Tivoli. IBM Tivoli Tape Optimizer on z/OS

Version 2 Release 2





Monitoring Agent Planning and Configuration Guide

Tivoli. IBM Tivoli Tape Optimizer on z/OS

Version 2 Release 2





Monitoring Agent Planning and Configuration Guide

Note

Before using this information and the product it supports, read the information in "Notices" on page 151.

This edition applies to Version 2, Release 2 of IBM Tivoli Tape Optimizer for z/OS Monitoring Agent (product number 5698–B26) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this guide

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IBM Tivoli Tape Optimizer on z/OS is a copy utility for data residing on tape storage devices that are managed by Data Facility System Managed Storage removable media manager (DFSMSrmm). The Tape Optimizer Monitoring Agent offers functions that can be used to manage numerous tape copy jobs and monitor the results of those jobs.

The IBM[®] Tivoli Tape Optimizer Monitoring Agent collects and reports information in the Tivoli Enterprise Portal graphical user interface. The product workspaces provide:

- Take action commands that can be used to launch Tape Optimizer copy request jobs
- · Historical statistical information
- Tape migration detail
- Volume chain list information
- · Volume dataset list information
- · Tapes pending migration due to replace
- · Tapes pending migration due to temporary errors
- · SMF statistics such as data set, volume, and job copy status

The user interface contains expert advice on alerts and corrective actions.

This book tells how to plan your deployment of the IBM Tivoli Tape Optimizer Monitoring Agent software, and how to install and configure the software in your environment.

Intended audience for this guide

This guide is intended for the system programmer or administrator responsible for installing and configuring new programs on z/OS[®] systems. The procedures in this guide require familiarity with the following topics:

- The z/OS operating system
- The Microsoft[®] Windows[®] operating system

Publications

This section lists publications in the IBM Tivoli Tape Optimizer and IBM Tivoli Monitoring libraries. The section also describes how to access Tivoli[®] publications online and how to order publications.

Tivoli Tape Optimizer publications

The following publications are included in the Tivoli Tape Optimizer library:

• Monitoring Agent Program Directory, GI11-4074

Provides hardware and software prerequisites and instructions for the Tivoli Tape Optimizer on z/OS SMP/E installation.

- Monitoring Agent Planning and Configuration Guide, SC23-9738
 Provides instructions for planning, installing, and configuring Tivoli Tape Optimizer on z/OS. This publication includes the following types of information:
 - Information and worksheets to help you plan your configuration
 - A list of prerequisite steps to complete before configuring the product

- Instructions for configuring the monitoring server and monitoring agent on a z/OS system
- Instructions for installing and setting up the distributed components of the product
- Information about using system variables and batch processing to expand a configuration across the enterprise
- Security considerations and advice
- Lists and explains Tivoli Tape Optimizer messages
- Monitoring Agent User's Guide, SC23-9737

Provides instructions for using Tivoli Tape Optimizer to manage numerous tape copy jobs and monitor the results of those jobs. It also lists and explains Tivoli Tape Optimizer messages and offers troubleshooting guidance.

• User's Guide, SC23-9735

Provides instructions for using Tivoli Tape Optimizer.

IBM Tivoli Monitoring publications

Basic instructions for installing and setting up the IBM Tivoli Monitoring (also called Tivoli Monitoring Services or Tivoli Management Services) components of the product are provided in this guide. You can find more detailed information about the IBM Tivoli Monitoring components in the following publications:

• Installation and Setup Guide, GC32-9407

Provides information on installing and setting up the Tivoli Enterprise Monitoring Server and the Tivoli Enterprise Portal Server and client.

Configuring IBM Tivoli Enterprise Monitoring Server on z/OS, SC32-9463

Describes how to configure and customize the Tivoli Enterprise Monitoring Server on z/OS. The book also contains platform planning information and information about setting up security on your monitoring server.

• Introducing IBM Tivoli Monitoring, GI11-4071

Gives a basic introduction to the features of IBM Tivoli Monitoring.

• Administrator's Guide, SC32-9408

Describes how to perform administrative tasks associated with the Tivoli Enterprise Portal Server and client.

• User's Guide, SC32-9409

Describes how to use the Tivoli Enterprise Portal client interface. This book includes a monitoring tutorial that covers workspaces, navigation, views, and responding to alerts. Different types of views and situations for event-based monitoring are also included, as well as information on automation policies.

• Problem Determination Guide, GC32-9458.

Lists and explains IBM Tivoli Monitoring messages, and offers troubleshooting guidance.

• z/OS Messages, SC23-6065

Lists and explains messages for z/OS-based Tivoli Monitoring Services components, such as the Tivoli Enterprise Monitoring Server on z/OS and the OMEGAMON[®] base components.

You can also find useful information about setting up and deploying the IBM Tivoli Monitoring components in the following IBM Redbooks[®]:

- Deployment Guide Series: IBM Tivoli Monitoring 6.2, SG24-7444
- Getting Started with IBM Tivoli Monitoring 6.2 on Distributed Environments, SG24-7143

Accessing publications online

The documentation CD contains the product publications in PDF and HTML formats. Refer to the readme file on the CD for instructions on how to access the documentation.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Information Center Web site at http://www.ibm.com/software/tivoli/library/.

In the Tivoli Information Center window, click **Tivoli product manuals**. Click the letter that matches the first letter of your product name to access your product library.

Note: If you print PDF documents on other than letter-sized paper, set the option in the **File > Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

Reading CCR2 online

IBM publishes $CCR2^{\text{TM}}$, a useful monthly e-newsletter for the System z^{B} and zSeries[®] software community. You can find the latest issue of CCR2 at http://www.ibm.com/software/tivoli/features/ccr2/info.html.

Ordering publications

You can order many Tivoli publications online at the following Web site:

http://www.elink.ibmlink.ibm.com/public/applications/ publications/cgibin/pbi.cgi.

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

- Go to http://www.elink.ibmlink.ibm.com/public/applications/ publications/cgibin/ pbi.cgi.
- 2. Select your country from the list and click Go.
- 3. Click **About this site** in the main panel to see an information page that includes the telephone number of your local representative.

Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

For additional information, see the Accessibility Appendix in the *Monitoring Agent User's Guide*.

Accessing terminology online

The *Tivoli Software Glossary* includes definitions for many of the technical terms related to Tivoli software. The *Tivoli Software Glossary* is available at the following Tivoli software library Web site:

http://publib.boulder.ibm.com/tividd/glossary/tivoliglossarymst.htm

The IBM Terminology Web site consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology Web site at the following Web address:

http://www.ibm.com/software/globalization/terminology

Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site:

http://www.ibm.com/software/tivoli/education

Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

- IBM Support Assistant: You can search across a large collection of known problems and workarounds, Technotes, and other information at http://www.ibm.com/software/support/isa.
- Obtaining fixes: You can locate the latest fixes that are already available for your product.
- Contacting IBM Software Support: If you still cannot solve your problem, and you need to work with someone from IBM, you can use a variety of ways to contact IBM Software Support.

For more information about resolving problems, see "Support information" on page 145.

Conventions used in this publication

This guide uses several conventions for special terms and actions and for operating system-dependent commands and paths.

In the books that discuss configuration and in the Configuration Tool (also called ICAT), the following abbreviations are used:

Abbreviation	Meaning
&hilev	High-level qualifier
&rhilev	Runtime high-level qualifier (non-VSAM)
&rte	Runtime environment name; used in conjunction with &rhilev
&rvhilev	Runtime high-level qualifier (VSAM)

Table 1. Configuration Tool abbreviations

Table 1. Configuration Tool abbreviations (continued)

Abbreviation	Meaning
&shilev	Installation high-level qualifier of the INST* libraries
&thilev	SMP/E target high-level qualifier

Typeface conventions

This guide uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:** and **Operating system considerations**)
- Keywords and parameters in text

Italic

- Words defined in text
- Emphasis of words (words as words)
- · New terms in text (except in a definition list)
- Variables and values you must provide

Monospace

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- · Message text and prompts addressed to the user
- · Text that the user must type
- Values for arguments or command options

Operating system-dependent variables and paths

This guide uses the $\text{UNIX}^{\textcircled{B}}$ convention for specifying environment variables and for directory notation.

When using the Windows command line, replace *\$variable* with *%variable%* for environment variables and replace each forward slash (*I*) with a backslash (*I*) in directory paths. The names of environment variables are not always the same in Windows and UNIX. For example, *%*TEMP% in Windows is equivalent to \$tmp in UNIX.

Note: If you are using the bash shell on a Windows system, you can use the UNIX conventions.

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Chapter 1. Introduction to the IBM Tivoli Tape Optimizer Monitoring Agent

IBM Tivoli Tape Optimizer on z/OS is a copy utility for data residing on tape storage devices that are managed by Data Facility System Managed Storage removable media manager (DFSMSrmm). The Tape Optimizer Monitoring Agent offers functions that can be used to manage numerous tape copy jobs and monitor the results of those jobs.

The IBM Tivoli Tape Optimizer Monitoring Agent displays the following types of z/OS data:

- Take action commands that can be used to launch Tape Optimizer copy request jobs
- Historical statistical information
- · Tape migration detail
- · Volume chain list
- · Volume dataset list
- · Tapes pending migration due to replace
- · Tapes pending migration due to temporary errors
- · SMF statistics such as data set , volume, and job copy status

Tivoli Tape Optimizer Monitoring Agent has a Java-based interface called the Tivoli Enterprise Portal, which transforms systems data into the business knowledge that you can use to run your enterprise. With IBM Tape Optimizer Monitoring Agent, you can also set threshold levels and flags as desired to alert you when the systems reach critical points.

The Tivoli Enterprise Portal presents information in a single window comprising a Navigator and a workspace:

- The *Navigator* in the upper left corner shows the hierarchy of your monitored enterprise, from the top level (Enterprise) down to the *nodes* that represent the systems in the enterprise, and then to the *subnodes* that represent groupings of information collected by the monitoring agents. The Navigator lights up with critical, warning, and informational alerts so you can instantly identify problems as they occur. When you click an item in the Navigator, the default workspace for that item is displayed in the Tivoli Enterprise Portal window.
- *Workspaces* can be divided into multiple *views* containing reports in the form of tables and charts, TN3270 emulator views, Web browsers, text boxes, graphic views, and event message logs.

You can use IBM Tape Optimizer Monitoring Agent features to accomplish many system-management tasks:

- Monitor all systems and resources from a single, integrated browser-based interface that you can customize with filters to display only the data you want to see.
- Create comprehensive online reports about system conditions.
- Define your own queries, using the attributes provided by a monitoring agent, to monitor conditions and data and customize workspaces.
- Create *situations*, which let you set up monitoring for particular conditions and flag the condition with an alert when detected.
- · Trace the causes leading up to an alert.

- Create and send commands to systems in your managed enterprise by means of the *Take Action* feature.
- Embed information about problem resolution in the product interface using *Expert Advice*, which can be edited to include knowledge and solutions specific to your environment.

Components of IBM Tape Optimizer Monitoring Agent

The Tape Optimizer Monitoring Agent is considered a client-server-agent implementation. For information about the Tape Optimizer Monitoring Agent components, see "Designing your Tivoli Tape Optimizer Monitoring Agent configuration" on page 7.

Features of Tivoli Tape Optimizer Monitoring Agent

The following features are available with Tivoli Tape Optimizer Monitoring Agent and the Tivoli Enterprise Portal:

- **Customized workspaces for each information group:** Tivoli Enterprise Portal retrieves data from the monitoring agent and displays the results in the workspace in the form of charts and tables. You can start monitoring activity and system status immediately with the predefined workspaces and tailor your own workspaces to look at specific conditions, display critical threshold values in red, and filter incoming data according to your needs.
- Workspace views: Each workspace consists of one or more views. There are several types of views:
 - *Table views* display data in table format where rows represent monitored resources and columns represent data collected for each resource.
 - *Chart views* allow you to view data in graphical formats. Pie, bar, and plot charts and a gauge format are supported.
 - *Take action view* lets you enter a command or select a predefined command, and run it on any system in your managed network.
 - Message log view shows the status of the situations running on your managed network.
 - Notepad view opens a simple text editor for writing text that can be saved with the workspace.
 - Terminal view starts a 3270 or 5250 session for working with z/OS applications.
 - Browser view opens the integrated Web browser.
- **Navigator views or** *navigators* provide hierarchical views of the systems, resources, and applications you are monitoring. Navigators help you structure your enterprise information to reflect the interests and responsibilities of the user. The Tivoli Enterprise Portal comes with a default navigator called the physical navigator. The Tivoli OMEGAMON DE on z/OS product, which can be ordered separately, comes with the same default navigator, but allows you to create additional navigators for viewing enterprise information representing your business systems.
- Linked workspaces: If you often go from one workspace to another, you can build a link between them to speed the transition. You can also build links that originate from a table or from a bar or pie chart, and use relevant data from the source table or graph to determine the target workspace.
- **Custom queries:** Every monitoring agent comes with a set of predefined queries. These queries tell the monitoring server what monitoring data to retrieve from the agent for the chart or table view. You can create your own queries to

specify exactly which attributes to retrieve, thus saving valuable resources. For example, you can build a filter into the Connections query to retrieve only records from a particular remote port. Additionally, you can write SQL queries to ODBC data sources and display the results in any chart or table. This enables you to show monitoring data and data from other sources (such as third-party databases) in a single workspace.

- Interaction with systems from your console: The Take Action feature lets you enter a command or select a predefined command, and run it on any system in your managed network.
- Monitor system conditions and send alerts: You can use the situation editor to create situations. A situation notifies you when an event occurs on a managed system. The monitoring server sends an alert when the conditions in a situation are evaluated to be true. The alert is displayed on the portal client with visual and sound indicators.
- Managed system lists: You can create and maintain named lists of managed systems that can be applied to:
 - Situation distribution lists
 - Policies correlated by business application group
 - Queries
 - Customer Navigator-managed system assignments
- **User administration:** The Tivoli Enterprise Portal provides a user administration feature for adding new user IDs, complete with selectable permissions for the major features and specific managed systems.

Standards supported

Monitoring products provide a number of integration facilities and adhere to a range of industry standards to make integration with other applications easier for you. These products use industry-standard languages and protocols to facilitate integration with third-party components and tools. The products also use the following strategic IBM and Tivoli tools and platforms:

- A Web-based user interface implemented with industry-standard Web content languages, such as Java[™], XML, and HTML
- Simple Network Management Protocol
- · Web Services and Web Management Interface (WMI) standard
- · TCP/IP-based communication between components and systems
- Support for the DB2[®] product, an industry-standard relational database
- Use of Structured Query Language (SQL '92, ISO/IEC 9075:1992), the standard interface for relational database access
- · Use of standard shell scripts and SMP/E to assist in installation

Interoperability with other products

Interoperability is the capability of an application to integrate with other IBM and non-IBM applications that are used in the same customer environment.

Monitoring agents are compatible with each other and can coexist in a single monitoring agent environment (that is, with a common Tivoli Enterprise Monitoring Server). These products, including the Tivoli Tape Optimizer, also interoperate with Tivoli Enterprise Monitoring Agents running on distributed systems and communicating through the same monitoring server. For more information on possible deployments of the monitoring products, see the following publications:

- IBM Tivoli Monitoring: Installation and Setup Guide
- IBM Tivoli Monitoring: Configuring IBM Tivoli Enterprise Monitoring Server on z/OS
- IBM Redbooks: Deployment Guide Series: IBM Tivoli Monitoring 6.2

Chapter 2. Planning your Tivoli Tape Optimizer Monitoring Agent configuration

In this chapter, you will learn about the components of Tivoli Tape Optimizer Monitoring Agent, and gather the information you need to make decisions about your configuration.

Before you begin the tasks of installing and configuring Tivoli Tape Optimizer Monitoring Agent, be sure to complete these prerequisite steps covered in this chapter:

- 1. Read the *Monitoring Agent Program Directory* and complete all the installation requirements listed there.
- Read "Designing your Tivoli Tape Optimizer Monitoring Agent configuration" to determine how you want your Tivoli Tape Optimizer Monitoring Agent configuration to look. For example, you must decide:
 - Where you want to deploy Tivoli Enterprise Monitoring Servers and Tivoli Tape Optimizer Monitoring Agent
 - What kind and how many runtime environments you need for your configuration
- 3. To get ready for configuration, make all the decisions called out in decision points in "Designing your Tivoli Tape Optimizer Monitoring Agent configuration" and fill out the worksheets in "Worksheets for Tivoli Tape Optimizer Monitoring Agent configuration" on page 19.
- 4. When you have designed your configuration and filled out the work sheets, see "A road map for installation and configuration of Tivoli Tape Optimizer Montoring Agent" on page 36 to determine your next step in installation and configuration.

Designing your Tivoli Tape Optimizer Monitoring Agent configuration

The Tivoli Tape Optimizer Monitoring Agent uses the Tivoli Monitoring Services infrastructure (also referred to as IBM Tivoli Monitoring, or Tivoli Management Services). The Tivoli Monitoring Services infrastructure provides security, data transfer and storage, notification mechanisms, user interface presentation, and communication services for products in the IBM Tivoli Monitoring suites in an agent-server-client architecture (see Figure 1 on page 8).



Figure 1. Tivoli Management Services architecture

The components include:

- "Tivoli Enterprise Monitoring Servers hub and remote" on page 9
- "Tivoli Data Warehouse and the warehouse proxy" on page 10
- "Tivoli Tape Optimizer monitoring agent" on page 10
- "Tivoli Enterprise Portal client and Tivoli Enterprise Portal Server" on page 11
- "Understanding runtime environments" on page 12

Some components, such as Tivoli Enterprise Portal and the Tivoli Data Warehouse, run only on distributed operating systems (Windows, Linux[®], or UNIX). The Tivoli Enterprise Monitoring Server can run on either distributed or mainframe systems. The Tivoli Tape Optimizer Monitoring Agent runs only on z/OS systems.

The required versions of the Tivoli Monitoring Services infrastructure components are distributed with the Tivoli Tape Optimizer Monitoring Agent software.

As you read through these sections, fill out the following worksheets to get ready for the configuration process:

- "Worksheet: Your overall configuration" on page 19
- "Worksheets: Information to gather when you put your hub monitoring server on a distributed system" on page 21
- "Worksheets: Information to gather when you put your hub monitoring server on a z/OS system" on page 27
- "Worksheet: Information for configuring your runtime environment" on page 35

Tivoli Enterprise Monitoring Servers - hub and remote

All requests and data for flow through a hub Tivoli Enterprise Monitoring Server (monitoring server). The monitoring server component performs the following tasks:

- Retrieves data from the monitoring agents and delivers data to the portal server.
- · Sends alerts to the portal server when conditions specified in situations are met.
- Receives commands from the portal client and passes them to the appropriate monitoring agents.

You can install this component on a z/OS, Windows, and some UNIX and Linux operating system. See the *IBM Tivoli Monitoring: Installation and Setup Guide* for a complete list of supported platforms.

Decision point:

Should you install a monitoring server on a z/OS, Windows, UNIX, or Linux system?

Many organizations prefer the reliability and availability characteristics of the z/OS platform for the monitoring server.

On the other hand, if your installation runs monitoring agents for other platforms, you might prefer a distributed platform such as Windows or Linux for your for your hub monitoring server. If you install the hub monitoring server on Windows or Linux, you have the option of deploying the portal server on the same system, which can shorten the communications path.

This decision influences the way you configure the Tivoli Tape Optimizer Monitoring Agent:

- If you choose to install the monitoring server on a distributed system, you fill out "Worksheets: Information to gather when you put your hub monitoring server on a distributed system" on page 21.
- If you choose to install the monitoring server on z/OS, you fill out "Worksheets: Information to gather when you put your hub monitoring server on a z/OS system" on page 27.

The two basic types of monitoring servers are hub and remote:

- The *hub* monitoring server is the focal point for managing your environment. You can configure only one hub monitoring server. It communicates with the portal server, with monitoring agents, and optionally with monitoring servers running remotely.
- You can optionally configure a *remote* monitoring server to distribute the workload of the hub monitoring server, but it is not required.

Each remote monitoring server must be installed on its own system or workstation. A remote monitoring server communicates with the hub monitoring server and with monitoring agents running on the same or different systems. Note that a remote monitoring server is remote only with respect to the hub monitoring server, not necessarily with respect to the monitoring agents. A monitoring agent can be installed on the same system as a remote monitoring server. The monitoring server is then local to the monitoring agent, but it is still a remote monitoring server. See "Tivoli Tape Optimizer monitoring agent" on page 10.

The configuration scenarios in this guide assume that the monitoring server being configured with the Tivoli Tape Optimizer Monitoring Agent is a hub monitoring

server. For instructions on configuring remote monitoring servers, see the *IBM Tivoli Monitoring: Configuring IBM Tivoli Enterprise Monitoring Server on z/OS* and *IBM Tivoli Monitoring: Installation and Setup Guide*.

Decision point: Should you configure a remote monitoring server or servers for your environment?

A remote monitoring server is designed to offload work from the hub. Whether or not your hub gets overloaded enough to slow down hub processing of situations and other data depends on the complexity of your environment. The following factors tend to boost strain on the hub and increase the likelihood that you might want a remote server to help out the hub:

- Monitoring many z/OS images. The more monitoring agents you have installed on z/OS systems, the more work for the hub.
- Monitoring many situations. Tivoli Tape Optimizer Monitoring Agent does not come with a great many situations to consume hub cycles, so unless you have other monitoring agents with lots of situations, this is probably not the deciding factor.

Configuring a remote monitoring server can also give you scalability potential and failover protection, which might be especially important when you add Tivoli Tape Optimizer Monitoring Agent to an environment with many monitoring agents. For more information on these issues, see the *IBM Redbooks: Deployment Guide Series: IBM Tivoli Monitoring 6.2* at the following Web site:

http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg247188.html?Open

Look for the following topics:

- Small/medium installation
- Scalability

Tivoli Data Warehouse and the warehouse proxy

The Tivoli Data Warehouse, an optional component of Tivoli Monitoring Services, is a long-term data store for the performance and analysis data collected by the monitoring agents. The warehouse proxy is a process that periodically moves data from the Tivoli Tape Optimizer Monitoring Agent to the Tivoli Data Warehouse. The short-term history files are maintained in the *persistent data store* at the location of the monitoring agent. The warehouse proxy agent retrieves the short-term history data and stores it in the warehouse.

The Tivoli Data Warehouse and warehouse proxy are available on Windows, UNIX, and Linux. For instructions on installing and configuring the Tivoli Data Warehouse and warehouse proxy, see *IBM Tivoli Monitoring: Installation and Setup Guide*, GC32-9407 and *IBM Tivoli Monitoring: Administrator's Guide*, SC32-9408.

Tivoli Tape Optimizer monitoring agent

The Tivoli Tape Optimizer Monitoring Agent, like all monitoring agents, monitors and collects data from a managed system. Monitoring agents are installed on the systems or subsystems you want to monitor. They pass data to monitoring servers (remote or hub), receive instructions from the monitoring servers, and issue commands to the managed systems.

Tivoli Enterprise Portal client and Tivoli Enterprise Portal Server

The *Tivoli Enterprise Portal client* (portal client) is the user interface for Tivoli Tape Optimizer Monitoring Agent. The portal client is a thin Java application that communicates with the Tivoli Enterprise Portal Server to send requests and retrieve data.

— Tip

These components require IBM Java Runtime Environment (JRE) V1.4.2. You do not need to install this JRE ahead of time, because the installation program for the Tivoli Monitoring Services components includes the JRE.

You can access all portal client function through either a desktop client or an Internet Explorer browser connected to an embedded Web server in the Tivoli Enterprise Portal Server.

- The desktop portal client allows access to portal client function and is required for configuration. In the operations environment, you must install the portal client on at least one desktop. Then individual Tivoli Tape Optimizer Monitoring Agent users can either install the portal client on their desktops, or use the browser portal client to access the portal client function. The desktop client can run on Windows or Linux (RedHat or SUSE Intel[®] Linux only).
- The browser portal client allows individual Tivoli Tape Optimizer Monitoring Agent users to leverage an existing deployment of Internet Explorer without installing the client component on every user's workstation. The browser client can run on Windows only, with Internet Explorer 6 as the only supported browser.

See the *IBM Tivoli Monitoring: Installation and Setup Guide* for complete information about supported operating system version support.

The *Tivoli Enterprise Portal Server* (portal server) is a Java application server that enables retrieval, manipulation, and analysis of data from agents. The portal server holds all the information needed to format the workspaces viewed in the portal client. The portal server communicates with the portal clients (default port is 1920) and with the hub monitoring server (default port is 1918).

You can install the portal server on a Windows, Linux for Intel, 31-bit Linux for z/OS, or AIX[®] system.

Decision point:

How do you choose among Windows, Linux, and AIX for installation of the portal server, and between Windows and Linux for installation of the portal desktop client?

Base this decision on conditions and preferences at your site, such as:

- · The operating systems already in use in the existing environment
- Familiarity and comfort level with each operating system
- Whether you want to bring additional operating systems into your site's current configuration

Note that you can run with mixed portal server and desktop client components. For example, you can have a desktop client on Linux and a portal server on AIX, or a desktop client on Windows and a portal server on Linux. The portal server requires that you have already installed DB2[®] Universal Database[™] (DB2 UDB) Workgroup Server Edition Express or Enterprise. The DB2 UDB is provided in the Tivoli Tape Optimizer Monitoring Agent installation package. If you already have DB2 UDB version 8 or higher on the workstation where you plan to install the portal server, you do not need to install it again for Tivoli Tape Optimizer Monitoring Agent.

Understanding runtime environments

Your next planning task is to decide what types of runtime environments to set up for the components you plan to deploy on your z/OS images.

Fill out the "Worksheet: Information for configuring your runtime environment" on page 35 as you read this section.

A runtime environment is a logical grouping of runtime libraries that are referenced by started tasks as they run on a z/OS image. When you run the Configuration Tool to configure the Tivoli Tape Optimizer Monitoring Agent, you start this process by defining a runtime environment of a certain type, which determines the number and types of runtime libraries required.

Table 2 summarizes the types of libraries created during installation and configuration of the Tivoli Tape Optimizer Monitoring Agent.

Type of Library	Description
Runtime libraries	General term for libraries referenced by started task procedures. Includes SMP/E target, base, and LPAR-specific libraries.
SMP/E target libraries	SMP/E maintained target libraries.
Abbreviated &thilev.	
Base libraries	Read-only runtime libraries that the configuration process does not alter and that are shareable between systems. These libraries physically
Abbreviated & rhilev or & rhilev.& rte.	exist in a full or base runtime environment, or as SMP/E target libraries (if a runtime environment shares with SMP/E).
	The base libraries can contain the actual data sets maintained by SMP/E, or a copy of them. Use a clone or copy of the SMP/E installation libraries for a production environment.
LPAR-specific libraries	Runtime libraries that are built during configuration to run on a specific
Abbreviated & rhilev.&rte.	required for a particular LPAR and cannot be shared among z/OS images.

Table 2. Types of libraries

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Table 3 explains the types of runtime environments that you can create during product configuration.

Table 3. Types of runtime environments

Type of runtime environment	Description
Full (self-contained) runtime environment	Runtime environment containing a full set of dedicated libraries, consisting of both LPAR-specific libraries and a copy of the SMP/E installation read-only base libraries eligible for sharing with other runtime environments. See "Example 1. Full (self-contained) runtime environment" on page 13.

Table 3. Types of runtime environments (continued)

Type of runtime environment	Description
Base runtime environment	Runtime environment containing exclusively read-only, shareable base libraries, which are a subset of the libraries needed to run monitoring agents. Therefore, they must be shared by another runtime environment.
	See "Example 2. Base runtime environment" on page 15.
Sharing-with-base runtime environment	Runtime environment containing LPAR-specific libraries and referencing the base libraries configured in a base runtime environment.
	See "Example 3. Sharing-with-base runtime environment" on page 16.
Sharing-with-full runtime environment	Runtime environment containing LPAR-specific libraries and referencing the base libraries configured in a full runtime environment.
	See "Example 4. Sharing-with-full runtime environment" on page 17.
Sharing-with-SMP/E runtime environment	Runtime environment containing LPAR-specific libraries and referencing the libraries managed by SMP/E.
	See "Example 5. Sharing-with-SMP/E runtime environment" on page 18.

The distinction among library types allows you to optimize your product environment. For example, by allocating common base libraries to a single runtime environment that can be shared by other runtime environments, you can substantially reduce the amount of disk space required, as well as simplify the application of product maintenance across remote z/OS images.

Quick start suggestion for a runtime environment configuration -

There are many variables and lots of information to consider when deciding on a runtime environment configuration for your installation. To get you started quickly, here are a couple of suggestions:

- In most cases, you can get good results with a sharing-with-base or sharing-with-SMP/E type of runtime environment.
- If you want to test Tivoli Tape Optimizer Monitoring Agent on an isolated test system, use a full, self-contained type of runtime environment.

Possible configurations using runtime environments

The following five examples show different types of runtime environment configurations. The way you choose to set up your runtime environments depends on your site requirements and maintenance procedures.

Tip

The data set name (DSN) is composed of the high-level qualifier (*&hilev*), followed by the mid-level qualifier (*&*rte), followed by the low-level qualifier. The field settings and library names shown are for illustrative purposes only.

Example 1. Full (self-contained) runtime environment: The full runtime environment contains all libraries required by a particular IBM product and is the easiest runtime environment to create. This type of runtime environment can be defined in any situation but is most suitable if at least one of the following statements is true:

- Your installation comprises only a single z/OS image.
- You want each z/OS image to be independent.
- You are creating a runtime environment for a specific combination of monitoring agents that do not exist in any other runtime environment.

The following example represents a full runtime environment called RTE1 that is completely self-contained. All base libraries and LPAR-specific libraries are allocated within RTE1. The base libraries in a full runtime environment are a copy of the SMP/E installation libraries.

RTE Name: RTE1 Type: FULL Hilev: IBM.OMXE Midlev: RTE1 Shares with: (none)

LPAR-specific library DD DSNAME resolution:

//RKANPARU DD DSN=IBM.OMXE.RTE1.RKANPAR DD DSN=IBM.OMXE.RTE1.RKANPARU

Base library DD DSNAME resolution:

//RKANMODL DD DSN=IBM.OMXE.RTE1.RKANMODL

This type of runtime environment is illustrated in Figure 2.



Figure 2. Full runtime environment on a single system

Figure 3 on page 15 shows the way a full runtime environment can be expanded to more than one z/OS image. Each runtime environment is self-contained; the three runtime environments X, Y, and Z on systems A, B, and C do not share any libraries.



Figure 3. Full runtime environments on several systems

Example 2. Base runtime environment: The base runtime environment allocates shareable base libraries only. A base runtime environment must be used in conjunction with a sharing-with-base runtime environment (see "Example 3. Sharing-with-base runtime environment" on page 16) to provide the complete set of libraries required to run the installed monitoring agents. The base runtime environment and the sharing-with-base runtime environment must be defined for the same combination of monitoring agents.

A base runtime environment is typically used when storage devices are shared or when monitoring agent product maintenance synchronization across systems is desired. Sharing base libraries avoids unnecessary duplication, saves disk space, and simplifies the application of monitoring agent maintenance to a common point.

The following example represents a base runtime environment called RTE2.

RTE Name: RTE2 Type: BASE Hilev: IBM.OMXE Midlev: (none) Shares with: (none)

LPAR-specific library DD DSNAME resolution:

*There are no LPAR-specific libraries in a BASE RTE.

Base library DD DSNAME resolution: //RKANMODL DD DSN=IBM.OMXE.RKANMODL

This type of runtime environment is illustrated in Figure 4 on page 16.



