQL) command and press Enter. You can use F4 to prompt the command if you want to change properties. For example, you may want to use the Naming convention (NAMING) parameter to change from the system naming convention (library-name/file-name) to the SQL naming convention (collection-name.table-name).
- 2. On the Enter SQL Statements display (Figure 712), type the SQL statement that you want to run and press Enter. You can use F4 to prompt SQL commands for help in creating an SQL statement. Like other iSeries server display, you can view previously typed statements and messages that were sent by pressing the Page Down (Roll Up) and Page Up (Roll Down) keys. You can copy a statement to the current line by placing the cursor on the statement

you want to copy and press the F9 (Retrieve) function key. Or to simply copy the last statement you entered, press F9 without moving the cursor. You can then edit and run the copied statement. Function key F13 (Services) displays the Interactive SQL Session Services menu and allows you to change current session attributes or properties, along with other options.



Figure 712. Running an SQL statement using the STRSQL command

- The result of this SQL statement is shown in Figure 710. You may have to press F19 and F20 to move the display left and right to see the entire SQL results.
- Press F3 to exit. On the Exit Interactive SQL display, select any of the following options:
 - Option 1 to leave interactive SQL and save your session, including all SQL statements run
 - Option 2 to leave interactive SQL without saving your session
 - Option 3 to return back to the Enter SQL Statements display
 - Option 4 to save the current session in a source file as defined in the Change Source File display when you press Enter.

Option 1 is the default and is the most common choice.

C.2.6.3 Using the STRQRY command

To run an SQL statement using the STRQRY command, follow these steps:

- 1. Issue the Start Query (STRORY) command and press Enter.
- 2. On the Query Utilities menu (Figure 713), select option 1 (Work with queries) and press Enter.

QUERY	Query Utilities	Ctratom, TO
Select one of the following:		System: 12
Query for AS/400 1. Work with queries 2. Run an existing query 3. Delete a query		
DB2 for AS/400		
10. Start DB2 Query Manager	r for AS/400	
Query management 20. Work with query manager 21. Work with query manager 22. Start a query 23. Analyze a Query for AS,	ment forms ment queries /400 definition	More
Selection or command ===> 1		
F3=Exit F4=Prompt F9=Retrie F16=AS/400 Main menu (C) COPYRIGHT IBM CORP. 1980, 2	eve F12=Cancel F13=Ind	Formation Assistant

Figure 713. STRQRY command Query Utilities menu

3. On the Work with Queries display (Figure 714), select option 1 to create a new query. Give the query definition a name and specify a library to put it into. Then press Enter. In our example, we use SQLTEST and place it into the Active Data Warehouse SQL collection library ADW50.

Work with Queries				
Type choices, press Enter.				
Option 1	1=Create, 2=Change, 3=Copy, 4=Delete 5=Display, 6=Print definition 8=Run in batch, 9=Run			
Query SQLTEST Library ADW50	Name, F4 for list Name, *LIBL, F4 for list			
F3=Exit F4=Prompt F5=Refre	esh F12=Cancel (C) COPYRIGHT IBM CORP. 1988			

Figure 714. STRQRY command Work with Queries display

4. On the Define the Query display (Figure 715), enter 1 next to select Specify file selections and press Enter.

Defir	ne the Query
Query : SQLTEST Library : ADW50	Option : CREATE CCSID : 65535
Type options, press Enter. Press F2 1=Select	21 to select all.
<pre>Opt Query Definition Option 1 > Specify file selections Define result fields > Select and sequence fields Select sort fields Select collating sequence Specify report column formatt Select report summary function Define report breaks Select output type and output Specify processing options</pre>	ting ons t form
F3=Exit F5=Report F13=Layout F18=Files	F12=Cancel F21=Select all

Figure 715. STRQRY command Define the Query display

5. On the Specify File Selections display (Figure 716), type the name of the file and library that you want to include in the query. Press Enter and then press Enter to confirm. In our example, we want the SYSTABLES file in the QSYS2 library.

	Specify F	File Selections
Type choices, pres file selection.	ss Enter. Press F9	9 to specify an additional
File	SYSTABLES SYSTABLES SYSTABLES SYSTABLES SYSTABLES	S Name, F4 for list Name, *LIBL, F4 for list Name, *FIRST, F4 for list Name, *FIRST, F4 for list
F3=Exit F12=Cancel	F4=Prompt F13=Layout	F5=Report F9=Add file F24=More keys

Figure 716. STRQRY command Specify File Selections display

6. On the Define the Query display shown in Figure 715, put a 1 next to Select and sequence fields and press Enter. On the Select and Sequence Fields display (Figure 717), enter the number 10 next to NAME and the number 20 next to SYS_TNAME. Then press Enter and then press Enter again to confirm. This displays the column or field NAME first and the SYS_TNAME second.
| | Select and Sequence Fields | | | | | | | | | |
|-------------|---|---------------------------|---|-----------------------------|--|--|--|--|--|--|
| Type
app | Type sequence number (0-9999) for the names of up to 500 fields to appear in the report, press Enter. | | | | | | | | | |
| Seq
10 | Field
NAME
CREATOR
TYPE
COLCOUNT
RECLENGTH
LABEL
REMARKS
DBNAME
ALTEREDTS | Seq | Field
TBDENAME
TBNAME
TBMEMBER | | | | | | | |
| 20 | SYS_TNAME
SYS_DNAME
FILETYPE | EE-Donort | Ell-Dignlay tort | Bottom | | | | | | |
| F13=E2 | Layout | F5=keport
F20=Renumber | F11=Display text
F21=Select all | F12=cancel
F24=More keys | | | | | | |

Figure 717. STRQRY command Select and Sequence Fields display

7. On the Define the Query display shown in Figure 715, enter option 1 next to Select records and press Enter. On the Select Records display (Figure 718), type the name of a field to be tested, a test value for the field, and the value to be compared with the tested field. Press Enter. In our case, we want field DBNAME, the test value to be Equal or EQ, and the value to be `ADW50'.

	5	Select Records	
Type comparisons Tests: EQ, NE	s, press Enter. S E, LE, GE, LT, GT	Specify OR to start ea , RANGE, LIST, LIKE, I	ch new group. S, ISNOT
AND/OR Field DBNAME	Test EQ	Value (Field, Number, 'ADW50'	'Characters', or)
			Bottom
Field	Field	Field	
NAME	RECLENGTH	SYS_DNAME	
SYS_TNAME	LABEL	FILETYPE	
CREATOR	REMARKS	TBDBNAME	
TYPE	DBNAME	TBNAME	
COLCOUNT	ALTEREDTS	TBMEMBER	
			Bottom
F3=Exit	F5=Report	F9=Insert	F11=Display text
F12=Cancel	F13=Layout	F20=Reorganize	F24=More keys

Figure 718. STRQRY command Select Records display

8. Now that they query is defined, press F3 to go to the Exit this Query display (Figure 719). Enter Y for Yes to save the query definition (SQLTEST in library ADW50), and enter 1 for the Run option to run the query interactively.

Exit this Query							
Type choices, press Enter.							
Save definition Y	Y=Yes, N=No						
Run option 1	1=Run interactively 2=Run in batch 3=Do not run						
For a saved definition: Query SQLIEST Library ADW50 Text	Name Name, F4 for list						
Authority *CHANGE	*LIBCRTAUT, authorization list name, *CHANGE, *ALL, *EXCLUDE, *USE						
F4=Prompt F5=Report F12=Car F14=Define the query	ncel F13=Layout						

Figure 719. STRQRY command Exit this Query display

9. After you press Enter, the query runs and appears in the Display Report panel (Figure 720). You may have to press F19 and F20 to move the display left and right to see the entire query results. Compare the results with those from STRSQL shown in Figure 710 on page 666.

Display Report								
Query : ADW50/SQLTEST	-		Report widt	h				
Position to line			Shift to column					
Line+1+2+3+4+5+6+								
TABLE_NAME			SYSTEM_TABLE_N	AME				
000001 ADW_CTRL			ADW_CTRL_H					
000002 ADW_CTRL_H			ADW_CTRL_H					
000003 ADW_H_HIST_DEF			ADW_H00001					
000004 ADW_H_HIST_DEF_H			ADW_H00004					
000005 ADW_H_SEL_CRIT			ADW_H00003					
000006 ADW_H_SEL_CRIT_H			ADW_H00006					
000007 ADW_H_TABLE_DEF			ADW_H00002					
000008 ADW_H_TABLE_DEF_H			ADW_H00005					
000009 ADW_HIST			ADW_HIST					
000010 ADW_MESG_LOG			ADW_M00001					
000011 ADW_MESG_LOG_H			ADW_M00002					
000012 ADW_NET_CHG			ADW_N00001					
000013 ADW_NET_CHG_DEF			ADW_N00002					
000014 ADW_NET_CHG_DEF_H			ADW_N00005					
000015 ADW_NET_CHG_H			ADW_N00004					
000016 ADW_NET_CHG_MAP			ADW_N00003					
000017 ADW_NET_CHG_MAP_H			ADW_N00006					
000018 ADW_S_CRIT			ADW_S_CRIT					
000019 ADW_S_PR_STATE			ADW_S00001					
				More				
F3=Exit F12=Cancel	F19=Left	F20=Right	F21=Split	F22=Widt				

Figure 720. STRQRY command Display Report from a run query

10.Press F3 or F12 to exit. You are taken back to the Work with Queries display. You can select options 2 to change the query, 4 to delete it, 5 to display how it was defined, or 9 to run it again. Then press F3 or F12 again to exit.

C.2.6.4 Using Operations Navigator to run a query

To run an SQL statement using Operations Navigator, follow these steps:

- 1. Open Operations Navigator on a PC. If it is not loaded on your system, install it from an iSeries server by mapping a network drive to or downloading to the PC the contents of directory /QIBM/ProdData/CA400/Express/Install/Image. Run SETUP.EXE and follow the installation panels.
- 2. Add a connection for the iSeries server that i2 is loaded on if one does not already exist.
- 3. Click the system name and sign in using your iSeries server user ID and password.
- 4. There are two ways to bring up the window where you can run SQL statements or scripts. The first is to right-click **Database** and then click **Run SQL Scripts** as shown in Figure 721.



Figure 721. Operations Navigator Database Run SQL Scripts menu option

The second is to click **Database**, which causes the toolbar near the top of the window to change. Then click the **Run SQL Scripts** blue icon located underneath the Options and Help menu options as shown in Figure 722.



Figure 722. Operations Navigator Database Run SQL Scripts toolbar option

5. The Run SQL Scripts window (Figure 723) appears. To see examples of SQL statements that you can enter, click the drop-down arrow to the right of the area titled SQL statement examples. You can insert and modify these.

