IBM Tivoli Decision Support for z/OS
Version 1.8.2

Guide to Reporting

SH19-6842-12

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Note
Before using this information and the product it supports, read the information in "Notices" on page 113.

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This edition applies to version 1, release 8, modification level 2 of IBM Tivoli Decision Support for z/OS (program number 5698-B06) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SH19-6842-11.

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Preface

This book provides an introduction to the reporting dialog of IBM® Tivoli® Decision Support for z/OS® as it is used from host sessions. It describes how to use the reporting dialog to display, search, modify, and create reports and report groups.

IBM Tivoli Decision Support for z/OS is hereafter also referred to as Tivoli Decision Support for z/OS.

The following terms are used interchangeably throughout this book:

- MVS™, OS/390®, and z/OS
- OPC and Tivoli Workload Scheduler for z/OS

Topics:

Who should read this book

The *Guide to Reporting* is primarily for Tivoli Decision Support for z/OS users who display existing reports using the reporting dialog. It is also for more experienced users who create and modify reports, or for the Tivoli Decision Support for z/OS administrator, who controls reporting dialog default functions and capabilities.

What this book contains

Use this book as a guide to using the Tivoli Decision Support for z/OS reporting dialog from a host session. The book contains these chapters:

- Introducing the Reporting Dialog introduces Tivoli Decision Support for z/OS, the reporting dialog, and products with which it interacts, such as DB2®, and (optionally) Query Management Facility (QMF™).
- Getting startedexplains how to use the reporting dialog. It describes how to start and exit Tivoli Decision Support for z/OS and how to use the reporting dialog. It also introduces the Tivoli Decision Support for z/OS help system and shows how to get help when you need it.
- Working with existing reports describes general tasks, including how to display, print, and modify reports that your Tivoli Decision Support for z/OS administrator has installed and made available for your use or that you created.
- Working with report groups describes how to create, modify, and use logical groups of reports.
- Searching for reports describes how to locate reports that describe the performance of a particular system or subsystem, or that show similar performance characteristics across a range of systems.

- Creating a new report using QMF describes how to use Tivoli Decision Support for z/OS and the products with which it interacts to create character (*tabular*) or graphical data display manager (GDDM)-based graphic reports (*charts*). It also shows you how to use an existing report as a template for a new one.
- Creating a new report with the report generatordescribes how to use Tivoli Decision Support for z/OS's built-in report generator to create character (*tabular*) reports or Graphical Data Display Manager (GDDM)-based graphic reports (*charts*). It also shows you how to use an existing report as a template for a new one.
- Using other Reporting Dialog functionsdescribes how to generate reports in batch, communicate with the Tivoli Decision Support for z/OS administrator using messages, and set dialog parameters.
- Reporting Dialog Navigation Reference is a reference of all the options on the menu bar pull-downs in the reporting dialog. It shows the pull-downs as they are displayed on your screen, and describes each option.
- Chapter 10, "Installing and using TDS web reporting," on page 103 describes the web reporting functionality available in the TDS product to run queries and present the data in a variety of output formats.
- "Support information," on page 109 explains how to obtain support for IBM software products.

Publications

This section describes how to access the Tivoli Decision Support for z/OS publications online and lookup message explanations.

For a list of publications and related documents, refer to "Tivoli Decision Support for z/OS publications" on page 117.

Accessing publications online

Publications for this and all other IBM products, as they become available and whenever they are updated, can be viewed on the IBM Knowledge Center website where you can also download the associated pdf.

Tivoli Decision Support for z/OS V1.8.2
https://www.ibm.com/support/knowledgecenter/SSH53X_1.8.2

IBM Knowledge Center
https://www.ibm.com/support/knowledgecenter

Using LookAt to look up message explanations

LookAt is an online facility that lets you look up explanations for most of the IBM messages you encounter, as well as for some system abends (an abnormal end of a task) and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can use LookAt from the following locations to find IBM message explanations from z/OS elements and features, z/VM, VSE/ESA™, and Clusters for AIX® and Linux®:

- The internet. You can access IBM message explanations directly from the LookAt website at:

  http://www.ibm.com/eserver/zseries/zos/bkserv/lookat/

- Your z/OS TSO/E host system. You can install code on your z/OS systems to access IBM message explanations, using LookAt from a TSO/E command line (for example, TSO/E prompt, ISPF, or z/OS UNIX® System Services running OMVS).
- Your Microsoft® Windows® workstation. You can install code to access IBM message explanations on the (SK3T-4269), using LookAt from a Microsoft Windows DOS command line.
- Your wireless handheld device. You can use the LookAt Mobile Edition with a handheld device that has wireless access and an Internet browser (for example, Internet Explorer for Pocket PCs, Blazer, or Eudora for Palm OS, or Opera for Linux handheld devices.) Link to the LookAt Mobile Edition from the LookAt website.

You can obtain code to install LookAt on your host system or Microsoft Windows workstation from:

- A CD in the *z/OS Collection*, (SK3T-4269)
- The *z/OS and Software Products DVD Collection*, (SK3T-4271)
- The LookAt website (click **Download** and then select the platform, release, collection, and location that suit your needs). More information is available in the LOOKAT.ME files available during the download process.