Figure 4. Base runtime environment

Example 3. Sharing-with-base runtime environment: The sharing-with-base configuration is a good choice for environments where storage devices are shared. Using the base runtime environment for common data sets, the sharing-with-base runtime environment contains only LPAR-specific libraries. The base runtime environment contain the LPAR-specific libraries required to run the installed monitoring agents. The base runtime environment and the sharing-with-base runtime environment must be defined for the same combination of monitoring agents.

The Configuration Tool resolves product configuration elements to point at the LPAR-specific libraries and the base runtime environment libraries as necessary.

The following example represents a sharing-with-base runtime environment called RTE3, which obtains its base library information from the base runtime environment (RTE2).

RTE Name: RTE3 Type: SHARING Hilev: IBM.OMXE Midlev: RTE3 Shares with: BASE RTE2

LPAR-specific library DD DSNAME resolution:

//RKANPARU DD DSN=IBM.OMXE.RTE1.RKANPAR DD DSN=IBM.OMXE.RTE1.RKANPARU

Base library DD DSNAME resolution: //RKANMODL DD DSN=IBM.OMXE.RKANMODL

This type of runtime environment is illustrated in Figure 5 on page 17.



Figure 5. Sharing-with-base runtime environment

Example 4. Sharing-with-full runtime environment: The sharing-with-full runtime environment allocates LPAR-specific libraries only, and in this example, obtains its base library information from a full runtime environment that contains the same combination of monitoring agents.

This configuration can also be used for environments where storage devices are shared, although the base/sharing pair is the preferred approach.

The following example represents a sharing-with-full runtime environment called RTE4, which obtains its base library information from the full runtime environment (RTE1).

RTE Name: RTE4 Type: SHARING Hilev: IBM.OMXE Midlev: RTE4 Shares with: FULL RTE1

LPAR-specific library DD DSNAME resolution:

//RKANPARU DD DSN=IBM.OMXE.RTE1.RKANPAR DD DSN=IBM.OMXE.RTE1.RKANPARU

Base library DD DSNAME resolution: //RKANMODL DD DSN=IBM.OMXE.RTE1.RKANMODL This type of runtime environment is illustrated in Figure 6.



Figure 6. Sharing-with-full runtime environment

Example 5. Sharing-with-SMP/E runtime environment: The sharing-with-SMP/E runtime environment allocates LPAR-specific libraries only and obtains its base library information from target libraries managed by SMP/E. Note that the target SMP/E libraries must be copies (cloned) rather than the system libraries. See the appendix on making a copy of your system software (cloning) in *z/OS and z/OS.e Planning for Installation*.

Use the sharing-with-SMP/E configuration if at least one of the following statements is true:

- Space is limited on storage devices. This configuration method does not allocate base libraries in the runtime environment, thereby reducing storage requirements.
- You want to activate SMP/E applied monitoring agent product maintenance immediately.

The following example represents a sharing-with-SMP/E runtime environment called RTE5, which obtains its base library information from SMP/E target libraries.

RTE Name: RTE5 Type: SHARING Hilev: IBM.OMXE Midlev: RTE5 Shares with: SMP/E Target Libraries Hilev (SMP): INSTALL.SMPE

LPAR-specific library DD DSNAME resolution:

//RKANPARU DD DSN=IBM.OMXE.RTE1.RKANPAR DD DSN=IBM.OMXE.RTE1.RKANPARU

Base library DD DSNAME resolution: //RKANMODL DD DSN=IBM.OMXE.SMPE.TKANMODL


The sharing-with-SMP/E type of runtime environment is illustrated in Figure 7.

Figure 7. Sharing-with-SMP/E runtime environment

Worksheets for Tivoli Tape Optimizer Monitoring Agent configuration

- "Worksheet: Your overall configuration"
- "Worksheets: Information to gather when you put your hub monitoring server on a distributed system" on page 21
- "Worksheets: Information to gather when you put your hub monitoring server on a z/OS system" on page 27
- "Worksheet: Information for configuring your runtime environment" on page 35

Worksheet: Your overall configuration

As you read the following sections, you can start to fill in your own overall Tivoli Tape Optimizer Monitoring Agent configuration, using the worksheet below. Note that all elements are required, unless otherwise indicated.

Fill in the system name where you plan to install each component, using "Designing your Tivoli Tape Optimizer Monitoring Agent configuration" on page 7 as a guide:

Tivoli Tape Optimizer Monitoring Agent component	Values
Tivoli Tape Optimizer monitoring agents (z/OS)	Number of images:
See "Tivoli Tape Optimizer monitoring agent" on page 10	 Image 1: Host name: IP address:
	 Image 2: Host name: IP address:
	 Image 3: Host name:
	 Image 4: Host name: IP address:
	 Image 5: Host name: IP address:
Hub Tivoli Enterprise Monitoring Server	Hub Tivoli Enterprise Monitoring Server is located on
See "Tivoli Enterprise Monitoring Servers - hub and remote" on page 9	(check one):
Remote Tivoli Enterprise Monitoring Server?	Yes
See "Tivoli Enterprise Monitoring Servers - hub and remote" on page 9 Optional	No If yes, indicate where you plan to put remote Tivoli Enterprise Server or Servers: Windows server Linux server UNIX server Z/OS server Host name: UIP address:
Tivoli Data Warehouse	Yes
See "Tivoli Data Warehouse and the warehouse proxy" on page 10	No If yes, indicate where you plan to put the Tivoli Data Warehouse:
Optional	 Windows server Linux server UNIX server Host name: IP address:
Tivoli Enterprise Portal Server	Tivoli Enterprise Portal Server is located on (check
See "Tivoli Enterprise Portal client and Tivoli Enterprise Portal Server" on page 11	one): Windows Linux AIX • Host name: • IP address:

Table 4. Worksheet for designing your overall configuration

Table 4. Worksheet for designing your overall configuration (continued)

Tivoli Tape Optimizer Monitoring Agent component	Values
Tivoli Enterprise Portal desktop client See "Tivoli Enterprise Portal client and Tivoli Enterprise Portal Server" on page 11	Desktop client is located on (check one): Windows Linux
Tivoli Enterprise Portal browser client	Windows
See "Tivoli Enterprise Portal client and Tivoli Enterprise Portal Server" on page 11	

For complete information about operating system version support for each Tivoli Monitoring Services component, see the *IBM Tivoli Monitoring: Installation and Setup Guide*.

Worksheets: Information to gather when you put your hub monitoring server on a distributed system

If you are putting your hub monitoring server on a distributed system, fill out the following tables:

- · "Configuration worksheet if the hub monitoring server is on a distributed system"
- "Configuration worksheet for communication protocols if the hub monitoring server is on a distributed system" on page 22

If you are putting your hub monitoring server on z/OS, fill out the worksheets in "Worksheets: Information to gather when you put your hub monitoring server on a z/OS system" on page 27.

Note that all fields are required, unless otherwise indicated.

Configuration worksheet if the hub monitoring server is on a distributed system

Table 5. Configuration worksheet	if the hub monitoring server is on a distributed system	1
		Value f

Value	Description	value for your configuration
Monitoring server host name	Host name of the system where the hub monitoring server is installed. You need both the short host name (without the domain name) and the fully qualified host name of the monitoring server workstation (with the domain name).	
Monitoring server port number	Port number of the system where the hub monitoring server is installed. The default is 1918. Note: The same TCP/IP port number must be used for every monitoring server in the enterprise. Also, make sure that the monitoring server well-known port is not on the TCP/IP reserved port list.	

Value	Description	Value for your configuration
Monitoring server name (TEMS name, or node ID)	Name (TEMS name, or node ID) of the monitoring server. The default name for the hub monitoring server is HUB _hostname. For example, for host ITMSERV61, the default hub name is HUB_ITMSERV61 .	
	 The TEMS name is generally not the same as the host name. It is an arbitrary name assigned during monitoring server configuration. On Windows systems, you can find the TEMS name in Manage Tivoli Monitoring Services. Right-click Tivoli Enterprise Monitoring Server and select Browse Settings, and look for the value of CMS_NODEID. On Linux and UNIX systems, you can find the value of CMS_NODEID in the KBBENV file located in the \$itmhome/tables/cms_name subdirectory. 	
Encryption key	You are prompted for a 32-bit encryption key when you begin configuration of components on a distributed system. You can use the default key. Be sure to document the value you use for the key, because you must use the same key in configuring any monitoring server and the portal servers that communicate with that monitoring server.	Use default key: Define your own key: —
Do you want to forward Take Action commands to NetView [®] for z/OS?	You can enable forwarding of z/OS console commands issued from the Tivoli Enterprise Portal to NetView for user authorization and command execution. See "Setting up NetView authentication of Take Action commands" on page 109 for instructions.	

Table 5. Configuration worksheet if the hub monitoring server is on a distributed system (continued)

Configuration worksheet for communication protocols if the hub monitoring server is on a distributed system

Fill out the following communication protocols worksheet if you plan to put your hub monitoring server on a distributed system. For information about general requirements for using the TCP/IP communication protocols, see "Requirements for TCP/IP communication protocols" on page 38.

Value for your Value Description configuration Communication protocols for You must plan communication protocols for a Protocol 1 a monitoring server on a monitoring server on a distributed system to send Highest-priority distributed system data to other Tivoli Tape Optimizer Monitoring Agent communication protocol. components, such as remote monitoring servers The IP.PIPE or IP.SPIPE You specify the communication and portal servers. protocol is generally the protocols for the monitoring best choice for Protocol 1 server in Configure the Tivoli Choose from the following protocols: in firewall environments. Enterprise Monitoring Server on **IP.PIPE** These protocols enable page 59. the monitoring server to Uses the TCP/IP protocol for underlying communicate with the communications. monitoring agent on z/OS **IP.UDP** and with other Also a TCP/IP protocol. Uses the User components on other Datagram Protocol (UDP). systems, even if the components are running **IP.SPIPE** behind firewalls. Secure IP.PIPE protocol. Protocol 2 **SNA** Protocol 3 _____ Uses the VTAM® SNA Advanced Program-To-Program Communications (APPC). IP.PIPE or IP.SPIPE Settings (See "Configuration worksheet if the hub monitoring server is on a distributed system" on page 21.) Host name or IP address Host name or IP address of the system where the monitoring server is installed. Port number Listening port for the hub monitoring server to use in communicating with the monitoring agent. The default port number is 1918 for IP.PIPE and 3660 for IP.SPIPE. Note: The same TCP/IP port number must be used for every monitoring server in the enterprise. Also, make sure that the monitoring server well-known port is not on the TCP/IP reserved port list. IP.UDP Settings (See "Configuration worksheet if the hub monitoring server is on a distributed system" on page 21.) Host name or IP address Host name or IP address of the system where the monitoring server is installed. Port or pool number Listening port for the hub monitoring server to use in communicating with the monitoring agent, or the pool from which the port is to be selected. The default number is 1918. **SNA Settings** Network Name SNA network identifier for your location. LU name LU name for the monitoring server. This LU name corresponds to the Local LU Alias in your SNA communications software. LU 6.2 logmode Name of the LU6.2 logmode. The default value is CANCTDCS. TP name Transaction program name for the monitoring server. The default value is SNASOCKETS.

Table 6. Configuration worksheet for communication protocols if the hub monitoring server is on a distributed system

Table 6.	Configuration	worksheet for	communication	protocols if a	the hub	monitoring	server is on a	a distributed
system	(continued)							

Value	Description	Value for your configuration
Communication protocols for the monitoring agent You specify the communication protocols for the monitoring agent in "Step 5. Configure the monitoring agent" on page 66.	You must plan communication protocols for the monitoring agent to send data to the monitoring server. Tip: Make sure that at least one of the protocols you specify for the monitoring agent corresponds to a protocol specified for the agent's primary monitoring server. Choose from the following protocols: IP.PIPE Uses the TCP/IP protocol for underlying communications. IP.UDP Uses the TCP/IP User Datagram Protocol (UDP). IP6.PIPE Uses the TCP/IP protocol for underlying communications. IPV6 must be installed and operational. IP6.UDP Uses the TCP/IP User Datagram Protocol (UDP). IPV6 must be installed and operational. IP.SPIPE Secure IP.PIPE protocol. The z/OS system must be V1R7 or higher. IP6.SPIPE Secure IP.PIPE protocol. IPV6 must be installed and operational, and the z/OS system must be V1R7 or higher. SNA.PIPE Uses the VTAM SNA Advanced	 Protocol 1
Language locale	Specify a numeric value (1-36) representing the language and region. For example, specify 1 for United States English. For a list of the language locale values, press F1 (Help) in the Configuration Tool panel where the prompt is displayed.	

Value	Description	Value for your configuration
TEMS name (node ID)	 Node ID of the hub monitoring server. Note that the TEMS name, or node ID, is generally not the same as the host name. It is an arbitrary name assigned during Tivoli Enterprise Monitoring Server configuration. Find the node ID as follows, depending on where the monitoring server is installed: On Windows systems, you can find the TEMS name in Manage Tivoli Monitoring Server and select Browse Settings, and look for the value of CMS_NODEID. On Linux and UNIX systems, you can find the value of CMS_NODEID in the KBBENV file located in the \$itmhome/tables/cms_name subdirectory. 	
IP.* or IP6.* protocols		
Host name	Host name of the system where the monitoring agent is installed. To obtain the host name, enter TS0 HOMETEST at the command line of the z/OS system where the monitoring agent is installed. If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.	
Address	IP address of the system where the monitoring agent is installed. To obtain the IP address, enter TS0 HOMETEST at the command line of the z/OS system where the monitoring agent is installed.	
Started task	Started task name of the TCP/IP server. You can specify * to allow the IP stack to dynamically find the TCP/IP image. * is the suggested value for the started task.	

Table 6.	Configuration worl	ksheet for c	communication	protocols if	f the hub	monitoring s	server is on a	distributed
system	(continued)							

Value	Description	Value for your configuration
Network interface list	A list of network interfaces for the monitoring agent to use. This parameter is required for sites that are running more than one TCP/IP interface or network adapter on the same z/OS image. Setting this parameter allows you to direct the monitoring agent to connect to a specific TCP/IP local interface. Specify each network adapter by the host name or IP address to be used for input and output. Use a blank space to separate the entries. If your site supports DNS, you can enter IP addresses or short host names. If your site does not support DNS, you must enter fully qualified host names. If you specify an interface address or a list of interface addresses, the Configuration Tool generates the KDEB_INTERFACELIST parameter	
	<i>&rhilev.&rtename</i> .RKANPARU library.	
Address translation	By default, Ephemeral Pipe Support (EPS) is enabled automatically to allow IP.PIPE connections to cross a (network address) translating firewall. This feature obviates the need for a broker partition file (KDC_PARTITIONFILE=KDCPART). If you specifically want to disable EPS, specify Y for Address translation.	
Partition name	If you specified Y for Address translation , specify the partition name that identifies the monitoring agent relative to the firewall used for address translation.	
SNA settings	1	
VTAM applid prefix	Specify the applid prefix to create the VTAM node and applids required by the monitoring agent. These applids begin with a prefix, and end with a unique applid value. The applids are contained in the VTAM major node. The default prefix is CTDRW.	

Value	Description	Value for your configuration
Communication protocols for the portal server You specify the communication protocols for the portal server in Configure the Tivoli Enterprise Portal on page 58.	You must plan communication protocols for the portal server to receive data from the monitoring server. Choose from the following protocols: IP.PIPE Uses the TCP/IP protocol for underlying communications. IP.UDP Uses the TCP/IP User Datagram Protocol (UDP). IP.SPIPE Secure IP.PIPE protocol. SNA.PIPE Uses the SNA Advanced Program-To-Program Communications (APPC).	 Protocol 1
IP.* settings (See "Configuration	worksheet if the hub monitoring server is on a distribu	ited system" on page 21.)
Host name or IP address	Host name or IP address of the hub monitoring server.	
Port number	Same port number you specified for the hub monitoring server.	
SNA settings		
Network name	SNA network identifier for your location.	
LU name	LU name for the monitoring server. This LU name corresponds to the Local LU Alias in your SNA communications software.	
LU 6.2 logmode	Name of the LU6.2 logmode. The default value is CANCTDCS .	
TP name	Transaction program name for the monitoring server. The default value is SNASOCKETS .	

Worksheets: Information to gather when you put your hub monitoring server on a z/OS system

If you are putting your hub monitoring server on a z/OS system, fill out the tables below:

- "Configuration worksheet if the monitoring server is on a z/OS system" on page 28
- "Configuration worksheet for communication protocols if the monitoring server is on a z/OS system" on page 30

For information about general requirements for using the TCP/IP communication protocols, see "Requirements for TCP/IP communication protocols" on page 38.

Configuration worksheet if the monitoring server is on a z/OS system

Note that all fields are required, unless otherwise indicated.

Table 7.	Configuration	worksheet if	the	monitorina	server	is c	n a	z/OS	svstem
	e en ingen en en en								

Value	Description	Value for your configuration
Runtime environment settings		
Host name	Host name of the z/OS system where the hub monitoring server is installed.	
	To obtain the host name, enter TS0 HOMETEST at the command line of the z/OS system where the hub monitoring server is installed.	
	If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.	
Port number	Address of the IP port for the z/OS system where the monitoring server is installed. Note: The same TCP/IP port number must be used for every monitoring server in the enterprise. Also, make sure that the monitoring server well-known port is not on the TCP/IP reserved port list.	
LU6.2 logmode settings: You m use an existing logmode or creat	ust associate an SNA logmode with each monitoring s e a new one.	erver on z/OS. You can either
LU6.2 logmode name	Name of the LU6.2 logmode defined for use by the monitoring server.	
	The default value is CANCTDCS .	
Logmode table name	Name of the logmode table that contains the LU6.2 logmode.	
	The default name is KDSMTAB1 .	
VTAMLIB load library	Name of the system library used to contain VTAM logmode tables. This is usually SYS1.VTAMLIB. You can specify any load library if you do not want to update your VTAMLIB directly.	
VTAM macro library	Name of the system library that contains the VTAM macros.	
	The default is SYS1.SISTMAC.	
Configuration value settings		
Tivoli Enterprise Monitoring Server started task name	Define a name for the started task (procedure name) for the monitoring server. Follow the naming conventions used at your installation, making sure that the value has a maximum of eight characters.	
	Check the IEASSNxx member of SYS1.PARMLIB to make sure that the name you are picking has not been used before.	

Value	Description	Value for your configuration
Is this a hub or remote Tivoli Enterprise Monitoring Server?	Indicate whether this is a hub or remote monitoring server.	
Do you want to use z/OS Integrated Cryptographic Service Facility (ICSF) on the z/OS hub system?	Ask your security team whether ICSF is installed and configured on the z/OS system where the hub monitoring server is installed. If so, answer Y.	Yes No
	The portal server assumes that the monitoring server is using ICSF encryption. If you set the ICSF value to N, the monitoring server uses an alternative, less secure encryption scheme. In that case, you must use a workaround to ensure communication between the monitoring server on z/OS and the portal server. See "Specifying configuration values" on page 82 for instructions.	
ICSF load library	If ICSF is installed and configured on the z/OS system, specify the load library that contains the CSNB* modules used for password encryption.	
Encryption key	You are prompted for a 32-bit ICSF encryption key. You can use the default key. Be sure to document the value you use for the key, because you must use the same key during the installation of any components that communicate with this monitoring server.	Use default key: Define your own key:
Enable Web Services SOAP Server	The Web Services SOAP Server must be enabled for a hub monitoring server, even though the Tivoli Tape Optimizer Monitoring Agent does not use the SOAP Server. You must accept the default value of Y for the Enable Web Services SOAP Server field if you are configuring a hub monitoring server.	
Language locale	Specify a numeric value (1-36) representing the language and region. For example, specify 1 for United States English. For a list of the language locale values, press F1 (Help) in the Configuration Tool panel where the prompt is displayed.	
Do you want to forward Take Action commands to NetView for z/OS?	You can enable forwarding of z/OS console commands issued from the Tivoli Enterprise Portal to NetView for user authorization and command execution. See "Setting up NetView authentication of Take Action commands" on page 109 for instructions.	
VTAM network ID	A VTAM network ID is required for any monitoring server on z/OS. You can locate this value on the NETID parameter in the VTAMLST startup member ATCSTR <i>nn</i> .	

Table 7. Configuration worksheet if the monitoring server is on a z/OS system (continued)

Fill out the following communication protocols worksheet for your hub monitoring server on z/OS as well as for each remote monitoring server on z/OS. For information about general requirements for using the TCP/IP communication protocols, see "Requirements for TCP/IP communication protocols" on page 38.

Table 8. Configuration worksheet for communication protocols if the monitoring server is on a z/OS system

Value	Description	Value for your configuration
Communication protocols for	You can choose from all the protocols shown in the	Protocol 1
the monitoring server on z/OS: You specify the communication protocols for the monitoring	list below. You must specify SNA.PIPE as one of the protocols for a Tivoli Enterprise Monitoring Server on z/OS. However, it need not be Protocol 1 (the highest-priority protocol).	Highest-priority communication protocol. IP.PIPE, IP.SPIPE, IP6.PIPE, or IP6.SPIPE is
IP* and IP6 * settings	 For a hub monitoring server on z/OS, you must specify a TCP/IP protocol as one of your protocols, for use by the Web Services SOAP Server, which must be enabled. Choose from the following protocols: IP.PIPE Uses the TCP/IP protocol for underlying communications. IP.UDP Also a TCP/IP protocol. Uses the User Datagram Protocol (UDP). IP6.PIPE IP.PIPE protocol with IPV6 installed and operational. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. IP6.DDP IP.UDP protocol with IPV6 installed and operational. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. IPSPIPE Secure IP.PIPE protocol. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher. IP6.SPIPE Secure IP.PIPE for IPV6. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher. IP6.SPIPE Secure IP.PIPE for IPV6. This protocol is available only for a monitoring server on a z/OS system at release level V1R7 or higher. IP6.SPIPE Uses the SNA Advanced Program-To-Program Communications (APPC). Because some monitoring gents require SNA, it must be one of the protocols for a Tivoli Enterprise Monitoring Server on z/OS. However, it need not be Protocol 1 (the highest-priority protocol). 	 IP6.PIPE, or IP6.SPIPE is generally the best choice for Protocol 1 in firewall environments. These protocols enable the monitoring server on z/OS to communicate with other components on other systems, even if all components are running behind firewalls. Protocol 2 Protocol 3

Value	Description	Value for your configuration
Host name	Host name of the z/OS system where the Tivoli Enterprise Monitoring Server is installed. See "Configuration worksheet if the monitoring server is on a z/OS system" on page 28.	
Address	IP address of the z/OS system where the Tivoli Enterprise Monitoring Server is installed.	
	To obtain the IP address, enter TS0 HOMETEST at the command line of the z/OS system where the monitoring agent is installed.	
Started task	Started task name of the TCP/IP server. You can specify * to allow the IP stack to dynamically find the TCP/IP image. * is the suggested value for the started task.	
Network interface list	A list of network interfaces for the monitoring server to use. This parameter is required for sites that are running more than one TCP/IP interface or network adapter on the same z/OS image. Setting this parameter allows you to direct the monitoring server to connect to a specific TCP/IP local interface.	
	Specify each network adapter by the host name or IP address to be used for input and output. Use a blank space to separate the entries.	
	If your site supports DNS, you can enter IP addresses or short host names. If your site does not support DNS, you must enter fully qualified host names.	
	If you specify an interface address or a list of interface addresses, the Configuration Tool generates the KDEB_INTERFACELIST parameter in the KDSENV member of the <i>&rhilev.&rtename</i> .RKANPARU library.	
HTTP server port number	Accept the default value of 1920. This field is required for the SOAP Server, which must be enabled for a hub monitoring server on z/OS, even though Tivoli Tape Optimizer Monitoring Agent does not use the SOAP Server.	
Access TEMS list via SOAP Server?	Accept the default value of Y. The Web Services SOAP Server must be enabled for a hub monitoring server on z/OS.	
Address translation	By default, Ephemeral Pipe Support (EPS) is enabled automatically to allow IP.PIPE connections to cross a (network address) translating firewall. This feature obviates the need for a broker partition file (KDC_PARTITIONFILE=KDCPART). If you specifically want to disable EPS, specify Y for Address translation .	

Value	Description	Value for your configuration
Partition name	If you specified Y for Address translation , specify the partition name that identifies the monitoring server relative to the firewall used for address translation.	
SNA.PIPE setting		
Applid prefix	Specify the applid prefix you want for all the VTAM applids required by the monitoring server. These applids begin with a prefix, and end with a unique applid value. The applids are contained in the VTAM major node. The default is CTDRW.	
Communication protocols for the monitoring agent You specify the communication protocols for the monitoring agent in "Step 4. Configure the monitoring agent" on page 89.	You must plan communication protocols for the monitoring agent to send data to the monitoring server. Tip: Make sure that at least one of the protocols you specify for the monitoring agent corresponds to a protocol specified for the agent's primary monitoring server. Choose from the following protocols: IP.PIPE Uses the TCP/IP protocol for underlying communications. IP.UDP Also a TCP/IP protocol. Uses the User Datagram Protocol (UDP). IP6.PIPE IP.PIPE protocol with IPV6 installed and operational. This protocol is available only on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. IP6.UDP IP.UDP protocol with IPV6 installed and operational. This protocol is available only on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. IP.SPIPE Secure IP.PIPE protocol. This protocol is available only on a z/OS system at release level V1R7 or higher. IP6.SPIPE Secure IP.PIPE for IPV6. This protocol is available only on a z/OS system at release level V1R7 or higher. IP6.SPIPE Secure IP.PIPE for IPV6. This protocol is available only on a z/OS system at release level V1R7 or higher. IP6.SPIPE Secure IP.PIPE for IPV6. This protocol is available only on a z/OS system at release level V1R7 or higher with IPV6 installed and operational. SNA.PIPE Uses the SNA Advanced Program-To-Program Communications (APPC).	 Protocol 1

Value	Description	Value for your configuration
TEMS name (node ID)	Node ID of the hub monitoring server. Note that the TEMS name, or node ID, is generally not the same as the host name. It is an arbitrary name assigned during Tivoli Enterprise Monitoring Server configuration. On z/OS systems, look for the value of CMS_NODEID in this location: &rhilev.&sys.RKANPARU(KDSENV)	
IP.* or IP6.* settings		
Host name	Host name of the system where the monitoring agent is installed.	
	To obtain the host name, enter TS0 HOMETEST at the command line of the z/OS system where the monitoring agent is installed.	
	If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.	
Address	IP address of the system where the monitoring agent is installed.	
	To obtain the IP address, enter TS0 HOMETEST at the command line of the z/OS system where the monitoring agent is installed.	
Started task	Started task name of the TCP/IP server. You can specify * to allow the IP stack to dynamically find the TCP/IP image. * is the suggested value for the started task.	
Network interface list	A list of network interfaces for the monitoring agent to use. This parameter is required for sites that are running more than one TCP/IP interface or network adapter on the same z/OS image. Setting this parameter allows you to direct the monitoring agent to connect to a specific TCP/IP local interface.	
	Specify each network adapter by the host name or IP address to be used for input and output. Use a blank space to separate the entries.	
	If your site supports DNS, you can enter IP addresses or short host names. If your site does not support DNS, you must enter fully qualified host names.	
	If you specify an interface address or a list of interface addresses, the Configuration Tool generates the KDEB_INTERFACELIST parameter in the KHLENV member of the <i>&rhilev.&rtename</i> .RKANPARU library.	

Table 8.	Configuration	worksheet for	r communication	protocols if the	e monitoring	server is or	<i>ו a z/OS</i>
system	(continued)						

Value	Description	Value for your configuration	
Address translation	By default, Ephemeral Pipe Support (EPS) is enabled automatically to allow IP.PIPE connections to cross a (network address) translating firewall. This feature obviates the need for a broker partition file (KDC_PARTITIONFILE=KDCPART). If you specifically want to disable EPS, specify Y for Address translation .		
Partition name	If you specified Y for Address translation , specify the partition name that identifies the monitoring agent relative to the firewall used for address translation.		
SNA settings			
Applid prefix	Specify the applid prefix to create the VTAM node and applids required by the monitoring agent. These applids begin with a prefix, and end with a unique applid value. The applids are contained in the VTAM major node. The default prefix is CTDRW.		
Communication protocols for the portal server You specify the communication protocols for the portal server in "Installing and configuring Tivoli Enterprise Portal Server and desktop client" on page 97.	You must plan communication protocols for the portal server to receive data from the monitoring server. Choose from the following protocols: IP.PIPE Uses the TCP/IP protocol for underlying communications. IP.UDP Uses the TCP/IP User Datagram Protocol (UDP). IP.SPIPE Secure IP.PIPE protocol. SNA.PIPE Uses the SNA Advanced Program-To-Program Communications (APPC).	 Protocol 1	
28.)	Host name or IP address of the monitoring sonior		
Port number	Listening port for the hub monitoring server to use in communicating with the portal server. The default port number is 1918 for IP.PIPE and 3660 for IP.SPIPE.		
IP.UDP settings (See "Configurat	ion worksheet if the monitoring server is on a z/OS sy	vstem" on page 28.)	
Host name or IP address	Host name or IP address of the monitoring server.		
Port or pool number	Listening port for the hub monitoring server to use in communicating with the portal server, or the pool from which the port is to be selected. The default number is 1918.		
SNA settings			
Network name	SNA network identifier for your location		

Value	Description	Value for your configuration
LU name	LU name for the monitoring server. This LU name corresponds to the Local LU Alias in your SNA communications software.	
LU 6.2 logmode	The name of the LU6.2 logmode. The default value is CANCTDCS .	
TP name	Transaction program name for the monitoring server. The default value is SNASOCKETS .	

Worksheet: Information for configuring your runtime environment

Using the information about runtime environments above, you can decide what type of runtime environment configuration you need for your Tivoli Tape Optimizer Monitoring Agent configuration. You must define a runtime environment on each z/OS system you monitor. In most cases, you start with one full or base type and sharing types (that share either the full or base runtime environment) for subsequent z/OS images you monitor. For each runtime environment, gather the information shown in Table 9.

Value	Description	Value for your configuration
Runtime environment name	Unique identifier of up to 8 characters. Tip: If you specify a runtime environment name no more than 4 characters long, you can specify the same name for the JCL suffix. This setup makes it easy to associate the jobs in INSTJOBS with the runtime environment.	
Runtime environment type	Explained above in "Understanding runtime environments" on page 12	
The base or full runtime environment associated with a sharing runtime environment	For a sharing runtime environment type, list the name of the base or full runtime environment from which the sharing runtime environment obtains its base library information.	
Runtime environment description	Information for your installation's use.	
Security system for the runtime environment	For each runtime environment, the Configuration Tool prompts you for a security system. You can specify None, RACF, TSS, or NAM. Specifying a security system here does not enable security validation of users signing on to the Tivoli Enterprise Portal. Security validation of users is enabled in a Tivoli Enterprise Monitoring Server configuration panel.	
VTAM network ID	VTAM network ID for the monitoring server on z/OS identified in "Worksheets: Information to gather when you put your hub monitoring server on a z/OS system" on page 27. This is optional for a monitoring server on a distributed system, see "Worksheets: Information to gather when you put your hub monitoring server on a distributed system" on page 21.	

Table 9. Worksheet for defining runtime environments

Table 9. Worksheet for defining runtime environments (continued)

Value	Description	Value for your configuration
TCP/IP host name	TCP/IP host name of the z/OS system where the runtime environment is being defined. To obtain the host name, enter TS0 HOMETEST at the command line of the z/OS system.	
	If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.	
IP address	IP address of the z/OS system where the runtime environment is defined. To obtain the IP address, enter TS0 H0METEST at the command line of the z/OS system.	
Started task	Started task of the TCP/IP server for the z/OS system.	
Port number	Address of the IP port. The default is 1918 for nonsecure communication and 3660 for secure communication.	