😽 Untitled - Run SQL Sci	ipts - Rchaser2	
File Edit View Run Vis	sualExplain Options Connection Help	
	a <u>fitto ww</u> g	
SQL statement examples:		Insert
/* Enter one or more \$	/* Data Manipulation Statements */ DELETE FROM table1 WHERE column1 = 0; INSERT INTO table1 (outurn1) VALUES(0); INSERT INTO table1 (column1) VALUES(0); INSERT INTO table1 (column1) SELECT column1 FROM table2 WHERE column1> 5; SELECT * FROM QSYS2SYSTABLES; SELECT * FROM QSYS2SYSTABLES WHERE TABLE_NAME LIKE 'FILE%'; SELECT TABLE_SCHEMA, COUNT(*) AS ''COUNT'' FROM QSYS2.SYSTABLES GROUP BY TABLE_SCHEMA UPDATE table1 SET column1 = 0 WHERE column1 < 0; UPDATE table1 SET column1, 'column3]; UPDATE table1 SET (column1, column2) = (SELECT column1, column2 FROM table2 WHERE table1.column3 =	
Ready	/* Miscellaneous Statements */ CALL procedure1 ('aaa',5,NULL); LOCK TABLE table1 IN SHARE MODE; LOCK TABLE table1 IN SCULSIVE MODE; LOCK TABLE table1 IN EXCLUSIVE MODE ALLOW READ:	

Figure 723. Operations Navigator Run SQL Scripts SQL statement examples

You can also simply type an SQL statement or multiple SQL statements, such as:

SELECT TABLE_NAME, SYSTEM_TABLE_NAME FROM QSYS2.SYSTABLES WHERE TABLE_SCHEMA
= 'ADW50'

Note that a dot (.) is used between the library (collection) and file (table) name because the SQL naming convention is the default. The system naming convention uses the slash (/).

An example is shown in Figure 724.

🐻 Untitled - Run SQL Scripts - Rchaser2	
File Edit View Run VisualExplain Options Connection Help	
SQL statement examples:	isert
/* Enter one or more SQL statements separated by semicolons */	A
SELECT TABLE_NAME, SYSTEM_TABLE_NAME FROM QSYS2.SYSTABLES WHERE TABLE_SCHEMA = 'ADW50	•

Figure 724. Operations Navigator Run SQL Scripts window with an SQL statement manually typed in

- 7. To run the SQL statement or multiple SQL statements, click one of the run toolbar icons located underneath the VisualExplain and Options menu options (green arrows pointing down). Or go to **Run** and select **All**, **From Selected**, or **Selected**. They perform the following actions:
 - Run All: Runs all statements in the active document
 - Run From Selected: Run statements starting from the selected statement
 - Run Selected: Run the selected statements

After one of the run choices are selected, a Run History appears at the bottom of the Run SQL Scripts window as shown in Figure 725. This is where errors display.

😽 Untitled - Run SQL Scripts - Rchaser2	- O ×
File Edit View Run VisualExplain Options Connection Help	
SQL statement examples:	Insert
/* Enter one or more SQL statements separated by semicolons */ SELECT TABLE_NAME, SYSTEM_TABLE_NAME FROM Q\$YS2.SYSTABLES WHERE TABLE_SCHEMA = 'ADW	/50'
	∇
- Run History -	*
> SELECT TABLE_NAME, SYSTEM_TABLE_NAME FROM QSYS2.SYSTABLES WHERE TABLE_SCHEMA = 'ADW50'	
Opening results viewer	
	T
Ready	1.

Figure 725. Operations Navigator Run SQL Scripts Run History

A results viewer window should also appear showing the results of the SQL statement or statements that were run as shown in Figure 726. Compare this with the results from STRSQL shown in Figure 710 on page 666 and with the results from STRQRY shown in Figure 720 on page 673.

SELECT	TABLE_NAME, SYSTEM_TABLE_NAM	E FROM Q5Y52.5YSTABLES WHERE TABL	E_SCHEMA = 'ADW50' 💶 🗙
	TABLE_NAME	SYSTEM_TABLE_NAME	▲
1	ADW_CTRL	ADW_CTRL	
2	ADW_CTRL_H	ADW_CTRL_H	
3	ADW_H_HIST_DEF	ADW_H00001	
4	ADW_H_HIST_DEF_H	ADW_H00004	
5	ADW_H_SEL_CRIT	ADW_H00003	
6	ADW_H_SEL_CRIT_H	ADW_H00006	
7	ADW_H_TABLE_DEF	ADW_H00002	
8	ADW_H_TABLE_DEF_H	ADW_H00005	
9	ADW_HIST	ADW_HIST	
10	ADW_MESG_LOG	ADW_M00001	
11	ADW_MESG_LOG_H	ADW_M00002	
12	ADW_NET_CHG	ADW_N00001	
13	ADW_NET_CHG_DEF	ADW_N00002	
14	ADW_NET_CHG_DEF_H	ADW_N00005	
15	ADW_NET_CHG_H	ADW_N00004	
16	ADW_NET_CHG_MAP	ADW_N00003	
17	ADW_NET_CHG_MAP_H	ADW_N00006	
18	ADW_S_CRIT	ADW_S_CRIT	
19	ADW_S_PR_STATE	ADW_S00001	
20	ADW_S_PROP	ADW_S_PROP	•

Figure 726. Results viewer showing the results of the SQL statement run

C.2.7 Unzipping zip files in the IFS

Many of the files that are available from i2 Support come in a compressed or zipped format and have an extension of zip. There are many PC zip programs that support this, such as PKZIP[®] (from PKWARE[®] Inc.).

There are also many ways to do this on the iSeries server. One way is the gzip utility that is available in PRPQ 5799-PTL, which is described in B.1.11, "Using gzip after installing the PRPQ" on page 596. This section shows other ways to zip and unzip files.

C.2.7.1 Java ARchive utility

One way to uncompress or unzip a zip file is to use the Java ARchive utility – the jar utility. The jar tool is a Java application that combines multiple files into a single Java ARchive (JAR) file. jar is a general-purpose archiving and compression tool, based on ZIP and the ZLIB compression format. However, jar was designed mainly to facilitate the packaging of java applets or applications into a single archive. jar also compresses files and so further improves download time.

The syntax for the jar tool is almost identical to the syntax for the tar command. It is compatible with the jar tool that is supplied by Sun Microsystems, Inc. The jar tool is available using the Qshell Interpreter.

For additional information on the jar tool, see: http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/ info/rzaha/javaapi/tooldocs/jar.html

You can also issue the jar command without any parameters within Qshell to see basic help text as shown in Figure 727.

QSH Command Entry Ś > jar Usage: jar {ctxu} [vfmOM] [jar-file] [manifest-file] [-C dir] files ... Options: -c create new archive -t list table of contents for archive -x extract named (or all) files from archive -u update existing archive -v generate verbose output on standard output -f specify archive file name -m include manifest information from specified manifest file -0 store only; use no ZIP compression -M do not create a manifest file for the entries -i generate index information for the specified jar files -C change to the specified directory and include the following file If any file is a directory then it is processed recursively. The manifest file name and the archive file name needs to be specified in the same order the 'm' and 'f' flags are specified. Example 1: to archive two class files into an archive called classes.jar: jar cvf classes.jar Foo.class Bar.class Example 2: use an existing manifest file 'mymanifest' and archive all the files in the foo/ directory into 'classes.jar': jar cvfm classes.jar mymanifest -C foo/ . \$ ===> F6=Print F9=Retrieve F12=Disconnect F3=Exit F13=Clear F17=Top F18=Bottom F21=CL command entry

Figure 727. Viewing jar help within Qshell

To view the contents or extract files from a zip file using jar, follow these steps:

1. Start the Qshell Interpreter from an OS/400 command line by calling the Start QSH (STRQSH or QSH) command.

2. Use the $_{\rm cd}$ command to change to the directory where you want the zip file extracted to:

cd /home/I2OWNER

In our example, the location of the zip file is in the same place to where we want to extract the contents of the zip file.

3. Use the ls -l command to list the contents of the target directory or to verify the name of the zip file:

ls -l

4. To view the files in the zip file, issue the jar command with the t option (list table of contents for archive) and the f option (specify archive file name) followed by the directory path (if not in the current directory) and the name of the zip file:

jar -tf /home/I2OWNER/i2zip.zip

– Note

The options or flags for the jar command can be preceded by the minus sign (-) character (jar -f) or used without it (jar f), and the flags are case-sensitive (-C is different than -c). Make sure you specify the flags exactly as shown.

An example is shown in Figure 728.

```
QSH Command Entry
  Ś
> ls -1
 total: 881.288 megabytes
  -rwxrwxrwx 1 I20WNER 0
                                       2607028 Oct 19 11:37 i2zip.zip
  Ś
> jar -tf /home/I2OWNER/i2zip.zip
 attribute extension data
 bill of material component data
 buckets pattern data
 calendar_entry_data
  calendar entry type data
etc...
  spec file
  std spec file
  unit_of_measure_conversion data
  vendor sourcing_calendar_list_data
  work in process data
  Ś
===>
F3=Exit F6=Print F9=Retrieve F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 728. Viewing zip file contents using the jar command in Qshell

5. To extract the files in the zip file, issue the jar command with the x option (extract named (or all) files from archive) and the f option (specify archive file name) followed by the directory path (if not in the current directory) and the name of the zip file:

jar -xf /home/I2OWNER/i2zip.zip

An example is shown in Figure 729.

QSH Command Entry								
\$ > jar -xf /home/120WNER/i2zip.zip								
\$								
> 15 -1	(00 magabat							
LOLAI: 906.		es	2607020	Oat	10	11.27	ilain ain	
-IWXIWXIWX	1 IZOWNER	0	2007020	Oct	10	11.20	attaibute outongion d	
-IM-IM-IM-	1 IZOWINER	0	2006220	Oct	10	11.20	bill of material comp	
-IM-IM-IM-	1 IZOWNER	0	5000550 E1	Oct	10	11.20	bill_of_material_comp	
-IM-IM-IM-	1 IZOWNER	0	DL EOE1	Oct	10	11.20	dalandar antiquidata	
-IM-IM-IM-	1 IZOWINER	0	2021 2751	Oct	10	11.20	calendar_entry_data	
-IM-IM-IM-	I IZOWINER	0	3751	UCL	19	TT:38	caterioar_entry_type_d	
		0	20	Oat	10	11.20	and file	
-IM-IM-IM-	1 IZOWINER	0	29	Oct	19	11.39	spec_iiie	
-IM-IM-IM-	1 IZOWNER	0	32059	OCL	19	11.39	sta_spec_iffe	
-rw-rw-rw-	1 IZOWNER	0	977	OCL	19	11.39	unit_or_measure_conve	
-rw-rw-rw-	1 IZOWNER	0	1407452	OCL	10	11.39	vendor_sourcing_caten	
-TM-TM-TM-	I IZOWINER	0	1497455	UCL	19	11:39	work_III_process_data	
Ş								
===>								
E2_Extit EC_	Drint E0_De	trioro El2-Dia	connect					
FO=EAIL FO=	TTTTTC F9=RE	etter F12=D1S	connect					
FIS=CIEAR FI/	=10b F18=F	OLION FZI=CL	connand	enery	2			

Figure 729. Extracting files from a zip file using the jar command within Qshell

C.2.7.2 Java ajar tool

The ajar tool is an alternative interface to the jar tool that you use to create and manipulate Java ARchive (JAR) files. You can use the ajar tool to manipulate both JAR files and ZIP files. If you need a ZIP interface or UNZIP interface, you may like the look and feel of the ajar tool instead of the jar tool.

The ajar tool lists the contents of JAR files, extracts from JAR files, creates new JAR files, and supports many of the ZIP formats just as the jar tool does. In addition, the ajar tool supports adding and deleting files in existing JAR files. The ajar tool is available using the Qshell Interpreter. For additional information on the ajar tool, see:

http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/info/rzahz/ajar.htm

You can issue the ajar command with the -h or -help option within Qshell to see basic help text as shown in Figure 730.