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 section in the *Administration Guide and Reference*.

Tivoli technical training

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

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:

- Searching knowledge bases: You can search across a large collection of known problems and workarounds, Technotes, and other information.
- 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 these three ways of resolving problems, see "Support information," on page 109.

Conventions used in this book

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

The following terms are used interchangeably throughout this book:
- MVS, OS/390®, and z/OS.
- VM and z/VM.

Except for editorial changes, updates to this edition are marked with a vertical bar to the left of the change.

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**)
- Column headings in a table
- Keywords and parameters in text

Italic

- Citations (titles of books, diskettes, and CDs)
- Words defined in text
- Emphasis of words (words as words)
- Letters as letters
- 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

Except for editorial changes, updates to this edition are marked with a vertical bar to the left of the change.

Chapter 1. Introducing the Reporting Dialog

Tivoli Decision Support for z/OS is a reporting system that collects utilization and throughput data logged by computer systems, then summarizes the data and presents it in a variety of forms. After reading this chapter, you should have a basic understanding of Tivoli Decision Support for z/OS and be ready to learn to use the reporting dialog.

Topics:

Understanding how Tivoli Decision Support for z/OS works

Tivoli Decision Support for z/OS performs these basic functions:

- Collecting systems management data into a DATABASE 2 (DB2) database
- Reporting on the data in the database

Tivoli Decision Support for z/OS consists of a base product and several optional features. The Tivoli Decision Support for z/OS base can generate graphic and tabular reports by using systems management data it stores in its DB2 database. The base product includes the administration dialog, the reporting dialog, and the log collector, all of which interact with a standard DB2 database. The following figure provides an overview of Tivoli Decision Support for z/OS and its processes.

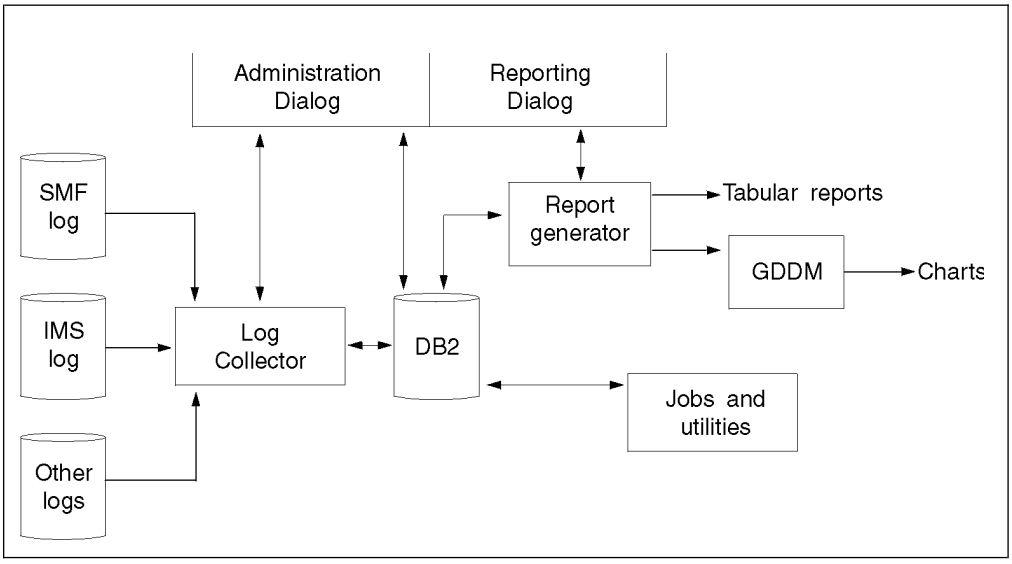


Figure 1. The Tivoli Decision Support for z/OS process

Tivoli Decision Support for z/OS stores systems management data in a standard DB2 database. You can use Structured Query Language (SQL) statements from the reporting dialog as you perform specialized searches and create reports. If Query Management Facility (QMF) is installed on your system, it is used for reporting functions. Otherwise, the built-in report generator of Tivoli Decision Support for z/OS is used.

The administrator can control almost every aspect of Tivoli Decision Support for z/OS using the administration dialog. The Tivoli Decision Support for z/OS administrator can use the administration dialog to install and customize features, work with log and record definitions, run COLLECT procedures, and work with tables (including displaying or editing them).

Tivoli Decision Support for z/OS provides batch procedures and an interactive interface that enable you to collect systems management data from the system management facility (SMF) log and other sources, extract and manipulate the data, and then store the data in the Tivoli Decision Support for z/OS database.

In the same database that holds collected data, Tivoli Decision Support for z/OS stores information you supply, such as performance objectives or department and workload definitions.

You use the Tivoli Decision Support for z/OS reporting dialog to work with reports and report groups to display, customize, create, and print reports. You can create Tivoli Decision Support for z/OS reports to support each of your specialized applications.

Reporting dialog windows conform to IBM Common User Access® (CUA®) guidelines, and greatly resemble the windows of other IBM CUA products.