A road map for installation and configuration of Tivoli Tape Optimizer Montoring Agent

Use the following road map to steer you though installation and configuration:

- 1. **Plan your installation**, using the information in Chapter 3, "Planning for prerequisites, packaging, and tools," on page 37.
- 2. **Perform the steps** in Chapter 4, "Beginning the installation and configuration," on page 45.
- 3. **Pick one** of the following configuration procedures to perform, depending on your configuration design:
 - a. Chapter 5, "Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image," on page 53
 - b. Chapter 6, "Configuring the hub monitoring server and the monitoring agent on a z/OS image," on page 75
- 4. Perform the steps in Chapter 7, "Setting up security," on page 103.
- 5. **Optionally make your configuration system-independent**, using the information in Chapter 8, "Enabling system variable support," on page 113.
- 6. **Optionally replicate runtime environments in batch mode**, using the information in Chapter 9, "Using batch mode processing," on page 119.

Chapter 3. Planning for prerequisites, packaging, and tools

This chapter covers the following information:

- "Understanding software and hardware prerequisites for installation"
- "Understanding product packaging" on page 39
- "Understanding Tivoli Tape Optimizer Monitoring Agent installation" on page 39
- "Understanding the Configuration Tool" on page 40

You need to understand this information before beginning the installation process in Part 2, "Installation and configuration," on page 43.

Understanding software and hardware prerequisites for installation

Versions of all the required products are provided in the Tivoli Tape Optimizer Monitoring Agent package.

- A complete list of Tivoli Tape Optimizer Monitoring Agent hardware and software prerequisites is located in the *Program directory for IBM Tivoli Tape Optimizer on z/OS*.
- Prerequisites for the distributed IBM Tivoli Monitoring Services components are located in the *IBM Tivoli Monitoring: Installation and Setup Guide*.

Requirements for historical data collection

nequirements	
	Configuration of historical data collection requires that you configure the following components:
	 Persistent data store in the z/OS runtime environment where the Tape Optimizer monitoring agent is installed.
	The persistent data store is the repository for short-term historical data, which is kept for 24 hours. A Tivoli Monitoring Services warehouse proxy periodically queries the persistent data store and retrieves any short-term historical data stored there.
	The location of historical data collection is set in two places:
	 Configuration Tool
	 History Collection Configuration window in the Tivoli Enterprise Portal
	Tip Both the Configuration Tool and Tivoli Enterprise Portal allow you to configure historical data collection either at the location of the monitoring agent (called TEMA, or Tivoli Enterprise Monitoring Agent, in the Tivoli Enterprise Portal) or at the location of the monitoring server to which the monitoring agent reports. However, Tivoli Tape Optimizer Monitoring Agent requires that historical data collection be configured at the location of the monitoring agent.
	Tivoli Data Warehouse on a Windows, UNIX, or Linux system.
	The Tivoli Data Warehouse is the repository for long-term historical data. It stores the historical data that the warehouse proxy agent retrieves from the persistent data store.

For instructions on installing and configuring the Tivoli Data Warehouse, see *IBM Tivoli Monitoring: Installation and Setup Guide*, GC32-9407 and *IBM Tivoli Monitoring: Administrator's Guide*, SC32-9408.

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Requirements for TCP/IP communication protocols

Review the following TCP-related requirements before you configure Tivoli Tape Optimizer Monitoring Agent.

Default OMVS segment

To use the TCP/IP communication protocols, a Tivoli Enterprise Monitoring Server on z/OS requires a default OMVS segment. See the *z/OS Communications Server IP Configuration Guide* for an explanation of how to provide an OMVS segment.

Using the IP.PIPE communication protocol

IP.PIPE is the default protocol for product components. If you choose IP.PIPE as a protocol for the monitoring server and monitoring agent, be aware of the following limitations:

- The maximum number of IP.PIPE processes per host is 16.
- IP.IPIPE uses only one physical port per process. Port numbers are allocated using a well-known port allocation algorithm. The first process for a host is assigned port 1918, which is the default.

Important

The same TCP/IP port number must be used on every monitoring server in the enterprise. Also, the monitoring server well-known port cannot be on the TCP/IP reserved port list.

Configuring domain name resolution

If the monitoring server and monitoring agent on a z/OS system are using any IP.* or IP6.* communication protocols for connection, but the IP domain name resolution is not fully configured on the system, you must specify the SYSTCPD DDNAME in the CANSDSST started task (the monitoring server started task).

The Configuration Tool generates the CANSDSST started task with the following commented out lines. Customize the SYSTCPD DDNAME to your environment.

```
//*SYSTCPD explicitly identifies which data set to use to obtain
//*the parameters defined by TCPIP.DATA when no GLOBALTCPIPDATA
//*statement is configured. Refer to the IP Configuration Guide
//*for information on the TCPIP.DATA search order. The data set
//*can be any sequential data set or a member of a partitioned
//*data set. TCPIP.SEZAINST(TCPDATA) is the default sample file.
//* TCPIP.TCPPARMS(TCPDATA) is another sample and is created as
//*part of the Installation Verification Program for TCP/IP.
//*Note: Uncomment out this DDNAME and point to your appropriate
//*
        TCPDATA library name supported at your site if domain
//*
       name resolution is not fully configured.
//*SYSTCPD DD DISP=SHR,
>//*
       DSN=TCPIO.SEZAINST(TCPDATA)
```

After you finish, copy the procedures to PROCLIB.

Prerequisite for Take Action command forwarding

NetView authentication of z/OS console commands forwarded from the Tivoli Enterprise Portal requires NetView on z/OS V5.2 with APAR OA18449 applied.

Checking for fixes

To make sure you have the latest version of all components, check for any fix packs that might be available. See "Support information" on page 145.

Understanding product packaging

If you are installing Tivoli Tape Optimizer Monitoring Agent for the first time, you will find familiar IBM packaging types (such as Passport Advantage[®]), installation tools (such as SMP/E or InstallShield), and installation documentation, including a program directory. You will also find a new z/OS-based Configuration Tool that streamlines the transition between the SMP/E installation and a running system. This tool works with SMP/E to save files that will be used in later steps to configure the products.

The contents of the Tivoli Tape Optimizer Monitoring Agent package are shown in Table 10.

Media	Name and description Target			
Media set 1 of 3: Distributed Installation				
	<i>Tivoli Tape Optimizer Monitoring Agent Data Files on z/OS</i> contains the predefined workspaces and situations, online help, expert advice, and Tivoli Tape Optimizer Monitoring Agent data for the Tivoli Enterprise Portal. This CD also contains data for adding Tivoli Tape Optimizer Monitoring Agent application support to the Tivoli Enterprise Monitoring Server.			
	IBM Tivoli Monitoring Services on z/OS Language Pack			
	<i>IBM Tivoli Monitoring Services on z/OS</i> (multi-CD set) includes subdirectories and installation procedures for the Tivoli Monitoring Services components on Windows, UNIX, Intel Linux, and Linux on zSeries operating systems.			
	<i>IBM DB2 Universal Database Workgroup Server Edition</i> version 8.2 (multi-CD set) provides database functions to Tivoli Monitoring Services components on Windows, UNIX, and Intel Linux, and Linux on zSeries operating systems.	DB2		
Media set 2 of 3: z/OS Installation				
	 Tivoli Tape Optimizer Monitoring Agent tape provides the installation software for the mainframe components: Tivoli Tape Optimizer monitoring agent Tivoli Enterprise Monitoring Server on z/OS Configuration Tool Common components 			
	 The z/OS media set also includes the following hardcopy publications: IBM Tivoli Monitoring Services on z/OS Program Directory Tivoli Tape Optimizer Monitoring Agent License Information 	_		

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Understanding Tivoli Tape Optimizer Monitoring Agent installation

There are two ways to install Tivoli Tape Optimizer Monitoring Agent:

- "Installing Tivoli Tape Optimizer Monitoring Agent from the Web download package"
- "Using SMP/E to install Tivoli Tape Optimizer Monitoring Agent"

Installing Tivoli Tape Optimizer Monitoring Agent from the Web download package

You can install Tivoli Tape Optimizer Monitoring Agent, including the components and the monitoring agent, from the Web. For information, see the *IBM Tivoli Tape Optimizer on z/OS: Program Directory*.

Using SMP/E to install Tivoli Tape Optimizer Monitoring Agent

About SMP/E: System Modification Program/Extended (SMP/E) is the basic tool for installing and maintaining software in z/OS systems and subsystems. It controls these changes at the element level by:

- Selecting the proper levels of elements to be installed from a large number of potential changes
- · Calling system utility programs to install the changes
- · Keeping records of the installed changes

SMP/E is an integral part of the installation, service, and maintenance processes for z/OS and OS/390[®] software products and product packages, such as CBPDO, ProductPac[®], RefreshPac, and selective follow-on service for CustomPac. In addition, SMP/E can be used to install and service any software that is packaged in SMP/E system modification (SYSMOD) format.

SMP/E can be run either from batch jobs or from the Interactive System Productivity Facility/Program Development Facility (ISPF/PDF). You can use ISPF to query the SMP/E database, as well as to create and submit jobs to process SMP/E commands.

The guidance for performing an SMP/E installation is a program directory. Every monitoring agent is accompanied by a program directory.

Understanding the Configuration Tool

About the Installation and Configuration Assistance Tool (Configuration Tool): You perform the bulk of the configuration for Tivoli Tape Optimizer Monitoring Agent using the Installation and Configuration Assistance Tool (also known as the Configuration Tool).

If you restart the Configuration Tool, you can continue from the point of interruption. For information about supported levels of the SMP/E program and other related installation software, refer to the *IBM Tivoli Tape Optimizer on z/OS: Program Directory*.

The Configuration Tool provides defaults wherever possible. These defaults are sufficient to complete the installation of products and maintenance. Change the defaults to reflect the needs of your enterprise. The tool operates in two modes:

- Interactive mode where an ISPF panel-driven facility assists you in specifying parameters and tailoring jobs for configuring new products and new versions of products
- A Batch facility that creates a single batch job that you can use to build, configure, and load a *runtime environment* (RTE). This single job performs all of

the same RTE processing as the interactive Configuration Tool. Batch mode is a simple and useful way of replicating RTEs to other z/OS systems.

Using the Configuration Tool

The Configuration Tool provides defaults for most fields and options. The defaults can be changed to values specific to your site.

Whenever possible, the Configuration Tool checks the values you specify and verifies that you have specified the required values. If the Configuration Tool detects an error or omission, it displays a short message.

Display requirements in ISPF

If you are using a 3270 Model 2 (24 x 80) display, you must turn off the predefined function (PF) keys so that the Configuration Tool panels are not truncated. To turn off the predefined function keys, type PFSH0W on any ISPF command line and press Enter until the function keys are no longer displayed.

Restrictions

The following restrictions apply to the Configuration Tool:

- The length of the high-level qualifier for the runtime libraries must be 26 characters or less.
- You cannot use the ISPF feature for edit recovery. If you enter the ISPF RECOVERY ON command, edits produce a recovery error message. Enter the RECOVERY OFF command to suppress the error messages.

Commands and function

You can use the following commands for navigation and display control in the Configuration Tool:

End key

Returns to the previous panel.

Enter key

Accepts the values you have specified and displays the next panel in the process.

HELP Displays information about a panel or the extended description for a message.

README

Displays the README for the Configuration Tool.

README APP

Displays information about VTAM applids.

README ERR

Displays a list of CLIST error codes and descriptions (for both interactive and batch mode).

README SYS

Displays information about system variable support.

UTIL Displays the Installation Services and Utilities menu.

Online help for the Configuration Tool

Online help contains detailed information about using the Configuration Tool panels. To display help from any Configuration Tool panel, press the Help key (F1) or enter HELP on the command line.

You can also display help for the help. For example, you can display information about the command to use to return to the previous topic in the help system. To display the help for help from any help panel, press the Help key (F1) or enter HELP on the command line.

Part 2. Installation and configuration

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Chapter 4. Beginning the installation and configuration

To install the Tivoli Tape Optimizer Monitoring Agent software for the first time, follow the instructions in this chapter, which describes the first steps of installing and configuring Tivoli Tape Optimizer Monitoring Agent V2.2:

- "First steps: Installing the z/OS components and beginning the configuration"
- "Step 1. Perform the SMP/E installation of the z/OS-based components"
- "Step 2. Set up the Configuration Tool" on page 46
- "Step 3. Start the Configuration Tool" on page 47
- "Step 4. Set up the Configuration Tool environment" on page 48
- "Step 5. Set up the common TEDA server" on page 50
- "Step 6. Setting up Tape Optimizer copy request jobs that can be run from the TEP console" on page 51
- "Continuing the configuration procedure" on page 51

First steps: Installing the z/OS components and beginning the configuration

For any deployment you choose, you must complete the first steps in the same way:

- ____ "Step 1. Perform the SMP/E installation of the z/OS-based components"
- ____ "Step 2. Set up the Configuration Tool" on page 46
- ____ "Step 3. Start the Configuration Tool" on page 47
- ____ "Step 4. Set up the Configuration Tool environment" on page 48

The rest of this chapter gives instructions for those steps.

Step 1. Perform the SMP/E installation of the z/OS-based components

Follow the instructions in the *IBM Tivoli Tape Optimizer on z/OS: Program Directory* to install the following components:

- Configuration Tool
- Tivoli Tape Optimizer monitoring agent
- Tivoli Enterprise Monitoring Server on z/OS (if your planned deployment includes a hub Tivoli Enterprise Monitoring Server on z/OS)
- Common components

This product includes several common components that are also included in other monitoring agents. If you install into an existing environment, you might need to delete the function modification identifiers (FMIDs) for the common components from the SMP/E installation jobs to avoid errors. See the *IBM Tivoli Tape Optimizer on z/OS: Monitoring Agent Program Directory* for a list of the common components.

If an earlier version of a product component is installed in the same consolidated software inventory (CSI), the earlier version is automatically replaced by the new version provided with the product.

Step 2. Set up the Configuration Tool

Your first step after installing the contents of the product tape is to copy the contents from one of the target libraries into the appropriate Configuration Tool work library. If you are using an existing CSI that already has the Configuration Tool installed, you copy the contents of the target library into your existing Configuration Tool work library. If you are using a new CSI, you copy the contents of the target library to a newly created Configuration Tool library.

- Tip

The **Prepare user libraries** utility generates a batch job to create, from the existing target libraries, the user libraries that are new in this release. You can access the utility by selecting **Services and utilities** from the Configuration Tool **Configure Products** menu, and then entering 6 (**Prepare user libraries**). See "Utilities: preparing user libraries" on page 131.

If you use a CSI in which the Configuration Tool is already installed

If you use an existing CSI that already has the Configuration Tool installed, copy the contents of the *&thilev*.TKCIINST library to the *&shilev*.INSTLIBW library as follows:

//COPY EXEC PGM=IEBCOPY //SYSPRINT DD SYSOUT=* //IN DD DSN=&thilev.TKCIINST,DISP=SHR //OUT DD DSN=&shilev.INSTLIBW,DISP=SHR //SYSIN DD * C 0=OUT,I=((IN,R))

where *&thilev* is the SMP/E target high-level qualifier and *&shilev* is the installation high-level qualifier.

— Tip

To receive notification of the results of a job, add this option to your job card: NOTIFY=userid

If you use a new CSI

If you are using a new CSI, perform the following steps to copy the contents of the target library to the newly created Configuration Tool library:

1. Allocate the &shilev.INSTLIB library using the sample JCL below:

```
//JOBCARD
//ALLOCDS EXEC PGM=IEFBR14
//*
//INSTLIB DD DSN=&shilev.INSTLIB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=&tunit,
// VOL=SER=&tvol,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=8880),
// SPACE=(TRK,(90,15,132))
```

Replace the following parameters with the values specific to your site:

JOBCARD is your job card.

&shilev is the high-level qualifier for the installation environment.

&tunit is the disk unit type for the target library.

&tvol is the disk volser for the target library.

2. Copy the contents of the *&thilev*.TKCIINST library into the *&shilev*.INSTLIB library:

```
//COPY EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=&thilev.TKCIINST,DISP=SHR
//OUT DD DSN=&shilev.INSTLIB,DISP=SHR
//SYSIN DD *
C 0=OUT,I=((IN,R))
```

where *&thilev* is the SMP/E target high-level qualifier and *&shilev* is the installation high-level qualifier.

Step 3. Start the Configuration Tool

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To start the Configuration Tool, complete the following steps:

1. Log on to a TSO session on the target system.

The target system is the logical partition (LPAR) where you are going to create and configure a runtime environment for the Tivoli Tape Optimizer on z/OS monitoring agent.

- 2. Invoke ISPF.
- 3. Go to a TSO command line. (In most cases, this is option 6 on the **ISPF Primary Option Menu**.)
- 4. Enter the following command:

EX '&shilev.INSTLIB'

where &shilev is the high-level qualifier you specified for the Configuration Tool.

Tip

You do not need to specify a member name in this command.

The Configuration Tool displays the copyright panel and then the Main Menu.

```
MAIN MENU -----
OPTION ===>
Enter the number to select an option:
    Set up work environment
    Install products or maintenance (for traditional Candle products only)
    Configure products
    Installation information
    Services and utilities

    Installation and Configuration Assistance Tool Version 310.06
        (C) Copyright IBM Corp. 1992-2006
        Licensed Material - Program Property of IBM
F1=Help F3=Back
```

Figure 8. Main Menu: Configuration Tool

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Some Configuration Tool menus contain items that apply only to the former Candle[®] products. On the **Main Menu**, only options **1** (**Set up work environment**, for setting up a new Configuration Tool environment) and **3** (**Configure products**) apply to the Tivoli Tape Optimizer on z/OS product.

If you are configuring Tape Optimizer in an existing runtime environment, you can skip the next step and go to "Continuing the configuration procedure" on page 51.

If this is the first time that you are setting up a runtime environment in this CSI, you need to set working and configuration values before you define the runtime environment. Continue to "Step 4. Set up the Configuration Tool environment."

Step 4. Set up the Configuration Tool environment

Setting up the Configuration Tool environment involves two short procedures:

- 1. Setting up the work environment, by specifying the allocation and processing values that the tool uses to create the work data sets it needs and to allocate its work libraries.
- 2. Setting up the configuration environment, by specifying the values the tool uses to customize the JCL it creates.

Setting up the work environment

To set up the work environment, complete the following steps:

- 1. From the Configuration Tool Main Menu, enter 1 (Set up work environment). The Set Up Work Environment menu is displayed.
 - a. Select **Specify options** to specify allocation and processing values that are used to create the work data sets needed by the Configuration Tool. These settings provide operational values for generating batch jobs.
 - b. Select **Allocate work libraries** to allocate the Configuration Tool work libraries. The initial library, INSTLIB, contains both the operational code and the tables and jobs created by the installer. This job creates additional libraries and populates them with the data initially stored in INSTLIB.
- 2. From the Set Up Work Environment menu, enter 1 (Specify Options).

----- SPECIFY OPTIONS ------COMMAND ===> Specify allocation and processing options: SMP/E JCL REGION value ==> OM (Specify K/M suffix) Unit/ Storclas/ VolSer Mgmtclas PDSE Installation work datasets 3390 Ν name Specify the job statement for Installer-generated JCL: ==> //useridA JOB (ACCT), 'NAME', CLASS=A ==> //* DEFAULT JCL ==> //* ==> //* Enter=Next F1=Help F3=Back

Figure 9. Specify Options panel: Configuration Tool

The **Specify Options** panel shows the defaults for your system. Edit these values as needed.

Tip To receive notification of the results of the job, add this option to your job card:

NOTIFY=userid

For details of the parameters, press F1 (Help).

- 3. When you have entered the relevant information, press Enter to return to the **Set Up Work Environment** menu.
- 4. From the **Set Up Work Environment** menu, enter 2 (**Allocate Work Libraries**). The JCL is displayed for you to review, edit if necessary, and submit.
 - Tip

The default space allocations for the INSTDATA and INSTJOBS libraries are sufficient for typical installations. However, the size of the libraries grows with increases in the number of runtime environments and the number of applications configured in them. If you are planning to have dozens of runtime environments, each of which contains several products, increase the space allocations.

5. After submitting the job, exit the Configuration Tool and allow the job to run. (It will not run while you are in the tool.) Verify that the job completes successfully. All return codes must be zero.

Setting up the configuration environment

When the Allocate Work Libraries job completes, perform the following steps:

1. Start the Configuration Tool:

EX '&shilev.INSTLIB'

 From the Main Menu of the Configuration Tool (Figure 8 on page 47), enter 3 (Configure products), and then enter 1 (Set up configuration environment). The Set Up Configuration Environment panel is displayed. On this panel, specify values for the JCL created by the Configuration Tool. For details of the parameters, press F1 (Help).

COMMAND ===>	SET UP CONFIGURATION EN	VIRONMENT		
*** High-le	vel qualifiers are locked.			
RTE allocati	on routine ==> IKJEFT01 (IKJEFT	01/IEFBR14)	
Runtime Datasets VSAM	High-Level Qualifier hilev	Unit/ VolSer 3390	Storclas/ Mgmtclas NONSMS	PDSE
Non-VSAM	hilev	3390 name 3390	NONSMS	Ν
work		5550		
SMP/E Datasets Target	High-Level Qualifier <i>hilev</i>			
Enter=Next F1=Help F3=Back				

Figure 10. Set Up Configuration Environment panel: Configuration Tool

3. Press Enter to accept the values.

If you enter the **Set Up Configuration Environment** panel again after specifying values, the high-level qualifiers are locked and cannot be modified. If you need to modify these values, you can unlock them by selecting **Unlock runtime high-level qualifiers** on the **Configuration Services and Utilities** menu.

Step 5. Set up the common TEDA server

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Tip

Note: These instructions assume you have already used the ICAT utility to update the RTE libraries. The instructions for using ICAT to create (or update) the RTE libraries are located in Chapter 5, "Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image," on page 53 and Chapter 6, "Configuring the hub monitoring server and the monitoring agent on a z/OS image".

Complete the following steps to set up the common TEDA server:

- After the SMP/E install has updated the Target libraries (TKAN*), and you have used the ICAT utility to update the RunTime Environment (RTE) libraries (RKAN*), copy these members from the RTE library RKANPAR to the RTE library RKANPARU:
 - KRSPRD00
 - KRSSYS00

 	 Edit RKANPARU member KRSSYS00 to add one line for each product that will be using the KRSTEDA server, leaving the first line for KRSPRD00 as it is. For example, if your environment will have just the KRW agent using the KRSTEDA server, KRSSYS00 would look like this: KRSPRD00 KRSSYS00
	Copy member KRSTEDA from RTE library RKANSAMU to the appropriate proclib for started tasks and edit it as follows:
 	a. Add any libraries needed in the STEPLIB concatenation (such as the libraries for the associated base products). For the Tivoli Tape Optimizer monitoring agent, you must include the Tivoli Tape Optimizer base product load library (SGTOLOAD).
	b. Add any other input files that might be required for specific agents. For the Tivoli Tape Optimizer monitoring agent, the FILEDEFS data set is required to be included on the FILEDEFS DD statement, and the GTOJOBS DD statement referring to an internal reader is required. For example:
	//FILEDEFS DD DISP=SHR,DSN= <i>yourGTOHLQ</i> .BASE.FILEDEFS //GTOJOBS DD SYSOUT=(A,INTRDR),DCB=(RECFM=F,LRECL=80,BLKSIZE=80)
 	Note: If other agents using the KRSTEDA server are installed, the configuration process will update the copy of KRSTEDA in RKANPARU, and any subsequent user customization will be lost. It is important to copy the KRSTEDA procedure to a system procedure library before configuring additional agents. Updates required for each agent should be made to the copy in proclib prior to configuring the next agent.
I	Note: All load libraries in the STEPLIB concatenation must be APF authorized.

Step 6. Setting up Tape Optimizer copy request jobs that can be run from the TEP console

The Tape Optimizer copy request jobs that appear in the TEP console are created using Tape Optimizer. Each copy request job is created and designated as a template. Copy request jobs designated as templates can only be run from the TEP console using a take action command. For more information on creating copy request templates, see *IBM Tivoli Tape Optimizer on z/OS: User's Guide*.

Continuing the configuration procedure

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The rest of your configuration procedure depends on the deployment you have planned, based on the information in Part 1, "Planning your deployment." Go to the chapter that contains instructions for the configuration you want:

- Chapter 5, "Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image," on page 53
- Chapter 6, "Configuring the hub monitoring server and the monitoring agent on a z/OS image," on page 75

Chapter 5. Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image

This procedure describes the steps to follow in configuring the hub Tivoli Enterprise Monitoring Server on Windows, and the Tivoli Tape Optimizer monitoring agent in a z/OS image, as shown in Figure 11.



Figure 11. Hub Tivoli Enterprise Monitoring Server on a distributed system and monitoring agent on a z/OS system

For this deployment, you install and configure the hub Tivoli Enterprise Monitoring Server on a distributed system. You then configure a monitoring agent on each z/OS system you want to monitor, with all monitoring agents defined to communicate with the hub Tivoli Enterprise Monitoring Server. The configuration can be expanded by adding remote monitoring servers and monitoring agents.

Tips

- Be sure to complete the steps in "First steps: Installing the z/OS components and beginning the configuration" on page 45 before beginning the procedure in this chapter.
- If you completed the worksheets in Chapter 2, "Planning your Tivoli Tape Optimizer Monitoring Agent configuration," on page 7, refer to them for the values to supply on the configuration panels.
- The instructions in this chapter assume that you are installing the hub Tivoli Enterprise Monitoring Server and the other distributed components of Tivoli Monitoring Services on a single Windows workstation. If you want to install any of these components on a Linux or UNIX system, see *IBM Tivoli Monitoring: Installation and Setup Guide* and *IBM Tivoli Tape Optimizer on z/OS: Monitoring Agent Planning and Configuration Guide* for instructions.

Configuration steps

To configure the product, complete the following steps in order:

- ____ "Step 1. Install the Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client"
- "Step 2. Install Tivoli Tape Optimizer Monitoring Agent application support" on page 60
- ____ "Step 3. Define the runtime environment" on page 61
- ____ "Step 4. Build the runtime libraries" on page 65
- ____ "Step 5. Configure the monitoring agent" on page 66
- ____ "Step 6. Load the runtime libraries" on page 71
- "Step 7. Complete the configuration of the monitoring agent" on page 72
- ____ "Step 8. Verify the configuration" on page 73

Step 1. Install the Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client

In this step, you install the hub Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client on a distributed system. These instructions assume that the operating system on the workstation is Windows XP Professional Edition with Service Pack 1. For complete information about hardware and software requirements for the Tivoli Monitoring Services components, and for instructions for installing and configuring the components on a Linux or UNIX system, see the *IBM Tivoli Monitoring: Installation and Setup Guide*.

This procedure installs a Tivoli Enterprise Monitoring Server, a Tivoli Enterprise Portal Server, and a Tivoli Enterprise Portal desktop client on a single Windows workstation. If you decide to install these components on different workstations, install them in this order:

- 1. Tivoli Enterprise Monitoring Server
- 2. Tivoli Enterprise Portal Server
- 3. Tivoli Enterprise Portal desktop client

Installing the DB2 Universal Database software

Tivoli Enterprise Portal Server requires DB2 Universal Database (DB2 UDB). DB2 UDB version 8.2 is provided in the Tivoli Tape Optimizer on z/OS installation package. If DB2 UDB version 8 or higher is already installed on the workstation where you plan to install a Tivoli Enterprise Portal Server, you can skip this procedure and go directly to "Installing and configuring Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client" on page 57.

- On the Windows system where you plan to install the Tivoli Enterprise Portal Server, log on with a local ID that has Administrator authority. The DB2 Universal Database installation adds a local **db2admin** user account to Windows, and local Administrator authority is required for creating this account. Without the **db2admin** ID, DB2 UDB is unable to create the Tivoli Enterprise Portal Server database, and the Tivoli Enterprise Portal Server cannot start.
- 2. Insert the *DB2 Universal Database Workgroup Server Edition CD* to start the installer.
- 3. Select **Install Products**. Read and accept the license agreement, and proceed through the installer windows until you reach the **Installation Type** window.
- 4. On the **Installation Type** window, accept the defaults. Do not select **Data warehousing**.
- 5. On the **Select the installation folder** window, change the installation drive if necessary.
- 6. Set user information for the DB2 Administration Server:
 - a. You can either accept the user name of **db2admin** or use a different name.
 - b. Enter a password.

Important

DB2 UDB requires the user name and password for all administrative tasks, including installation and configuration of the Tivoli Enterprise Portal Server.

- If the Local Security Settings on the Windows system require complex passwords, use a password that fits the system requirements:
 - Not containing the user's account name.
 - Being at least six characters in length.
 - Containing characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphanumeric characters (Examples: !, \$, #, %)

For information about Local Security Settings and password complexity, see the Windows system help.

- If you change the **db2admin** password after DB2 UDB installation, you receive error messages when you try to install the Tivoli Enterprise Portal Server. If your Local Security Settings require you to change the password, wait to do so until you finish installing the Tivoli Enterprise Portal Server. See *IBM Tivoli Tape Optimizer on z/OS: Monitoring Agent Planning and Configuration Guide* and *IBM Tivoli Monitoring: Problem Determination Guide* for troubleshooting information.
- c. Do not enter a domain name in the drop-down list.
- 7. On the remaining windows, select the defaults.
- 8. Click Install to start copying the files.
- 9. After the DB2 UDB installation is complete, restart Windows before installing the Tivoli Enterprise Portal Server. Do this even if the DB2 UDB installer does not ask you to.
- 10. If the Local Security Settings on the Windows system require complex passwords, you must create a new Windows user account for the Tivoli Enterprise Portal Server before you begin installing it. The default database user account name of the Tivoli Enterprise Portal Server is **TEPS**, but you can assign any name no longer than eight characters that meets your site's requirements for user IDs. Use a password that fits the Windows system requirements for complex passwords:
 - Not containing the user account name.
 - Being at least six characters long.
 - Containing characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)

- Non-alphanumeric characters (Examples: !, \$, #, %)

For information about Local Security Settings and password complexity, see the Windows system help.

Installing and configuring Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client

Complete the following steps to install Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client on a Windows workstation where DB2 UDB is already installed:

- 1. Begin the installation.
 - a. Log on to Windows with an ID that has local Administrator authority, and close any running applications.
 - b. Insert the *IBM Tivoli Monitoring Services on z/OS CD* into the CD-ROM drive.

Installation begins automatically. If the installer does not start, go to the Windows directory on your CD-ROM drive and run **setup.exe**. If **setup.exe** initialization fails, you might not have enough free disk space to extract the setup files.

- c. Read the text that welcomes you to the installation, and click **Next** to continue.
- d. On the **Install Prerequisites** window, read the information about the required levels of IBM Global Security Kit and IBM Java.

The check box for each prerequisite is cleared if the correct level of the software is already installed on the workstation. Otherwise, the check box is selected to indicate that the software is to be installed.

e. Click Next to continue.

If Global Security Kit or Java is selected for installation, it is installed now. After installation of the prerequisite software is complete, you might be prompted to reboot the computer. In that case, you receive an abort message with a **Severe error** heading. This is normal and does not indicate a problem.

If you are prompted to reboot, do the following:

- 1) Click **OK** on the window prompting you to reboot.
- 2) Click No on the window asking whether you want to view the abort log.
- 3) Restart the computer.
- 4) Restart the installation program.
- f. Read the software license agreement and click Accept.

The **Choose Destination Location** window is displayed. The default is C:\IBM\ITM.