```
QSH Command Entry
$
> ajar -h
usage: ajar [-h|--help][-1|--list][-x|--extract][-d|--delete][-c|--create][-a|--add][-0|--store-only]
[-v|--verbose][-r|--recurse][-@|--stdin][-D|--nodirs][-q|--quiet][-N|--neverWrite][-p|--pipe]
[-m|--manifest mffile][-M|--no-manifest][-n|--no-deflate suffix] jarfile file|pattern..
ajar may be used as an alternative interface for creating and manipulating Java Archive (JAR) files.
Use ajar instead of the jar command when you need a zip or unzip like interface.
$
===>
F3=Exit F6=Print F9=Retrieve F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry
```

Figure 730. Viewing ajar help within Qshell

To view the contents or extract files from a zip file using ajar, follow these steps:

- 1. Start the Qshell Interpreter from an OS/400 command line by calling the Start QSH (STRQSH or QSH) command.
- 2. Use the cd command to change to the directory to where you want to extract the zip file:

cd /home/I20WNER

In our example, the location of the zip file is in the same place as where we want to extract the contents of the zip file.

- 3. Use the ls -l command to list the contents of the target directory or to verify the name of the zip file.
- 4. To view the files in the zip file, issue the ajar command with the -l option (lists or writes table of contents to stdout) followed by the directory path (if not in the current directory) and the name of the zip file:

ajar -1 /home/I2OWNER/i2zip.zip

– Note

The options or flags for the ajar command must be preceded by the minus sign (-) character (like ajar -I) and the flags are case-sensitive (-L is not valid). Make sure you specify the flags exactly as shown.

An example is shown in Figure 731.

QSH Command Entry								
\$ > ls -1 total: 881.288 m -rwxrwxrwx 1 I20 \$ > aiar -1 /bome/120	egabytes DWNER 0 DWNER /i2zip zi	in	2607028 Oct 19 11:37 i2zip.zip					
Length	Date 1	-p Fime	File					
442 3806330 51 5051 3751 etc 29 32059 977 760165 1497453	11/20/00 S 11/20/00 S	9:07 PM 9:06 PM 9:06 PM 9:06 PM 9:06 PM 9:06 PM 9:06 PM 9:06 PM 9:07 PM 9:07 PM 9:06 PM	attribute_extension_data bill_of_material_component_data buckets_pattern_data calendar_entry_data calendar_entry_type_data spec_file std_spec_file unit_of_measure_conversion_data vendor_sourcing_calendar_list_data work_in_process_data					
23587959 34 \$								
>								
F3=Exit F6=Print F13=Clear F17=Top	F9=Retrieve H F18=Bottom H	F12=Disco F21=CL co	onnect onmand entry					

Figure 731. Viewing zip file contents using the ajar command in Qshell

5. To extract the files in the zip file, issue the ajar command with the x option (extract named (or all) files from archive) and the f option (specify archive file name), followed by the directory path (if not in the current directory) and the name of the zip file:

jar -xf /home/I2OWNER/i2zip.zip

An example is shown in Figure 732.

(QSH (Command Er	ntry			· · · · · · · · · · · · · · · · · · ·
\$ > ajar -x /hom \$	ne/I20WNER/	'i2zip.zip					
> ls -l							
total: 906.6	500 megabyt	es					
-rwxrwxrwx	1 I20WNER	0	2607028	Oct	19 :	11:37	i2zip.zip
-rw-rw-rw-	1 I20WNER	0	442	Oct	19 3	13:43	attribute_extension_d
-rw-rw-rw-	1 I20WNER	0	3806330	Oct	19 :	13:43	bill_of_material_comp
-rw-rw-rw-	1 I20WNER	0	51	Oct	19 3	13:43	buckets_pattern_data
-rw-rw-rw-	1 I20WNER	0	5051	Oct	19 3	13:43	calendar_entry_data
-rw-rw-rw-	1 I20WNER	0	3751	Oct	19 3	13:43	calendar_entry_type_d
etc							
-rw-rw-rw-	1 I20WNER	0	29	Oct	19 :	13:43	spec_file
-rw-rw-rw-	1 I20WNER	0	32059	Oct	19 :	13:43	std_spec_file
-rw-rw-rw-	1 I20WNER	0	977	Oct	19 :	13:43	unit_of_measure_conve
-rw-rw-rw-	1 I20WNER	0	760165	Oct	19 3	13:43	vendor_sourcing_calen
-rw-rw-rw-	1 I20WNER	0	149745 3	Oct	19 :	13:43	work_in_process_data
\$							
===>							
F3=Exit F6=E	rint F9=Re	trieve F12=Dis	sconnect				
F13=Clear F17=	='1'op F18=B	Bottom F21=CL	command e	ntry			

Figure 732. Extracting files from a zip file using the ajar command within Qshell

C.2.7.3 Independent Solution Vendor (ISV) zip solutions

Various Independent Solution Vendors develop and support an official zip solution that runs on the iSeries server. These are fee-based products that usually come with advanced features and functions, along with product support. Two popular ones are PKZIP from ASCENT SOLUTIONS INC (ASi) and PAEZIP Compression Utility (V1R1) from PAE Inc. For additional information on these products, visit the following Web sites:

- http://www.asizip.com
- http://www.paeinc.com/

This section shows an example of downloading a 30-day evaluation copy of PKZIP from ASCENT SOLUTIONS INC and using it to unzip a zip file.

To view the contents or extract files from a zip file using ASi's PKZIP product, follow these steps:

1. Go to http://www.asizip.com

On the left-hand side, click **Downloads** and then click **New Customer**. Complete the new customer form with the requested information. Click **Enter Download Area** and then click **PKZIP OS/400 5.0 (RISC only)** as shown in Figure 733.

🚰 ASi Download Files - Mici	rosoft Internet Explorer		
File Edit View Favorit	es Tools Help		100 A
Back → → →	(3) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	Bertein Bertein)▼ 🎒 » ail Print
Address 🙋 http://www.asizi	ip.com/downloads/downloads.cfm?ID=15167		→ c → Go ↓ Links ≫
	CENT SOLUTIONS INC UTILITY SOF		
COMPANY NEWS PRODUCTS TECH SUPPORT OUNLOADS ONLINE STORE COMPANY	Download Files	umentation n ck Here to do	equires Adobe's ownload.
Includes software downloads, product	A3/ 400 DOWIN	Udus	
manuals, applications, and product	AS/400 Products		
enhancements.	UFTP 3.0	EXE	106443 KB
	PKZIP OS/400 5.0 CL Conversion Tool (for 5.0 ONLY)	EXE	664 KB
	PKZIP OS/400 5.0 (RISC only)	EXE	1650 KB
	PKZIP AS/400 4.0.3 - RISC Only	EXE	1935 KB
	PKZIP AS/400 2.31 - RISC	EXE	695 KB
	PKZIP AS/400 2.22 RISC (for OS400 3.7 and higher)	EXE	464 KB
	AS/400 Manuals		
	UFTP 3.0 User Guide	Adobe PDF	2076 KB
	PKZIP OS/400 5.0 White Paper	Adobe PDF	421 KB
	PKZIP OS/400 5.0 User's Guide	Adobe PDF	469 KB 🗾
e]			Internet

Figure 733. Downloading PKZIP from http://www.asizip.com

- 2. A window opens that asks where you want to save program pkas4r.exe to disk. After you save the program to disk, run it to extract the files within it. To do this:
 - a. Click Start-> Programs-> Accessories-> Windows Explorer.
 - b. Navigate to the folder where you saved the program and double-click the program
 - Or follow these steps:
 - a. Click Start->Run.
 - b. Type:

<drive>:\<folder name>\pkas4r.exe

Here *<drive>* is the drive letter assigned to your PC hard disk and *<folder name>* is the name of the folder where you placed the program.

- c. Press Enter.
- 3. Extract the six files from pkas4r.exe. There should be a new folder called ASi with a sub-folder called PKAS4R as shown in the Windows Explorer example in Figure 734.

💽 C:\ASi\PKAS4R									
File Edit View Favorites Too	ls H	telp			**				
4= Back → → → 🔁 @ Search 💁 Folders ③History ≌ 🧏 🗙 🖄 🔢 -									
Address 🔂 C:\ASi\PKAS4R									
Folders	×	Name 🛆	Size	Туре	Modified				
🚮 Desktop		Global contacts.txt	8 KB	Text Document	8/21/2001 6:05 PM				
🖻 🛄 My Computer		🗒 License.txt	6 KB	Text Document	3/1/2001 10:29 AM				
😟 🕀 🚽 31⁄2 Floppy (A:)		🖻 pkz506420.sav	5,903 KB	SAV File	9/7/2001 8:11 AM				
C_DRIVE (C:)		E PKZIP OS400 User's Guide.pdf	470 KB	PDF File	10/10/2001 1:24 PM				
😟 🧰 95drive		🗐 Readme.txt	9 KB	Text Document	9/17/2001 12:12 PM				
		🗒 Whatsnew.txt	6 KB	Text Document	8/21/2001 6:03 PM				
i in adtswin									
E _ AFPPLGIN									
AIX Information									
	-1								
	ř	•							
6 object(s) (Disk free space: 790 MB)				6.24 MB	My Computer				

Figure 734. Windows Explorer view of folder C:\ASi\PKAS4R

 The Readme.txt file provides you with the quick steps to install PKZIP OS/400 Version 5.0.6. The PKZIP OS/400 User's Guide.pdf contains detailed information on installing and using the product.

We followed the Readme.txt to create a save file called PKZ506420 on the iSeries server. Using FTP, send the save file PKZ506420.SAV in binary mode from the PC to the iSeries server. Restore the PKZ506420 library from the save file (19 objects), add library PKZ506420 to the library list, and then license the product for a 30-day trial.

5. Use the EDTF command to list the contents of the target directory or to verify the name of the zip file:

EDTF STMF('/home/I2OWNER')

An example is shown in Figure 735.

	Directory:	/home/I20WNE	R)
	Position to New File :	0:	Record	l: 1 0	£3		
	2=Edit 4=I	Delete File	5=Display	6=Path Size	9=Recursive Del	ete	
	Opt Name		Size	Owner	Changed	Used	
	.sh his	story	8K	I20WINER	10/19/01 10:14	10/19/01 10:14	
	.profil	le	8K	I20WINER	09/13/01 14:34	10/15/01 17:22	
	i2zip.:	zip	2,560K	120WINER	10/19/01 11:37	10/19/01 14:49	
						Bottom	
	F3=Exit	F12=Cancel	F16=Sort T TBM CORP	F17=Position	to F22=Displa	y entire field	
<		(C) COPINIGH	I IDN CORF.	100, 2000.)

Figure 735. Using EDTF to verify the contents on the target directory and the zip file name

- 6. To view the files in the zip file, issue the PKUNZIP File Extraction (PKUNZIP) command and use the F4 function key to prompt it. The completed display is shown in Figure 736.
 - a. For the Archive Zip File name parameter, provide the fully qualified path name to the zip file that you want to work with.
 - b. For the Type of processing parameter, type *VIEW because we want to output information about all files or selected files contained in an archive or zip file. The View Options parameter (sequence) and Viewing Option parameter (type of list) determine what information is displayed.
 - c. For the 'Archive File Type' parameter, type *IFS because the archive or zip file is located in the Integrated Files System (IFS).
 - d. You may need to press F9 or F10 to see some of the parameters.
 - e. Press Enter.

PKUNZIP File	e Extraction (1	PKUNZIP)
Type choices, press Enter.		
Archive Zip File name >	'/home/I20WNE	R/i2zip.zip'
List Include file or pattern	*ALL	
+ for more values		
Type of processing > File Types	*VIEW *DETECT *NORMAL *NAME	*VIEW, *EXTRACT, *NEWER *DETECT *TEXT *BINARY *NORMAL, *BRIEF, *COMMENT *ASIS, *DATE, *DATER
Archive File Type	*IFS *SUFFIX '*NONE'	*DB, *IFS *NONE, *DROP, *SUFFIX Character value
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additional F24=More keys	Bottom l parameters F12=Cancel

Figure 736. The PKUNZIP command prompted to view the contents of a zip file

Or you can simply issue the following command and press enter:

PKUNZIP ARCHIVE('/home/I2OWNER/i2zip.zip') TYPE(*VIEW) TYPARCHFL(*IFS)

7. The Qshell display appears with the output of the PKUNZIP command as shown in Figure 737.