Using Tivoli Decision Support for z/OS features

Tivoli Decision Support for z/OS features provide DB2 table definitions for collecting systems management data, and provide predefined queries, forms, and reports for presenting that data.

These optionally installable features are available for use with Tivoli Decision Support for z/OS:

- Resource Accounting for z/OS (previously known as Resource Accounting)
- AS/400 System Performance feature
- CICS Performance feature
- Distributed Systems Performance feature
- IMS Performance feature
- Monitoring Agent feature
- Network Performance feature
- System Performance feature

These features let you collect and report on systems management data, such as SMF data or IMS log data.

An overview of the Reporting Dialog

You can use the reporting dialog to display reports that present data collected by Tivoli Decision Support for z/OS.

If QMF is used with Tivoli Decision Support for z/OS in your installation, it is used when you work with reports. Otherwise, the built-in reporting dialog ofTivoli Decision Support for z/OS is used. For more information about using the Tivoli Decision Support for z/OS reporting dialog with or without QMF, see Creating a new report using QMF, and Creating a new report with the report generator.

Using Tivoli Decision Support for z/OS reports

Tivoli Decision Support for z/OS features come with a comprehensive set of predefined reports. When you use the reporting dialog to display or print a report, Tivoli Decision Support for z/OS runs the query associated with the report to retrieve data from the database, and then displays or prints the results according to the form associated with the report.

Understanding the different report formats

You can display a report in either tabular or chart format. (To generate and display chart reports, Tivoli Decision Support for z/OS uses Graphical Data Display Manager (GDDM®). If GDDM is not installed on your system, all reports are displayed in tabular form.) Reports displayed in tabular format are displayed as tables with rows and columns. Charts are displayed as graphic representations of the row and column data. Each predefined report has a default form (either tabular or chart) associated with it.

Charts are useful for displaying data trends and providing an overview of the data. For example, the chart in Figure 2 identifies the projects that use their allocated direct access storage device (DASD) storage inefficiently.

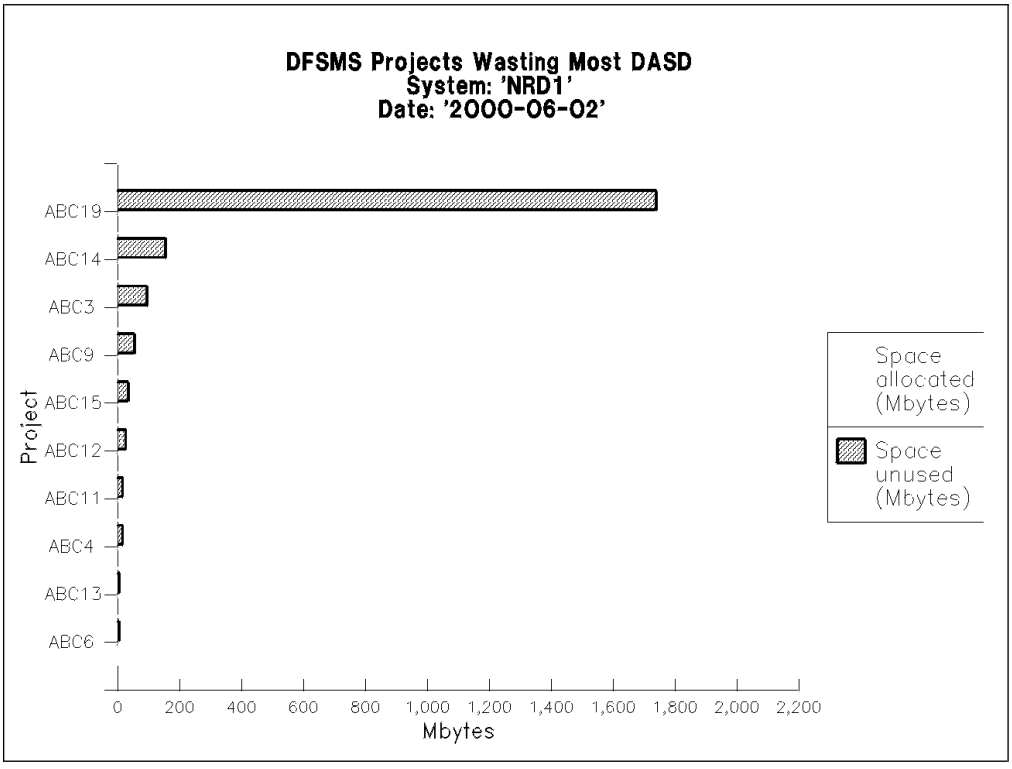


Figure 2. Sample chart showing projects wasting the most DASD

Tivoli Decision Support for z/OS tabular reports provide various levels of detail to assist you in solving systems management problems. Because these reports present data in a numerical format, you can view indicators of a potential system constraint in more detail than in charts.

For example, by examining the tabular report in Figure 3 on page 4, you can determine if DASD overallocation is a problem. If it is, you need to know what projects have a high amount of unused storage. You can then contact people or

departments in your organization who are responsible for an application with a high amount of unused storage. Either they can release wasted storage, or you can ensure that the proper management class has been assigned.