- g. Accept the default and click Next.
- h. On the **User Data Encryption Key** window, type a 32-bit encryption key. You can use the default key.

Note: Be sure to record the value you use for the key. You must use the same key during the installation of any components that communicate with this monitoring server.

- i. Click Next and then click OK to confirm the encryption key.
- 2. Select the components to install.
 - a. On the **Select Features** window, expand the list of features and select the following:
 - Tivoli Enterprise Monitoring Agent Framework
 - Tivoli Enterprise Monitoring Server
 - Tivoli Enterprise Portal Server Framework

- Tivoli Enterprise Portal Desktop Client
- IBM Eclipse Help Server
- b. Click Next.
- c. On the Agent Deployment window, clear the check boxes for both Universal Agent and Monitoring Agent for Windows OS. These selections do not apply to the Tivoli Tape Optimizer Monitoring Agent. Click Next.
- d. On the Select Program Folder window, accept the default and click Next.
- 3. On the **TEPS Desktop and Browser Signon ID and Password** window, provide and confirm a password to be used by the Tivoli Enterprise Portal desktop or browser client for initial access to the Tivoli Enterprise Portal Server.

The initial user ID **sysadmin** cannot be changed. You can add other user IDs after installation. For instructions, see the Tivoli Enterprise Portal online help or the *IBM Tivoli Monitoring: Administrator's Guide*.

- Click Next and review the installation summary details. This summary identifies what you are installing and where you chose to install it. Click Next to install the components.
- 5. On the **Setup Type** window, select these items:
 - Configure Tivoli Enterprise Portal
 - Configure Tivoli Enterprise Monitoring Server
 - Launch Manage Tivoli Monitoring Services

Click Next.

- 6. Configure the Tivoli Enterprise Portal.
 - a. On the **TEPS Hostname** window, make sure that the host name of the Tivoli Enterprise Portal Server is correct and does not include the domain name. Click **Next**.
 - b. On the TEPS Data Source Config Parameters window, enter the db2admin account password and a password for the Tivoli Enterprise Portal Server database user.
 - Тір

To have one less password to remember, you can use the same password for the **db2admin** account and the Tivoli Enterprise Portal Server database user account (default user account name **TEPS**, or the account name you set in 10 on page 55). If the Local Security Settings on the Windows system require complex passwords, use a password that fits the system requirements:

- Not containing the user account name.
- Being at least six characters in length.
- · Containing characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphanumeric characters (Examples: !, \$, #, %)

For more information about Local Security Settings and password complexity, see the Windows system help. See *IBM Tivoli Monitoring: Problem Determination Guide* for Tivoli Enterprise Portal Server troubleshooting information.

c. Click OK.

This step takes a few moments to complete while it populates the database.

- d. On the Success window, click OK.
- e. If you want to enable historical reporting, supply a user ID and password for use by the Tivoli Enterprise Portal Server to access the Tivoli Data Warehouse, and click **Next**. Otherwise, click **Next** without specifying any values on the **Warehouse ID and Password for TEP Server** window.
- f. On the **TEP Server Configuration** window, click **OK** to accept **IP.PIPE** (the default) as the protocol for communication with the hub Tivoli Enterprise Monitoring Server installed on the same workstation.
- g. On the next **TEP Server Configuration** window, enter the host name of the workstation where the hub Tivoli Enterprise Monitoring Server is installed. In this case it is the name of your workstation without the domain name. Also enter the port number for the Tivoli Enterprise Monitoring Server. Because IBM Tivoli Monitoring is case-sensitive, select **Convert to upper case** to reduce the chance of user error. Click **OK**.
- h. When you are prompted to reconfigure the warehouse connection information, click **Yes** if you are enabling historical data collection.
 Otherwise, click **No** and go on to Configure the Tivoli Enterprise Monitoring Server.

If you clicked Yes, follow these steps:

- On the Warehouse Proxy Database Selection window, select the type of database you want to use for the warehouse data source and click OK.
- Provide the values required for the selected database type and click OK. For detailed instructions, see *IBM Tivoli Monitoring: Installation and Setup Guide*, GC32-9407 and *IBM Tivoli Monitoring: Administrator's Guide*, SC32-9408.
- 3) Click **OK** on the **Successfully configured warehouse data source** window.
- 7. Configure the Tivoli Enterprise Monitoring Server.
 - a. On the **Tivoli Enterprise Monitoring Server Configuration** window, select the type of monitoring server you are configuring: **Hub** or **Remote**. For this procedure, select **Hub**.

For complete information on this configuration window and its values, see the *IBM Tivoli Monitoring: Installation and Setup Guide*.

b. Make a note of the value shown for the **TEMS name**. You will need to specify it later, when you configure the monitoring agent on z/OS. A good place to record it is "Configuration worksheet if the hub monitoring server is on a distributed system" on page 21. The **TEMS name** parameter is case-sensitive on all platforms.

The default name is HUB_hostname.

c. Identify up to three communication protocols for the monitoring server to use in communicating with the other components. When communication with another component is initiated, the monitoring server tries Protocol 1 first and goes to Protocol 2 and then to Protocol 3 in case of failure.

IP.PIPE (the default) or IP.SPIPE is generally the best choice for Protocol 1 in firewall environments. These protocols enable the monitoring server to communicate with the monitoring agent on z/OS and with other components on other systems, even if the components are running behind firewalls. At least one of the protocols chosen must match a protocol that you intend to specify for the Tape Optimizer monitoring agent (see Table 6 on page 23).

d. Click OK.

- e. On the **Hub TEMS Configuration** window, complete the settings for communications with the monitoring agent. Use the values you established in Table 5 on page 21.
- f. Because the Tivoli Monitoring Services components are case-sensitive, select **Convert to upper case** to reduce the chance of user error. Click **OK**.
- g. On the **Configuration Defaults for Connecting to a TEMS** windows, select the same communication protocols and values you specified for the monitoring server to use in communicating with the other components.
- 8. On the **InstallShield Wizard Complete** window, select **Display the README file** and click **Finish**.

Step 2. Install Tivoli Tape Optimizer Monitoring Agent application support

The *Tivoli Tape Optimizer Monitoring Agent Data Files for z/OS* CD contains the product-specific application support data required by distributed components and by the hub Tivoli Enterprise Monitoring Server (on any platform).

Important

If you have installed a previous version of application support for Tivoli Tape Optimizer on z/OS, you must uninstall it prior to installing application support for Tivoli Tape Optimizer on z/OS for this release. Application support can be uninstalled from the Windows **Add or Remove Programs** function in the Control Panel.

To install Tivoli Tape Optimizer Monitoring Agent application support, follow this procedure:

1. Insert the *Tivoli Tape Optimizer Monitoring Agent Data Files for z/OS* CD into the CD-ROM drive of the Windows workstation that hosts the Tivoli Enterprise Portal Server and desktop client.

Installation begins automatically. If the installer does not start, go to the Windows directory on your CD-ROM drive and run **setup.exe**. If **setup.exe** initialization fails, you might not have enough free disk space to extract the setup files.

- 2. Read the text that welcomes you to the installation, and click **Next** to continue.
- On the Install Prerequisites window, both check boxes are cleared, to indicate that the required software is already installed. Click Next to continue.
- 4. Read the software license agreement and click **Accept**.
- 5. On the Select Features window, select Tape Optimizer for these components:
 - Tivoli Enterprise Monitoring Server
 - Tivoli Enterprise Portal Server
 - Tivoli Enterprise Portal Desktop Client

Tape Optimizer

- 6. Click Next to continue.
- 7. On the **Start Copying Files** window, read the list of actions to be performed, and click **Next**.

Application support for Tivoli Tape Optimizer Monitoring Agent is installed on the IBM Tivoli Monitoring components you selected.

- 8. On the Setup Type window, select Configure Tivoli Enterprise Portal and Install application support for a local/remote Tivoli Enterprise Monitoring Server, and clear the check boxes for any other items. Click Next.
- On the TEPS Hostname window, make sure that the host name of the Tivoli Enterprise Portal Server is correct and does not include the domain name. Click Next.
- 10. On the two Tivoli Enterprise Monitoring Server configuration windows that are displayed, make sure the information is correct and click **Next**.
- 11. On the Add application support to the TEMS window, select On this computer and click OK.
- 12. On the Select the application support to add to the TEMS window, select Tape Optimizer and click OK.
- 13. On the Application support addition complete window, click Next.
- 14. On the **InstallShield Wizard Complete** window, select **Display the README file** and click **Finish**.

Step 3. Define the runtime environment

In this step you define the runtime environment for configuring the Tivoli Tape Optimizer Monitoring Agent.

- Tip

Be sure you have completed the steps in "First steps: Installing the z/OS components and beginning the configuration" on page 45 before beginning this procedure.

- If you installed the Tivoli Tape Optimizer Monitoring Agent software onto a z/OS image that contains no other monitoring agents, you must add the runtime environment and then build its libraries. This procedure is described immediately below.
- If you installed the Tivoli Tape Optimizer Monitoring Agent software onto a z/OS image that already contains another monitoring agent, and if you want to use an existing runtime environment (rather than creating a new one) for configuring the Tivoli Tape Optimizer Monitoring Agent, you do not need to add a runtime environment. Go directly to "Step 4. Build the runtime libraries" on page 65 and continue from there.

To define the runtime environment for the Tivoli Tape Optimizer monitoring agent, complete the following procedure:

1. On the **Configure Products** menu of the Configuration Tool, enter 2 (**Select product to configure**).

```
CONFIGURE PRODUCTS -----
OPTION ===>
Enter the number to select an option:
    Set up configuration environment
    Select product to configure
    I Configuration information
    S Services and utilities
F1=Help F3=Back
```

Figure 12. Configure Products panel: Configuration Tool

The **Product Selection Menu** is displayed, listing the products available for configuration.

```
COMMAND ===>
Actions: S Select product
______Tivoli Tape Optimizer Monitoring Agent V2.2
______IBM Tivoli Monitoring Services on z/OS V6.2.1
F1=Help F3=Back F5=Refresh F7=Up F8=Down
```

Figure 13. Product Selection Menu: Configuration Tool

 Type S to the left of Tivoli Tape Optimizer Monitoring Agent V2.2 and press Enter.

The **Runtime Environments (RTEs)** panel is displayed. This panel lists all the runtime environments defined to the Configuration Tool, along with the actions you can perform to create and manage runtime environments.

```
COMMAND ===>
Actions: A Add RTE, B Build libraries, C Configure,

L Load all product libraries after SMP/E,

D Delete, U Update, V View values, Z Utilities
Action Name Type Sharing Description

A TOCSHAR1 SHARING TOBASE1 Sharing RTE for TO environment

TOCBASE1 BASE Base RTE for the TO environment

Enter=Next F1=Help F3=Back F7=Up F8=Down
```

Figure 14. Runtime Environments (RTEs) panel: Configuration Tool

See "Worksheet: Information for configuring your runtime environment" on page 35 for the values you have decided to specify for the runtime environment.

3. On the **Runtime Environments (RTEs)** panel, type A (**Add RTE**) in the **Action** field beside the first (empty) row and type a **Name** for your new runtime environment.

The runtime environment name is a unique identifier of up to 8 characters. It is automatically used as the mid-level qualifier for full and sharing runtime environments. You can optionally specify a mid-level qualifier for base runtime environments.

- Tip

If you specify a runtime environment name no more than 4 characters long, you can specify the same name for the JCL suffix. This setup makes it easy to associate the jobs in INSTJOBS with the runtime environment.

4. Specify the type of runtime environment being created. In this case, start by creating either a base or full type, which is essential if you intend to add sharing runtime environments later on.

- Tip

site.

A base runtime environment is not configurable. For information about the different types of runtime environments, see "Understanding runtime environments" on page 12.

- 5. (For sharing runtime environments only) Type the name of the base or full runtime environment from which this runtime environment obtains its base library information. If SMP/E target libraries are to be shared, type SMP.
- Type a description for this runtime environment.
 The description can be any information that is useful for you and others at your
- 7. When you have specified all required values on the **Runtime Environments** (**RTEs**) panel, press Enter.

The first of two **Add Runtime Environment** panels is displayed. This panel shows the defaults for your system.

a. Specify a JCL suffix no more than 4 characters long, to be used as the suffix of the name of the member containing the JCL in the INSTJOBS dataset.

If possible, specify the runtime environment name as the JCL suffix, to make the output of your Configuration Tool batch jobs easier to find in the SDSF queue.

- b. You can change the started task (STC) prefix to avoid confusion with others at your site.
- c. Type N for Will this RTE have a Tivoli Enterprise Monitoring Server (because Tivoli Enterprise Monitoring Server is installed on a different system).

For details of the parameters, press F1 (Help).

```
----- ADD RUNTIME ENVIRONMENT (1 of 2) -----
COMMAND ===>
RTE: RTEname
                Type: SHARING Desc: RTE with CMS
 Libraries High-level Qualifier
                                    Volser Unit
                                                   Storclas Mgmtclas PDSE
 Non-VSAM hilev
                                    P20MG1 3390
                                                                   Ν
                                    P20MG1
 VSAM
         hilev
 Mid-level qualifier ==> RTEname
 JCL suffix
                   ==> suffix
                   ==> CANS
 STC prefix
                 ==> X
 SYSOUT class
                                   Diagnostic SYSOUT class ==> X
 Load optimization ==> N
                          (Y, N)
 Will this RTE have a Tivoli Enterprise Monitoring Server
                                                          => N (Y, N)
   If Y, TEMS name
                                                        (Case sensitive)
                    ==>
 Copy configuration values from RTE ==>
                                            (Optional)
 Enter=Next F1=Help F3=Back
```

Figure 15. Add Runtime Environment (1 of 2) panel: Configuration Tool

8. From the Add Runtime Environment (1 of 2) panel, press Enter. The Add Runtime Environment (2 of 2) panel is displayed.

```
----- ADD RUNTIME ENVIRONMENT (2 of 2) -----
COMMAND ===>
                            ==> N (Y, N)
==> &SYSNAME
Use z/OS system variables?
   RTE name specification
   RTE base alias specification ==>
                                                          n/a
   Applid prefix specification ==> K&SYSCLONE
   Use VTAM model applids? ==> N (Y, N)
                       ==> NONE (RACF, ACF2, TSS, NAM, None)
Security system
  ACF2 macro library ==>
If you require VTAM communications for this RTE, complete these values:
   Applid prefix==> CTDNetwork ID==> NetidLogmode table==> KDSMTAB1LU6.2 logmode==> CANCTDCS
If you require TCP/IP communications for this RTE, complete these values:
  *Hostname ==> * (See F1=Help for
*Address ==> HOMETEST instru
                              HOMETEST instructions)
   Started task ==> *
                            (Recommended default = *)
   Port number ==>
 Enter=Next F1=Help F3=Back
```

Figure 16. Add Runtime Environment (2 of 2) panel: Configuration Tool

- Leave NONE as the value of the Security system field. Because this runtime environment does not include a Tivoli Enterprise Monitoring Server, security validation for users signing on to the Tivoli Enterprise Portal is handled by the hub monitoring server on Windows.
- If you intend to use the SNA communication protocol, supply the name of your network ID in the VTAM section.

Important

If you do not intend to use SNA, clear the system defaults displayed in the **VTAM** section. Otherwise, you will be required to define SNA as one of your communication protocols during "Step 5. Configure the monitoring agent" on page 66.

11. For TCP/IP communications between the monitoring agent and the Tivoli Enterprise Monitoring Server, supply the following information:

Hostname

The TCP/IP host name of the z/OS system where the runtime environment is being defined. To obtain the host name, enter TS0 HOMETEST at the command line.

If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.

Address

The IP address of the z/OS system. To obtain the IP address, enter TS0 H0METEST at the command line.

Started task

The started task name of the TCP/IP server. The default value of * (asterisk) allows the IP stack to find the TCP/IP image dynamically, if it is available.

Port number

The address of the IP port. The default is 1918.

12. When you have finished defining your runtime environment, press Enter to return to the **Runtime Environments (RTEs)** panel (Figure 14 on page 62).

- Tip

Select **View Values** (**V**) to verify the runtime environment information and **Update** (**U**) to make the necessary changes.

This completes the addition of your runtime environment. You must build the runtime libraries before continuing to configure Tape Optimizer. Go on to Step 4. Build the runtime libraries.

Step 4. Build the runtime libraries

Complete the following steps to allocate the required runtime libraries:

1. Type B next to the name of the runtime environment for which you want to build the libraries, and press Enter.

The JCL is displayed for you to review, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero.

2. Press F3 (Back) to return to the **Runtime Environments (RTEs)** panel (Figure 14 on page 62).

You can now configure Tivoli Tape Optimizer Monitoring Agent in the runtime environment. Go on to Step 5. Configure the monitoring agent.

Step 5. Configure the monitoring agent

To configure the Tivoli Tape Optimizer Monitoring Agent to communicate with a hub Tivoli Enterprise Monitoring Server on a distributed system, complete the following steps:

 On the Runtime Environments (RTEs) panel (Figure 14 on page 62), type C (Configure) next to the runtime environment in which you want to configure Tivoli Tape Optimizer Monitoring Agent.

The Product Component Selection Menu is displayed.

```
COMMAND ===>

The following list of components requires configuration to make the product

operational. Refer to the appropriate configuration documentation if you

require additional information to complete the configuration.

To configure the desired component, enter the selection number on the command

line. You should configure the components in the order they are listed.

Note: It may not be necessary to configure Tivoli Enterprise Monitoring Server

(TEMS) component, if listed below. Press Fl for more information.

COMPONENT TITLE

1 Tivoli Enterprise Monitoring Server

2 Tivoli Tape Optimizer Monitoring Agent
```

Figure 17. Product Component Selection Menu: Configuration Tool

 From the Product Component Selection Menu, enter 2 to select Tivoli Tape Optimizer Monitoring Agent.

The **Configure Tivoli Tape Optimizer Monitoring Agent** menu shown in Figure 18 is displayed.

<pre> Configure IBM Tivoli Tape Optimizer Monitoring Agent / OPTION ===></pre>	RTE	
Perform the appropriate configuration steps in order:	Last sel Date	ected Time
I Configuration information (What's New)	<=== Rev	ised
1 Specify Agent parameters		
If you have defined a TEMS in this RTE that this Agent will communicate with, select option 2. 2 Register with local TEMS		
Agent address space configuration: 3 Specify Agent address space parameters 4 Create runtime members 5 Configure persistent datastore (in Agent)		
6 Complete the configuration		
Note: This Agent is running in its own Agent address space.		

Figure 18. Configure Tivoli Tape Optimizer Monitoring Agent menu: Configuration Tool

For this configuration, you select options 1, 3 and 4 (Specify Agent parameters, Specify agent address space parameters, and Create runtime members). Because the hub Tivoli Enterprise Monitoring Server is not on this system, you do not select option 2. If you want to enable historical reporting, select option 5 (Configure persistent datastore in Agent) as well. You complete the configuration (option 6) later, after completing options 3 and 4 (and possibly option 5) and then loading the runtime libraries.

3. From the **Configure IBM Tivoli Tape Optimizer on z/OS** menu, enter 1 (**Specify Agent parameters** to display the **Specify Agent parameters** panel.

(Com	SPECIFY AGE	NT PARAMETERS		
	Data Collector started task name	==> KRSTEDA		
	Agent/Provider communications port	==> 2097		
	Time in seconds that the agent will cache collected metrics.	==> 30		
	Timeout in seconds for Take Action commands.	==> 60		
	Number of asyn events to cache in each pure event table	==> 1000		
	Timeout in seconds for data collection requests.	==> 60		
Note: Press F1 for help, before modifying any of these parameters.				

Figure 19. Specify Agent Parameters panel: Configuration Tool

- 4. On the **Specify Agent parameters** panel, provide the required information:
 - Specify the started task name for the Data Collector.
 - Specify the agent communications port.

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- Specify the time, in seconds, that the agent will cache collected metrics.
- Specify the timeout, in seconds, for Take Action commands.
- Specify the number of asynchronous events to cache in each pure event table.
- · Specify the timeout, in seconds, for data collection requests.
- 5. When you are finished specifying the agent parameters, press Enter or PF3 (Back) to return to the **Configure IBM Tivoli Tape Optimizer on z/OS** menu.
- 6. From the **Configure IBM Tivoli Tape Optimizer on z/OS** menu, enter 3 to display the **Specify Agent Address Space Parameters** panel.

```
---- SPECIFY AGENT ADDRESS SPACE PARAMETERS ---
COMMAND ===>
 The following information is needed to define the Agent address space.
                                 ==> CANSRW
==> N
  Agent started task
  Connect to TEMS in this RTE
                                                  (Y, N)
     Name of Primary TEMS
                                  ==> None
  Specify the communication protocols in priority sequence.
     IP.PIPE ==> 1 (Non-secure NCS RPC)
     IP.UDP ==> 2 (Non-secure NCS RPC)
     SNA.PIPE ==> (Non-secure NCS RPC)
IP6.PIPE ==> (IP.PIPE for IPV6)
     IP6.UDP ==> (IP.UDP for IPV6)
     IP.SPIPE ==> (Secure IP.PIPE)
IP6.SPIPE ==> (Secure IP.PIPE for IPV6)
     Note: Enable only protocol(s) in use by the Primary TEMS.
```

Figure 20. Specify Agent Address Space Parameters panel: Configuration Tool

- 7. On the **Specify Agent Address Space Parameters** panel, provide the required information:
 - Supply the started task name for the agent.
 - Specify N for Connect to TEMS (Tivoli Enterprise Monitoring Server) in this RTE (runtime environment).
 - Supply the priority number for each protocol you want to select. When communication with the monitoring server is initiated, the monitoring agent tries Protocol 1 first and goes to Protocol 2 and then to Protocol 3 in case of failure. Be sure to specify the same protocols you specified for the monitoring server (see "Installing and configuring Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal desktop client" on page 57). For definitions of the communication protocols, see Table 6 on page 23.
- Press Enter to display a list of monitoring servers on z/OS systems. Because your Tivoli Enterprise Monitoring Server is on a distributed system, it is not included in the list.
- 9. Press F5 (Advanced) to display the **Specify Agent Primary TEMS Values** panel.

```
----- SPECIFY AGENT PRIMARY TEMS VALUES ------
COMMAND ===>
TEMS name (case sensitive)
                                          ==>
Complete this section if the primary TEMS requires SNA support.
   Logmode table name
   Local location broker applid ==>
   Network ID
                                         ==>
Complete this section if the primary TEMS requires TCP support.
* Hostname ==>
 * Address ==>
   Primary TEMS port number based on protocol in use:
     IP.PIPE port number ==> 1918 (Non-secure NCS RPC)
IP6.PIPE port number ==> (IP.PIPE for IPV6)
IP.SPIPE port number ==> (Secure IP.PIPE)
IP6.SPIPE port number ==> (Secure IP.PIPE for IPV6)
     IP.UDP port number ==> 1918 (Non-secure NCS RPC)
IP6.UDP port number ==> (IP.UDP for IPV6)
 * Note: See F1=Help for TSO HOMETEST command instructions.
```

Figure 21. Specify Agent Primary TEMS Values panel: Configuration Tool

 Supply the TEMS name (node ID) of the hub Tivoli Enterprise Monitoring Server.

Тір

The TEMS name (node ID) is generally not the same as the host name. It is an arbitrary name assigned during Tivoli Enterprise Monitoring Server configuration. If you made a note of the TEMS name during configuration of the Tivoli Monitoring Services distributed components, find it now. You might have recorded it in "Configuration worksheet if the hub monitoring server is on a distributed system" on page 21. Otherwise, you can find it in one of the following locations:

- On Windows systems, you can find the TEMS name in Manage Tivoli Monitoring Services. Right-click the Tivoli Enterprise Monitoring Server and select Browse Settings, and look for the value of CMS_NODEID.
- On Linux and UNIX systems, you can find the value of CMS_NODEID in the KBBENV file located in the \$CANDLEHOME/tables/cms_name subdirectory.
- If SNA is one of the protocols you selected for the Tivoli Enterprise Monitoring Server, complete the SNA section of the panel.

LU6.2 logmode

Name of the LU6.2 logmode defined for use by the monitoring server. The default name is CANCTDCS.

Logmode table name

Name of the logmode table that contains the LU6.2 logmode. The default name is KDSMTAB1.

Local location broker applid

Local location broker applid of the monitoring server the agent communicates with.

Network ID

Identifier of the VTAM network where the monitoring server is

running. You can locate this value on the NETID parameter in the VTAMLST startup member ATCSTR*nn*.

 If IP.PIPE or IP.UDP is one of the protocols you selected for the Tivoli Enterprise Monitoring Server, complete the TCP section:

Hostname

Host name of the system where the monitoring server with which the agent communicates is installed.

Address

IP address of the system where the monitoring server with which the agent communicates is installed.

IP.PIPE port number

Supply the same port number you specified for the monitoring server the agent communicates with.

IP.UDP port number

Supply the same port number you specified for the monitoring server the agent communicates with.

10. Press Enter to display the **Specify Advanced Agent Configuration Values** panel.

```
----- SPECIFY ADVANCED AGENT CONFIGURATION VALUES ------
COMMAND ===>
Specify the advanced configuration options for this Agent.
    nable secondary TEMS ==> N
Name of secondary TEMS ==> None
  Enable secondary TEMS
                                           (Y. N)
  Enable startup console messages ==> N
                                           (Y, N)
  Enable WTO messages ==> N
                                           (Y, N)
  Intervals (hh:mm):
    Storage detail logging: Hours ==> 0 (0-24) Minutes ==> 60 (0-60)
    Flush VSAM buffers: Hours ==> 0 (0-24) Minutes ==> 30 (0-60)
  Virtual IP Address (VIPA) type ==> N
                                         (S=Static, D=Dynamic, N=None)
  Minimum extended storage ==> 60000 K
  Language locale ==>
                                 (Press F1=Help for a list of codes)
  Program to Program Interface (PPI) information:
      Forward Take Action commands to NetView for z/OS? ==> N (Y, N)
          NetView PPI receiver ==> CNMPCMDR
          Agent PPI sender
                                    ==>
 Enter=Next F1=Help F3=Back F10=CMS List
```

Figure 22. Specify Advanced Agent Configuration Values panel: Configuration Tool

Accept the defaults or specify other values.

Language locale is a required field and has no default. Specify a numeric value (1 through 36) representing the language and region for the z/OS system. (Example: **1** for United States English.) For a list of the language locale values, press F1.

The **Program to Program Interface (PPI) information** section is optional. If desired, specify the PPI values that enable forwarding of Take Action commands to NetView for z/OS for authorization and execution. If you enable forwarding, you must also enable NetView to authorize the commands. See "Setting up NetView authentication of Take Action commands" on page 109.

11. Press Enter, then press Enter again to display a series of panels prompting you for values for each communication protocol you selected. Enter the values you recorded in Table 6 on page 23.

- 12. Press Enter to return to the **Configure Tivoli Tape Optimizer Monitoring Agent** menu (Figure 18 on page 66).
- 13. Enter 4 (Create runtime members) to open JCL that you can review, edit, and submit. Check to make sure the return code is zero.
- 14. After the job completes, press F3 (Back) to return to the **Configure Tivoli Tape Optimizer Monitoring Agent** menu.
- 15. If you want to enable historical reporting, select option 5 to configure the persistent data store. Otherwise, skip this step.

For instructions on configuring the persistent data store, see *IBM Tivoli Monitoring: Configuring IBM Tivoli Enterprise Monitoring Server on z/OS* and *IBM Tivoli Monitoring: Administrator's Guide.*

Important

Both the Configuration Tool and Tivoli Enterprise Portal allow you to configure historical data collection either at the location of the monitoring agent (called TEMA, or Tivoli Enterprise Monitoring Agent, in the Tivoli Enterprise Portal) or at the location of the monitoring server to which the monitoring agent reports. However, Tivoli Tape Optimizer Monitoring Agent requires that historical data collection be configured at the location of the monitoring agent.

16. Go on to "Step 6. Load the runtime libraries."

Tip

Even though **Complete the configuration** is an option on the **Configure Tivoli Tape Optimizer Monitoring Agent** menu, you must load the runtime libraries from the SMP/E target libraries before you perform the tasks required to complete the configuration. If you select **Complete the configuration** (option 6 on the **Configure Tivoli Tape Optimizer Monitoring Agent** menu), the Configuration Tool displays a list of the steps you must take outside the Configuration Tool. You can examine and print the list now.

Step 6. Load the runtime libraries

Before you complete the configuration of the product outside the Configuration Tool, you must load the runtime libraries from the SMP/E target libraries. The load job requires shared access to the runtime libraries.

- From the Configure Tivoli Tape Optimizer Monitoring Agent menu (Figure 18 on page 66), press F3 (Back) to return to the Product Component Selection Menu and then press F3 again to return to the Runtime Environments (RTEs) panel (Figure 14 on page 62).
- 2. Type L in the **Action** field to the left of the runtime environment in which you have just configured Tivoli Tape Optimizer Monitoring Agent, and press Enter.
- 3. Review the JCL and submit the job. Verify that the job completes successfully and that the return code is 04 or less.
- 4. When you finish loading the libraries, press F3 (Back) to return to the **Runtime Environments (RTEs)** panel.

Step 7. Complete the configuration of the monitoring agent

To complete the configuration, perform the following steps in the order shown.

- 1. Copy the started task procedures to your procedure library.
 - a. From the **Runtime Environments (RTEs)** panel, enter Z (Utilities) next to your runtime definition.

OPTION ===>
Specify the number of the desired utility.
 Create batch mode parameters Create System Variable parameter member Create System Variable VTAM major node rename job Create VTAM major node (one node for all products) Generate sample transport JCL Generate sample system procedure copy JCL Generate sample system VTAMLST copy JCL
* Important: After the CB#VJH job runs, edit the RKANPARU(<i>midlvl</i>) parameter member and follow the directions to ensure the proper resolution of cross-system variables.
F1=Help F3=Back

Figure 23. RTE Utility menu: Configuration Tool

- b. From the **RTE Utility Menu**, enter 6 to display the **Generate sample** system procedure copy JCL panel.
- c. Type the name of your procedure library (for example, USER.PROCLIB). Press Enter.
- d. The JCL is displayed for you to review, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero.
 This job creates a member called KCISYPJB in the RKANSAMU library.
- e. Edit KCISYPJB and submit the job. Verify that the job completes successfully and that all return codes are zero.

This job copies all the required started tasks from your RKANSAMU library to the specified procedure library. The code contains the names of all the started tasks created during configuration.

- 2. APF-authorize the runtime load libraries concatenated in the STEPLIB DDNAME and in the RKANMODL DDNAME of all started tasks.
- 3. Start the started task for the monitoring agent, and check the RKLVLOG for this message, which indicates success.

KRAIRA000 Starting HEARTBEAT

If you do not see message KRAIRA000, review the steps performed and look for errors. If you need assistance, see "Support information" on page 145.

4. Start the started task for the data collection agent (KRSTEDA), and check the JES message log for the data collection agent address space for the following message which indicates successful startup:

KRS0127I KRS Agent task name agent_name initialization complete

Step 8. Verify the configuration

Now that you have completed the configuration, you can verify that it is successful. Verification involves starting these components through Manage Tivoli Monitoring Services on your workstation:

- Tivoli Enterprise Monitoring Server
- Tivoli Enterprise Portal Server
- Tivoli Enterprise Portal desktop client

To do this, complete the following procedure:

- 1. On your workstation, select Start > Programs (or All Programs) > IBM Tivoli Monitoring > Manage Tivoli Monitoring Services.
- 2. To start the Tivoli Enterprise Monitoring Server, right-click its entry in **Manage Tivoli Monitoring Services** and click **Start**.
- 3. To start the Tivoli Enterprise Portal Server, right-click its entry in **Manage Tivoli Monitoring Services** and click **Start**.
- 4. To start the Tivoli Enterprise Portal desktop client, right-click its entry in **Manage Tivoli Monitoring Services** and click **Start**.
- 5. When prompted, supply the user ID sysadmin and the password you specified for initial access to the Tivoli Enterprise Portal Server
- 6. When Tivoli Enterprise Portal opens, you can expand the navigator pane to see the Tivoli Tape Optimizer Monitoring Agent workspaces.