```
PKZIP OS/400(TM) Compression Utility Version 5.0.6, 2001/08/22
  Copyright. 2001 ASCENT SOLUTIONS Inc. All Rights Reserved.
  PKZIP (R) is a registered trademark of PKWARE (R), Inc.
  Archive: /home/I2OWNER/i2zip.zip 2607028 bytes 34 files
    Length Method Size Ratio Date Time CRC-32 Name
    ----- ----- ----- -----
                                                                  ____
         442 Defl:N 221 50% 11-20-00 21:07 cbe6df08 attribute_extension_data
    3806330 Defl:N 264388 93% 11-20-00 21:06 99dc715f bill of material component data
         51 Defl:N 34 33% 11-20-00 21:06 ee8b78fb buckets_pattern_data

        5051 Defl:N
        693
        86% 11-20-00
        21:06
        97c0056a
        calendar_entry_data

        3751 Defl:N
        274
        93% 11-20-00
        21:06
        804b0ba6
        calendar_entry_type_data

etc...
      .

29 Defl:N 23 21% 11-20-00 21:06 e6308000 spec_file

32059 Defl:N 8333 74% 11-20-00 21:06 0aaf0122 std_spec_file

977 Defl:N 173 82% 11-20-00 21:07 e8cad7d5 unit_of_measure_conversion_data
     760165 Defl:N 63482 92% 11-20-00 21:07 6balab15 vendor sourcing calendar list data
    1497453 Defl:N 139535 91% 11-20-00 21:06 4ee4ddc4 work_in_process_data
   -----
                      _____ ___
                                                                      _____
  23587959 2601684 89%
                                                                     34 files
  PKUNZIP extracted 0 files
  PKUNZIP Completed Successfully
  Press ENTER to end terminal session.
===>
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top
F18=Bottom F19=Left F20=Right F21=User Window
```

Figure 737. Viewing zip file contents using the PKUNZIP command in a Qshell display

- 8. The information shown in the Qshell display is stored in the user's job log. Press Enter to end the terminal session. You can use a command, such as Display Job Log (DSPJOBLOG), to view this information.
- 9. To extract the files in the zip file, issue the PKUNZIP File Extraction (PKUNZIP) command and press F4 to prompt it. The completed display is shown in Figure 738.
 - a. For the Archive Zip File name parameter, provide the fully qualified path name to the zip file that you want to work with.
 - b. For the Type of processing parameter, type *EXTRACT because we want to extract files from the archive.
 - c. You can use the Drop Stored Path, File Name actions, and Default Paths parameters to control the conversion of file names extracted from an archive.
 - d. For the Archive File Type parameter, type ***IFS** because the archive or zip file is located in the Integrated Files System (IFS).
 - e. For the Files to Zip Type parameter, type ***IFS** because the archive or zip file is located in the Integrated Files System (IFS).
 - f. You may need to press F9 or F10 to see some of the parameters.
 - g. Press Enter.

PKUNZIP File	e Extraction (PKUNZIP)
Type choices, press Enter.		
Archive Zip File name >	'/home/120WNE	R/i2zip.zip'
List Include file or pattern	*ALL	
+ for more values		
Type of processing > File Types	*EXTRACT *DETECT	*VIEW, *EXTRACT, *NEWER *DETECT *TEXT *BINARY
Archive File Type > Files to Zip Type > File Name actions External Conversion Flags	*IFS *IFS *SUFFIX '*NONE'	*DB, *IFS *DB, *IFS *NONE, *DROP, *SUFFIX Character value
F3=Exit F4=Prompt F5=Refresh F13=How to use this display	F10=Additiona F24=More keys	Bottom 1 parameters F12=Cancel

Figure 738. Prompt of the PKUNZIP command to extract the contents of a zip file

Or you can simply enter the following command:

PKUNZIP ARCHIVE('/home/I2OWNER/i2zip.zip') TYPE(*EXTRACT) TYPARCHFL(*IFS)
TYPFL2ZP(*IFS)

10.The Qshell display (Figure 739) opens with the output of the PKUNZIP command.

```
PKZIP OS/400(TM) Compression Utility Version 5.0.6, 2001/08/22
 Copyright. 2001 ASCENT SOLUTIONS Inc. All Rights Reserved.
 PKZIP (R) is a registered trademark of PKWARE (R), Inc.
 EVALUATION Running
 EVALUATION, Warning - This license will expire in 30 days on 2001/11/18
 Contact your dealer with the following information
 Machine ID = 0105H1HM, Processor Group = P40
 PKUNZIP Archive: /home/I2OWNER/i2zip.zip
 Searching Archive /home/I2OWNER/i2zip.zip for files to extract
 Extracting file attribute extension data
 Inflating: attribute_extension_data
                                      Text
 Extracting file bill_of_material_component_data
 Inflating: bill of material component data
                                                Text.
 Extracting file buckets pattern data
 Inflating: buckets pattern data
                                     Text
 Extracting file calendar entry data
 Inflating: calendar_entry_data
                                 Text
 Extracting file calendar_entry_type_data
 Inflating: calendar_entry_type_data
                                         Text.
etc...
 Extracting file spec file
 Inflating: spec_file
                         Text
 Extracting file std_spec_file
 Inflating: std spec file
                              Text
 Extracting file unit of measure conversion data
 Inflating: unit of measure conversion data
                                                Text.
 Extracting file vendor sourcing calendar list data
 Inflating: vendor sourcing calendar list data
                                                   Text
 Extracting file work in process data
 Inflating: work_in_process_data
                                     Text
 PKUNZIP extracted
                      34 files
 PKUNZIP Completed Successfully
 Press ENTER to end terminal session.
F3=Exit F4=End of File F6=Print F9=Retrieve F17=Top
F18=Bottom F19=Left F20=Right F21=User Window
```

Figure 739. Extracting files from a zip file using the PKUNZIP command in a Qshell display

- 11. The information shown in the Qshell display is stored in the user's job log. Press Enter to end the terminal session. Then enter a command, such as Display Job Log (DSPJOBLOG), to view this information.
- 12.Use the EDTF command to list the contents of the target directory to verify that it now contains the 34 files from the zip file:

EDTF STMF('/home/I2OWNER')

An example is shown in Figure 740.

Directory: /home/120WNER				
Position to :	Record	d: 1 c	of 37	
New File :				
2=Edit 4=Delete File 5=I	Display	6=Path Size	9=Recursive Del	ete
Opt Name S:	ize	Owner	Changed	Used
.sh_history	8K	120WNER	10/19/01 10:14	10/19/01 10:14
.profile	8K	120WNER	09/13/01 14:34	10/15/01 17:22
i2zip.zip	2,560K	120WNER	10/19/01 11:37	10/19/01 15:11
<pre><bute_extension_data< pre=""></bute_extension_data<></pre>	8K	120WNER	11/20/00 21:07	11/20/00 21:07
<rial_component_data< td=""><td>4,096K</td><td>120WNER</td><td>11/20/00 21:06</td><td>11/20/00 21:06</td></rial_component_data<>	4,096K	120WNER	11/20/00 21:06	11/20/00 21:06
buckets_pattern_data	8K	120WNER	11/20/00 21:06	11/20/00 21:06
calendar_entry_data	16K	120WNER	11/20/00 21:06	11/20/00 21:06
<dar_entry_type_data< td=""><td>8K</td><td>120WNER</td><td>11/20/00 21:06</td><td>11/20/00 21:06</td></dar_entry_type_data<>	8K	120WNER	11/20/00 21:06	11/20/00 21:06
cdm_fp_spec_file	64K	120WNER	11/20/00 21:06	11/20/00 21:06
core	32K	120WNER	11/20/00 21:07	11/20/00 21:07
demand_data	96K	I20WNER	11/20/00 21:06	11/20/00 21:06
<pre><ute_assignment_data< pre=""></ute_assignment_data<></pre>	384K	I20WNER	11/20/00 21:07	11/20/00 21:07
<pre><mand_line_item_data< pre=""></mand_line_item_data<></pre>	384K	I20WNER	11/20/00 21:07	11/20/00 21:07
demand_shipment_data	384K	I20WNER	11/20/00 21:06	11/20/00 21:06
<ine_parameters_data< td=""><td>8K</td><td>120WNER</td><td>11/20/00 21:06</td><td>11/20/00 21:06</td></ine_parameters_data<>	8K	120WNER	11/20/00 21:06	11/20/00 21:06
				More
F3=Exit F12=Cancel F10	6=Sort	F17=Position	to F22=Displa	y entire field

Figure 740. Using EDTF to verify the contents on the target directory after running PKUNZIP

C.2.8 Copying data between DB2 UDB for iSeries and stream/flat files

The iSeries server provides two sets of CL commands that allow a user to copy data between database file members in DB2 UDB for iSeries and Integrated File System (IFS) stream or flat files:

- CPYTOSTMF and CPYFRMSTMF
- CPYTOIMPF and CPYFRMIMPF

C.2.8.1 CPYTOSTMF and CPYFRMSTMF commands

You can use the Copy From Stream File (CPYFRMSTMF) and Copy To Stream File (CPYTOSTMF) commands to copy data between stream files and database file members. You can create a stream file from a database file member by using the CPYTOSTMF command. Or you can create a database file member from a stream file by using the CPYFRMSTMF command. If the file or member that is the target of the copy does not exist, it is created.

There are some limitations, however. The database file must be either a program-described physical file containing only one field or a source physical file containing only one text field. The commands give you a variety of options for converting and reformatting the data that is being copied.

You can also use the CPYTOSTMF and CPYFRMSTMF commands to copy data between a stream file and a save file.

C.2.8.2 The CPYTOIMPF and CPYFRMIMPF commands

You can use the Copy To Import File (CPYTOIMPF) and Copy From Import File (CPYFRMIMPF) commands to copy data between stream files and database members. The CPYTOSTMF and CPYFRMSTMF commands do not allow you to move data from complex, externally-described (DDS-described) database files.

The term *import file* refers to the stream type file; the term *typically* refers to a file created for purposes of copying data between heterogeneous databases.

When copying from a stream (or import) file, the CPYFRMIMPF command allows you to specify a field definition file (FDF) that describes the data in the stream file. Or, you can specify that the stream files is delimited and the characters that are used to mark string, field, and record boundaries. Options for converting special data types, such as time and date, are also provided.

Data conversion is provided on these commands if the target stream file or database member already exists. If the file does not exist, you can use the following two-step method to convert the data:

- 1. Use the CPYTOIMPF and CPYFRMIMPF commands to copy the data between the externally-described file and a source physical file.
- Use the CPYTOSTMF and CPYFRMSTMF commands (provide full data conversion regardless of whether the target file exists) to copy between the source physical file and the stream file.

— Note -

The intent of copy commands is to duplicate an object, so the authority settings on the new file are the same as the original, except for the owner. The intent of such commands as CPYTOSTMF, however, is simply to duplicate data. The authority settings on the new file cannot be controlled by the user. The creator/owner has *RWX data authority, but the group and public authorities have *EXCLUDE authority. The user must use another means like the Change Authority (CHGAUT) command or chmod to assign the desired authorities after the new file is created.

C.2.8.3 Using the Copy To Stream File (CPYTOSTMF) command

This section shows an example of using the Copy To Stream File (CPYTOSTMF) command to copy the contents of a database file member to a stream file in the IFS. This may be useful when it is necessary to access legacy or ERP data located on the iSeries server into a form that the i2 products can pick up or use directly, for example, by i2 Link.

To copy the contents of a database file to a stream file, follow these steps:

1. The database file member that we are using for this example was created to contain sample product sales records for a specific company location. The comma (,) character is used as a field delimiter and is commonly used within i2 applications. To view the contents of the file, you can use a command such as Start Source Entry Utility (STRSEU) or EDTF:

EDTF FILE(I2/I2SOURCE) MBR(GDJSALES)

An example is shown in Figure 741.

Edit File: 12/12SOURCE(GDJSALES) Record . : 1 of 8 by 10 Control :	Column:	13 of	92 by
CMD+2+3+4+5+ **************Beginning of data***********************************	6+7+	8	.+
GDJ, CORUI, 123456, 1		<-En	a or r
GDU, MODUL, 314435, 1		<- <u>En</u>	aorr
GLU, VICUI, 243576, I		<- <u>En</u>	a or r
GDJ, $MONUI$, 357669, 1		<- <u>En</u>	a or r
GLU, ESIUI, 4346, I		<-EU	
GDU, LEOUI, 120985, 1		<- <u>En</u>	aorr
GDJ, PACUI, 283632, 1		<-En	aorr
GLU, NEGUI, 498477, 1		<- <u>En</u>	a or r
*******************End of Data***********************************			
F2=Save F3=Save/Exit F12=Exit F15=Services (C) COPYRIGHT IBM CORP. 1980, 2000.	F16=Repeat find	F17=Rep	eat ch

Figure 741. Displaying a database file member using the EDTF command

- 2. To copy a database file member to a stream file or flat file, issue the Copy To Stream File (CPYTOSTMF) command and use F4 to prompt it. The completed display is shown in Figure 742.
 - a. For the From file member or save file parameter, provide the fully qualified QSYS.LIB path name of the database file member from which data is copied:

/QSYS.LIB/I2.LIB/I2SOURCE.FILE/GDJSALES.MBR

b. For the To stream file parameter, provide the fully qualified path name of the stream file to which data is copied:

/SALES_DATA/4Q01GDJsales.dat

All directories in the path name must exist because new directories are not created. If the stream file does not exist, it is created.

- c. For the Stream file option parameter, type *REPLACE so the copy operation replaces the records in a stream file if a stream file with the specified name already exists. Other options are *NONE to fail and send an error or *ADD to add records to the end of the existing stream file records. If the stream file does not exist, it is created.
- d. For the Stream file code page parameter, type 819 to specify a specific stream file code page and CCSID used for data conversion. 819 is an ASCII code page and is what all files used in PASE and by i2 applications should be created as. If the stream file exists, this option is valid only if the code page associated with the stream file is the same as the specified value. Otherwise, the operation fails. If the stream file does not exist, the specified code page is used and associated with the stream file.
- e. For the End of line characters parameter, type *LF to specify that a line-feed end-of-line character is inserted or appended to the end of each line of the stream file during the copying of records. ASCII files (code page 819 set above) require the line-feed character.

- f. You may need to press F9 or F10 to see some of the parameters.
- g. Press Enter.

Copy To Stream File (CPYTOSIMF)									
Type choices, press Enter.									
From file member or save file . > '/QSYS.LIB/12.LIB/12SOURCE.FILE/GDJSALES.MBF To stream file > '/SALES_DATA/4Q01GDJsales.dat'									
Stream file option	*NONE, *ADD, *REPLACE *AUTO, *TBL, *NONE 1-65533, *FILE 1-32767, *STMF, *PCASCII								
End of line characters > *LF	*CRLF, *LF, *CR, *LFCR								
F3=Exit F4=Prompt F5=Refresh F12=Cancel F24=More keys	Bottom F13=How to use this display								

Figure 742. Prompt of the CPYTOSTMF command to copy a database file member to a stream file

Or you can simply enter the following command:

```
CPYTOSTMF FROMMBR('/QSYS.LIB/I2.LIB/I2SOURCE.FILE/GDJSALES.MBR')
TOSTMF('/SALES_DATA/4Q01GDJsales.dat') STMFOPT(*REPLACE) STMFCODPAG(819)
ENDLINFMT(*LF)
```

You should see the completion message stating that the object was copied.

Use the EDTF command to view the existence and contents of the file that is created:

EDTF STMF('/SALES_DATA/4Q01GDJsales.dat')

An example is shown in Figure 743.

```
Edit File: /SALES DATA/4Q01GDJsales.dat
            1 of
Record . :
                                                    1 of 59 by
                     8 by 10
                                            Column:
Control :
**********Beginning of data***********
  GDJ,COR01,123456,1
  GDJ, MOD01, 314435, 1
  GDJ, VIC01, 243576, 1
  GDJ,MON01,357669,1
  GDJ,EST01,4346,1
  GDJ,LEO01,120985,1
  GDJ, PAC01, 283632, 1
  GDJ, NEG01, 498477, 1
   F2=Save F3=Save/Exit F12=Exit F15=Services
                                     F16=Repeat find
                                                   F17=Repeat ch
```

Figure 743. Displaying a file created from CPYTOSTMF using the EDTF command

4. Compare the results in Figure 743 with the data shown in Figure 741 on page 691.

C.2.9 Advanced problem determination

If OS/400 PASE encounters an error, a Licensed Internal Code (LIC) log may be written and would have a major code of 4700. To check for PASE LIC logs, follow these steps:

- 1. Type Start System Service Tools (STRSST) and press Enter.
- 2. Select option 1 (Start a service tool) and press Enter.
- 3. Select option 5 (Licensed Internal Code log) and press Enter.
- Select option 1 (Select entries from the Licensed Internal Code (LIC) log) and press Enter.
- 5. Enter a major code of 4700 and leave the rest of the fields at their defaults. You can narrow down the date and time to search, or for select major and minor codes. Press Enter.
- 6. You should now see a list of PASE LIC logs (if there are any on your system) as shown in Figure 744. You should contact IBM Support to understand what caused these LIC logs.

	Select Entries from Licensed Internal Code Log											
Type options, press Enter to dump entry to selected device. 1=Printer 2=Media 5=Display entry 8=Display note												
	Entry Major Major Minor Dump											
Opt	ID	Description	Code	Code	Date	Time	K bytes					
	010011F0	Priv addr space environ	4700	000F	02/02/01	14:50:42	0					
	010011F1	Priv addr space environ	4700	000F	02/02/01	14:51:25	0					
	010011F2	Priv addr space environ	4700	000F	02/02/01	15:09:44	0					
	010011F3	Priv addr space environ	4700	000F	02/02/01	15:10:12	0					
	010011F4	Priv addr space environ	4700	000F	02/02/01	15:10:50	0					
	010011F5	Priv addr space environ	4700	000F	02/02/01	15:11:02	0					
	0100433B	Priv addr space environ	4700	000F	02/15/01	13:49:29	0					
l												
F3=E	xit F12=	Cancel										
10-11	<u></u> 112-											

Figure 744. Looking for PASE Licensed Internal Code logs

If you are seeing core dumps in OS/400 PASE when you try to use an i2 product, the UNIX DBX tool can be used to gather some additional information regarding the problem.

To use DBX in OS/400 PASE, follow these steps:

1. On the iSeries server, start the PASE terminal environment from an OS/400 command line by calling the QP2TERM program located in the QSYS library:

CALL QP2TERM

2. Use the cd command to change to the desired directory where the core dump occurred. In our example, we are looking at one that occurred with the Link product:

```
cd /opt/i2/TradeMatrix/5_0_1/link/os400_450
```

3. You can use the Is -I command to verify that a core file exists:

ls -l core

4. Start DBX by using dbx <program name>. In our case, the name of the program that caused the core dump is rl_engine:

dbx rl_engine

- 5. Once in DBX, there are multiple subcommands that you can use to gather additional information. A nice one to use is where, which displays a list of active procedures and functions. The help subcommand can be used to see what subcommands are available. Refer to the following Web site to find more information about DBX: http://www.rs6000.ibm.com/cgi-bin/ds_rslt?lang=en_US&viewset=Global&view=Commands
- 6. When you are done with DBX, use the quit subcommand to return to a PASE command line.

Figure 745 shows an example of steps two through five.