DFSMS Total Storage Used by Project
System: 'NRD1'
Date: '2000-10-03'

Project	Total storage (Mbytes)	Space allocated (Mbytes)	Mspace DASD (Mbytes)	Mspace tape (Mbytes)	Bspace DASD (Mbytes)	Bspace tape (Mbytes)	Migration ratio (%)	Backup ratio (%)
ABC11	437	90	74	0	273	0	12.0	11.5
ABC12	114	34	10	0	69	0	4.3	5.2
ABC13	381	101	277	0	2	0	77.5	1.2
ABC14	1 354	384	662	0	308	0	61.7	6.3
ABC15	103	69	5	0	29	0	11.1	6.0
ABC16	6	2	1	0	3	0	73.0	48.6
ABC18	874	9	370	0	495	0	57.4	48.2
ABC19	13 768	2 123	3 499	0	8 147	0	33.0	24.0
ABC2	57	5	10	0	41	0	45.0	19.2
ABC22	336	1	126	0	210	0	64.0	18.8
ABC3	356	150	5	0	201	0	7.9	10.8
ABC4	3 328	485	2 288	0	555	0	18.0	17.1
ABC5	3 936	26	1 809	0	2 101	0	52.6	22.9
ABC6	39	5	9	0	25	0	59.7	43.0
ABC9	896	83	138	0	675	0	22.5	7.0

Tivoli Decision Support for z/OS Report: DFSMS05

Figure 3. Sample Tivoli Decision Support for z/OS tabular report

When you create a report, you can use the reporting dialog to save the report data as a member in either the tabular reports data set or the charts data set. (Your administrator defined the names of these report data sets during installation. You can change them from the Dialog Parameters pop-up.)

Organizing Tivoli Decision Support for z/OS reports

You can store related reports (for example, all CICS reports) in logical report groups for easier access. You can also use report groups to keep together all reports for a particular group of users (for example, managers). Predefined reports shipped with Tivoli Decision Support for z/OS features are stored in predefined groups. You can use the reporting dialog to define new report groups, or to add reports to or delete reports from existing groups. Tivoli Decision Support for z/OS reports can exist in more than one group.

Tivoli Decision Support for z/OS provides a search function that lets you find reports you need without manually scrolling through all available reports. If you define search criteria that you are likely to use often, you can save the criteria for future use.

Each predefined Tivoli Decision Support for z/OS report has one or more attributes associated with it. These attributes help identify the report and are used by the reporting dialog search function. For example, the attribute CICS identifies reports that show CICS data.

Tivoli Decision Support for z/OS reports, groups, and saved criteria of searches are classified as:

Public Reports and report groups that are available to all Tivoli Decision Support for z/OS users

Private
Reports and report groups that you created for your use

You can display or print private reports and public reports. However, you can modify or delete only private reports and public reports that you created. If you are a Tivoli Decision Support for z/OS administrator, you can display, print, modify, or delete all reports.

Getting help information

The online help system provides field help, window help (general help), message help, and keys help. In addition, each help window has a function key that takes you to appropriate sections of Tivoli Decision Support for z/OS online books where you can read additional information.

Tivoli Decision Support for z/OS also shows you report descriptions in the online books for every predefined report supplied with a Tivoli Decision Support for z/OS feature. You can learn about the application of a specific report by typing a question mark next to its name in the list of reports. See Viewing information about a report for more information about viewing online information about reports.

Chapter 2. Getting started

This chapter explains how to use the Tivoli Decision Support for z/OS reporting dialog. After reading this chapter, you should be familiar with these tasks:

- Starting the reporting dialog for the first time
- Using a Tivoli Decision Support for z/OS dialog
- Getting help
- Finding information in online books
- Using Tivoli Decision Support for z/OS commands to navigate
- Exiting Tivoli Decision Support for z/OS

Topics:

Starting the reporting dialog for the first time

About this task

When you use the reporting dialog, you can customize certain dialog defaults. One of these defaults lets you select a report group to display as your list of reports whenever you start the reporting dialog.

To start the reporting dialog and set a report group as a default:

Procedure

1. Type `TSO %DRLEINIT REPORTS` on the command line of any Interactive System Productivity Facility/Program Development Facility (ISPF/PDF) window.

   Note: Depending on how Tivoli Decision Support for z/OS was installed on your system, you might be able to select the reporting dialog from the ISPF primary menu.

   The first time you start the reporting dialog, Tivoli Decision Support for z/OS displays the Reporting Dialog Defaults pop-up (Figure 4 on page 8). In subsequent sessions, if you elect not to display this pop-up each time you start the reporting dialog, you can access this pop-up by selecting the Reporting dialog defaults option from the Options pull-down.