For information about using the Tivoli Tape Optimizer Monitoring Agent workspaces and situations to monitor your sysplex resources and z/OS systems, see the online help and *Monitoring Agent User's Guide*.

Setting up security

Now you can set up security for the product components. See Chapter 7, "Setting up security," on page 103.

Expanding this configuration

You can add monitoring agents to other z/OS images that you want to monitor, and configure them to communicate with the hub Tivoli Enterprise Monitoring Server or with a remote monitoring server that reports to the hub. To add a monitoring agent, repeat Steps 5-8 in this chapter. Alternatively, you can use batch mode processing to replicate the monitoring agent runtime environment in other z/OS images. See Chapter 9, "Using batch mode processing," on page 119.

Chapter 6. Configuring the hub monitoring server and the monitoring agent on a z/OS image

This procedure describes the steps to follow in configuring a hub Tivoli Enterprise Monitoring Server and an Tivoli Tape Optimizer monitoring agent in separate address spaces of the same z/OS image.



Figure 24. Hub Tivoli Enterprise Monitoring Server and monitoring agent in separate address spaces of a single z/OS image

The configuration shown in Figure 24 depicts the monitoring agent and hub Tivoli Enterprise Monitoring Server installed in separate address spaces of the same z/OS image. This configuration is a basic one that can be expanded easily to accommodate multiple systems. (See "Expanding this configuration" on page 102.)

Tips

- Be sure to complete the steps in "First steps: Installing the z/OS components and beginning the configuration" on page 45 before beginning the procedure in this chapter.
- If you completed the worksheets in Chapter 2, "Planning your Tivoli Tape Optimizer Monitoring Agent configuration," on page 7, refer to them for the values to supply on the configuration panels.

Configuration steps

To configure the product, complete the following steps in order:

- "Step 1. Define the runtime environment" on page 76
- ___ "Step 2. Build the runtime libraries" on page 80
- ____ "Step 3. Configure the hub Tivoli Enterprise Monitoring Server" on page 80
- ____ "Step 4. Configure the monitoring agent" on page 89
- ____ "Step 5. Load the runtime libraries" on page 93
- ____ "Step 6. Complete the configuration of the Tivoli Enterprise Monitoring Server and the monitoring agent" on page 93
- ____ "Step 7. Install Tivoli Enterprise Portal Server and client on a Windows workstation" on page 95
- ____ "Step 8. Install Tivoli Tape Optimizer Monitoring Agent application support" on page 99

Step 1. Define the runtime environment

In this step you define the runtime environment for configuring the Tivoli Tape Optimizer Monitoring Agent software.

- If you installed the Tivoli Tape Optimizer Monitoring Agent software onto a z/OS image that contains no Tivoli Enterprise Monitoring Server and no other monitoring agents, you must add the runtime environment and then build its libraries. This procedure is described immediately below.
- If you installed the Tivoli Tape Optimizer Monitoring Agent software onto a z/OS image that already contains a Tivoli Enterprise Monitoring Server or another monitoring agent, and if you want to use an existing runtime environment (rather than creating a new one) for configuring the Tivoli Tape Optimizer Monitoring Agent, you do not need to add a runtime environment. Go directly to "Step 2. Build the runtime libraries" on page 80 and continue from there.

To define the runtime environment for the Tivoli Tape Optimizer Monitoring Agent software, complete the following procedure:

1. On the Configure Products menu, enter 2 (Select product to configure).

```
OPTION ===>
Enter the number to select an option:
1 Set up configuration environment
2 Select product to configure
I Configuration information
S Services and utilities
F1=Help F3=Back
```

Figure 25. Configure Products panel: Configuration Tool

The **Product Selection Menu** is displayed, listing the products available for configuration.

```
COMMAND ===>
Actions: S Select product
______Tivoli Tape Optimizer Monitoring Agent V2.2
______IBM Tivoli Monitoring Services on z/OS V6.2.0
F1=Help F3=Back F5=Refresh F7=Up F8=Down
```

Figure 26. Product Selection Menu: Configuration Tool

2. Type S to the left of **Tivoli Tape Optimizer Monitoring Agent V2.2** and press Enter.

The **Runtime Environments (RTEs)** panel is displayed. This panel lists all the runtime environments defined to the Configuration Tool, along with the actions you can perform to create and manage runtime environments.

Figure 27. Runtime Environments (RTEs) panel: Configuration Tool

See "Worksheet: Information for configuring your runtime environment" on page 35 for the values you have decided to specify for the runtime environment.

3. On the **Runtime Environments (RTEs)** panel, type A (**Add RTE**) in the **Action** field beside the first (empty) row and type a **Name** for your new runtime environment.

The runtime environment name is a unique identifier of up to 8 characters. It is automatically used as the mid-level qualifier for full and sharing runtime environments. You can optionally specify a mid-level qualifier for base runtime environments.

Tips

- If you specify a runtime environment name no more than 4 characters long, you can specify the same name for the JCL suffix (used as the suffix of the name of the member containing the JCL in the INSTJOBS dataset). This setup makes it easy to associate the jobs in INSTJOBS with the runtime environment.
- When you enter a C (Configure), B (Build), or L (Load) next to a runtime environment that has a previous version of the Tivoli Enterprise Monitoring Server installed, the Configuration Tool prompts you to confirm that you want to migrate to the newer version. A batch migration job completes the upgrade and retains all previously configured values for the Configuration Tool.
- 4. Specify the type of runtime environment being created. In this case, start by creating either a base or full type, which is essential if you intend to add sharing runtime environments later on.

- Tip

A base runtime environment is not configurable. For information about the different types of runtime environments, see "Understanding runtime environments" on page 12.

- 5. (For sharing runtime environments only) Type the name of the base or full runtime environment from which this runtime environment obtains its base library information. If SMP/E target libraries are to be shared, type SMP.
- Type a description for this runtime environment. The description can be any information that is useful for you and others at your site.

7. When you have specified all required values on the **Runtime Environments** (**RTEs**) panel, press Enter.

The first of two **Add Runtime Environment** panels is displayed. These panels show the defaults for your system.

a. Specify a JCL suffix no more than 4 characters long, to be used as the suffix of the name of the member containing the JCL in the INSTJOBS dataset.

If possible, specify the runtime environment name as the JCL suffix. This setup makes it easy to associate the jobs in INSTJOBS with the runtime environment.

- b. You can change the started task (STC) prefix to avoid confusion with others at your site.
- c. Type Y for Will this RTE have a Tivoli Enterprise Monitoring Server.

Make a note of the **TEMS name** value displayed here. You will need to specify it later, when you configure the other components. A good place to record the **TEMS name** value is "Configuration worksheet if the monitoring server is on a z/OS system" on page 28. The **TEMS name** parameter is case-sensitive on all platforms.

For details of the parameters, press F1 (Help).

- aiT -

```
ADD RUNTIME ENVIRONMENT (1 of 2)COMMAND ===>RTE: RTEnameType: SHARING Desc: RTE with TEMSLibraries High-level QualifierVolser UnitNon-VSAMhilevP20MG13390NYSAMHilevP20MG1Wid-level qualifier ==> RTEnameJCL suffix==> suffixSYSOUT class==> XLoad optimization==> NY(Y, N)Will this RTE have a Tivoli Enterprise Monitoring Server==> YIf Y, TEMS name==> RTEname:CMSCopy configuration values from RTE ==>(Optional)
```

Figure 28. Add Runtime Environment (1 of 2) panel: Configuration Tool

8. From the Add Runtime Environment (1 of 2) panel, press Enter. The Add Runtime Environment (2 of 2) panel is displayed.

```
----- ADD RUNTIME ENVIRONMENT (2 of 2) ------
COMMAND ===>
Use z/OS system variables? ==> N (Y, N)
RTE name specification ==> &SYSNAME
   RTE base alias specification ==>
                                                           n/a
   Applid prefix specification ==> K&SYSCLONE
  Use VTAM model applids? ==> N (Y, N)
                    ==> NONE (RACF, ACF2, TSS, NAM, None)
Security system
 ACF2 macro library ==>
If you require VTAM communications for this RTE, complete these values:
  Applid prefix==> CTDNetwork ID==> NetidLogmode table==> KDSMTAB1LU6.2 logmode==> CANCTDCS
If you require TCP/IP communications for this RTE, complete these values:
  *Hostname ==> * (See F1=Help for
*Address ==> HOMETEST instructions)
  Started task ==> * (Recommended default = *)
   Port number ==>
 Enter=Next F1=Help F3=Back
```

Figure 29. Add Runtime Environment (2 of 2) panel: Configuration Tool

- 9. You can leave NONE as the value of the **Security system** field, or specify the security system of your choice. Specifying a security system here indicates the system to be used for security validation of users signing on to the Tivoli Enterprise Portal, but it does not enable the validation. Security validation of users is enabled in a Tivoli Enterprise Monitoring Server configuration panel (see "Specifying configuration values" on page 82). For more information about product security, see Chapter 7, "Setting up security," on page 103.
- 10. Supply the name of your network ID in the VTAM section.
- 11. For TCP/IP communications between the Tivoli Enterprise Monitoring Server and the other product components, supply the following information:

Hostname

The TCP/IP host name of the z/OS system where the runtime environment is being defined. To obtain the host name, enter TS0 HOMETEST at the command line.

If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.

Address

The IP address of the z/OS system. To obtain the IP address, enter TS0 HOMETEST at the command line.

Started task

The started task name of the TCP/IP server. The default value of * (asterisk) allows the IP stack to find the TCP/IP image dynamically, if it is available.

Port number

The address of the IP port. The default is 1918.

12. When you have finished defining your runtime environment, press Enter to return to the **Runtime Environments (RTEs)** panel (Figure 27 on page 77).

- Tip

Select **View Values** (**V**) to verify the runtime environment information and **Update** (**U**) to make the necessary changes.

This completes the addition of your runtime environment. You must build the runtime libraries before continuing to configure Tivoli Tape Optimizer Monitoring Agent. Go on to "Step 2. Build the runtime libraries" on page 80.

Step 2. Build the runtime libraries

Complete the following steps to allocate the required runtime libraries:

1. Type B next to the name of the runtime environment for which you want to build the libraries, and press Enter.

The JCL is displayed for you to review, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero.

 Press F3 (Back) to return to the Runtime Environments (RTEs) panel (Figure 27 on page 77).

You can now configure the hub Tivoli Enterprise Monitoring Server and the Tivoli Tape Optimizer Monitoring Agent in the runtime environment. Go on to "Step 3. Configure the hub Tivoli Enterprise Monitoring Server" on page 80.

Step 3. Configure the hub Tivoli Enterprise Monitoring Server

Before you configure Tivoli Tape Optimizer Monitoring Agent, configure the hub Tivoli Enterprise Monitoring Server.

Tip

If you completed the worksheets in Chapter 2, "Planning your Tivoli Tape Optimizer Monitoring Agent configuration," on page 7, refer to them for the values to supply on the configuration panels.

Beginning the configuration

Perform the following steps to begin the configuration:

 On the Runtime Environments (RTEs) panel (Figure 27 on page 77), type C (Configure) next to the runtime environment in which you want to configure Tivoli Tape Optimizer Monitoring Agent.

The Product Component Selection Menu is displayed.

PRODUCT COMPONENT SELECTION MENU COMMAND ===>				
The following list of components requires configuration to make the product operational. Refer to the appropriate configuration documentation if you require additional information to complete the configuration. To configure the desired component, enter the selection number on the command line. You should configure the components in the order they are listed.				
Note: It may not be necessary to configure Tivoli Enterprise Monitoring Server (TEMS) component, if listed below. Press F1 for more information.				
COMPONENT TITLE				
 Tivoli Enterprise Monitoring Server Tivoli Tape Optimizer Monitoring Agent 				

Figure 30. Product Component Selection Menu: Configuration Tool

2. From the **Product Component Selection Menu**, enter 1 to select Tivoli Enterprise Monitoring Server.

The Configure the TEMS menu is displayed.

CONFIGURE THE TEMS (V610) / RTE: <i>RTEname</i> CONFIGURE THE TEMS (V610) / RTE: <i>RTEname</i>			
Each RTE can contain only one TEMS. To configure Last selected the TEMS for this RTE, perform these steps in order: Date Time			
I Configuration information (What's New)			
 Create LU6.2 logmode Specify configuration values Specify communication protocols Create runtime members Configure persistent datastore Complete the configuration 			
Optional:			
7 View TEMS list and registration status 8 Generate sample migration JCL			
F1=Help F3=Back			

Figure 31. Configure the TEMS menu: Configuration Tool

Tips

- You can select option I (**Configuration information: What's New**) to read about updates to the Configuration Tool.
- Option 6 (**Complete the configuration**) involves steps to be performed outside the configuration panels. Therefore, the instructions are provided later in this chapter ("Step 6. Complete the configuration of the Tivoli Enterprise Monitoring Server and the monitoring agent" on page 93).

See "Configuration worksheet if the monitoring server is on a z/OS system" on page 28 for the values you have decided to specify.

Creating a logmode

To create a logmode, complete the following procedure:

1. From the **Configure the TEMS** menu (Figure 31 on page 81), enter 1 (Create LU 6.2 logmode).

The **Create LU6.2 Logmode** panel is displayed. This panel lets you specify the name of the LU6.2 logmode and logmode table required by the Tivoli Enterprise Monitoring Server.

```
COMMAND ===>

The TEMS requires an LU6.2 logmode. Complete the items on this panel and

press Enter to create a job that will assemble and link the required logmode.

LU6.2 logmode ==> CANCTDCS

Logmode table name ==> KDSMTAB1

VTAMLIB load library ==> SYS1.VTAMLIB

VTAM macro library ==> SYS1.SISTMAC1
```

Figure 32. Create LU6.2 Logmode panel: Configuration Tool

Tips

- If you use an existing LU6.2 logmode, you do not need to submit the job created from this panel. However, you must ensure that the existing logmode has the same VTAM attributes as the logmode contained in the job. Be sure to provide the logmode information, even if you do not intend to submit the job.
- The default value for VTAMLIB load library is SYS1.VTAMLIB, but you can specify another load library if you cannot or do not want to update VTAMLIB directly.
- 2. Review the values on the panel and specify site-specific values as needed. For the full list of parameters, press F1 (Help).
- 3. To accept the values, press Enter.

The JCL to create the logmode is displayed.

4. Review the JCL, edit it if necessary, and submit it. Verify that the job completes successfully and that all return codes are zero.

You are returned to the Configure the TEMS menu (Figure 31 on page 81).

Specifying configuration values

To specify the configuration values for the Tivoli Enterprise Monitoring Server, complete the following procedure:

1. From the **Configure the TEMS** menu (Figure 31 on page 81), enter 2 to display the **Specify Configuration Values** panel.

```
----- SPECIFY CONFIGURATION VALUES ------
COMMAND ===>
Started task
                     ==> CANSDSST
Type (Hub or Remote) ==> HUB
Security settings:
  Validate security? ==> N (Y, N)
  ITMS password encryption information:
    Integrated Cryptographic Service Facility (ICSF) installed? ==> N (Y, N)
      ICSF load library
      ==> CSF.SCSFMOD0
      ITMS encryption key
      ==> IBMTivoliMonitoringEncryptionKey
  Program to Program Interface (PPI) information:
    Forward Take Action commands to NetView for z/OS? ==> N (Y, N)
      NetView PPI receiver ==> CNMPCMDR
      TEMS PPI sender
                          ==>
Enter=Next F1=Help F3=Back F5=Advanced
```

Figure 33. Specify Configuration Values panel: Configuration Tool

2. Accept the defaults or provide the values appropriate for your site.

If this is your first Tivoli Enterprise Monitoring Server, you must define it as a hub.

Follow these guidelines for the Security settings section:

Validate security?

This option determines whether the hub Tivoli Enterprise Monitoring Server validates the user IDs and passwords of users signing on to the Tivoli Enterprise Portal. Leave the value N for now. If you set security validation to Y at this point, you will have difficulty completing the configuration steps and verifying the configuration. You can return to this panel and set security validation to Y later, after you set up security for the monitoring server (see Chapter 7, "Setting up security," on page 103). When security validation is enabled on this panel, validation of users is handled by the security system specified for the runtime environment (see Figure 29 on page 79).

Integrated Cryptographic Service Facility (ICSF) installed?

If the IBM Integrated Cryptographic Service Facility (ICSF) is installed and configured on the z/OS system, set the value to Y.

Important

The Tivoli Enterprise Portal Server assumes that the Tivoli Enterprise Monitoring Server is using ICSF encryption. If you set the ICSF value to N, the Tivoli Enterprise Monitoring Server uses an alternative, less secure encryption scheme.

Perform the following steps so that the portal server can connect to a monitoring server without ICSF:

- a. When you specify configuration values for the hub monitoring server on z/OS, answer N to the prompt Integrated
 Cryptographic Service Facility (ICSF) installed?
- b. After the monitoring server has been configured and is running, modify the portal server configuration to use the older, less robust encoding algorithm used by the hub monitoring server in the absence of ICSF:
 - 1) In a text editor, edit the file **kfwenv** in *drive*:\IBM\ITM\CNPS.
 - 2) In a line by itself, type the text USE EGG1 FLAG=Y
 - 3) Save the file and exit.
 - 4) Stop and restart the portal server.

ICSF load library

If ICSF is installed and configured on the z/OS system, specify the ICSF load library that contains the CSNB* modules used for password encryption.

If ICSF is not installed on the system, clear the field.

ITMS encryption key

Specify a unique, 32-byte password encryption key. When written to the key file, the encryption key value cannot be changed. The value is case-sensitive.

Note: Be sure to record the value you use for the key. You must use the same key during the installation of any components that communicate with this monitoring server.

If ICSF is not installed on the system, clear the field.

The **Program to Program Interface (PPI) information** section is optional. If desired, specify the PPI values that enable forwarding of Take Action commands to NetView for z/OS for authorization and execution. If you enable forwarding, you must also enable NetView to authorize the commands. See "Setting up NetView authentication of Take Action commands" on page 109.

For a full description of the parameters, press F1 (Help).

3. Press Enter to display the Specify Advanced Configuration Values panel.

----- SPECIFY ADVANCED CONFIGURATION VALUES ------COMMAND ===> Enable Web Services SOAP Server => Y (Y, N) Enable startup console messages ==> Y (Y, N) Enable communications trace => N (Y, N, D, M, A) Enable storage detail logging => Y (Y, N) Storage detail logging: Hours ==> 0 (0-24) Minutes ==> 60 (0-60) Flush VSAM buffers: Hours ==> 0 (0-24) Minutes ==> 30 (0-60) Virtual IP Address (VIPA) type ==> N (S=Static, D=Dynamic, N=None) Minimum extended storage ==> 150000 K Maximum storage request size ==> 16 (Primary) ==> 23 (Extended) Language locale ==> 1 (Press F1=Help for a list of codes) Persistent datastore parameters: Maintenance procedure prefix ==> KPDPROC Datastore file high-level prefix ==> hilev Volume ==> PRI140 Storclas ==> Unit ==> 3390 Mgmtclas ==> Enter=Next F1=Help F3=Back F10=CMS List

Figure 34. Specify Advanced Configuration Values panel: Configuration Tool

Accept the defaults or specify other values.

- Accept the default value of Y for Enable Web Services SOAP Server. The Web Services SOAP Server is required to be enabled for a hub monitoring server. Press F1 for information about the SOAP Server.
- Language locale is a required field and has no default. Specify a numeric value (1 through 36) representing the language and region for the z/OS system. (Example: 1 for United States English.) For a list of the language locale values, press F1.
- The first two parameters in the **Persistent datastore parameters** section of the panel are required, even though Tivoli Tape Optimizer Monitoring Agent requires that historical data collection be configured at the location of the monitoring agent rather than at the location of the monitoring server. Accept the default values.
- Press Enter twice to return to the Configure the TEMS menu (Figure 31 on page 81).

Specifying communication protocols

To specify protocols for communications between the Tivoli Enterprise Monitoring Server and the other components of Tivoli Tape Optimizer Monitoring Agent, complete the following procedure:

1. From the **Configure the TEMS** menu, enter 3 to display the **Specify Communication Protocols** panel.

```
------ SPECIFY COMMUNICATION PROTOCOLS ------
COMMAND ===>
Specify the communication protocols in priority sequence for
TEMS RTEname:CMS.

IP.PIPE ==> 1 (Non-secure NCS RPC)
IP.UDP ==> 2 (Non-secure NCS RPC)
IP6.PIPE ==> (IP.PIPE for IPV6)
IP6.UDP ==> (IP.UDP for IPV6)
IP.SPIPE ==> (Secure IP.PIPE for IPV6)
SNA.PIPE ==> 3 (Non-secure NCS RPC)
Note: One of the protocols chosen must be SNA.PIPE.
 * Web Services SOAP Server is enabled: TCP protocol is required.
Enter=Next F1=Help F3=Back
```

Figure 35. Specify Communication Protocols panel: Configuration Tool

This panel lists the communication protocols to be used by the monitoring server. The number beside each protocol indicates its priority. When communication with another component is initiated, the monitoring server tries Protocol 1 first and goes to Protocol 2 and then to Protocol 3 in case of failure.

- 2. Supply the priority number for each protocol you want to select. SNA.PIPE must be one of the protocols chosen but need not be Protocol 1. At least one of the protocols chosen must match a protocol that you intend to specify for the Tivoli Tape Optimizer Monitoring Agent. For definitions of the communication protocols, see "Configuration worksheet for communication protocols if the monitoring server is on a z/OS system" on page 30.
- 3. When you have listed the protocols, press Enter. You are presented with panels for the protocols you specified.
 - IP.PIPE

Figure 36 shows the Specify IP.PIPE Communication Protocol panel.

```
------ SPECIFY IP.PIPE COMMUNICATION PROTOCOL ------
COMMAND ===>
Specify the IP.PIPE communication values for this TEMS.
 * Hostname
  Hostname

Address ==>

Started task ==> * (Recommended default = *)

interface list: (If applicable)
 * Address
 Specify IP.PIPE and Web Services SOAP Server configuration.
  Port number ==> 1918 (IP.PIPE)
                          ==> (IP.PIPE for IPV6)
==> (Secure IP.PIPE)
==> (Secure IP.PIPE for IPV6)
  Port number
  Port number
                         ==>
  Port number
  HTTP server port number ==> 1920
   Access TEMS list via SOAP Server? ==> Y (Y, N)
  Address translation ==> N
                                       (Y, N)
     Partition name
                          ==>
 * Note: See F1=Help for TSO HOMETEST command instructions.
 Enter=Next F1=Help F3=Back
```

Figure 36. Specify IP.PIPE Communication Protocol panel: Configuration Tool

Hostname

The TCP/IP host name of the z/OS system where the hub monitoring server is installed. To obtain the host name, enter TS0 HOMETEST at the command line.

If the z/OS domain name resolver configuration specifies a search path that includes the target domain suffix, specify only the first qualifier of the host name. (Example: sys is the first qualifier of the fully qualified host name sys.ibm.com.) Otherwise, specify the fully qualified host name.

Address

The IP address of the z/OS system where the Tivoli Enterprise Monitoring Server is installed. To obtain the IP address, enter TS0 HOMETEST at the command line.

Started task

The started task name of the TCP/IP server. The default value of * (asterisk) allows the IP stack to find the TCP/IP image dynamically, if it is available.

Network interface list

A list of network interfaces for the monitoring server to use. This parameter is required for sites that are running more than one TCP/IP interface or network adapter on the same z/OS image. Setting this parameter allows you to direct the monitoring server to connect to a specific TCP/IP local interface.

Specify each network adapter by the host name or IP address to be used for input and output. Use a blank space to separate the entries.

If your site supports DNS, you can enter IP addresses or short host names. If your site does not support DNS, you must enter fully qualified host names.

If you specify an interface address or a list of interface addresses, the Configuration Tool generates the KDEB_INTERFACELIST parameter in the KDSENV member of the *&rhilev*. *&rtename*.RKANPARU library.

Port number

The address of the IP port. The default port number is 1918 for nonsecure IP protocols and 3660 for secure IP protocols.

Note: The same TCP/IP port number must be used for every monitoring server in the enterprise. Also, make sure that the monitoring server well-known port is not on the TCP/IP reserved port list.

HTTP server port number

Accept the default value of 1920. This field is required but is used only for the SOAP Server.

Access TEMS list via SOAP Server?

Accept the default value of Y. The Web Services SOAP Server is required to be enabled for a hub monitoring server. Press F1 for information about the SOAP Server.

Address translation

By default, Ephemeral Pipe Support (EPS) is enabled automatically to allow IP.PIPE connections to cross a (network address) translating firewall. This feature obviates the need for a broker partition file (KDC_PARTITIONFILE=KDCPART). If you specifically want to disable EPS, specify Y for **Address translation**.

When you press Enter after providing the IP.PIPE configuration values, you are presented with the **SOAP Server KSHXHUBS List** panel.

```
----- SOAP SERVER KSHXHUBS LIST / RTE: RTEname ----- Row 1 from 1
COMMAND ===>
The following Hub TEMS list is eligible for SOAP Server access.
 RTE: RTEname
               Local SOAP Server: RTEname:CMS
           A Add TEMS, U Update TEMS, D Delete TEMS,
Actions:
           V View TEMS, S Secure TEMS,
           G Grant global security access, C Copy TEMS
      RTE name TEMS name
                                                 Preferred TEMS
                                                 protocol
                                                           secured
      RTEname RTEname:CMS
                                                 IPPIPE
                                                           Ν
F1=Help F3=Back F7=Up F8=Down
```

Figure 37. SOAP Server KSHXHUBS List panel: Configuration Tool

This panel lists the hub monitoring servers that are eligible for SOAP Server access. The list is maintained in the KSHXHUBS member of the RKANPARU library. The monitoring server you are configuring is shown on the list.

Press F3 (Back) to return to the communication protocol configuration panels.

IP.UDP

The field definitions and instructions for the IP.UDP protocol are the same as those for the IP.PIPE protocol, except that address translation does not apply to IP.UDP.

• SNA.PIPE

Figure 38 shows the Specify SNA Communication Protocol panel.

```
SPECIFY SNA COMMUNICATION PROTOCOL -----
COMMAND ===>
Specify the SNA communication values for this TEMS.
Applid prefix ==> DS
Network ID ==> (NETID value from SYS1.VTAMLST(ATCSTRnn))
Enter=Next F1=Help F3=Back F6=Applids
```

Figure 38. Specify SNA Communication Protocol panel: Configuration Tool

Applid prefix

This value is used to create the VTAM applids required by the monitoring server. These applids begin with the prefix, and end with a specific value that makes each applid unique. The applids are contained in the VTAM major node.

Tip:

Enter README APP on the command line for more information on how the Configuration Tool processes VTAM applids. If System Variable support is enabled, enter README SYS on the command line for more information on how the Configuration Tool processes VTAM applids using z/OS system symbols. Press F6 (Applids) for a list of the VTAM major node and applid values.

Network ID

The identifier of your VTAM network. You can locate this value on the NETID parameter in the VTAMLST startup member ATCSTR*nn*.

For detailed help about the required values, press F1.

When you press Enter on the last panel, you are returned to the **Configure the TEMS** menu.

Creating the runtime members

To create the runtime members required by Tivoli Enterprise Monitoring Server, complete the following procedure:

- 1. From the **Configure the TEMS** menu, enter 4 to display the job that creates the runtime members required by Tivoli Enterprise Monitoring Server. These members are created in the runtime libraries for this runtime environment.
- 2. Review the JCL, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero.
- 3. When the job finishes, return to the **Configure the TEMS** menu and then to the **Product Component Selection Menu**.
 - Tip

Even though **Configure persistent datastore** and **Complete the configuration** are included in the list of required steps on the **Configure the TEMS** menu, you do not need to perform them now. Option 6 (**Complete the configuration**) involves steps to be performed outside the configuration panels. Therefore, the instructions are provided later in this chapter (see "Step 6. Complete the configuration of the Tivoli Enterprise Monitoring Server and the monitoring agent" on page 93).

Step 4. Configure the monitoring agent

In this step, you register the Tivoli Tape Optimizer Monitoring Agent with the hub Tivoli Enterprise Monitoring Server, specify parameters for the agent address space, and create runtime members for the agent address space.

1. From the **Product Component Selection Menu** (Figure 30 on page 81), enter 2 to select IBM Tivoli Tape Optimizer on z/OS.

The Configure Tivoli Tape Optimizer Monitoring Agent menu is displayed.

/ Configure IBM Tivoli Tape Optimizer on z/OS / RTE OPTION ===>			
Perform the appropriate configuration steps in order:	Last selected Date Time		
I Configuration information (What's New)	<=== Revised		
1 Specify Agent parameters			
If you have defined a TEMS in this RTE that this Agent will communicate with, select option 2. 2 Register with local TEMS			
Agent address space configuration: 3 Specify Agent address space parameters 4 Create runtime members 5 Configure persistent datastore (in Agent)			
6 Complete the configuration			
Note: This Agent is running in its own Agent address sp	pace.		

Figure 39. Configure Tivoli Tape Optimizer Monitoring Agent menu: Configuration Tool

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If you see <=== Revised beside option I (Configuration information, What's New), select option I first and read the information about changes to the agent configuration.

For this configuration, you select options 1, 2, 3 and 4 (Specify Agent parameters, Register with local TEMS, Specify agent address space parameters, and Create runtime members). If you want to enable historical reporting, select option 5 (Configure persistent datastore in Agent) as well. You complete the configuration (option 6) later, after completing the first four options and loading the runtime libraries.

2. From the **Configure IBM Tivoli Tape Optimizer on z/OS** menu, enter 1 **Specify Agent parameters** to display the **Specify Agent parameters** panel.

SPECIFY AGENT PARAMETERS Command ===>				
Data Collector started task name	==> KRSTEDA			
Agent/Provider communications port	==> 2097			
Time in seconds that the agent will cache collected metrics.	==> 30			
Timeout in seconds for Take Action commands.	==> 60			
Number of asyn events to cache in each pure event table	==> 1000			
Timeout in seconds for data collection requests.	==> 60			
Note: Press F1 for help, before modifying any of these parameters.				

Figure 40. Specify Agent Parameters panel: Configuration Tool
- 3. On the **Specify Agent parameters** panel, provide the required information:
 - · Specify the started task name for the Data Collector.
 - Specify the agent communications port.

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- Specify the time, in seconds, that the agent will cache collected metrics.
- Specify the timeout, in seconds, for Take Action commands.
- Specify the number of asynchronous events to cache in each pure event table.
- · Specify the timeout, in seconds, for data collection requests.
- 4. When you are finished specifying the agent parameters, press PF3 (Back) to return to the **Configure IBM Tivoli Tape Optimizer on z/OS** menu.
- 5. From the **Configure IBM Tivoli Tape Optimizer on z/OS** menu, enter 2 (**Register with local TEMS**).

This step produces and displays JCL for the job that enables the Tape Optimizer monitoring agent to transmit data to the Tivoli Enterprise Monitoring Server.

- 6. Review the JCL, edit if necessary, and submit. Verify that the job completes successfully. All return codes must be zero.
- 7. After the job completes, press F3 (Back) to return to the **Configure IBM Tivoli Tape Optimizer on z/OS** menu.
- 8. From the **Configure Tivoli Tape Optimizer Monitoring Agent** menu, enter 3 to display the **Specify Agent Address Space Parameters** panel.