```
/QOpenSys/usr/bin/sh
  Ś
> cd /opt/i2/TradeMatrix/5 0 1/link/os400 450
> ls -l core
  -rw-rw-rw-
            1 I20WNER 0
                                  3889918 Feb 08 09:19 core
  ¢
> dbx rl enqine
  Type 'help' for help.
  reading symbolic information ... warning: no source compiled with -g
  [using memory image in core]
  IOT/Abort trap in signal.pthread kill [/usr/lib/libpthreads.a] at 0xd020704c ($
  0xd020704c (pthread kill+0x90) 80410014
                                                lwz r2,0x14(r1)
  (dbx)
> where
  signal.pthread kill(??, ??) at 0xd020704c
  signal._p_raise(??) at 0xd020646c
  raise.raise(??) at 0xd002605c
  abort() at 0xd0004e60
   assert(??, ??, ??) at 0xd0086ee4
  inputReady 6DSUserFi(0x30191ed0, 0x12) at 0xd1729910
  notify 12dpDispatcherFiR8dpFdMaskN22(0x301a0e90, 0x2, 0x301a1ba0, 0x301a1dc0,
  dispatch 12dpDispatcherFP7timeval(0x301a0e90, 0x0) at 0xd1a74cac
  dispatch_12dpDispatcherFv(0x301a0e90) at 0xd1a74d38
 begin 6DSUserFv(0x30191ed0) at 0xd172adac
  start 9VISThreadFPv(0x30191ef4) at 0xd16c0758
 pthread. pthread body (??) at 0xd1eb8700
  (dbx)
> quit
  Ś
===>
F3=Exit
           F6=Print
                      F9=Retrieve F11=Truncate/Wrap
F13=Clear F17=Top
                      F18=Bottom F21=CL command entry
```

Figure 745. Using DBX to debug a core dump problem

C.2.10 ASCII character set tables

The PASE environment uses the ASCII character set. There are many times when it would be nice to know the translation between decimal, hexadecimal, and character representations in the ASCII character set. For example, this may include when trying to view carriage return characters in files using the od command (described in C.1.6.3, "Removing carriage return characters from files" on page 640). Or it may be when using a tool such as mrhex, available in PRPQ iSeries Tools for Developers (5799-PTL) (described in B.1, "iSeries Tools for Developers PRPQ (5799-PTL)" on page 561), to view a file in hexadecimal. The ASCII character set is included in Table 31 and Table 32.

Dec	Hex	Char	
0	0	NUL	(null)
1	1	SOH	(start of heading)
2	2	STX	(start of text)
3	3	ETX	(end of text)
4	4	EOT	(end of transmission)
5	5	ENQ	(enquiry)
6	6	ACK	(acknowledge)
7	7	BEL	(bell)
8	8	BS	(backspace)
9	9	TAB	(horizontal tab)
10	А	LF	(NL line feed, new line)
11	в	VT	(vertical tab)
12	С	FF	(NP form feed, new page)
13	D	CR	(carriage return)
14	E	SO	(shift out)
15	F	SI	(shift in)
16	10	DLE	(data link escape)
17	11	DC1	(device control 1)
18	12	DC2	(device control 2)
19	13	DC3	(device control 3)
20	14	DC4	(device control 4)
21	15	NAK	(negative acknowledge)
22	16	SYN	(synchronous idle)
23	17	ETB	(end of transmission block)
24	18	CAN	(cancel)
25	19	EM	(end of medium)
26	1A	SUB	(substitute)
27	1B	ESC	(escape)
28	1C	FS	(file separator)
29	1D	GS	(group separator)
30	1E	RS	(record separator)
31	1F	US	(unit separator)

Table 31. ASCII character set decimal 0-31

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
32	20		64	40	@	96	60	`
33	21	!	65	41	А	97	61	а
34	22	"	66	42	В	98	62	b
35	23	#	67	43	С	99	63	С
36	24	\$	68	44	D	100	64	d
37	25	%	69	45	E	101	65	е
38	26	&	70	46	F	102	66	f
39	27	6	71	47	G	103	67	g
40	28	(72	48	Н	104	68	h
41	29)	73	49	1	105	69	i
42	2A	*	74	4 A	J	106	6A	j
43	2B	+	75	4B	К	107	6B	k
44	2C	,	76	4C	L	108	6C	I
45	2D	-	77	4D	М	109	6D	m
46	2E	•	78	4E	N	110	6E	n
47	2F		79	4F	0	111	6F	0
48	30	0	80	50	Р	112	70	р
49	31	1	81	51	Q	113	71	q
50	32	2	82	52	R	114	72	r
51	33	3	83	53	S	115	73	S
52	34	4	84	54	Т	116	74	t
53	35	5	85	55	U	117	75	u
54	36	6	86	56	V	118	76	v
55	37	7	87	57	W	119	77	w
56	38	8	88	58	х	120	78	x
57	39	9	89	59	Y	121	79	У
58	ЗА	:	90	5A	Z	122	7A	z
59	3B	;	91	5B	[123	7B	{
60	3C	<	92	5C	١	124	7C	I
61	3D	=	93	5D]	125	7D	}
62	3E	>	94	5E	^	126	7E	~
63	3F	?	95	5F	_	127	7F	DEL

Table 32. ASCII character set decimal 32-127

C.2.10.1 Descriptions

Additional information is provided in the following sections regarding some of the ASCII character set characters.

Format control

- **BS** Backspace. Indicates movement of the printing mechanism or display cursor backwards in one position.
- **HT** Horizontal Tabulation. Indicates movement of the printing mechanism or display cursor forward to the next preassigned tab or stopping position.
- **LF** Line Feed. Indicates movement of the printing mechanism or display cursor to the start of the next line (for example, one line down).
- **VT** Vertical Tabulation. Indicates movement of the printing mechanism or display cursor to the next of a series of preassigned printing lines.
- **FF** Form Feed. Indicates movement of the printing mechanism or display cursor to the starting position of the next page, form, or panel.
- **CR** Carriage Return. Indicates movement of the printing mechanism or display cursor to the starting position (left) of the current line.

Transmission control

- **SOH** Start of Heading. Used to indicate the start of a heading that may contain address or routing information.
- **STX** Start of Text. Used to indicate the start of the text and so also indicates the end of the heading.
- **ETX** End of Text. Used to terminate the text that was started with STX. End of Transmission indicates the end of a transmission that may have included one or more texts with their headings.
- **ENQ** Enquiry. A request for a response from a remote station. It may be used as a "who are you?" request for a station to identify itself.
- ACK Acknowledge. A character transmitted by a receiving device as an affirmation response to a sender. It is used as a positive response to polling messages.
- **NAK** Negative Acknowledgement. A character transmitted by a receiving device as a negative response to a sender. It is used as a negative response to polling messages.
- SYN Synchronous/Idle. Used by a synchronous transmission system to achieve synchronization. When no data is sent, a synchronous transmission system may send SYN characters continuously.
- **ETB** End of Transmission Block. Indicates the end of a block of data for communication purposes. It is used for blocking data where the block structure is not necessarily related to the processing format.

Information separator

- FS File Separator.
- **GS** Group Separator.
- **RS** Record Separator.
- **US** Unit Separator.

Information separators are used in an optional manner except that their hierarchy shall be FS (the most inclusive) to US (the least inclusive).

Miscellaneous

- **NUL** Null. No character. Used for filling in time or filling space on tape when there is no data.
- **BEL** Bell. Used when there is need to call human attention. It may control alarm or attention devices.
- **SO** Shift Out. Indicates that the code combinations that follow should be interpreted as "outside" the standard character set until an SI character is reached.
- **SI** Shift In. Indicates that the code combinations that follow should be interpreted according to the standard character set.
- **DLE** Data Link Escape. A character that should change the meaning of one or more contiguously following characters. It can provide supplementary controls or permits the sending of data characters having any bit combination.
- **DC1-4** Device Controls. Characters for the control of ancillary devices or special terminal features.
- **CAN** Cancel. Indicates that the data that precedes it in a message or block should be disregarded (usually because an error has been detected).
- **EM** End of Medium. Indicates the physical end of a card, tape, or other medium, or the end of the required or used portion of the medium.
- **SUB** Substitute. Substituted for a character that is found to be erroneous or invalid.
- **ESC** Escape. A character intended to provide code extension in that it gives an alternate meaning to a specified number of contiguously following characters.
- **SP** Space. A non-printing character used to separate words, or to move the printing mechanism or display cursor forward by one position.
- **DEL** Delete. Used to obliterate unwanted characters (for example, on paper tape by punching a hole in "every" bit position).



Glossary

Advanced Interactive eXecutive (AIX) An IBM integrated UNIX operating environment. Most or the references in this redbook are for the RS/6000 version of AIX.

American National Standard Code for Information Interchange (ASCII) A code page usually used on PCs and UNIX systems.

Application System/400 (AS/400) Now known as the IBM @server iSeries server, or simply "iSeries server".

Available-to-Promise (ATP) Refers to inventory.

batch job A task or group of tasks you submit for processing that the system treats as a single unit during processing, for example, printing reports and purging files. The computer system performs a batch job with little or no user interaction.

batch processing A method by which the system selects jobs from the job queue, processes them, and sends output to the output queue. Contrasts with interactive processing.

brick and mortar Refers to a business that operates traditionally with physical stores as opposed to online stores.

browser A client application that translates information sent by the World Wide Web. A client must use a browser to receive, manipulate, and display World Wide Web information on the desktop. Also known as a Web browser.

Business Process Intelligence (BPI) i2's software for intelligent Web analysis for other i2 products, solutions, and marketplaces.

Business Release (BR) i2's implementation methodology or stages of a project where each one normally has specific milestones or goals to accomplish. For example, BR0 is typically the initial planning and data cleansing stage, BR1 is where initial products are rolled out or piloted, and BRn... is where additional sites are brought online or new products are implemented.

Business-to-Business (B2B) Refers to anything that involves businesses communicating or transacting with one another.

Business-to-Consumer (B2C) Refers to businesses communicating or transacting with consumers or end users.

Business Unit (BU) A unit within a company. It can be segmented by function or whatever is appropriate for a particular company.

Center of Excellence (COE) A room within i2 that is equipped with state-of-the-art demo equipment and

facilities. It is used to make presentations to customers, prospects, and partners.

client/server A relationship between processes running on separate machines. The server process is a provider of software services. The client is a consumer of those services. Provides a clean separation of function based on the idea of service. A server can service many clients at the same time and regulate their access to shared resources. There is a many-to-one relationship between clients and a server, respectively. Clients always initiate the dialog by requesting a service. Servers passively wait for reguests from clients.

constraint Anything that limits the performance of a system. A constraint could be a resource such as a work center with limited capacity or a material such as a part that prevents the completion of an order.

Consumer Packaged Goods (CPG) An industry where i2 has customers.

Customer Management (CM) One of the suites under the older TradeMatrix umbrella.

customer relationship management (CRM) An industry definition where customer needs are placed first by understanding the customers and aligning an organizations capabilities to better deliver value to customers.

daemon A task, process, or thread that intermittently awakens to perform some tasks and then goes back to sleep. Frequently used to describe management or server tasks in UNIX.

data warehouse Database used for reconciling and consolidating data from multiple databases before it is distributed to data marts for department-level decision support queries and reports. It is generally a large relational database residing on a dedicated server between operational databases and the data marts.

data warehousing Involves off-loading operational data sources to target databases that will be used exclusively for decision support (reports and queries). There are a range of decision support environments, including duplicated database, enhanced analysis databases, and enterprise data warehouses.

database A continuously updated collection of all information that a system uses and stores. Makes it possible to create, store, index, and cross-reference information online.

database server A server that stores data.

DB2 Universal Database for iSeries (DB2 UDB for iSeries) The integrated database management system of the iSeries operating system that provides the structure, integrity, and data manipulation components of the relational database model. **Demand Fulfillment (DF)** One of i2's software products. See *High Availability Demand Fulfillment* for more information.

development server The server that a company develops and makes changes on, and then moves everything to a production server. Some customers have multiple development servers and may use them for testing, training, Quality Assurance (QA), or what-if scenarios.

direct procurement Procurement of materials that are used directly in the manufacturing process. A raw material is a direct material. Because receiving the right quantity of direct material at the right time is essential to efficient and timely manufacture, direct procurement functionality includes collaboration rather than a simple, one-way purchase order process. Collaboration functionality is an i2 differentiator.

e-business Business done on the Web.

electronic (e-) Usually refers to anything accomplished with the Web.

EMEA Europe, Middle East, and Africa. A region within IBM and i2.

Enterprise Application Systems (EAS) This is the new name commonly used to replace ERP.

Enterprise Resource Planning (ERP) Generally used for core business applications.

Extended Binary Coded Decimal Interchange Code (**EBCDIC**) A code page usually used on iSeries servers.

fab A semiconductor chip manufacturing factory.

Factory Planner (FP) i2's very first product. It is software that helps a company lower their inventory and WIP while optimizing load on the machines and other factory resources. It also provides JIT delivery to their customers while keeping costs to a minimum.

Fast-Moving Consumer Goods (FMCG) i2 started with CPG about 1998 and then expanded the scope to include retail customers, so it became CG&R. In 2000, they merged Softgoods (Textile and Apparel), Consumer Durables (CD) and Consumer Electronic (CE) as part of CG&R. The original CG&R is sometimes referred to as FMCG.