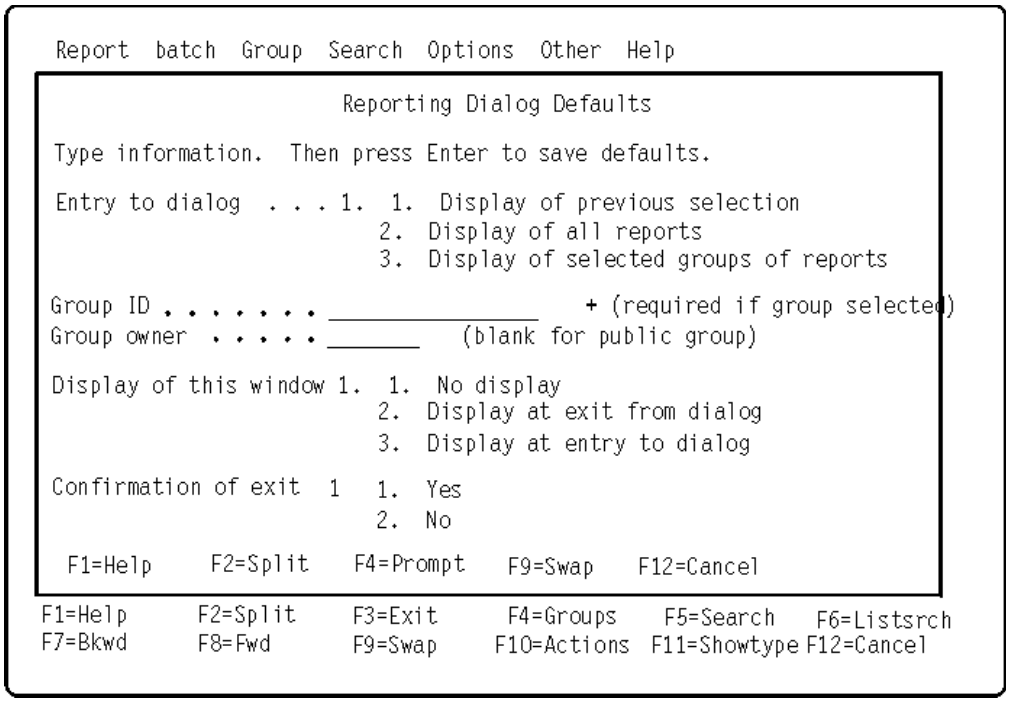


Figure 4. Reporting dialog defaults pop-up

2. Type the number of your selection in the Entry to dialog field.

   If you type 1, Display of previous selection, Tivoli Decision Support for z/OS uses the search criterion you used last to limit the list of reports shown in the Reports window. This is the default selection. If you choose this option the first time you use the Tivoli Decision Support for z/OS reporting dialog, the Reports window displays nothing until you specify a group or search criteria.

   If you type 2, Display of all reports, Tivoli Decision Support for z/OS displays the Reports window listing all the reports available for your use. On subsequent entries into the reporting dialog, the Reports window displays all reports.

   If you type 3, Display of selected group of reports, you must also type the name of the report group in the Group name field and the user ID of the group owner, if it is a private report group. To see a list of report groups, move the cursor to the Group name field and press **F4**. On subsequent entries into the reporting dialog, Tivoli Decision Support for z/OS displays the Reports window and lists only the reports in the group you have identified.
3. Press Enter to save the defaults.

Using a Tivoli Decision Support for z/OS dialog

The reporting dialog consists of a series of windows through which you provide information to Tivoli Decision Support for z/OS. You use the Tivoli Decision Support for z/OS reporting dialog to select items such as reports and report groups, and then select the actions to perform on these items.

Understanding Tivoli Decision Support for z/OS windows

The following figure shows a sample Tivoli Decision Support for z/OS window and points out the elements common to many windows:

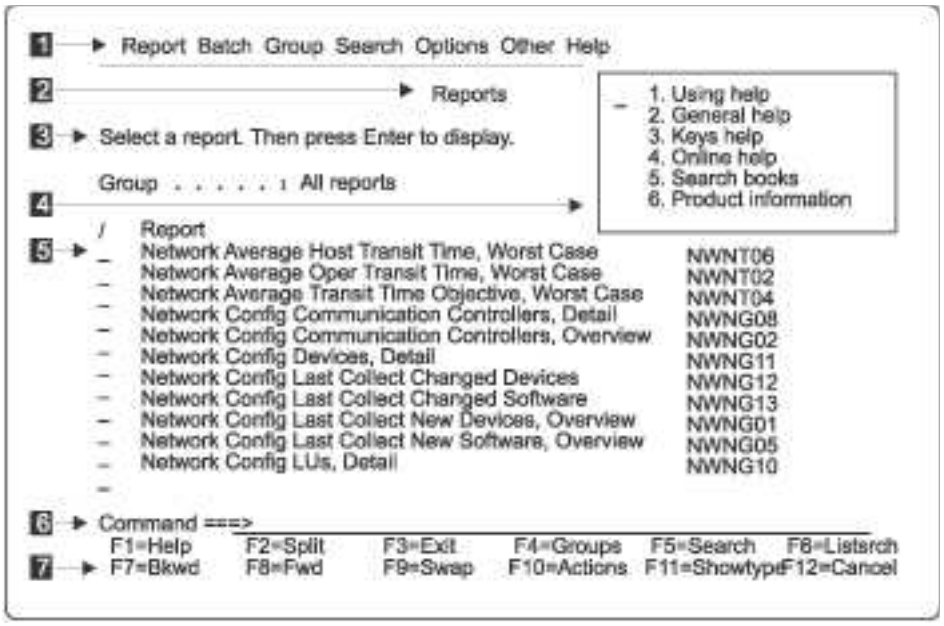


Figure 5. A sample Tivoli Decision Support for z/OS window

1 Menu bar
Lists the types of actions available from the window. Every primary window has a menu bar; pop-up windows do not. Using the menu bar describes how to use the options on the menu bar.