Figure 41. Specify Agent Address Space Parameters panel: Configuration Tool

- 9. On the **Specify Agent Address Space Parameters** panel, provide the required information:
 - Supply the started task name for the agent.
 - Specify Y for **Connect to TEMS in the RTE**. Leave the name of the primary Tivoli Enterprise Monitoring Server blank for now.
 - Supply the priority number for each protocol you want to select. When communication with the monitoring server is initiated, the monitoring agent tries Protocol 1 first and goes to Protocol 2 and then to Protocol 3 in case of failure. Be sure to specify the same protocols you specified for the monitoring server (see "Specifying communication protocols" on page 85). For definitions of the communication protocols and values to provide for each, see "Configuration worksheet for communication protocols if the monitoring server is on a z/OS system" on page 30.

10. Press Enter to display the **Specify Advanced Agent Configuration Values** panel.

```
------ SPECIFY ADVANCED AGENT CONFIGURATION VALUES ------
COMMAND ===>
Specify the advanced configuration options for this Agent.
  Enable secondary TEMS
                               ==> N
                                          (Y, N)
   Name of secondary TEMS ==> None
  Enable startup console messages ==> N
                                          (Y, N)
  Enable WTO messages ==> N
                                         (Y, N)
  Intervals (hh:mm):
    Storage detail logging: Hours ==> 0 (0-24) Minutes ==> 60 (0-60)
    Flush VSAM buffers: Hours ==> 0 (0-24) Minutes ==> 30 (0-60)
  Minimum extended storage ==> 60000 K
Language locale ==> (Dece ==>
  Program to Program Interface (PPI) information:
      Forward Take Action commands to NetView for z/OS? ==> N (Y, N)
         NetView PPI receiver ==> CNMPCMDR
         Agent PPI sender
                                   ==>
 Enter=Next F1=Help F3=Back F10=CMS List
```

Figure 42. Specify Advanced Agent Configuration Values panel: Configuration Tool

Accept the defaults or specify other values.

Language locale is a required field and has no default. Specify a numeric value (1 through 36) representing the language and region for the z/OS system. (Example: 1 for United States English.) For a list of the language locale values, press F1.

The **Program to Program Interface (PPI) information** section is optional. If desired, specify the PPI values that enable forwarding of Take Action commands to NetView for z/OS for authorization and execution. If you enable forwarding, you must also enable NetView to authorize the commands. See "Setting up NetView authentication of Take Action commands" on page 109.

- 11. Press Enter, then press Enter again to display a series of panels prompting you for values for each communication protocol you selected. Enter the values you recorded in "Configuration worksheet for communication protocols if the monitoring server is on a z/OS system" on page 30.
- 12. Press Enter to return to the **Configure Tivoli Tape Optimizer Monitoring Agent** menu (Figure 39 on page 90).
- 13. Enter 4 (**Create runtime members**) to open JCL that you can review, edit, and submit. Check to make sure the return code is zero.
- 14. After the job completes, press F3 (Back) to return to the **Configure Tivoli Tape Optimizer Monitoring Agent** menu.
- 15. If you want to enable historical reporting, select option 5 to configure the persistent data store. Otherwise, skip this step.

For instructions on configuring the persistent data store, see *IBM Tivoli Monitoring: Configuring IBM Tivoli Enterprise Monitoring Server on z/OS* and *IBM Tivoli Monitoring: Administrator's Guide*.

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Important

Both the Configuration Tool and Tivoli Enterprise Portal allow you to configure historical data collection either at the location of the monitoring agent (called TEMA, or Tivoli Enterprise Monitoring Agent, in the Tivoli Enterprise Portal) or at the location of the monitoring server to which the monitoring agent reports.

16. Go on to "Step 5. Load the runtime libraries."

– Tip

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Even though **Complete the configuration** is an option on the **Configure Tivoli Tape Optimizer Monitoring Agent** menu, you must load the runtime libraries from the SMP/E target libraries before you perform the tasks required to complete the configuration. If you select **Complete the configuration** (option 6 on the **Configure Tivoli Tape Optimizer Monitoring Agent** menu), the Configuration Tool displays a list of the steps you must take outside the Configuration Tool. You can examine and print the list now.

Step 5. Load the runtime libraries

Before you complete the configuration of the product outside the Configuration Tool, you must load the runtime libraries from the SMP/E target libraries. The load job requires exclusive access to the runtime libraries.

- 1. From the **Configure Tivoli Tape Optimizer Monitoring Agent** menu, return to the **Runtime Environments (RTEs)** panel (Figure 27 on page 77).
- 2. Type L in the **Action** field to the left of the runtime environment in which you have just configured Tivoli Tape Optimizer Monitoring Agent and press Enter.
- 3. Review the JCL and submit the job. Verify that the job completes successfully and that the return code is 04 or less.
- 4. When you finish loading the libraries, press F3 (Back) to return to the **Runtime Environments (RTEs)** panel.

Step 6. Complete the configuration of the Tivoli Enterprise Monitoring Server and the monitoring agent

To complete the configuration, perform the following steps in the order shown.

- 1. Copy the started task procedures to your procedure library.
 - a. From the **Runtime Environments (RTEs)** panel (Figure 27 on page 77), enter Z (Utilities) next to your runtime definition to open the **RTE Utility Menu**.

```
Private After the CB#VJH job runs, edit the RKANPARU(midlvl)
parameter member and follow the directions to ensure the
proper resolution of cross-system variables.
```

Figure 43. RTE Utility Menu: Configuration Tool

- b. On the **RTE Utility Menu**, enter 6 to display the **Generate sample system** procedure copy JCL panel.
- c. Type the name of your procedure library (for example, USER.PROCLIB). Press Enter.
- d. The JCL is displayed for you to review, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero.

This job creates a member called KCISYPJB in the RKANSAMU library.

e. Edit KCISYPJB and submit the job. Verify that the job completes successfully and that all return codes are zero.

This job copies all the required started tasks from your RKANSAMU library to the specified procedure library. The code contains the names of all the started tasks created during configuration.

- Copy the VTAM definitions to your SYS1.VTAMLST. Even if you have not configured the monitoring agent to use SNA, the Tivoli Enterprise Monitoring Server on z/OS requires SNA as one of its communication protocols, so you must copy the VTAM definitions from your Tivoli Enterprise Monitoring Server configuration to SYS1.VTAMLST.
 - a. On the **RTE Utility Menu**, enter 7 to display the **Generate sample system VTAMLST copy JCL** panel.
 - b. Type the name of your VTAM major node and press Enter.
 - c. The JCL is displayed for you to review, edit if necessary, and submit. Verify that the job completes successfully and that all return codes are zero. This job creates a member called KCISYNJB in the RKANSAMU library.
 - d. Edit KCISYNJB and submit the job. Verify that the job completes successfully and that all return codes are zero.
 This job copies all the required VTAM definitions from your RKANSAMU library to the specified VTAMLST.
- 3. Vary the VTAM major node active. Example:

V NET,ACT,ID=OMEGKRW

4. APF-authorize the runtime load libraries concatenated in the STEPLIB DDNAME and in the RKANMODL DDNAME of the started tasks.

 	5.	Start the started tasks for the monitoring server, the monitoring agent and the data collection agent.
I	6.	Verify successful startup.
		a. In the RKLVLOG for the monitoring server address space, look for the following messages to indicate successful startup:
I		KO4SRV032 Tivoli Enterprise Monitoring Server (TEMS) startup complete.
 		 In the RKLVLOG for the monitoring agent address space, look for the following message to indicate successful startup:
I		KRAIRA000 Starting HEARTBEAT
		c. In the JES message log for the data collection agent address space, look for the following message to indicate successful startup:
I		KRS0127I KRS Agent task name <i>agent_name</i> initialization complete
		If you do not find the messages shown, review the steps performed and look for errors. If you need assistance, see "Support information" on page 145.

Step 7. Install Tivoli Enterprise Portal Server and client on a Windows workstation

Install at least one Tivoli Enterprise Portal Server for each hub Tivoli Enterprise Monitoring Server. You can connect more than one Tivoli Enterprise Portal Server to a hub Tivoli Enterprise Monitoring Server, for example, to provide a test environment and a production environment.

The instructions in this step assume that the operating system on the workstation is Windows XP Professional Edition with Service Pack 1. For complete information about hardware and software requirements for the Tivoli Monitoring Services components, and for instructions for installing and configuring the components on a Linux or UNIX system, see the *IBM Tivoli Monitoring: Installation and Setup Guide*.

- Tip

Install only the Tivoli Enterprise Portal Server and desktop client components. You do not need to install the hub Tivoli Enterprise Monitoring Server on the Windows system, because you already installed and configured it on a z/OS system. If you plan to install the hub Tivoli Enterprise Monitoring Server on Windows, UNIX, or Linux, see Chapter 5, "Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image," on page 53.

Installing the DB2 Universal Database software

Tivoli Enterprise Portal Server requires DB2 Universal Database (DB2 UDB) Workgroup Server Edition. DB2 UDB version 8.2 is provided in the Tivoli Tape Optimizer Monitoring Agent installation package. If DB2 UDB version 8 or higher is already installed on the workstation where you plan to install a Tivoli Enterprise Portal Server, you can skip this procedure and go directly to "Installing and configuring Tivoli Enterprise Portal Server and desktop client" on page 97.

 On the Windows system where you plan to install the Tivoli Enterprise Portal Server, log on with a local ID that has Administrator authority. The DB2 Universal Database installation adds a local **db2admin** user account to Windows, and local Administrator authority is required for creating this account. Without the **db2admin** ID, DB2 UDB is unable to create the Tivoli Enterprise Portal Server database, and the Tivoli Enterprise Portal Server cannot start.

- 2. Insert the *DB2 Universal Database Workgroup Server Edition CD* to start the installer.
- 3. Select **Install Products**. Read and accept the license agreement, and proceed through the installer windows until you reach the **Installation Type** window.
- 4. On the **Installation Type** window, accept the defaults. Do not select **Data warehousing**.
- 5. On the **Select the installation folder** window, change the installation drive if necessary.
- 6. Set user information for the DB2 Administration Server:
 - a. You can either accept the user name of **db2admin** or use a different name.
 - b. Enter a password.

Important

DB2 UDB requires the user name and password for all administrative tasks, including installation and configuration of the Tivoli Enterprise Portal Server.

- If the Local Security Settings on the Windows system require complex passwords, use a password that fits the system requirements:
 - Not containing the user's account name.
 - Being at least six characters in length.
 - Containing characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphanumeric characters (Examples: !, \$, #, %)

For information about Local Security Settings and password complexity, see the Windows system help.

- If you change the **db2admin** password after DB2 UDB installation, you receive error messages when you try to install the Tivoli Enterprise Portal Server. If your Local Security Settings require you to change the password, wait to do so until you finish installing the Tivoli Enterprise Portal Server. See *IBM Tivoli Monitoring: Problem Determination Guide* for troubleshooting information.
- c. Do not enter a domain name in the drop-down list.
- 7. On the remaining windows, select the defaults.
- 8. Click Install to start copying the files.
- After the DB2 UDB installation is complete, restart Windows before installing the Tivoli Enterprise Portal Server. Do this even if the DB2 UDB installer does not ask you to.
- 10. If the Local Security Settings on the Windows system require complex passwords, you must create a new Windows user account for the Tivoli Enterprise Portal Server before you begin installing it. The default database user account name of the Tivoli Enterprise Portal Server is **TEPS**, but you can assign any name no longer than eight characters that meets your site's requirements for user IDs. Use a password that fits the Windows system requirements for complex passwords:
 - Not containing the user account name.
 - Being at least six characters long.
 - Containing characters from three of the following categories:

- English uppercase characters (A through Z)
- English lowercase characters (a through z)
- Base 10 digits (0 through 9)
- Non-alphanumeric characters (Examples: !, \$, #, %)

For information about Local Security Settings and password complexity, see the Windows system help.

Installing and configuring Tivoli Enterprise Portal Server and desktop client

Complete the following steps to install Tivoli Enterprise Portal Server and desktop client on a Windows workstation where DB2 UDB is already installed:

- 1. Begin the installation.
 - a. Log on to Windows with an ID that has local Administrator authority, and close any running applications.
 - b. Insert the *IBM Tivoli Monitoring Services on z/OS CD* into the CD-ROM drive.

Installation begins automatically. If the installer does not start, go to the Windows directory on your CD-ROM drive and run **setup.exe**. If **setup.exe** initialization fails, you might not have enough free disk space to extract the setup files.

- c. Read the text that welcomes you to the installation, and click **Next** to continue.
- d. On the **Install Prerequisites** window, read the information about the required levels of IBM Global Security Kit and IBM Java.

The check box for each prerequisite is cleared if the correct level of the software is already installed on the workstation. Otherwise, the check box is selected to indicate that the software is to be installed.

e. Click Next to continue.

If Global Security Kit or Java is selected for installation, it is installed now. After installation of the prerequisite software is complete, you might be prompted to reboot the computer. In that case, you receive an abort message with a **Severe error** heading. This is normal and does not indicate a problem.

- If you are prompted to reboot, do the following:
- 1) Click **OK** on the window prompting you to reboot.
- 2) Click **No** on the window asking whether you want to view the abort log.
- 3) Restart the computer.
- 4) Restart the installation program.
- f. Read the software license agreement and click Accept.

The **Choose Destination Location** window is displayed. The default is $c:\IBM\ITM$.

- g. Accept the default and click Next.
- h. On the **User Data Encryption Key** window, type the same 32-bit encryption key you set for the monitoring server on z/OS (see "Specifying configuration values" on page 82), and click **Next**, then click **OK** to confirm the encryption key.
- 2. Select the components to install.
 - a. On the **Select Features** window, expand the list of features and select the following:

- Tivoli Enterprise Monitoring Agent Framework
- Tivoli Enterprise Portal Server Framework
- Tivoli Enterprise Portal Desktop Client
- IBM Eclipse Help Server
- b. Click Next.
- c. On the Agent Deployment window, clear the check boxes for both Universal Agent and Monitoring Agent for Windows OS. These selections do not apply to the Tivoli Tape Optimizer Monitoring Agent . Click Next.
- d. On the Select Program Folder window, accept the default and click Next.
- 3. On the TEPS Desktop and Browser Signon ID and Password window, provide and confirm a password to be used by the Tivoli Enterprise Portal desktop or browser client for initial access to the Tivoli Enterprise Portal Server. The initial user ID sysadmin cannot be changed. You can add other user IDs after installation. For instructions, see the Tivoli Enterprise Portal online help or the *IBM Tivoli Monitoring: Administrator's Guide*.
- Click Next and review the installation summary details. This summary identifies what you are installing and where you chose to install it. Click Next to begin the installation of components.
- On the Setup Type window, clear the Launch Manage Tivoli Monitoring Services check box, and make sure that Configure Tivoli Enterprise Portal is selected. Click Next.
- 6. Configure the Tivoli Enterprise Portal.
 - a. On the **TEPS Hostname** window, make sure that the host name of the Tivoli Enterprise Portal Server is correct and does not include the domain name. Click **Next**.
 - b. On the TEPS Data Source Config Parameters window, enter the db2admin account password and a password for the Tivoli Enterprise Portal Server database user.
 - Тір

To have one less password to remember, you can use the same password for the **db2admin** account and the Tivoli Enterprise Portal Server database user account (default user account name **TEPS**, or the account name you set in 10 on page 96). If the Local Security Settings on the Windows system require complex passwords, use a password that fits the system requirements:

- Not containing the user account name.
- Being at least six characters in length.
- · Containing characters from three of the following categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphanumeric characters (Examples: !, \$, #, %)

For more information about Local Security Settings and password complexity, see the Windows system help. See *IBM Tivoli Monitoring: Problem Determination Guide* for Tivoli Enterprise Portal troubleshooting information.

c. Click OK.

This step takes a few moments to complete while it populates the database.

- d. On the Success window, click OK.
- e. If you want to enable historical reporting, supply a user ID and password for use by the Tivoli Enterprise Portal Server to access the Tivoli Data Warehouse, and click **Next**. Otherwise, click **Next** without specifying any values on the **Warehouse ID and Password for TEP Server** window.
- f. On the **TEP Server Configuration** window, select the same communication protocols you specified for the monitoring server to use in communicating with the other components. Click **OK**.
- g. On the next **TEP Server Configuration** window, enter the fully qualified host name of the z/OS system where the hub Tivoli Enterprise Monitoring Server is installed. Also enter the port number you specified when configuring the hub Tivoli Enterprise Monitoring Server. Supply any other values required for the selected communication protocols. Use the values you established in "Configuration worksheet for communication protocols if the monitoring server is on a z/OS system" on page 30. Because IBM Tivoli Monitoring is case-sensitive, select **Convert to upper case** to reduce the chance of user error. Click **OK**.
- When you are prompted to reconfigure the warehouse connection information, click **Yes** if you are enabling historical data collection. Otherwise, click **No** and skip the rest of this step.

If you clicked Yes, follow these steps:

- On the Warehouse Proxy Database Selection window, select the type of database you want to use for the warehouse data source and click OK.
- Provide the values required for the selected database type and click OK. For detailed instructions, see *IBM Tivoli Monitoring: Installation and Setup Guide*, GC32-9407 and *IBM Tivoli Monitoring: Administrator's Guide*, SC32-9408.
- 3) Click **OK** on the **Successfully configured warehouse data source** window.
- 7. On the **InstallShield Wizard Complete** window, select **Display the README file** and click **Finish**.

Step 8. Install Tivoli Tape Optimizer Monitoring Agent application support

The *IBM Tivoli Tape Optimizer on z/OS Support Files for z/OS* CD contains the product-specific application support data required by distributed components and by the hub Tivoli Enterprise Monitoring Server (on any platform).

Important

If you have installed a previous version of application support for Tivoli Tape Optimizer on z/OS, you must uninstall it prior to installing application support for Tivoli Tape Optimizer on z/OS for this release. Application support can be uninstalled from the Windows **Add or Remove Programs** function in the Control Panel.

To install Tivoli Tape Optimizer Monitoring Agent application support, follow this procedure:

1. Insert the *Tivoli Tape Optimizer Monitoring Agent Data Files for z/OS* CD into the CD-ROM drive of the Windows workstation that hosts the Tivoli Enterprise Portal Server and desktop client.

Installation begins automatically. If the installer does not start, go to the Windows directory on your CD-ROM drive and run **setup.exe**. If **setup.exe** initialization fails, you might not have enough free disk space to extract the setup files.

- 2. Read the text that welcomes you to the installation, and click **Next** to continue.
- On the Install Prerequisites window, both check boxes are cleared, to indicate that the required software is already installed. Click Next to continue.
- 4. Read the software license agreement and click Accept.
- On the Select Features window, select Tivoli Tape Optimizer Support for these components:
 - Tivoli Enterprise Portal Server
 - Tivoli Enterprise Portal Desktop Client
- 6. Click **Next** to continue.
- 7. On the **Start Copying Files** window, read the list of actions to be performed, and click **Next**.

Application support for Tivoli Tape Optimizer Monitoring Agent is installed on the components you selected.

- 8. On the **Setup Type** window, select **Configure Tivoli Enterprise Portal** and clear the check boxes for the other items. Click **Next**.
- On the TEPS Hostname window, make sure that the host name of the Tivoli Enterprise Portal Server is correct and does not include the domain name. Click Next.
- 10. On the **InstallShield Wizard Complete** window, select **Display the README file** and click **Finish**.
- 11. Add application support to the hub Tivoli Enterprise Monitoring Server on z/OS.
 - a. Ensure that the hub Tivoli Enterprise Monitoring Server is running.
 - b. On the Windows workstation, select Start > Programs (or All Programs)
 > IBM Tivoli Monitoring > Manage Tivoli Monitoring Services.
 - c. Select Actions > Advanced > Add TEMS application support.
 - d. On the Add application support to the TEMS window, select On a different computer and click OK.
 - e. When you are prompted to ensure that the Tivoli Enterprise Monitoring Server is configured and running, click **OK**.
 - f. On the **Non-Resident TEMS Connection** window, provide the hub monitoring server TEMS name (node ID) and select the communication protocol to use in sending the application support to the hub monitoring server on z/OS.

If you made a note of the TEMS name displayed in the **Add Runtime Environment (1 of 2)** panel (Figure 28 on page 78), find it now. You might have recorded it in "Configuration worksheet if the monitoring server is on a z/OS system" on page 28. Otherwise, you can find the TEMS name as the value of the CMS_NODEID variable in this location:

&rhilev.&sys.RKANPARU(KDSENV)

g. On the next window, provide any values required by the communication protocol.

For example, if the protocol is IP.PIPE, you are prompted for the fully qualified TCP/IP host name and port number of the z/OS system where the

hub Tivoli Enterprise Monitoring Server is installed. See "Configuration worksheet if the monitoring server is on a z/OS system" on page 28 for the values you recorded during installation planning.

- h. On the Select the application support to add to the TEMS window, select Tivoli Tape Optimizer support and click OK.
- i. When the application support has been added to the monitoring server (this might take several minutes), a window gives you information about the status and location of the application support (also called *seeding* or *seed data*). Click **Save As** if you want to save the information in a text file. Click **Close** to close the window.
- j. Stop and restart the hub Tivoli Enterprise Monitoring Server.

Step 9. Verify the configuration

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Now that you have completed the configuration, you can verify that it is successful. Verification involves starting these components:

- Tivoli Enterprise Monitoring Server and monitoring agent started tasks on your z/OS system.
- Tivoli Enterprise Portal Server through Manage Tivoli Monitoring Services on your workstation.
- Tivoli Enterprise Portal desktop client through Manage Tivoli Monitoring Services on your workstation.

To do this, complete the following procedure:

- 1. Start the started tasks for the monitoring server and the monitoring agent.
- 2. Verify successful startup.
- a. In the RKLVLOG for the monitoring server address space, look for the following messages to indicate successful startup:
 K04SRV032 Tivoli Enterprise Monitoring Server (TEMS) startup complete.
 - In the RKLVLOG for the monitoring agent address space, look for the following message to indicate successful startup:
 KRAIRA000 Starting HEARTBEAT
 - c. In the In the JES message log for the data collection agent address space, look for the following message to indicate successful startup:

KRS0127I KRS Agent task name *agent_name* initialization complete

- 3. On your workstation, select **Start > Programs (or All Programs) > IBM Tivoli Monitoring > Manage Tivoli Monitoring Services**.
- 4. To start the Tivoli Enterprise Portal Server, right-click its entry in **Manage Tivoli Monitoring Services** and click **Start**.
- 5. To start the Tivoli Enterprise Portal desktop client, right-click its entry in **Manage Tivoli Monitoring Services** and click **Start**.
- 6. When prompted, supply the user ID sysadmin and the password you specified for initial access to the Tivoli Enterprise Portal Server
- 7. When Tivoli Enterprise Portal opens, you can expand the navigator pane to see the Tape Optimizer workspaces.

For information about using the Tivoli Tape Optimizer Monitoring Agent workspaces and situations to monitor your sysplex resources and z/OS systems, see the online help and *Monitoring Agent's User's Guide*.

Setting up security

Now you can set up security for the product components. See Chapter 7, "Setting up security," on page 103.

Expanding this configuration

After you configure the hub Tivoli Enterprise Monitoring Server and a Tivoli Tape Optimizer Monitoring Agent in different address spaces of the same z/OS image, you can add agents in other z/OS images that you want to monitor. These additional agents are called *remote agents* because they are not on the same z/OS image as the hub Tivoli Enterprise Monitoring Server. To add remote monitoring agents, complete the following steps:

____ "Step 1. Define the runtime environment" on page 76

In this step, answer N for this RTE have a Tivoli Enterprise Monitoring Server on the Add Runtime Environment panel.

____ "Step 2. Build the runtime libraries" on page 80

You can skip Step 3 (Configure the hub Tivoli Enterprise Monitoring Server) because all the Tape Optimizer monitoring agents can communicate with the same hub Tivoli Enterprise Monitoring Server.

- ____ "Step 4. Configure the monitoring agent" on page 89
 - Register the remote monitoring agents with the hub Tivoli Enterprise Monitoring Server on the z/OS image where the hub is installed, not on the z/OS image where the monitoring agent is installed.
 - 2. To configure a remote monitoring agent, follow the instructions in "Step 5. Configure the monitoring agent" on page 66.
- ____ "Step 5. Load the runtime libraries" on page 93
- ____ "Step 6. Complete the configuration of the Tivoli Enterprise Monitoring Server and the monitoring agent" on page 93

You can skip Steps 7 and 8 (Install Tivoli Enterprise Portal Server and client on a Windows workstation, and Install Tivoli Tape Optimizer Monitoring Agent application support) because you performed these steps during configuration of the first monitoring agent.

____ "Step 9. Verify the configuration" on page 101

Batch mode processing

The Configuration Tool offers batch mode processing for several configuration scenarios. You can use the batch mode processing utility to configure runtime environments and monitoring agents without going through the ISPF panels and filling in parameter values there. After you establish and configure a runtime environment in a z/OS image, you can use the batch mode processing utility to replicate your runtime environment in other z/OS images. See Chapter 9, "Using batch mode processing," on page 119.

Chapter 7. Setting up security

This chapter explains three aspects of product security:

- Configuring user security
- "Tivoli Tape Optimizer Monitoring Agent security considerations" on page 108
- "Setting up NetView authentication of Take Action commands" on page 109

Configuring user security

You can control who has access to the Tivoli Enterprise Portal through authentication of user IDs and passwords. Initially, the Tivoli Enterprise Portal has only one valid user ID, sysadmin. You use this user ID to log on and create other users.

How you configure user security depends on the operating system where the hub Tivoli Enterprise Monitoring Server is installed.

Table 11. User security configuration methods

Operating system of the hub monitoring server	Method of Tivoli Enterprise Portal user authentication
z/OS	Security product specified in the Configuration Tool
Windows	User accounts
Linux and UNIX	Password files

For complete information about user security issues in the Tivoli Monitoring Services environment, see the Tivoli Enterprise Portal online help and the following IBM Tivoli Monitoring publications:

- Installation and Setup Guide
- Configuring IBM Tivoli Enterprise Monitoring Server on z/OS
- · Administrator's Guide

Setting up user security if the hub Tivoli Enterprise Monitoring Server is running on a z/OS system

If your hub Tivoli Enterprise Monitoring Server is running on z/OS, you need to configure RACF[®] or another supported security product to authenticate your Tivoli Enterprise Portal users. User IDs must also be defined on any Linux, UNIX, and Windows systems where distributed components are installed.

After you specify a security product and activate security validation by the hub monitoring server in the Configuration Tool, user access to the Tivoli Enterprise Portal is controlled by user ID and password validation at the monitoring server, using the selected security product.

Important

The first time you configure the Tivoli Enterprise Monitoring Server, you can select a security system for the runtime environment if desired, but be sure to leave security turned off in the **Security validation** field of the **Specify Configuration Values** panel (Figure 33 on page 83) for the monitoring server.

Security validation? ==> N (Y, N)

Steps to perform before turning on security validation

Before turning on security validation, perform the following steps:

- 1. Configure and start the Tivoli Enterprise Monitoring Server, Tivoli Tape Optimizer monitoring agent, and Tivoli Enterprise Portal Server, following the instructions in Chapter 6, "Configuring the hub monitoring server and the monitoring agent on a z/OS image," on page 75.
- 2. Use the sysadmin user ID to log on to the Tivoli Enterprise Portal, and create other user accounts with different levels of permissions. Be sure to create at least one Tivoli Enterprise Portal user account with administrator authority. All user accounts need valid TSO user IDs and passwords, for signing on to the Tivoli Enterprise Portal after security validation is turned on at the hub Tivoli Enterprise Monitoring Server on z/OS.

To create an administrator user account in the Tivoli Enterprise Portal, follow these steps:

- a. Click **Administer Users**.
- b. On the Administer Users window, select the sysadmin user account and click **Create Another User**.
- c. Create a user account with the same user ID as a valid TSO user ID. The new user account is based on the sysadmin account and therefore has administrator authority in the Tivoli Enterprise Portal.

For further instructions on managing user accounts, see the Tivoli Enterprise Portal online help or the *IBM Tivoli Monitoring: Administrator's Guide*.

3. Verify that your security product is installed and configured correctly.

Activating user security

After you have performed all the steps listed above, you can turn on user security at the Tivoli Enterprise Monitoring Server.

- If you have already specified a security system for the runtime environment where the hub Tivoli Enterprise Monitoring Server is installed and configured, skip to step 3. Otherwise, navigate in the Configuration Tool to the **Runtime Environments (RTEs)** panel (Figure 27 on page 77) and enter U (**Update**) in the **Action** field beside the name of the runtime environment where the hub Tivoli Enterprise Monitoring Server is installed and configured.
- 2. On the **Update Runtime Environment** panel, specify the security system you want to use, and press Enter. This example specifies RACF:

Security system ==> RACF (RACF, ACF2, TSS, NAM, None)

If you select ACF2, you must also specify the ACF2 macro library in the next field.

- 3. On the **Product Component Selection Menu** (Figure 30 on page 81), enter 1 to select Tivoli Enterprise Monitoring Server.
- 4. On the **Configure the TEMS** menu (Figure 31 on page 81), select option 2 (**Specify configuration values**).
- 5. On the **Specify Configuration Values** panel (Figure 33 on page 83), specify Y in the **Security validation?** field:

Security validation? ==> Y (Y, N)

- 6. Press Enter to return to the Configure the TEMS menu.
- On the Configure the TEMS menu, select option 4 (Create runtime members) to open JCL that you can review, edit, and submit. Check to make sure the return code is zero.

- After the job completes, press F3 (Back) repeatedly to exit the Configuration Tool.
- Locate the section for the security system you are using and follow the instructions:
 - "Defining security for RACF"
 - "Defining security for Network Access Method (NAM)"
 - "Defining security for CA-ACF2"
 - "Defining security for CA-TOP SECRET"
- 10. Verify that the user account you created, using a TSO user ID, can log on to the Tivoli Enterprise Portal.

Defining security for RACF

To implement RACF security, recycle the Tivoli Enterprise Monitoring Server started task.

Defining security for Network Access Method (NAM)

You can use the product-provided security feature NAM (Network Access Method) to secure your Tivoli Enterprise Monitoring Server. Complete the following steps to implement NAM security.

- 1. Access the z/OS system console.
- 2. Define a password for each user who accesses the Tivoli Enterprise Monitoring Server:

F taskname, NAM SET user_id PASSWORD=password

where *taskname* is the name of your Tivoli Enterprise Monitoring Server started task, *user_id* is the user ID, and *password* is the NAM password you want to define for that user.

3. Recycle the Tivoli Enterprise Monitoring Server started task.

Defining security for CA-ACF2

Complete the following steps to install an exit for CA-AF2 security validation.

- 1. Stop the Tivoli Enterprise Monitoring Server started task.
- Follow the instructions in KLVA2NEV to assemble and link KLVA2NEV. Change the variables as directed. Member KLVA2NEV in *&hilev.&rte*.TKANSAM is the product-supplied interface to CA-ACF2. The product-supplied member KLV@ASM, in *&hilev.&rte*.RKANSAM, contains sample assembly JCL, which is assembled into the RKANMODU data set for the specific runtime environment.
- 3. Define the Tivoli Enterprise Monitoring Server started task as a MUSASS to CA-ACF2:
 - Log on to TSO. At the READY prompt, type ACF and press Enter.
 - At the ACF prompt, type SET LID and press Enter.
 - · At the LID prompt, type

CH ctaskname MUSASS

where *taskname* is the name of the Tivoli Enterprise Monitoring Server started task. Press Enter.