fat client A client that uses its own resources, in the form of processor, memory, and disk, to perform substantial amounts of application processing in cooperation with a server.

File Transfer Protocol (FTP) A standard protocol used to transfer data files between systems over TCP/IP.

go-live To actively use an i2 solution after implementing it. Implementations can take anywhere from a couple of weeks to several months. They include installation, testing, and so on before the customer actually uses it "for real". Achieving go-live

status is one of the first steps toward i2 achieving the mission of providing value to its customers.

graphical user interface (GUI) Computer interface that is graphically based as opposed to being character-based. An example of a character-based interface is the 5250 "green screen" used on the iSeries server. An example of a GUI is Microsoft Windows or Operations Navigator. Graphically-based interfaces allow pictures and other graphic images to be used to give people clues on how to operate the computer.

High Availability Demand Fulfillment (HA DF) High Availability is a software architecture which allows the system to remain running 24 hours a day, 7 days a week. Even if there is a crash of the software or hardware, the system is distributed across multiple servers, so that if one server goes down, there is always another mirrored copy of the solution in backup and ready to take over immediately. Demand Fulfillment provides a clear input of the Available to Promise (ATP) inventory so that when a customer requests material, they are given an accurate projection as to whether their request can be met. Because customer requests can come from any part of the world at any time of the day, it is important to implement the Demand Fulfillment solution with a High Availability architecture so a request is never missed.

host In the centralized computer model, a large timesharing computer system that terminals communicate with and rely on for processing. Contrasts with client/server in that those users work at computers that perform much of their own processing and access servers that provide services such as file management, security, and printer management.

hosted solution A solution, such as i2's, that exists outside of a company's firewall. A hosted solution serves as a single point of integration to each business partner and does not require a company to re-implement for each individual supplier or customer. It also reduces a company's total cost of ownership, since a hosted solution eliminates the need to staff application and technology experts, and the initial expense of licensing and hardware acquisition is foregone.

HyperText Markup Language (HTML) A markup language used to specify the logical structure of a document rather than the physical layout. Specifying logical structure makes any HTML document platform independent. You can view an HTML document on any desktop capable of supporting a browser. HTML can include active links to other HTML documents anywhere on the Internet or on intranet sites.

i2 is not an acronym or a shortened version of another word or words; it's simply i2. For more than a decade, i2 has been a leader in supply chain management. i2 has extended its technology and expertise to Dynamic Value Chain Management solutions to help companies collaborate on decision-making processes not only across functions within a single company, but across multiple companies. i2 solutions span the value chain interactions, including customer relationship management, supply chain management, and supplier relationship management. Established in 1988, i2 is the only software solutions provider that measures, audits, and reports total value provided to its customers, with a mission to deliver \$75 billion in value by 2005. Learn more at: http://www.i2.com

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indirect procurement The procurement of materials that support a company's operations, but that are not used in manufacturing. Office supplies, furniture, computers, and so on are all indirect materials.

Industry Business Unit (IBU) A component of i2 which contains a group of people. Each IBU focuses on different industries that i2 has or wants to have customers in (for example, Automotive).

Industry Conference Series (ICS) Part of the i2 Planet user conference.

Integrated File System (IFS) The hierarchical directory and file system for iSeries servers. iSeries "libraries" and the objects they contain can be accessed as a mounted file system (QSYS.LIB) under the IFS root. Other file systems include the "root" (DOS-like) and QOpenSys (UNIX-like).

Integrated Language Environment (ILE) The iSeries program execution environment that supports bound procedures. All C application programs on the iSeries server run in ILE.

Integrated Netfinity Server (INS) Originally called the Integrated PC Server (IPCS). Now called the Integrated xSeries Server for iSeries.

Integrated PC Server (IPCS) Later called the Integrated Netfinity Server. Now called the Integrated xSeries Server for iSeries.

Intellection The former name of i2 Technologies, Inc.

interactive processing Processing actions that occur in response to commands you enter directly into the system. During interactive processing, you are in direct communication with the system, and it may prompt you for additional information while processing your request. Contrasts with batch processing. See also *online*.

interface Allows systems to send information to and receive information from one another.

Internal MicroProgramming Interface (IMPI) The original processor architecture of the iSeries server. IBM no longer manufactures IMPI-based iSeries servers.

Internet Worldwide constellation of servers, applications, and information available to a desktop

client through a phone line or other type of remote access.

Internet Protocol (IP) Connectionless communication protocol that, by itself, provides a datagram service. Datagrams are self-contained packets of information that are forwarded by routers based on their address and the routing table information contained in the routers. Every node on a TCP/IP network requires an address that identifies both a network and a local host or node on the network. In most cases, the network administrator sets up these addresses when installing new workstations. In some cases, however, it is possible for a workstation, when booting up, to query a server for a dynamically assigned address.

interoperability Ability of different computer systems, networks, operating systems, and applications to work together and share information.

intranet A small version of the Internet usually confined to one company or organization. An intranet uses the functionality of the Internet and places it at the disposal of a single enterprise.

Inventory Planner (IP) An i2 product that helps customers determine safety stock levels in the presence of demand and supply uncertainties.

ITWO i2 Technologies, Inc. symbol on the NASDAQ stock exchange. Analysts often just use this symbol in their reports about the stock market and companies instead of writing the name of the company.

Java Internet executable language that, like C, is designed to be highly portable across platforms. This programming language was developed by Sun Microsystems. Applets, or Java applications, can be accessed from a Web browser and executed at the client, provided that the operating system or browser is Java-enabled (Java is often described as a scaled-down C++). Java applications are platform independent.

job queue A group of jobs waiting to be batch processed. See also *batch processing*.

Just-in-Time (JIT) Refers to delivery of a product or service. Too early or too late is usually bad, while JIT is usually good.

legacy system System or systems that are already in place and are usually based on a previous technology. Old mainframes or an ERP system, such as SAP, may be considered to have become legacy systems to some people.

load Amount of work being demanded of a resource, where a resource could be a machine or person.

Machine Interface (MI) MI architecture is the high-level abstract machine definition implemented by iSeries servers. Also referred to as Technology-Independent Machine Interface (TIMI). **Management Central** A suite of system management functions known as Management Central has been integrated into Operations Navigator.

menu A menu that displays numbered selections. Each of these selections represents a program or another menu. To access a selection from a menu, type the selection number and then press Enter.

middleware A general term that covers all distributed software needed to support interactions between clients and servers. Think of it as the software that is in the middle of the client/server system or the "glue" that lets the client obtain a service from a server.

multi-tier architecture Client/server architecture that allows multiple levels of processing. A tier defines the number of computers that can be used to complete some defined task.

network computer As opposed to the personal computer, the network computer offers (in theory) lower cost of purchase and ownership and less complexity. Basically, it is a scaled-down PC (very little memory or disk space) that can be used to access network-based applications (Java applets, ActiveX controls) through a network browser.

network computing Often referred to as the next phase of computing after client/server. While its exact definition remains obscure, it generally encompasses issues such as transparent access to computing resources, browser-style front-ends, platform independence, and other similar concepts.

object A self-sufficient entity that contains data, as well as the structures and functions used to manipulate the data.

offering What a company "offers" to customers; products, services, and so on.

online Computer functions over which the system has continuous control.

Open Database Connectivity (ODBC) Defines a standard interface for different technologies to process data between applications and different data sources. The interface is made up of a set of function calls, methods of connectivity, and representation of data types that define access to data sources.

Operations Navigator The strategic platform for providing a graphical interface to systems administration functions and is a feature of iSeries Client Access Express for Windows.

output Information that the computer transfers from internal storage to an external device, such as a printer or a computer form.

output queue See print queue.

platform independence A benefit of open systems and Configurable Network Computing. Applications that are composed of a single code base can be run

across a TCP/IP network consisting of various server platforms and SQL databases.

portability Allows the same application to run on different operating systems and hardware platforms.

Portable Application Solutions Environment (PASE) An iSeries server runtime environment that delivers a broad subset of the AIX interface on the iSeries server.

Portable Operating System Interface (POSIX) For computer environments, an IEEE operating system standard, closely related to the UNIX system.

print queue A list of tables, such as reports, that you have submitted to be written to an output Configurable Network Computing Implementation device, such as a printer. The computer spools the tables until it writes them. After the computer writes the table, the system removes the table identifier from the list.

private marketplace An e-business forum for a company and its approved business partners and customers. Private marketplaces can exist within public marketplaces.

Process Local Storage (PLS) The part of an address space that is private to a process. An application program can control what memory is mapped to a particular address in PLS. It can also specify different storage protection for multiple mappings of the same memory. All PASE memory is equivalent to PLS.

production server The server that a company goes live with, or that contains the final version of a stage of the implementation. The production server contains code that was promoted or transferred from the development server (where changes are usually made).

program temporary fix (PTF) Representation of changes to IBM software that an organization receives on CD-ROM, magnetic tape, or through electronic download.

public-level service Services that are made available within i2 public marketplaces. Examples include Content aggregation, Demand aggregation and allocation, Single view for collaboration, Freight and Warehousing services, Auctioning, and Indirect procurement aggregation. All of these services take advantage of the increased scale at the level of a public marketplace.

public marketplace An open e-business forum. Examples include GM's TradeExchange and i2's HighTechMatrix. i2's public marketplaces allow end users to search entire marketplaces for product offerings. They also provide forums for public-level services, such as auctions, and provide content aggregated across the entire marketplace.

Request For Proposal (RFP) A document that a prospective customer requests and that a company

prepares that answers basic questions about doing business with the company.

RHYTHM i2's original suite of software products such as Factory Planner, Demand Planner, and Supply Chain Planner.

RHYTHM User Group (RUG) Now called the i2 User Group. You can find it on the Web at: http://www.i2-usergroup.org

RosettaNet A nonprofit consortium of more than 400 leading electronic components, information technology (IT), and semiconductor manufacturing (SM) companies dedicated to creating, implementing and promoting open e-business standards. The organization's mission is the creation of common XML-based supply chain process standards for the high-tech industry.

run To cause the computer system to perform a routine, process a batch of transactions, or carry out computer program instructions.

runtime The application engine. This is the piece of the system code that drives the applications.

scalability Allows software, architecture, network, or hardware growth that will support software as it grows in size or resource requirements. The ability to reach higher levels of performance by adding microprocessors.