2 Window title
Indicates the contents and function of the window.

3 Instructions
Provides direction about what action to take, and describes the default action (what happens when you press Enter without selecting another action).

4 Pull-down

Contains the options related to the categories listed in the menu bar. Using the menu bar describes how to select these options.

5 Selection field
Lets you select an option, or a report or report group, from a displayed list. The selection field for a list of options is a blank where you can type the number of the option you want to select (as in pull-downs). The selection field for a list of reports or groups is a column of blanks with a slash (/) as the column heading. You can type a slash in the blank beside a report or group to select it.

Note: You can actually type any character in the selection field of a list of reports or groups. If you select a report by typing a question mark, Tivoli Decision Support for z/OS uses BookManager® to show you a description of that report. See Finding information in online books for more information about BookManager.

6 Command line
Lets you specify any command available on your system, including Tivoli Decision Support for z/OS commands, TSO commands, and ISPF commands. Using Tivoli Decision Support for z/OS commands to navigate describes the commands.

7 Function keys
Lists the function key settings for the current window. Using function keys describes the function key settings in Tivoli Decision Support for z/OS.

Text entry field (not shown)
Lets you specify information to Tivoli Decision Support for z/OS by typing text. If you type information that is not valid, an error message is displayed. Correct the information and try the action again. If an entry field is followed by a plus (+) sign, you can use the F4 (Prompt) function key, described in Using function keys.

Performing actions in Tivoli Decision Support for z/OS

You can perform actions in Tivoli Decision Support for z/OS by:

- Pressing Enter to perform the default action
- Pressing a function key
- Selecting a menu bar option
- Typing a command

In most cases, you select a report or group upon which to act *before* selecting an action. Selecting reports and groups describes how to select reports and groups.

The instructions below the title of the window describe the default action (what happens if you press Enter) for that window. Selecting the default action describes how to initiate the default action.

Function keys are defined to perform some of the most frequently used Tivoli Decision Support for z/OS actions. Using function keys describes how to use the function keys to select actions.

The menu bar provides access to all possible actions in Tivoli Decision Support for z/OS. Using the menu bar describes how to use the menu bar to select actions.

Selecting reports and groups

To select a report or group from a Tivoli Decision Support for z/OS selection list, type a slash (/) or another character in the selection field beside the name of the report or group. The selection field has a slash as its column heading.

To see a description of a report, type a question mark (?) in the selection field beside the report ID. Tivoli Decision Support for z/OS starts BookManager to display the report description from the online books. See Viewing information about a report for more information.

Selecting the default action

Every Tivoli Decision Support for z/OS window has a default, which you select by pressing Enter. The default action is described in the instructions below the title of the window. For example, the default on the Reports window is to display the selected report. When you select a report and press Enter, Tivoli Decision Support for z/OS processes the default immediately.

Using function keys

A list of function keys and their actions are displayed at the bottom of each reporting dialog window. When you press a function key, Tivoli Decision Support for z/OS immediately performs the action assigned to that function key.

You can use an ISPF command to display the list of function keys if they are not displayed. Type FKA ON or PFSHOW ON on the command line and press Enter. To change the display of function keys, such as whether to display them as F1 to F12 or F13 to F24, type PFSHOW TAILOR on the command line, press Enter, and specify your preference.

Note: You should always display the list of function keys. In pop-ups, you have no other way to start the functions that are assigned to function keys. Also, some function keys might have different functions in different windows.

Figure 5 on page 9 shows the function keys available in the Reports window.

These function keys perform the same actions regardless of where they are displayed in the dialog:

F1

If the cursor is on a selectable field, a menu bar option, or a pull-down option, Tivoli Decision Support for z/OS displays field-level help. Otherwise, general help is displayed for the entire dialog window. If you press **F1** after Tivoli Decision Support for z/OS displays a message, help is displayed for the message.

F2

Initiates the ISPF split-screen mode. If split-screen mode is already activated, pressing F2 repositions the split line.

Note:

1. Split-screen mode is not always available from products with which Tivoli Decision Support for z/OS works.
2. You can use the alternate ISPF session for every task except those that allocate and free the same DDNAMEs that Tivoli Decision Support for z/OS uses. An example is SLR, which can free ADMCFORM.
3. You cannot run a second Tivoli Decision Support for z/OS session from the other ISPF session.

F3 Exits from the window. F3 is available only on the Reports window and help windows. It is not available on pop-ups.

F9

Swaps the cursor from one portion of a split screen to another. You must have initiated ISPF split-screen mode by pressing F2. Note that split-screen mode is not available with all of the products with which Tivoli Decision Support for z/OS works.

F12 Returns to the previous window without saving any changes made in the current window.