- At the LID prompt, type END and press Enter.
- 4. Start the Tivoli Enterprise Monitoring Server started task.

Defining security for CA-TOP SECRET

Complete the following steps to implement CA-TOP SECRET security.

1. Stop the Tivoli Enterprise Monitoring Server started task.

 Define the Tivoli Enterprise Monitoring Server as a started task in the STC record and relate it to a master facility accessor identifier. For example: TSS ADD(STC) PROC(taskname) ACID(master facility acid)

where *taskname* is the name of your Tivoli Enterprise Monitoring Server started task. The value for *master_facility_acid* might be the same as *taskname*.

3. Define the name of your Tivoli Enterprise Monitoring Server started task as a FACILITY in the CA-TOP SECRET Facility Matrix Table. Set the SIGN parameter as SIGN(M) and set MODE to MODE=FAIL. Make sure the name of your Tivoli Enterprise Monitoring Server started task and the FACILITY name match.

Example: This example shows FACILITY statements for a site that uses CA-TOP SECRET. Some statements might not be relevant to your site or might need to be modified to fit the standards and configuration of your site.

FACILITY(<i>USER3</i> =NAME= <i>task</i>)	&#SPACE</th></tr><tr><td>FACILITY(task=MODE=FAIL,ACTIVE,SHRPRF)</td><td>&#SPACE</td></tr><tr><td>FACILITY(task=PGM=KLV,NOASUBM,NOABEND,NOXDEF)</td><td>&#SPACE</td></tr><tr><td>FACILITY(task=ID=3,MULTIUSER,RES,WARNPW,SIGN(</td><td>(M))&#SPACE</td></tr><tr><td>FACILITY(task=NOINSTDATA,NORNDPW,AUTHINIT,NOF</td><td>PROMPT,NOAUDIT,NOMRO)</td></tr><tr><td><pre>FACILITY(task=NOTSOC,LOG(INIT,SMF,MSG,SEC9))</pre></td><td>&#SPACE</td></tr><tr><td></td><td></td></tr></tbody></table>
---------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

4. Start the Tivoli Enterprise Monitoring Server started task.

Setting up security for a hub Tivoli Enterprise Monitoring Server running on a Windows, Linux, or UNIX system

When you install and configure the hub Tivoli Enterprise Monitoring Server on a Windows, Linux, or UNIX system, do not turn on security validation immediately. Make sure the **Security: Validate User** check box is cleared. To see this setting in **Manage Tivoli Monitoring Services**, right-click **Tivoli Enterprise Monitoring Server** and click **Reconfigure**.

Steps to perform before turning on security validation

Before turning on security validation, perform the following steps:

- 1. Configure and start the Tivoli Enterprise Monitoring Server, Tivoli Tape Optimizer monitoring agent, and Tivoli Enterprise Portal Server, following the instructions in Chapter 5, "Configuring the hub monitoring server on a Windows system and the monitoring agent on a z/OS image," on page 53.
- 2. Use the sysadmin user ID to log on to the Tivoli Enterprise Portal, and create other user accounts with different levels of permissions. Be sure to create at least one Tivoli Enterprise Portal user account with administrator authority and with the same user ID as one already set up in your network domain user accounts or in the operating system where the hub Tivoli Enterprise Monitoring Server is installed.

To create an administrator user account in the Tivoli Enterprise Portal, follow these steps:

- a. Click **Administer Users**.
- b. On the Administer Users window, select the sysadmin user account and click ***** Create Another User.
- c. Create a user account with the same user ID as one already set up in your network domain user accounts or in the operating system where the hub Tivoli Enterprise Monitoring Server is installed. The new user account is based on the sysadmin account and therefore has administrator authority in the Tivoli Enterprise Portal.

For further instructions on managing user accounts, see the Tivoli Enterprise Portal online help or the *IBM Tivoli Monitoring: Administrator's Guide*.

Activating user security

After you have performed the steps listed above, you can activate user security validation by the hub Tivoli Enterprise Monitoring Server:

- 1. In Manage Tivoli Monitoring Services, right-click Tivoli Enterprise Monitoring Server and click Reconfigure.
- 2. Select Security: Validate User.
- 3. Click OK twice.
- 4. Recycle the Tivoli Enterprise Monitoring Server.
- 5. Verify that the user account you created can log on to the Tivoli Enterprise Portal.

Tivoli Tape Optimizer Monitoring Agent security considerations

Access to the Tivoli Tape Optimizer Monitoring Agent workspaces and authority to perform various functions with the product are controlled through password validation. Administrative users of the Tivoli Enterprise Portal can set permissions for specific product features. It is important to provide access to the product only to users who can be trusted with the information and capabilities the product provides. For information about user administration, see *IBM Tivoli Monitoring: Administrator's Guide*.

Tivoli Tape Optimizer Monitoring Agent does not provide user-based security with respect to z/OS information displayed. All users of the product have access to the same z/OS reports. If you configure forwarding of Take Action commands to NetView on z/OS, then NetView performs user authorization and command execution. Otherwise, all users have the same Take Action command authority. See "Setting up NetView authentication of Take Action commands" on page 109.

Setting up security for Take Action command execution

For Take Action commands issued from the TEP client to be executed as z/OS commands, the TEP logon ID must be translated into a corresponding TSO user ID. For RACF, complete the following steps:

- 1. Create a RACF class named TEPUSER. A sample TSO command for doing this is provided in the TKANSAM target library member KRSRDEF.
- For each TEP logon ID that will be issuing Take Action commands, create a profile in the TEPUSER class. The profile name should be the TEP logon ID (which is case sensitive). Specify the corresponding RACF user ID as the APPLDATA value in the profile.
- 3. Ensure that the TEPUSER class is RACLISTed.

OMVS segment

To use the TCP/IP communication protocols, a Tivoli Enterprise Monitoring Server on z/OS requires a default OMVS segment. See the *z/OS Communications Server IP Configuration Guide* for an explanation of how to provide an OMVS segment.

Setting up NetView authentication of Take Action commands

You can configure a monitoring server or monitoring agent address space to redirect z/OS Take Action commands to NetView through the Program to Program Interface (PPI). Take Action commands issued in NetView make full System Authorization Facility (SAF) calls for authorization. NetView uses the Tivoli Enterprise Portal user ID to determine the NetView operator on which the command authorization is performed. If command authorization passes, the command is executed on the NetView operator. Messages are written to the NetView log to provide an audit trail of the commands and the users that issued them.

If you enable NetView command authorization on the monitoring server, you must also enable NetView to execute the commands.

Take Action forwarding requires NetView on z/OS V5.2 with APAR OA18449 applied.

To set up NetView authentication of Take Action commands, complete the steps below:

- 1. "Step 1. Configure NetView authentication in the Configuration Tool"
- 2. "Step 2. Add the NetView CNMLINK data set to the Tivoli Enterprise Monitoring Server started task" on page 110
- 3. "Step 3. Enable NetView to authorize Take Action commands" on page 110

Step 1. Configure NetView authentication in the Configuration Tool

You configure NetView authentication of Take Action commands on the following Configuration Tool panels:

- Tivoli Enterprise Monitoring Server: The **Specify Configuration Values** panel (Figure 33 on page 83).
- Tivoli Tape Optimizer on z/OS monitoring agent: The **Specify Advanced Agent Configuration Values** panel (Figure 42 on page 92).

The parameters for the monitoring server and the monitoring agent are the same.

Forward Take Action commands to NetView for z/OS?

Indicate whether you want z/OS console commands issued as Take Action commands to be forwarded to NetView for authorization and execution.

NetView PPI receiver

Specify the name of the PPI receiver on NetView that is to receive Take Action commands. This name is required if you answer Y to **Forward Take Action commands to NetView for z/OS?** and must match the receiver name specified on the NetView APSERV command. (The default name is **CNMPCMDR**.) If the specified name is incorrect or the receiver is not active on NetView for z/OS, default (MGCR) command routing is performed. The Configuration Tool generates the KGLHC_PPI_RECEIVER parameter in the *Kpp*ENV member of the *&rhilev.&rtename*.RKANPARU library (where *pp* is **DS** for the monitoring server or **RW** for the Tivoli Tape Optimizer Monitoring Agent).

The receiver name must be a unique identifier, up to 8 characters in length. It can contain alphabetic characters A-Z or a-z, numeric characters 0-9, and the following special characters: dollar sign (), percent sign (), ampersand (), at sign (), and number sign (). This value must match

the value specified in the NetView DSIPARM initialization member, CNMSTYLE (see "Step 3. Enable NetView to authorize Take Action commands").

The value for the monitoring agent defaults to the value set for the monitoring server, if one is configured in the same runtime environment. Otherwise, the default is CNMPCMDR.

TEMS PPI sender

Optionally, specify the name of the PPI sender. The value must be a unique identifier, up to 8 characters in length. It can contain alphabetic characters A-Z or a-z, numeric characters 0-9, and the following special characters: dollar sign (\$), percent sign (%), ampersand (&), at sign (@), and number sign (#). This name must not conflict with any NetView for z/OS domain name, as it is used in logging the command and command response in the NetView log. If a value is specified, the Configuration Tool generates the KGLHC_PPI_SENDER parameter in the KppENV member of the *&hilev.&rtename*.RKANPARU library (where pp is **DS** for the monitoring server or **RW** for the Tivoli Tape Optimizer Monitoring Agent).

If you do not specify a value in this field, the default is the job name of the Tivoli Enterprise Monitoring Server that is the source of the command.

Step 2. Add the NetView CNMLINK data set to the Tivoli Enterprise Monitoring Server started task

To connect to NetView, the monitoring server must reference the NetView CNMLINK data set. Concatenate the NetView CNMLINK data set to the RKANMODL statement in the Tivoli Enterprise Monitoring Server started task.

To provide the location, uncomment the CNMLINK DD card in the Tivoli Enterprise Monitoring Server started task and specify the NetView CNMLINK data set. For example:

000250		
000350	//KKANPODL	
000351	//	DSN= &RHILEV.&SYS.RKANMODU
000352	//	DD DISP=SHR,
000353	//	DSN= &RHILEV.&SYS.RKANMODUL
000354	//	DD DISP=SHR,
000355	//	DSN= &RHILEV.&SYS.RKANMOD
000356	//********	***************************************
000357	//* RKANMOD	L DD: CNMLINK
000358	//********	***************************************
000359	//* Uncomme	nt this DD card and specify the location of the CNMLINK
000360	//* load mo	dule for NetView for z/OS. This library is required for the
000361	//* "Forwar	d Take Action commands to NetView for z/OS" support which
000362	//* is enab	led for this Agent. The CNMLINK library must also be
000363	//* APF-aut	norized.
000364	// 1	DD DISP=SHR,
000365	//	DSN=NETVIEW.V5R2M0.CNMLINK

Contact your NetView for z/OS system programmer for the data set name, if necessary. The default NetView 5.2 CNMLINK data set is NETVIEW.V5R2M0.CNMLINK. The CNMLINK library must be APF-authorized.

Step 3. Enable NetView to authorize Take Action commands

If you have configured the monitoring server or monitoring agent address spaces to forward z/OS Take Action commands to NetView, you must also enable NetView to receive and execute the commands. NetView performs command authorization as part of the execution.

To enable execution of forwarded commands, complete the following steps:

1. Define Tivoli Enterprise Portal user IDs to NetView.

For information on defining user IDs, see the section "Defining operators for the NetView for z/OS Tivoli Enterprise Portal agent" in *IBM Tivoli NetView on z/OS: Security Reference*. You can find the NetView documentation in the IBM Tivoli NetView for z/OS documentation information center at: http:// publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?toc=/ com.ibm.itnetviewforzos.doc/toc.xml

2. Optionally, define the NetView PPI receiver in the NetView DSIPARM member CNMSTYLE (see Figure 44).

Follow the instructions in the member. The PPI receiver for APSERV will be started during NetView initialization.

3. If you do not customize CNMSTYLE to define the receiver, start the NetView PPI receiver manually by issuing the APSERV command.

Figure 44. CNMSTYLE member after editing

Chapter 8. Enabling system variable support

This chapter provides detailed instructions for enabling system variable support and using it to run your monitoring agents on any z/OS system. With system variables, the software becomes z/OS system-independent. The software can then be ported and started on any z/OS system without extensive Configuration Tool reconfiguration.

Tips

- The system variables discussed in this chapter are not the same as JCL system symbols.
- For additional information, you can access the README file for system variable support by issuing the **README SYS** command from any Configuration Tool panel.

By using system variable support, the components inherit the system values for the system on which they are started (the host z/OS system). These system-specific values are then automatically loaded into dynamic in-memory parameter members that exist only while the component runs. The result is that the software runs correctly using the system-specific parameter values for the host z/OS system.

Using system variable support includes the following benefits:

- You can deploy the same software unit, consisting of any or all monitoring agents, on any system without modification. LPAR-specific values are automatically resolved and substituted at product startup.
- The number of unique runtime environments required is smaller. This feature saves storage space, CPU, and labor.
- The same started task JCL and the same VTAM node can be used on any system without modification.
- You can choose to use a single VTAM major node in place of the individual product major nodes. When generated, a single VTAM major node contains all VTAM applids for all monitoring agents you have configured in the runtime environment.

When using system variable support, consider the following facts:

- Product started tasks (STCs) contain a new preprocessing step (STEP1 in the STC JCL). This new step resolves all system variable specifications in the product parameter members.
- Product parameter members contain many variables, instead of values, that are resolved when the STC starts. For example, the members contain &SVXDSNV instead of the VSAM high-level qualifier value.

Sample usage scenario

The following steps describe the process for enabling and using system variable support.

1. Define and configure a runtime environment. During runtime environment configuration, specify the values to enable system variable support. See Chapter 5 for details on configuring a runtime environment.

Note: Multiple runtime environments might be required depending on the runtime environment structure (full, sharing, base, or SMP/E), the CMS type (hub or remote), and variations in product mixtures.

2. Create the system variable parameter member.

After configuring a runtime environment, you can create the system variable parameter member. Each runtime environment contains one user system variable parameter member named RKANPARU(*rtename*), which contains all system-specific values.

See "Creating the system variable parameter member" on page 116 for information on creating the *rtename* system variable parameter member in the RKANPARU library.

3. Create the VTAM major node rename job.

After configuring a runtime environment, you can create the VTAM major node rename job. This job creates VTAM major nodes on remote systems with names that are resolved from your system variable specification.

See "Creating the VTAM major node rename job" on page 117 for information on creating a VTAM major node rename job.

- 4. Create the runtime environment transport job by using the RTE Utility option **Generate sample transport JCL**.
- 5. Copy the runtime environment to a remote system by using the runtime environment transport job (or any other copy utility).
- After the copy completes, edit the system variable parameter member RKANPARU (*rtename*). If necessary, set values for components running on other systems. For example, set values for a hub CMS running on a different LPAR.
- 7. Perform other remote system setup tasks as required.
 - Copy the new started tasks to your system procedure library. These started tasks have been enabled for system variables.
 - If you are not using an existing system variable for the runtime environment name on the LPAR, set the &SYSNAME system variable to the name of the runtime environment. This is set in SYS1.PARMLIB(IEASYMxx).
 - If you are using VTAM system variable support, you must run the VTAM major node rename job. This job creates new major nodes that are named according to your system variable specifications. After the new nodes are created, copy them to SYS1.VTAMLST.
 - VSAM file allocation and seeding are required on every system.
- 8. Start the components.

Enabling system variable support

You enable system variable support from the **Add Runtime Environment** panel. In an existing runtime environment, use the **Update** (**U**) command to enable system variable support.

Some older versions of monitoring agents might not support the system variable feature. These monitoring agents can exist in the same runtime environment, and you need not reconfigure them in the runtime environment.

Complete the following steps to enable system variable support.

 From the Main Menu, select Configure products > Select product to configure and select the product you are configuring.

The Configuration Tool displays the Runtime Environments (RTEs) panel.

- 2. Add a new runtime environment or update an existing runtime environment:
 - a. If you are adding a new runtime environment, type A in the **Action** field and specify all other required information.
 - b. If you are updating a runtime environment, type U in the Action field.
 - c. Press Enter.
 - d. On the first **Add Runtime Environment** panel, enter all of the required information.
 - e. Press Enter to access the second Add Runtime Environment panel.
- 3. Specify the following values to enable system variable support:

Table 12. System variable values

Field	Value
Use z/OS system variables?	Specify Y to enable support. The default is N.
RTE name specification	Specify the system variable name by which the runtime environment is identified in the SYS1.PARMLIB LPAR system definition member. The default is &SYSNAME. This value becomes the value of the SYS parameter in all started tasks (for example, SYS='&SYSNAME'). Note: Resolved system variable values cannot exceed the length of the variable name (maximum length of 8 characters).

Important -

If you change the status of system variable support in an existing runtime environment (**on** to **off** or vice versa), you must reconfigure all monitoring agents in that runtime environment. This includes specifying VTAM values and creating runtime members.

4. (Optional) Specify the following values on the second **Add Runtime Environment** panel to enable other functions:

Table 13. Add runtime environment values

Field	Value
-------	-------

Table 13. Add runtime environment values (continued)

	1
RTE base alias specification	 If this runtime environment is sharing with a base runtime environment, specify an optional system variable specification for the base runtime environment. This value is inserted into the base runtime environment library references in all started tasks. The resolved name must be a valid library name qualifier. This field is commonly used to switch between base runtime environments at different maintenance levels. You can use the runtime environment base alias as one of the following: An easy way to switch runtime environment bases. An alternative way to refer to an existing base.
	field if the current runtime environment is not sharing with a base runtime environment.
Applid prefix specification	Specify the VTAM applid prefix that contains system variables. Be sure to place a period after the last symbol in the specification. The resolved prefix can be a maximum of four characters. The default is K&SYSCLONE.
Use VTAM model applids?	If you want to use model applids (wildcards), specify Y. Model applids generate VTAM nodes that contain applids with wildcard suffixes wherever possible. These wildcards allow you to use any applids that match the pattern within the VTAM node. The default is N.

5. When you have finished specifying the values to enable system variable support, press F3 until you return to the **Main Menu**.

Creating the system variable parameter member

You enable system variable support from the **Add Runtime Environment** panel. In an existing runtime environment, use the **Update** (**U**) command to enable system variable support.

After configuring a runtime environment, you can create the system variable parameter member.

Each runtime environment contains one user system variable parameter member named RKANPARU(*rtename*). All system-specific values are contained in this member.

Complete the following steps to create the system variable parameter member, *rtename*, in the RKANPARU library.

1. From the Configuration Tool Main Menu, select Configure products > Select product to configure and select the product you are configuring.

Result: The Configuration Tool displays the **Runtime Environments (RTEs)** panel.

- 2. Create the system variable parameter member:
 - a. Type Z next to the name of the runtime environment you have configured and press Enter.
 - b. On the **RTE Utility Menu**, select **Create System Variable parameter member** and press Enter.

Result: The JCL that creates the system variable parameter member (CB#V*xxxx*) job is displayed.

- c. Review the JCL and submit the job. Verify that the job completes successfully and that all return codes are zero.
- d. Edit the RKANPARU(*rtename*) parameter member. Follow the directions to ensure proper resolution of cross-system variables.
- 3. When you have finished creating the system variable parameter member, press F3 until you return to the **Main Menu**.

Creating the VTAM major node rename job

After configuring a runtime environment, you can create the VTAM major node rename job. This job creates VTAM major nodes on remote systems with names that are resolved from your system variable specification.

Complete the following steps to create a VTAM major node rename job in the INSTJOBS library.

- From the Configuration Tool Main Menu, select Configure products > Select product to configure and select the product you are configuring.
 Result: The Configuration Tool displays the Runtime Environments (RTEs) panel.
- 2. Create the VTAM major node rename job:
 - a. Type Z next to the name of the runtime environment you have configured and press Enter.
 - b. On the **RTE Utility Menu**, select **Create System Variable VTAM major node rename job**, and then press Enter.

Result: The JCL that renames the VTAM major node (CB#7*xxxx*) job is displayed.

c. Review the JCL. Do not submit the job yet.

Note: You must submit this job on each remote system where the monitoring software is to run. The job is in the RKANSAMU library.

3. When you have finished creating the VTAM major node rename job, press F3 until you return to the **Main Menu**.

Creating one VTAM major node for all monitoring agents in the runtime environment

A single VTAM major node can contain all the VTAM applids for all of the monitoring agents you have configured in the runtime environment. This single major node is then used in place of the individual product major nodes.

If you choose to use a single VTAM major node, you must create it after all monitoring agents have been configured in the runtime environment. After the node is created and copied to your system VTAM system library (SYS1.VTAMLST), you vary it active and then start all of the components (started tasks).

Complete the following steps to create a single VTAM major node in the RKANSAMU library.

- From the Configuration Tool Main Menu, select Configure products > Select product to configure and select the product you are configuring.
 Result: The Configuration Tool displays the Runtime Environments (RTEs) panel.
- 2. Create the VTAM major node:
 - a. Type Z next to the name of the runtime environment you have configured and press Enter.
 - b. On the **RTE Utility Menu**, select **Create VTAM major node(one node for all products)** and press Enter.
 - c. On the **Create VTAM Major Node** panel, type the name you want to use for the single node and press Enter.

The JCL that creates the single node is displayed.

- d. Review the JCL and submit the job. Verify that the job completed successfully and that all return codes are zero.
- 3. When you have finished creating a single VTAM major node, press F3 until you return to the Configuration Tool **Main Menu**.

Chapter 9. Using batch mode processing

The Configuration Tool offers batch mode processing for several configuration scenarios. You can use the batch mode processing utility to configure runtime environments and monitoring agents without going through the ISPF panels and filling in the required parameter values. After you establish and configure a runtime environment in a z/OS image or address space, you can use the batch mode processing utility to replicate your runtime environment in other z/OS images or address spaces.

This chapter provides instructions on using batch mode processing to perform these tasks:

- · Create a new runtime environment by running a single batch job
- · Replicate an existing runtime environment
- Transport a replicated runtime environment to other z/OS images

Batch mode processing using the Configuration Tool is an alternative way of building and configuring a runtime environment. Instead of using the interactive Configuration Tool to build and configure a runtime environment, you can submit a single batch job that performs the same processing.

Batch mode processing in the Configuration Tool includes the following components:

Configuration Tool batch job (CICATB)

CICATB is a new job that is generated into the INSTJOBS library. You submit this job to build and configure a runtime environment.

Configuration Tool batch parameter member

This is a single member in INSTJOBS, containing all of the configuration values for all monitoring agents to be configured in the runtime environment.

RTE Utility to create Configuration Tool batch parameter member

This utility creates the batch parameter member for an existing runtime environment, which can then be used for running subsequent CICATB jobs. The name of the parameter member is the runtime environment name.

You create the Configuration Tool batch job only once on an image and then use it for all subsequent batch mode processing on that image.

Tips

- You must recreate the Configuration Tool batch job if your ISPF environment has changed.
- When the SUBMIT parameter is set to **YES**, the generated runtime environment configuration jobs are submitted automatically if the job names do not currently exist in the INSTJOBS library. If the generated jobs already exist, then the jobs are regenerated but not automatically submitted.
- The JCL suffix must be unique for each runtime environment, because when the Configuration Tool batch job runs, it is used in every member name that is generated in INSTJOBS. If the suffix is not unique, the jobs that are generated conflict with other runtime environment jobs that might already exist in INSTJOBS.

For more information about the Configuration Tool batch utilities, see Appendix B, "Configuration Tool batch utilities," on page 133.

Planning your runtime environment replication

The Configuration Tool batch mode process involves the following three broad steps:

- Creating batch mode parameters
- · Adding and configuring parameter input decks
- Creating the new runtime environment on the appropriate z/OS image, using the appropriate runtime environment transportation method

- Tip

After you create a runtime environment in batch mode, you can use Configuration Tool to configure it further.

- 1. Edit the newly created member and invoke Configuration Tool edit macros to add additional product parameter decks to it.
- 2. Configure the product by changing the default parameter values as required.
- 3. Create the new runtime environment on the appropriate z/OS image using one of the following transport methods.

Table 14. Runtime environment transport methods

Transport method	Mode used	Advantages and disadvantages
Define the runtime environment	Interactive and batch mode Configuration Tool on the local z/OS image, to create a runtime environment accessible to the target image.	Advantages of this method:
on the local z/OS image using shared DASD.		 The interactive Configuration Tool, located on the local image, contains the configuration information for all images.
		• Only one copy of the runtime libraries is created.
		 Only one batch job is submitted.
		The disadvantage of this method is that it applies only to z/OS images with shared DASD.
Transport the runtime	Interactive and batch mode Configuration	Advantages of this method:
environment from the local image to the remote image.	Tool on the local image to create a runtime environment. After the runtime environment is defined, you use sample transport jobs to distribute the runtime libraries and parameters to the remote image.	 The interactive Configuration Tool, located on the local image, contains the configuration information for all images.
		 Only one batch job is submitted.
		 The method applies to remote z/OS images that do not share storage.
		The disadvantage of this method is that two copies of the runtime libraries are created.

Transport method	Mode used	Advantages and disadvantages
Transport method Transport runtime environment batch jobs from the local z/OS image to the remote image.	Interactive and batch mode Configuration Tool on the local image to create a set of batch jobs that can build a runtime environment. You use the sample transport jobs to distribute the batch jobs to the remote image. Then you submit the jobs on the remote image to create the runtime libraries and parameters.	 Advantages and disadvantages Advantages of this method: The interactive Configuration Tool, located on the local image, contains the configuration information for all images. The method applies to remote z/OS images that do not share storage. Only one copy of the runtime libraries is created. The disadvantage of this method is that you must submit a series of batch jobs, or use the Auto Submit CLIST to submit
		the jobs that create the runtime environment.
Transport runtime environment batch mode parameters from the local z/OS image to the	Interactive Configuration Tool on the local image to export an existing runtime environment. After the runtime environment parameters are collected, you use the sample transport jobs to distribute the batch mode parameters to the remote image. The batch mode Configuration Tool is run on the remote image to create the runtime libraries and parameters.	Advantages of this method: The method applies to remote z/OS images that do not share storage
remote image equipped with the Configuration Tool.		 Only one copy of the runtime libraries is created.
		 Only one batch job is submitted.
		The disadvantage of this method is that the interactive Configuration Tool located on the local image does not contain the configuration information for all images.

Table 14. Runtime environment transport methods (continued)

Creating batch mode parameters

Use the Create batch mode parameters processing option to export parameters from an existing runtime environment into a library member. You then copy the member and change the image-specific parameters, as required, to configure the runtime environment for its new environment.

You can generate parameter decks for all monitoring agents in an existing runtime environment, and then copy the information into a new library member to be used during batch mode processing.

Complete the following steps to generate the runtime environment parameters and copy the information into a new library member.

 From the Configuration Tool Main Menu, select Configure products > Select product to configure and select the product you are configuring.

The Configuration Tool displays the **Runtime Environments (RTEs)** panel.

- 2. Create the new library member:
 - a. Type Z next to the runtime environment you want to replicate and press Enter.
 - b. From the **RTE Utility Menu**, select **Create batch mode parameters** and press Enter.
 - c. Specify the library that receives the batch parameter member generated by the Configuration Tool.

- d. The INSTJOBS library is specified by default, and the member name is the same as that of the current runtime environment.
- e. Press Enter.
- 3. Exit the Configuration Tool.
- 4. Edit the INSTJOBS library and copy the exported library member to a new member name. This new member name is also used as the name of the new runtime environment.
- 5. Using ISPF Option 2, edit the new library member to reflect the settings specific to the z/OS image of the new runtime environment.

Transporting the runtime environment

Use any of the following methods to transport the new runtime environment to the appropriate z/OS image.

- "Define a runtime environment on a local z/OS image using shared DASD"
- "Transport a runtime environment from a local z/OS image to a remote image" on page 123
- "Transport runtime environment batch jobs from a local z/OS image to a remote image equipped with the Configuration Tool" on page 124
- "Transport runtime environment batch mode parameters from a local z/OS image to a remote image" on page 125

Before using the transport methods within this section, make sure that sufficient space and library security authorizations exist.

For a list of the advantages and disadvantages for each transport method, see Table 14 on page 120.

Define a runtime environment on a local z/OS image using shared DASD

Complete the following steps to define a runtime environment on a local z/OS image using shared DASD.

- 1. Start the Configuration Tool on your local image.
- 2. Create the Configuration Tool batch mode job:

Starting from the Main Menu, select Configure products > Services and utilities > Create batch mode job. Press Enter.

- 3. Exit the Configuration Tool.
- 4. Perform a scan on your runtime environment parameters:
 - a. Edit CICATB, updating the BATCHLIB and BATCHMEM parameters as required, and setting the SUBMIT parameter to **SCAN**.
 - b. Submit the CICATB job to scan your runtime environment parameters.
 - c. Verify that the job completes successfully; review the parameter report; correct any errors in the parameter member; repeat the scan until a clean report is generated.
- 5. Create a new runtime environment that is accessible to the target image:
 - a. Edit CICATB again, setting the SUBMIT parameter to **YES**. This submits the runtime environment configuration jobs that allocate and populate runtime libraries.
 - b. Submit the CICATB job to create the runtime environment.
 - c. Verify that the job completes successfully.

- 6. Perform the following manual configuration steps on the target image:
 - Copying procedures to PROCLIB.
 - Copying VTAM definitions to VTAMLST.
 - APF-authorizing libraries.

Transport a runtime environment from a local z/OS image to a remote image

Complete the following steps to transport a runtime environment from a local z/OS image to a remote image:

- 1. Start the Configuration Tool on your local image.
- 2. Create the Configuration Tool batch mode job:
 - a. Starting from the Main Menu, select Configure products > Services and utilities > Create batch mode job.
 - b. Press Enter.
- 3. Exit the Configuration Tool.
- 4. Perform a scan on your runtime environment parameters:
 - a. Edit CICATB, updating the BATCHLIB and BATCHMEM parameters as required, and setting the SUBMIT parameter to **SCAN**.
 - b. Submit the CICATB job to scan your runtime environment parameters.
 - c. Verify that the job completes successfully; review the parameter report; correct any errors in the parameter member; repeat the scan until a clean report is generated.
- 5. Create a new runtime environment that is accessible to the target image runtime environment:
 - a. Edit CICATB again, setting the SUBMIT parameter to **YES**. This submits the runtime environment configuration jobs that allocate and populate runtime libraries.
 - b. Submit the CICATB job to create the runtime environment.
 - c. Verify that the job completes successfully.
- 6. Start the Configuration Tool again.
- 7. Select the runtime environment you want to transport:
 - Access the Runtime Environments (RTEs) panel. (From the Main Menu, select Configure products > Select product to configure, and then select a product.)
 - b. Type Z next to the runtime environment you want to transport and press Enter.
- On the RTE Utility Menu, select Generate sample transport JCL and press Enter. This action generates several sample transport jobs in the RKANSAMU library. Member \$XPRTNDX provides a description of all generated members. For example, to use DFDSS to transport the runtime libraries to the target image, use the following sample jobs:
 - XDFDMP01 on the master image to dump the runtime libraries.
 - XDFRST01 on the target image to restore the runtime libraries.
- 9. Perform the following manual configuration steps on the target image:
 - Copying procedures to PROCLIB.
 - Copying VTAM definitions to VTAMLST.
 - APF-authorizing libraries.

Transport runtime environment batch jobs from a local z/OS image to a remote image equipped with the Configuration Tool

Complete the following steps to transport runtime environment batch jobs from a local z/OS image to a remote image that is equipped with the Configuration Tool.