server Provides the essential functions for furnishing services to network users (or clients) and provides management functions for network administrators. Some of these functions are: 1) Storage of operating system program modules, utilities, and commands; 2) Storage of user programs and data; 3) Management functions for the file system; 4) Management functions for security and user access; 5) Network monitoring and management components; and 6) Data protection functions for fault tolerance.

It may not be possible for one server to support all users with the required services. Dedicated servers that handle specific tasks, such as those listed here, are also common: 1) Backup and archive servers, 2) Application server, 3) Database server, 4) Fax server, 5) Print Server, 6) Electronic mail server, and 7) Directory services server.

service Software delivered to a private marketplace or public marketplace.

Single Level Storage (SLS) The single address space shared by all PowerAS architecture programs running in all processes. SLS provides a mapping for all storage (memory and disk) in an iSeries server.

site When in reference to the Internet or an intranet, a collection of associated Web pages with the Internet or intranet. When in reference to a customer, their office, plant, or factory.

software Operating system and application programs that tell the computer which tasks to perform and how to perform them.

spool The function by which the system stores generated output to await printing and processing.

spooled table A holding file for output data waiting to be printed or input data waiting to be processed.

Stock-Keeping Unit (SKU) The final sell-able product. For example, in the apparel business it is usually a combination of style, color, and size.

Structured Query Language (SQL) A fourth generation language used as an industry standard for relational database access. Can be used to create databases and to retrieve, add, modify, or delete data from databases. Is not a complete programming language because it does not contain control flow logic.

supply chain management (SCM) Generally used for the business applications that are used to manage the supply chain.

Supply Chain Planner (SCP) An i2 software product that enables customers to optimally manage their entire supply chains. Could also be Supply Chain Planning.

System Licensed Internal Code (SLIC) Contains all kernel (privileged) code for iSeries servers, plus a large amount of low-level user runtime code that does not require privilege.

table A two-dimensional entity made up of rows and columns. All physical data in a database are stored in tables. A row in a table contains a record of related information. An example is a record in an Employee table containing the Name, Address, Phone Number, Age, and Salary of an employee. Name is an example of a column in the employee table.

TCP/IP services port Used by a particular server application to provide whatever service the server is designed to provide. The port number must be readily known so that an application programmer can request it by name.

Technology Independent Machine Interface (TIMI) See Machine Interface.

thin client A client that is used primarily as an intelligent graphical display device, while most, if not all, application logic is executed on the server.

TradeMatrix A packaged set of services, content, and technology infrastructure to power private marketplaces ad public marketplaces. It is a collection of interconnected public marketplaces and private marketplaces. TradeMatrix was dropped from the name of i2 products starting with i2 Five.Two.

TradeMatrix Open Commerce Network (OCN) A collaborative network where buyers, suppliers, and marketplaces can rapidly connect to each other in

order to collaborate and conduct commerce. TradeMatrix OCN provides a single point of connection across a wide range of B2B platforms and technology standards to facilitate the creation of collaborative communities that drive increased visibility, velocity and value throughout the entire value chain. You can find it on the Web at: http://www.tradematrix.net

Transmission Control Protocol/Internet Protocol (TCP/IP) The original TCP protocol was developed as a way to interconnect networks using many different types of transmission methods. TCP provides a way to establish a connection between end systems for the reliable delivery of messages and data.

Transportation Manager (TM) An i2 product. Also an abbreviation for TradeMatrix.

Transportation Manager/Transportation Optimizer (TM/TO) i2's largest transportation products.

Uniform Resource Locator (URL) Names the Web address of a document on the Internet or an intranet.

UNIX An operating system developed at Bell Laboratories (trademark of UNIX System Laboratories, licensed exclusively by X/Open Company, Ltd.).

vertical marketplace A public marketplace organized around a single industry. Participants take advantage of tailored service offerings and workflows as well as access to relevant industry content.

Web client Any workstation that contains an Internet browser. Communicates with the Web server for i2 applications.

Web server Any workstation that contains the IServer service, SQL server, Java menus, and applications, and Internet middleware. Receives data from the Web client, and passes the request to the enterprise server. When the enterprise server processes the information, it sends it back to the Web server, and the Web server sends it back to the Web client.

white paper A document that succinctly explains a concept. It is typically targeted to a lay person, end user, or executive for their understanding. It can be about a new product/solution idea, industry requirements, or solution overview. Most white papers have sections for business requirements and a solution approach.

workflow According to the Workflow Management Coalition, workflow means "the automation of a business process, in whole or part, during which documents, information, or tasks are passed from one participant to another for action, according to a set of procedural rules."

World Wide Web (WWW) Part of the Internet that can transmit text, graphics, audio, and video. The World Wide Web allows clients to launch local or remote applications.
Abbreviations and acronyms

ADW	i2 Active Data Warehouse	CR	Carriage return
AIX	Advanced Interactive eXecutive	CST	Central Standard Time
A/P	Accounts Payable	СТР	Capable-to-Promise
AP	Asia Pacific	CRM	Customer relationship management
APAC	Asia-PACific	DASD	Direct Access Storage Device.
APAR	Authorized Program Analysis Report	DDL	Data Definition Language
ΑΡΙ	Application Programming Interface	DF	i2 Demand Fulfillment
APPC	Advanced Program to Program Communication	DP	i2 Demand Planner
APS	Advanced planning and scheduling	DR	Developer relations
A/R	Accounts Receivable	e-	
AS/400	Application System/400	EAI	Enterprise Application Integration
ASCII	American National Standard Code for Information Interchange	EAS EBCDIC	Extended Binary Coded Decimal
ASP	Applications Service Provider	eBPO	Electronic Business Process Ontimization
ATP	Available-to-Promise	ECS	Electronic Customer Support
ATS	Advanced Technical Support	EDI	Electronic Data Interchange
ATSS	Americas Technical Sales Support	EMEA	Europe, Middle East and Africa
B2B	Business-to-Business	ERP	Enterprise Resource Planning
B2C	Business-to-Consumer	EST	Eastern Standard Time
BPI	Business Process Intelligence	FAQ	Frequently Asked Questions
BR	Business Release	FMCG	Fast-Moving Consumer Goods
BU	Business Unit	FP	i2 Factory Planner
C2B	Consumer-to-Business	FTP	File Transfer Protocol
CAO	Constraint-Anchored Optimization	FTSS	Field Technical Sales Support
CCSID	Coded Character Set ID	GMT	Greenwich Mean Time
CD	Consumer Durables	GUI	Graphical user interface
СDМ	Common Data Model	HA DF	i2 High Availability Demand Fufillment
CE	Consumer Electronic	HTML	HyperText Markup Language
CG&R	Consumer Goods and Retail	IBM	International Business Machines Corporation
	Control Language	IBU	Industry Business Unit
		ICC	International Competency Center
	Control Language Program	ICS	Industry Conference Series
с <u>и</u>	Customer Management	IFS	Integrated File System
COF	Center of Excellence	IGF	IBM Global Financing
CPFR	Collaborative Planning Forecasting and	IGS	IBM Global Services
	Replenishment	ILE	Integrated language environment
CPG	Consumer Packaged Goods	IMPI	Internal MicroProgramming Interface
СРР	Command Processing Program	INS	Integrated Netfinity Server

IOP	Input/output processor	PSP	Preventive Service Planning
IP	Internet Protocol	PST	Pacific Standard Time
IP	i2 Inventory Planner	PTF	Program Temporary Fix
IPCS	Integrated PC Server	PWD	PartnerWorld for Developers
IPL	Initial Program Load	QA	Quality Assurance
ISV	Independent Software Vendor	QSH or qsh	Qshell
ITSO	International Technical Support	RAID	Redundant Array of Independent Disks
JAR	Java ARchive	RDBMS	Relational Database Management System
JIT	Just-in-Time	RFP	Request for Proposal
JRE	Java Runtime Environment	RISC	Reduced Instruction Set Computing
JVM	Java Virtual Machine	ROI	Return on Investment
KPI	Key Performance Indicator	RUG	RHYTHM User Group
LA	Latin America	SCE	Supply Chain Execution
LAN	Local area network	SCM	Supply chain management
LF	Line feed	SCP	i2 Supply Chain Planner
LIC	Licensed Internal Code	SEU	Source Entry Utility
LPAR	Logical partition or logical partitioning	SIA	Strategic Impact Assessment
LPP	Licensed Program Product	SKU	Stock-Keeping Unit
М2М	Marketplace-to-Marketplace	SLIC	System Licensed Internal Code
МІ	Machine Interface	SLS	Single level storage
MSP	Marketplace Service Provider	SMB	Small and Medium Business
MST	Mountain Standard Time	SME	Subject Matter Expert
NDA	Non-Disclosure Agreement	SOA	Strategic opportunity analysis
NLV	National language version	SPC	Sales Productivity Center or Solution
NPT	Non-Programmable Terminal	201	
ODBC	Open database connectivity	SQL	Structured Query Language
ОЕМ	Original Equipment Manufacturer	SRM TODUD	Supplier relationship management
org	Organization	ΤΟΡ/ΙΡ	Protocol
OS/400	Operating System/400	TELNET	Teletypewriter Network
PASE	Portable Application Solutions Environment	ТІМІ	Technology Independent Machine Interface
PF	Physical file	ТМ	i2 Transportation Manager or TradeMatrix
PID	Process ID	ТМ/ТО	i2 Transportation Manager/Transportation
PLS	Process Local Storage		Optimizer
PMR	Problem Management Record	UDB	Universal Database
PO	Purchase Order	URL	Uniform Resource Locator
POSIX	Portable Operating System Interface	UTC	Universal Time Coordinated
PRPQ	Programming Request for Price	WAN	Wide Area Network
PSI	Purchase Sales and Inventory or	WIP	Work in Process
	Problem Source Identification	WWQ&A	Worldwide Question and Answer
PSG	Personal Systems Group	XMĹ	eXtensible Markup Language

Related publications

The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this Redbook.

IBM Redbooks

For information on ordering these publications, see , "How to get IBM Redbooks" on page 710.

- IBM @server iSeries Handbook Version 5 Release 1, GA19-5486
- TCP/IP Tutorial and Technical Overview, GG24-3376
- IBM @server iSeries and AS/400e Builder Version 5 Release 1, SG24-2155
- AS/400 Implementing Windows NT on the Integrated Netfinity Server, SG24-2164
- V4 TCP/IP for AS/400: More Cool Things Than Ever, SG24-5190
- Slicing the AS/400 with Logical Partitioning: A How to Guide, SG24-5439
- Porting UNIX Applications Using AS/400 PASE, SG24-5970
- AS/400e to IBM @server iSeries Migration: A Guide to System Upgrades at V4R5 and V5R1, SG24-6055
- Consolidating Windows 2000 Servers in iSeries: An Implementation Guide for the IBM Integrated xSeries Server for iSeries, SG24-6056
- Capacity Planning for Logical Partitioning on the IBM @server iSeries Server, SG24-6209
- Direct Attach xSeries for the IBM @server iSeries Server: A Guide to Implementing xSeries Servers in iSeries, SG24-6222
- IBM @server iSeries Pocket Handbook Version 5 Release 1, SG24-9406

Other resources

These publications are also relevant as further information sources:

- AS/400 Physical Planning Guide, SA41-5109
- iSeries Performance Capabilities Reference Version 5 Release 1, SC41-0607
- Software Installation, SC41-5120
- Integration Services for Integrated Netfinity Server, SC41-5123
- Query/400, SC41-5210
- Basic System Security and Planning, SC41-5301
- iSeries Security Reference, SC41-5302
- Backup and Recovery, SC41-5304
- OS/400 Work Management, SC41-5306
- Performance Tools for iSeries, SC41-5340
- TCP/IP Configuration and Reference, SC41-5420
- TCP/IP Fastpath Setup, SC41-5430
- Client Access Express for Windows Setup, SC41-5507

- Operations Console Setup, SC41-5508
- SQL Reference, SC41-5612
- Database Programming, SC41-5701
- Integrated File System Introduction, SC41-5711
- CL Programming, SC41-5721
- CL Reference, SC41-5722

Referenced Web sites

These Web sites are also relevant as further information sources:

- IBM Corporation home page: http://www.ibm.com/
- IBM iSeries home page: http://www.iseries.ibm.com/
- IBM iSeries Support home page: http://as400service.ibm.com/
- IBM iSeries Information Center V5R1: http://publib.boulder.ibm.com/html/as400/v5r1/ic2924/index.htm/
- i2 Technologies home page: http://www.i2.com/
- i2 Technologies Support home page: http://support.i2.com/
- i2 Technologies TradeMatrix Open Commerce Network (OCN): http://www.tradematrix.net/

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You can also download additional materials (code samples or diskette/CD-ROM images) from that site.

IBM Redbooks collections

Redbooks are also available on CD-ROM. Click the CD-ROM button on the Redbooks Web site for information about all the CD-ROMs offered, as well as updates and formats.

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(1.0" spine) 0.875"<->1.498" 460 <-> 788 pages



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The information in this redbook covers:

- An overview of the structure, features, and functions of the i2 products supported on the iSeries server
- Implementation tasks and techniques necessary to install and properly setup i2 on the iSeries server
- Available support for i2 and the iSeries server

This redbook is designed to assist technical people among i2 customers, business partners, and service representatives. It targets those professionals who are directly involved with the installation and implementation of a total business solution consisting of iSeries server hardware, OS/400, i2 solutions, and supplemental solution products.

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SG24-6208-00

ISBN 0738421111