These function keys are used in many Tivoli Decision Support for z/OS windows and help windows:

F4 With the cursor in a text entry field followed by a plus (&plus) sign, press

F4 to list available choices for that field. In a Tivoli Decision Support for z/OS help window, this key links to more help in one of the online books. See Using help function keys for more information about function keys used in the help windows.

F7 If information cannot fit in one window, press F7 to scroll backward to the previous window.

F8 If information cannot fit in one window, press F8 to scroll forward to the next window.

F10 In the Reports window, press F10 to move the cursor between the work area and the menu bar.

F11 In the Reports window, press F11 to toggle the display between showing the report ID and showing the report type and owner. When the report ID is displayed (the default display), F11 is labeled Showtype; when the report type and owner are displayed, the key is labeled Show ID.

Using the menu bar

Each Tivoli Decision Support for z/OS primary window contains a menu bar that lists the options available in that window. When you select an option from the menu bar, a pull-down menu is displayed beneath it listing the actions you can perform. Pop-ups do not contain a menu bar. The Reports window (Figure 6) is a primary window and contains a menu bar from which you can select these options:

- Reports
- Batch
- Group
- Search
- Options
- Other
- Help

```
Report  Batch  Group  Search  Options  Other  Help
------------------------------------------------------------------------------
                       Reports       ROW 221 TO 231 OF 438

Select a report. Then press Enter to display.

Group  . . . . . : All reports

/   Report                                          ID
_   Network Average Host Transit Time, Worst Case       NWNT06
_   Network Average Oper Transit Time, Worst Case       NWNT02
_   Network Average Transit Time Objective, Worst Case  NWNT04
_   Network Config Communication Controllers, Detail    NWNG08
_   Network Config Communication Controllers, Overview  NWNG02
_   Network Config Devices, Detail                      NWNG11
_   Network Config Last Collect Changed Devices         NWNG12
_   Network Config Last Collect Changed Software        NWNG13
_   Network Config Last Collect New Devices, Overview   NWNG01
_   Network Config Last Collect New Software, Overview  NWNG05
_   Network Config LUs, Detail                          NWNG10

Command ===> ____________________________________________________________
 F1=Help      F2=Split     F3=Exit      F4=Groups    F5=Search    F6=Listsrch
 F7=Bkwd      F8=Fwd       F9=Swap     F10=Actions  F11=Showtype F12=Cancel
```

Figure 6. Reports window

To select an action from the menu bar:

1. Press **Actions (F10)** (or the **Home** key) or use the cursor movement keys to move the cursor to the menu bar.
2. Use the cursor movement keys to move the cursor to the option you want to select, and press Enter.

   Tivoli Decision Support for z/OS displays a pull-down listing the actions you can perform.
3. In the selection field on the pull-down, type the number of the action you want to perform, or press the up arrow and down arrow keys until the cursor is on the action you want to perform.
4. Press Enter.

Tivoli Decision Support for z/OS does the action you selected.

Getting help

Tivoli Decision Support for z/OS provides help on all windows and functions. This help explains how to use dialog windows and how to fill in fields in windows. Tivoli Decision Support for z/OS provides these types of help:

- Field help
- Using help
- General help
- Keys help
- Message help
- Online books
- Search books
- Product information

Getting field help

Tivoli Decision Support for z/OS provides field help for every menu bar option, pull-down option, and entry field.

To request field help, place the cursor in the field you want to learn more about and press **F1**. Tivoli Decision Support for z/OS displays help for the field you selected.

Getting general help

General help provides help for an entire window. To get general help for a window, you can use any one of these methods:

- Press **F5** from a field help window.
- Press **F1** when the cursor is not on an entry field or the menu bar.
- Type **`help`** on the command line and press Enter.
- Select the **General help** option from the **Help** pull-down of the Tivoli Decision Support for z/OS Reports window (Figure 7 on page 14).