- 1. Start the Configuration Tool on your local image.
- 2. Create the Configuration Tool batch mode job:
 - a. Starting from the Main Menu, select Configure products > Services and utilities > Create batch mode job.
 - b. Press Enter.
- 3. Exit the Configuration Tool.
- 4. Perform a scan on your runtime environment parameters:
 - a. Edit CICATB, updating the BATCHLIB and BATCHMEM parameters as required, and setting the SUBMIT parameter to **SCAN**.
 - b. Submit the CICATB job to scan your runtime environment parameters.
 - c. Verify that the job completes successfully; review the parameter report; correct any errors in the parameter member; repeat the scan until a clean report is generated.
- 5. Create the runtime environment generation jobs:
 - a. Edit CICATB again, setting the SUBMIT parameter to NO. This creates the runtime environment configuration jobs that allocate and populate runtime libraries.
 - b. Submit the CICATB job to create the runtime environment generation jobs.
 - c. Verify that the job completes successfully.
- 6. Start the Configuration Tool again.
- 7. Select the runtime environment you want to transport:
 - Access the Runtime Environments (RTEs) panel. (From the Main Menu, select Configure products > Select product to configure, and then select a product.)
 - b. Type Z next to the runtime environment you want to transport and press Enter.
- 8. On the RTE Utility Menu, select Generate sample transport JCL and press Enter. This action generates several sample transport jobs in the RKANSAMU library. Member \$XPRTNDX provides a description of all generated members. For example, to use DFDSS to transport the targets, INSTLIB, INSTDATA, and INSTJOBS to the remote image, use the following sample jobs:
 - XDFDMP03 on the master image to dump the batch jobs.
 - XDFRST03 on the target image to restore the batch jobs.
- Submit the batch jobs on the target image in the order listed in the Jobs Sorted By Generation Sequence section of the Configuration Tool Batch Mode job report.

You can submit each job manually or use the Auto Submit CLIST to automatically submit the Configuration Tool jobs on the target image. To use the Auto Submit CLIST, complete the following steps:

- a. Verify that the SMP/E target libraries are available on the image where the CLIST is to run.
- b. Edit the member named SUB#*jclsuffix* in INSTJOBS, where *jclsuffix* identifies the JCL suffix for the new runtime environment.
- c. Run the CLIST to submit the Configuration Tool jobs that create the runtime environment.

- 10. Perform the following manual configuration steps on the target image:
 - · Copying procedures to PROCLIB
 - Copying VTAM definitions to VTAMLST
 - APF-authorizing libraries

Transport runtime environment batch mode parameters from a local z/OS image to a remote image

Complete the following steps to transport runtime environment batch mode parameters from a local z/OS image to a remote image.

- 1. Start the Configuration Tool on your local image.
- 2. Select the runtime environment you want to transport:
 - Access the Runtime Environments (RTEs) panel. (From the Main Menu, select Configure products > Select product to configure, and then select a product.)
 - b. Type Z next to the runtime environment you want to transport and press Enter.
- 3. On the **RTE Utility Menu**, select **Generate sample transport JCL** and press Enter. Several sample transport jobs are generated in the RKANSAMU library. Member \$XPRTNDX provides a description of all generated members.

For example, to use DFDSS to transport the targets, INSTLIB, INSTDATA, and INSTJOBS to the remote image, use the following sample jobs:

- XDFDMP03 on the master image to dump the batch jobs.
- XDFRST03 on the target image to restore the batch jobs.
- 4. Create the Configuration Tool batch mode job:
 - a. Starting from the Main Menu, select Configure products > Services and utilities > Create batch mode job.
 - b. Press Enter.
- 5. Exit the Configuration Tool.
- 6. Perform a scan on your runtime environment parameters:
 - a. Edit CICATB, updating the BATCHLIB and BATCHMEM parameters as required, and setting the SUBMIT parameter to **SCAN**.
 - b. Submit the CICATB job to scan your runtime environment parameters.
 - c. Verify that the job completes successfully; review the parameter report; correct any errors in the parameter member; repeat the scan until a clean report is generated.
- 7. Create the runtime environment on the target image:
 - a. Edit CICATB again, setting the SUBMIT parameter to **YES**. This submits the runtime environment configuration jobs that allocate and populate runtime libraries.
 - b. Submit the CICATB job to create the runtime environment.
 - c. Verify that the job completes successfully.
- 8. Perform the following manual configuration steps on the target image:
 - Copying procedures to PROCLIB.
 - Copying VTAM definitions to VTAMLST.
 - APF-authorizing libraries.
Part 3. Appendixes

Appendix A. Configuration services and utilities

You can use the configuration services and utilities to perform various services on the runtime environment and specify diagnostic information. Some of the services can modify the Configuration Tool values stored in ISPF tables.

Note: Do not modify any values unless you are told to do so in the documentation or by IBM Software Support personnel. If the Configuration Tool values are modified incorrectly, the Configuration Tool can stop functioning or produce unpredictable results.

To access the configuration services and utilities,

- 1. From the Configuration Tool Main Menu, select Configure products.
- 2. Select Services and utilities.

Services: unlocking runtime high-level qualifiers

You can use this option to unlock the high-level qualifier values that you specified when you set up your configuration environment. If you need to modify these values, you must first unlock them.

Warning: If you unlock and change the high-level qualifiers, the Configuration Tool does not automatically delete and reallocate the existing libraries. The jobs generated by the Configuration Tool fail if they are pointing at incorrect libraries.

Complete the following steps to unlock and modify runtime high-level qualifiers.

- 1. From the Main Menu, select Configure products > Services and utilities > Unlock runtime high-level qualifiers.
- 2. Unlock and modify the high-level qualifiers:
 - a. On the Unlock Runtime High-Level Qualifiers panel, specify Y.
 - b. On the **Set Up Configuration Environment** panel, make your modifications to the high-level qualifiers and press Enter
- 3. Press F3 until you return to the Main Menu.

Services: creating the Configuration Tool batch mode job

You can use this option to generate the JCL that runs the Configuration Tool steps under batch.

This option also creates the KCISETUP REXX exec. Invoking KCISETUP enables your ISPF environment to use the ISPF macros provided with the Configuration Tool. You can use these macros to compose and manage the parameter members used for the Configuration Tool batch mode process.

Complete the following steps to create the Configuration Tool batch mode job.

1. From the Main Menu, select Configure products > Services and utilities >Create batch mode job.

Result: The Configuration Tool displays a message at the top of the panel indicating the job has been created.

To view additional information about this job press F1.

2. Press F3 until you return to the Main Menu.

Utilities: specifying DEBUG options

Complete the following steps to specify or modify DEBUG parameter values.

 From the Configuration Tool Main Menu, select Configure products > Services and utilities > DEBUG options.

Result: The Configuration Tool displays the **Debug Options** panel with all of the existing DEBUG values that you entered when invoking the Configuration Tool.

2. Contact IBM Software Support.

Note: IBM Software Support personnel direct you in specifying or modifying the DEBUG parameter values.

3. Press F3 until you return to the Main Menu.

Utilities: displaying an ISPF table

You can use this option to specify the contents of an ISPF table located in the data library.

Complete the following steps to display an ISPF table.

- 1. From the Configuration Tool Main Menu, select Configure products > Services and utilities > Display an ISPF table.
- 2. Specify and view an ISPF table:
 - a. Specify the name of the ISPF table you want to display. You can limit the information displayed for an ISPF table by specifying one to three sets of display criteria under **Optional section parameters**. For each set you must specify the variable name and matching value.
 - b. Press Enter to view the ISPF table you specified. You can take the following actions:

Action	Result
END (PF3)	Go to the previous record.
ENTER	Go to the next record.
CANCEL	Go back to the previous panel.
UP/DOWN	Use scroll variables.

3. Press F3 until you return to the Main Menu.

Utilities: running a CLIST in the TKANCUS library

Complete the following steps to run a specific CLIST/REXX exec in the TKANCUS library.

- 1. From the Configuration Tool Main Menu, select Configure products > Services and utilities > Execute a CLIST in the TKANCUS library.
- 2. Contact IBM Software Support.

Note: Software Support personnel direct you in selecting and running a CLIST in the TKANCUS library.

3. Press F3 until you return to the Main Menu.

Utilities: preparing user libraries

The Configuration Tool supports the allocation of the following user libraries required for product operation:

- &rhilev.&rte.RKANCMDU
- &rhilev.&rte.RKANMODU
- & *rhilev.&rte*.RKANPARU
- &rhilev.&rte.RKANSAMU
- &rhilev.&rte.RKANSQLU (applicable to the Tivoli Enterprise Monitoring Server only)

The **Prepare user libraries** utility generates a batch job to create, from the existing target libraries, the necessary user libraries.

1. From the Configuration Tool Main Menu, select Configure products > Services and utilities > Prepare user libraries.

The **Runtime Environments (RTEs) for Conversion** panel lists all the runtime environments whose libraries are eligible for conversion to user libraries.

- 2. On the **Runtime Environments (RTEs) for Conversion** panel, you can accept the default (all runtime environments listed) or delete from the list any runtime environments you want to exclude from conversion.
- 3. When you finish reviewing the list, press Enter to generate the KCIJSP01 batch job.
- 4. Edit the job as needed, then submit it.

Appendix B. Configuration Tool batch utilities

Several Configuration Tool utilities are available for batch mode processing. These utilities are designed to run outside the Configuration Tool, but can also be used while in the Configuration Tool.

KCISETUP

Sets up the environment that is required to use the Configuration Tool batch utilities.

KCICFKEY

Manages the PF keys that are used for the Configuration Tool batch utilities.

KCICPGHP

Displays help information for parameters in a batch parameter deck member.

KCISETUP: setting up the environment

You use the KCISETUP utility to set up the environment that is required for using the other Configuration Tool batch utilities. This utility must be run after starting your TSO ISPF session and can be run only from an ISPF session.

Before using the KCISETUP utility, you must generate the KCISETUP member in your INSTLIB. KCISETUP can be run only once per session. There is no confirmation message issued to indicate successful completion of KCISETUP.

Complete the following steps to generate KCISETUP.

- 1. Start the Configuration Tool on your master image.
- 2. From the Main Menu, select Configure products > Services and utilities > Create batch mode job.

Result: The Configuration Tool generates member KCISETUP in your INSTLIB.

3. Press F3 until you return to the Main Menu.

Note: KCISETUP must be created on an image and can be used for all subsequent parameter deck processing on that image. If your ISPF environment changes or you split your INSTLIB, you must recreate KCISETUP.

You can invoke the environment setup utility, using either of the following methods.

Location	Command
ISPF command line	TSO EXEC 'shilev.INSTLIB(KCISETUP)'
ISPF Primary Option Menu EXEC 'shilev.INSTLIB(KCISETUP)' > Enter TSO or Workstation	
commands	where <i>shilev</i> is the high-level qualifier of the INSTLIB.

KCICFKEY: managing PF keys

You use the KCICFKEY utility to manage ISPF session PF keys that are used for batch utilities. This includes turning the PF keys on and off, and toggling which set of keys display. This utility can be run only under an ISPF session.

Note: If you are using KCICFKEY to manage the ISPF session PF keys for the batch utilities, you must turn on the predefined function keys. To do this, issue the PFSHOW command from either the ISPF command line or any of the Configuration Tool panel command lines.

Before using this Configuration Tool batch utility, you must use the KCISETUP utility to set up the environment.

To use the KCICFKEY utility, the ISPF session must support 24 PF keys. Complete the following steps to set up the ISPF session to support 24 PF keys.

- 1. From the ISPF Primary Option Menu, select Terminal and user parameters > Function keys > Non-Keylist PF Key settings.
- 2. Type 24 for Number of PF Keys.
- 3. Press F3 to return to the **ISPF Primary Option Menu**.

If the ISPF session is not set up to support 24 PF keys, the KCICFKEY utility runs but issues the following ISPF warning message:

```
"PFKEYS COUNT ERROR", "Number
of PF Keys must be 24. See ISPF Settings."
```

When setting PF keys, the Configuration Tool PF Key Manager owns PF keys 13–24. On keyboards that do not support 24 PF keys, PF keys 13–24 are enabled by holding the Shift key and pressing a function key. While the Shift key is pressed, function keys 1–12 become 13–24.

When the Configuration Tool PF keys are active, any change in the PF Key Show State is preserved. If you have set the PF Key Show State to **Show All** and then turned off the PF keys, when you turn the PF keys back on, the PF Key Show State is restored to **Show All**.

While using the Configuration Tool PF Key Manager, all of your original PF key and Show State settings are preserved. After exiting the PF Key Manager, all of your original PF key and Show State settings are restored.

Method	Command
ISPF edit	From the Edit command line, enter
	KCICFKEY state
	Note: To use this method you must be running under an ISPF session, editing a member or data set.
TSO command	From the ISPF command line, enter
	TSO KCICFKEY state

You invoke the PF Key Manager utility using one of the following methods.

The state is the desired state of the Configuration Tool PF keys. Valid states are:

ON Turn on the PF keys.

OFF Turn off the PF keys.

SHOW

If the PF keys are active, then toggle the PF keys between All (1–24), Alternate (13–24), and Primary (1–12).

HELP Display the PF Key Manager help information.

If *state* is not specified, the Configuration Tool PF keys toggle between **ON** and **OFF**.

KCICPGHP: displaying help for batch parameters

You use the KCICPGHP utility to display help information for parameters in a batch parameter deck member. The detailed help information for each of the batch parameters is provided to help you modify or construct a batch parameter deck.

This utility must be run from an ISPF Edit session.

Before using this batch utility, you must use the KCISETUP utility to set up the environment.

You invoke the Batch Parameter Deck Help utility using either of the following methods:

- From an ISPF Edit command line, enter the command **KCICPGHP**, position the cursor on the row that contains a batch parameter, and then press Enter.
- Position your cursor on the row that contains a batch parameter and then select the PF key assigned by the Configuration Tool PF Key Manager.

Note: This is the preferred method for invoking Batch Parameter Deck Help. The PF Key Manager assigns a PF key to invoke this function.

With either method, you must position the cursor on the row that contains the batch parameter. The utility then isolates the parameter, looks it up, and displays detailed help information.

The batch parameter online help contains the following sections:

Description Area

The detailed help information for the parameter. This area is scrollable, as indicated by the (+) indicator on the bottom right. **PF7** and **PF8** are assigned to scroll this area.

Attribute Area

The attributes of the parameter. This information can help you determine what type of data is expected for this parameter.

PF Key Area

The PF key assignments that apply only to the dialog box.

Note: PF5 (Show All) displays the help information for all parameters that make up this product.

Following is an example of a batch parameter help:



Figure 45. Batch parameter help example

Appendix C. TEDA Server Operator Commands

This appendix describes the TEDA server operator commands and assumes that the TEDA address space name is KRSTEDA.

Note: In the following descriptions, where *mask* is used, you can specify an asterisk wildcard character (*) to match multiple characters and percent-sign placeholder (%) to match a single character.

Starting the TEDA server

S KRSTEDA

Start the TEDA server.

Stopping the TEDA server

P KRSTEDA

Stop the TEDA server.

Quiescing Agent Activity

F KRSTEDA,Q AGENT(mask)

Temporarily halt (quiesce) activity for any agents whose NAME() matches the mask.

Resuming Agent Activity

F KRSTEDA,R AGENT(mask)

Resume activity for previously quiesced agents whose NAME() matches the mask.

Dynamically Changing Agent Settings

F KRSTEDA,T AGENT(mask),MsgLevel(n)

Change the message level setting for agents whose NAME() matches the mask. F KRSTEDA,T AGENT(mask),Interval(hh:mm:ss.th)

Change the sample interval for agents whose NAME() matches the mask.

Display Commands

F KRSTEDA,D AGENT(mask)

Show the quiesce state and agent control block address of all agents matching the mask.

Appendix D. TEDA Server PARMLIB Statements

The TEDA server address space enables one or more IBM Tivoli products to communicate with the Tivoli Enterprise Portal (TEP). The server is controlled by a sequence of PARMLIB statements that can be in the z/OS PARMLIB concatenation or in another PDS dataset specified by the KRSPARM DD statement in the KRSTEDA started task JCL.

The TEDA uses the contents of the KRSSYS00 PARMLIB member to dictate which other PARMLIB members to process at startup. Member names must be specified in columns 1-8 of the KRSSYS00 and comments are indicated by an asterisk in column 1.

The KRSPRD00 member contains PARMLIB definitions that are common to all IBM Tivoli Products that use the TEDA - its contents should not be changed without direction from IBM.

The other PARMLIB members are of the form KppPRD00 and are supplied as part of the IBM Tivoli software that is TEP-enabled. These PARMLIB statements declare global option, products, resources and various agents that are required by the associated software product.

Global

These options define the global options and settings for the server address space. The syntax of the GLOBAL statement is:

GLOBAL=BATCHBUFFER(nnnnn), MSGLEVEL(n)

Keywords

BATCHBUFFER(nnnn)

The maximum amount of storage in kilobytes (K) to obtain by a single data collection agent task. The valid range is 1000-16380. The default is 8000.

SMTPNAME(stcname)

The name of the SMTP started task required for sending alert e-mails. The default is SMTP.

SMTPCLASS(c)

The JES output class used by the SMTP started task. The default is B.

MSGLEVEL(n)

The level of messages produced by the monitoring agent. Values greater than zero cause some agents to generate more messages than the default setting. The valid range is 0-9. The default is 0.

Note: Do not change this definition without direct instructions from IBM.

Products

Defines the TEP-enabled product to the TEDA server. In normal circumstances, it is expected that the PORT and MAXEVENTS keywords would be customized during installation. The syntax of the PRODUCT statement is:

Keywords

NAME(Kpp)

The three letter product name.

PORT(port_number)

The TCP/IP port number used by the TEDA server to communicate with the IBM Tivoli TEMA address space. The valid range is 1023-65535.

MAXEVENTS(maximum_events)

The maximum number of records to be sent to the TEP as results of any request to collect data. It is recommended that the value specified should be less than 5000 because large number of events being sent to the TEP can result in :

- Time-outs in the TEP GUI as it expects a response within a reasonable period of time (approximately 30 seconds)
- · Increased CPU usage by the TEDA and TEMA address spaces
- · Unusable GUI displays that have been swamped by the amount of data sent

PARM='parameters'

0-63 characters that can be passed to the product. The meaning and format varies depending on the product.

Resources

Defines the resources required by the TEDA server. The resources typically persist for the duration of the started task and sometimes until next IPL. The syntax of the RESOURCE statement is:

```
RESOURCE=TYPE(resource_type),
NAME(resource_name),
MODULE(module_name),
INDEX(internal_index),
SCOPE(dataspace_scope),
BLOCKS(dataspace_blocks),
PARM='runtime_parameters'
```

Keywords

TYPE(resource_type)

The type of resource. Specify one of the following:

- Dataspace—A dataspace owned by the TEDA server. The scope of the dataspace is defined by the SCOPE() keyword and its maximum size set by the BLOCKS() keyword.
- Signal—A general purpose signal object. The signal object maintains a count field that can be updated externally using the KppSIGNL utility program.
 Signals provide a means that external users can "wake up" data collection agents.
- SMFExit—An SMF exit intercept. The specific SMF exit is nominated using the NAME() keyword and the exit load module specified using the MODULE() keyword. The TEDA will install the nominated module as an SMF exit in all SMF subsystems that have the associated SMF exit name activated.

Note: SMFExit remains defined and active after the TEDA address space terminates. You can manually remove the exit using the "SETPROG EXIT" z/OS operator command.

NAME(resource_name)

The name of the resource. Where *resource_name* is one of the following:

- Dataspace The 1-4 character name appended to "Kpp" to form the actual name of the dataspace.
- Signal The 1-8 character signal name.
- SMFExit The 6-8 character name of the SMF exit point (for example IEFU83, IEFU84).

MODULE(module_name)

The 1-8 character name of the SMF exit load module.

INDEX(internal_index)

The internal index of the dataspace. The valid range is 0-254. The default is 0.

SCOPE(dataspace_scope)

The scope of the dataspace as follows:

- ALL A SCOPE=ALL dataspace
- COMMON A SCOPE=COMMON dataspace (typically used by the TEDA SMF exit intercepts).

BLOCKS(dataspace_blocks)

The maximum number of blocks the dataspace can use. This value is used to limit the amount of real storage consumed by any CADS (Common Access DataSpace). The valid range is 160-524288. The default is 524288.

PARM='runtime_parameters'

0-63 characters that can be passed to the resource. The meaning and format varies depending on the resource.

Agents

Defines the agents used by the TEDA server. There are various types of agents and each type defines when and how the agent is used. The syntax of the AGENT statement is:

```
AGENT=TYPE(agent_type),
NAME(agent_name),
MODULE(module_name),
INTERVAL(sample_interval),
INDEX(internal_index),
MSGLEVEL(message_level),
RESTART(restart_limit),
MODE(asc_mode),
SSWITCH(space_switch)
PARM='runtime_parameters'
```

Keywords

TYPE(agent_type)

The type of agent. Specify one of the following:

 INIT — An initialization agent routine. The nominated load module in the MODULE() keyword is called during server initialization. INIT agents typically build the infrastructure and global settings for later TASK agents. **Note:** There are four levels of initialization, and whether the agent is called depends on its INDEX() value. INIT agent routines with the lowest INDEX() values are called first.

 TERM — A termination agent routine. The nominated load module in the MODULE() keyword is called during server termination. TERM agents typically cleanup resources built by INIT or TASK agents.

Note: There are four levels of termination, and whether the agent is called depends on its INDEX() value. TERM agent routines with the highest INDEX() values are called first.

- TASK A task agent routine. The nominated load module in the MODULE() keyword is ATTACHed and is expected to remain active until TEDA server termination. Task agents typically sample performance data periodically or on a demand or event driven basis.
- SMF An SMF exit intercept agent. These agents process the intercepted SMF records that are dealt by the DEALER agent. If the SMF record number is a variable, it can be passed to the agent using the INDEX() keyword.
- PIPI A Language Environment function called by CEEPIPI. The TEDA server uses several C function stub programs to interface to the TEMA.
- LOAD A LOAD agent. These agents statement nominate which load modules will be pre-loaded by the TEDA server.
- PCR A PC Routine agent. Nominates the PC routine to be established by the TEDA server. The PC routine is referred to by its internal index number.

NAME(agent_name)

The name of the agent.

Note: It is important that the KppSYNC and KppASYNC agents are named exactly as provided as there are internal checks performed based on the names.

MODULE(module_name)

The 1-8 character load module name.

INTERVAL(sample_interval)

The interval at which the agent is to wake-up and perform its actions. This could include sampling performance data or checking for system or internal resources. The sampling interval is in the following format: *hh:mm:ss.th*

Note: Leading and trailing zeros must always be specified.

INDEX(internal_index)

An internal index value. The valid range is 0-255. The default is 0. The usage of INDEX() depends upon the agent TYPE():

- INIT—The initialization level (0 = first, 3 = last)
- TERM—The termination level (3 = first, 0 = last)
- SMF—The SMF record number for non-fixed SMF record types.
- PCR—The PC Routine index number.

MSGLEVEL(message_level)

The level of messages produced by the monitoring agent. Values greater than zero cause some agents to generate more messages than the default setting. This value overrides the MSGLEVEL() setting from the GLOBAL() statement. The valid range is 0-9. The default is 0.

Note: Do not change this definition without direct instructions from IBM.

RESTART(restart_limit)

The maximum number of times that the TEDA server will restart the TASK agent after it terminates normally or abnormally outside or server termination. The valid range is 0-65535. The default is 0.

MODE(asc_mode)

The address space control setting for PCR agents. Valid values are:

- PRIMARY PC Routine receives control in Primary mode (Default).
- AR PC Routine receives control in Access Register mode.

SSWITCH(space_switch)

Whether or not the PCR agent is for a space-switch PC routine. Valid values are:

- NO PC Routine is not space-switch (Default).
- YES— PC Routine is space-switch.

PARM='runtime_parameters'

0-63 characters that can be passed to the agent as runtime parameters. The meaning and format varies depending on the specific agent.

Intercepting SMF Records

The TEDA server provides a general purpose IEFU83/4 exit called KppU8X that can intercept nominated SMF record types (and subtypes) and capture information from them for use in various other agents. This exit is installed the first time that the TEDA Server starts after an IPL and stays active even if the TEDA Server address space is not active.

When one of the nominated SMF record types is matched by the exit, it is copied to a circular buffer in the KppDS02 common data space. Periodically an agent running in the TEDA called the DEALER (SMF Record Dealer) will sequentially remove the SMF records from the data space buffer and pass a copy to the TYPE(SMF) agents. The TYPE(SMF) agents can choose to ignore the record or process the contents accordingly.

The SMF records that are intercepted are nominated by the SMF= statement in the KppPRD00 startup parameters:

SMF=(type(subtype),...)

Keywords

type

The SMF record type.

subtype

The SMF record subtype. If omitted, all subtypes are collected.

Example:

SMF=(152(1),252)

Support information

If you have a problem with your IBM software, you want to resolve it quickly. This section describes the following options for obtaining support for IBM software products:

- "Using IBM Support Assistant"
- "Obtaining fixes" on page 146
- "Receiving weekly support updates" on page 146
- "Contacting IBM Software Support" on page 148

— Tip

Before using the resources listed below, look for troubleshooting information in *IBM Tivoli Monitoring: Problem Determination Guide*.

Using IBM Support Assistant

The IBM Support Assistant is a free, stand-alone application that you can install on any workstation.

The IBM Support Assistant saves you time searching product, support, and educational resources. The IBM Support Assistant helps you gather support information when you need to open a problem management record (PMR) or Electronic Tracking Record (ETR), which you can then use to track the problem.

- Tip

The Log and Trace Analyzer tool can help you prepare logs to submit with a PMR.

The product-specific plug-in modules of the IBM Support Assistant provide you with the following resources:

- Support links
- Education links
- · Ability to submit problem management reports

For more information and to download the IBM Support Assistant Version 3, see http://www.ibm.com/software/support/isa/. After you download and install the IBM Support Assistant, follow these steps to install the plug-in for Tivoli Tape Optimizer Monitoring Agent

- 1. Start the IBM Support Assistant application.
- 2. Select Updater on the Welcome page.
- 3. Select the New Products and Tools tab.
- 4. Under Tivoli, select **Tivoli Tape Optimizer Monitoring Agent**, then click the **Install** button. Be sure to read the license and description.
- 5. Restart IBM Support Assistant.

Obtaining fixes

A product fix might be available to resolve your problem. To determine what fixes are available for the Tivoli Tape Optimizer Monitoring Agent , complete the following steps:

- 1. Go to the IBM Software Support Web site at http://www.ibm.com/software/ support.
- 2. Under **Find product support**, click **All IBM software (A-Z)**. This opens the software product list.
- 3. In the software product list, click **Tivoli Tape Optimizer Monitoring Agent**. This opens the Tivoli Tape Optimizer Monitoring Agent support site.
- 4. Under **Solve a problem**, click **APARs** to go to a list of fixes, fix packs, and other service updates for Tivoli Tape Optimizer Monitoring Agent.
- 5. Click the name of a fix to read the description and optionally download the fix. You can also search for a specific fix; for tips on refining your search, click **Search tips**.
- 6. In the **Find downloads and drivers by product** section, select one software category from the **Category** list.
- 7. Select one product from the Sub-category list.
- 8. Type more search terms in the **Search within results** if you want to refine your search.
- 9. Click Search.
- 10. From the list of downloads returned by your search, click the name of a fix to read the description of the fix and to optionally download the fix.

For more information about the types of fixes that are available, see the *IBM Software Support Handbook* at http://techsupport.services.ibm.com/guides/ handbook.html.

Receiving weekly support updates

To receive weekly e-mail notifications about fixes and other software support news, complete the following steps:

- 1. Go to the IBM Software Support Web site at http://www.ibm.com/software/ support.
- 2. Click My support in the upper right corner of the page.
- 3. If you have already registered for **My support**, sign in and skip to the next step. If you have not registered, click **register now**. Complete the registration form using your e-mail address as your IBM ID and click **Submit**.
- 4. Click Edit profile.
- 5. In the Products list, select Software. A second list is displayed.
- 6. In the second list, select the product segment **Systems Management**. A third list is displayed.
- 7. In the third list, select **Other Systems Management**. A list of applicable products is displayed.
- 8. Select the products for which you want to receive updates.
- 9. Click Add products.
- After selecting all products that are of interest to you, click Subscribe to e-mail on the Edit profile tab.
- 11. Select Please send these documents by weekly e-mail.

- 12. Update your e-mail address as needed.
- 13. In the **Documents** list, select **Software**.
- 14. Select the types of documents that you want to receive information about.
- 15. Click Update.

If you experience problems with the **My support** feature, you can obtain help in one of the following ways:

Online

Send an e-mail message to erchelp@ca.ibm.com, describing your problem.

By phone

Call 1-800-IBM-4You (1-800-426-4968).

Contacting IBM Software Support

IBM Software Support provides assistance with product defects. The easiest way to obtain that assistance is to open a PMR or ETR directly from the IBM Support Assistant (see "Using IBM Support Assistant" on page 145), and attach the logs you prepare with the help of the Log and Trace Analyzer Tool.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

For IBM distributed software products (including, but not limited to, Tivoli, Lotus[®], and Rational[®] products, as well as DB2 and WebSphere[®] products that run on Windows, or UNIX operating systems), enroll in Passport Advantage in one of the following ways:

Online

Go to the Passport Advantage Web site at http://www.ibm.com/software/ howtobuy/passportadvantage/pao_customers.htm and click **How to Enroll**.

By phone

For the phone number to call in your country, go to the IBM Software Support Web site at http://techsupport.services.ibm.com/guides/ contacts.html and click the name of your geographic region.

- For customers with Subscription and Support (S & S) contracts, go to the Software Service Request Web site at https://techsupport.services.ibm.com/ssr/ login.
- For customers with IBMLink[™], CATIA, Linux, S/390[®], iSeries[®], pSeries[®], zSeries, and other support agreements, go to the IBM Support Line Web site at http://www.ibm.com/services/us/index.wss/so/its/a1000030/dt006.
- For IBM eServer[™] software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web site at http://www.ibm.com/servers/eserver/techsupport.html.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. From other countries, go to the contacts page of the *IBM Software Support Handbook* on the Web at http://techsupport.services.ibm.com/guides/contacts.html and click the name of your geographic region for phone numbers of people who provide support for your location.

If you prefer to contact IBM Software support without the help of the IBM Support Assistant, complete the following steps:

- 1. "Determining the business impact"
- 2. "Describing problems and gathering information"
- 3. "Submitting problems"

Determining the business impact

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem that you are reporting. Use the following criteria:

Severity 1

The problem has a *critical* business impact. You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.

Severity 2

The problem has a *significant* business impact. The program is usable, but it is severely limited.

Severity 3

The problem has *some* business impact. The program is usable, but less significant features (not critical to operations) are unavailable.

Severity 4

The problem has *minimal* business impact. The problem causes little impact on operations, or a reasonable circumvention to the problem was implemented.

Describing problems and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- · What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information. See IBM Tivoli Tape Optimizer on z/OS: Monitoring Agent Planning and Configuration Guide.
- Can you re-create the problem? If so, what steps were performed to re-create the problem?
- Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, and so on.
- Are you currently using a workaround for the problem? If so, be prepared to explain the workaround when you report the problem.

Submitting problems

You can submit your problem to IBM Software Support in one of two ways:

Online

Click **Submit and track problems** on the IBM Software Support site at http://www.ibm.com/software/support/probsub.html. Type your information into the appropriate problem submission form.

By phone

For the phone number to call in your country, go to the contacts page of the

IBM Software Support Handbook at http://techsupport.services.ibm.com/ guides/contacts.html and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the Software Support Web site daily, so that other users who experience the same problem can benefit from the same resolution.

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