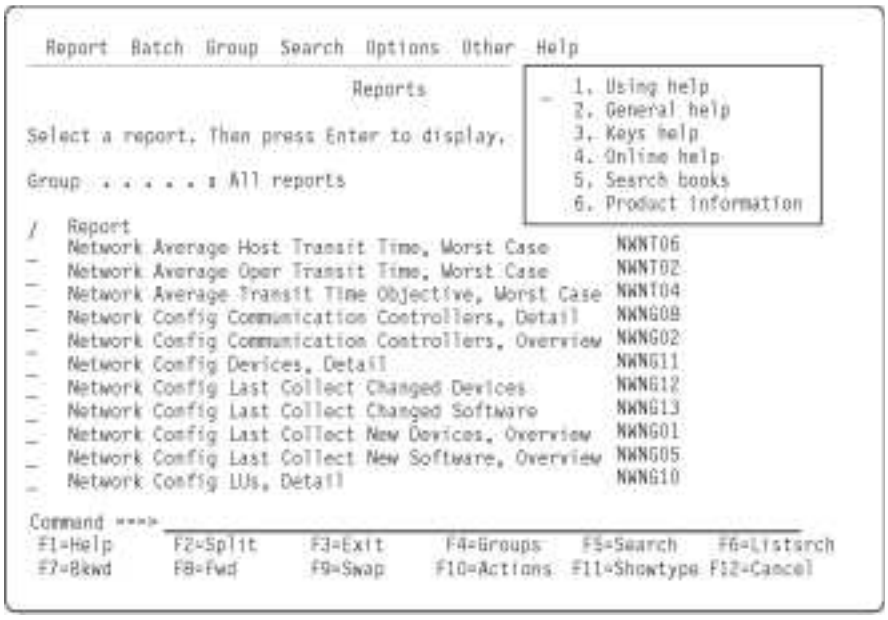


Figure 7. Help pull-down for the Reports

Getting keys help

Tivoli Decision Support for z/OS provides help for the function keys used by the reporting dialog. To get help for function keys, either:

- Select the **Keys help** option from the **Help** pull-down on the Reports window.
- Press **F6** from a help window.

Getting help on using help

Tivoli Decision Support for z/OS provides instructions for using online help. To get help on using help, select the **Using help** option from the **Help** pull-down.

Using help function keys

A list of function keys and their actions are displayed at the bottom of each help window. When you press a function key, Tivoli Decision Support for z/OS immediately performs the action assigned to that function key.

These function keys perform the same actions in all field help windows:

F1 Displays help for a reference phrase selected by the cursor, or displays ISPF help

F2 Initiates ISPF split-screen mode

F3 Exits from help

F4 Links to more help for the topic in an online Tivoli Decision Support for z/OS book

F5 Displays general help, which is help for tasks coordinated by the entire window

F6 Displays keys help for the window

F7 Scrolls the help window backward

F8 Scrolls the help window forward

F9 Swaps to the alternate ISPF window, if operating in ISPF split-screen mode

F12 Returns to the previous window

Function keys for general help are slightly different. There is no F5 (Gen help) key to link you to general help.

Function keys for message help are also different. There is no key for general help. Also, there is no F4 (Info) key to link you to more help in one of the Tivoli Decision Support for z/OS online books.

Finding information in online books

While in Tivoli Decision Support for z/OS, you can use BookManager to access any online book. Tivoli Decision Support for z/OS provides numerous links between its dialogs and the online books. Links to online books are available from:

Selection lists of Tivoli Decision Support for z/OS reports

You can type a question mark (?) beside the name of a report to see a description of that report in an online book.

Help windows

You can go directly from a help window to a relevant online description of the help subject by pressing F4 (Info). For each help window except message help, there is one link to the most relevant information in an online book.

The BookManager option of the Other pull-down
When you select this option, BookManager is started and you see your default list of bookshelves.

The Online books option of the Help pull-down
When you select this option, the online list of books and topics is displayed. From the displayed list, you can select a book or view a list of commonly referenced topics that link to the online library. Alternatively, you can type the **INFO** command.

The Search books option of the Help pull-down
When you select this option, Tivoli Decision Support for z/OS starts BookManager and displays the BookManager Set Up Search pop-up. You can then search for any word or phrase in the online books.

Alternatively, you can type the **INFO SEarch** command. If you use a search argument with this command: **INFO SEarch** *search_argument*

Tivoli Decision Support for z/OS bypasses the BookManager Set Up Search pop-up and initiates the BookManager search function. The next pop-up you see is the BookManager pop-up that describes the results of the search, the List All Books with Matches pop-up.

For more information about the Tivoli Decision Support for z/OS commands, see Using Tivoli Decision Support for z/OS commands to navigate.

Once you are in BookManager, you can use its capabilities to find online information about Tivoli Decision Support for z/OS. When you are ready to return to a Tivoli Decision Support for z/OS dialog, exit BookManager.

The rest of this section describes how to navigate within BookManager. A typical way to enter BookManager is to select option 4 **Online books** from the **Help** pull-down in the Reports window. When you start BookManager this way, BookManager displays the topics list pop-up (Figure 8).

```
 Books  GoTo  Search  Notes  Services  Options  Help
-------------------------------------------------------------------------------


1.0  Topics in Online Books             © Copyright IBM Corp. 1993, 2001
                                                        Topic lines 1 to 25 of 31
   To view an online book, tab the cursor to the book and press Enter:

       Administration Guide and Reference and Reference
       Distributed Systems Performance Feature Guide and Reference
       Guide to Reporting
       Language Guide and Reference
       Messages and Problem Determination
       AS/400 System Performance Feature Guide and Reference
       Capacity Planner Feature Guide and Reference
       CICS Performance Feature Guide and Reference
       Network Performance Feature Installation and Administration
       Network Performance Feature Reports
       Network Performance Feature Reference
       Resource Accounting for z/OS
       System Performance Feature Guide
       System Performance Feature Reference Volume I
       System Performance Feature Reference Volume II

   To select a topic in an online book, tab the cursor to one of these
   topic groups and press Enter:
Command ===> _____________________________________________ SCROLL ===> PAGE
F1=Help      F2=Split     F3=Exit      F4=Unlink    F5=Notes     F6=Review
F7=Bkwd      F8=Fwd       F9=Swap      F10=Actions  F11=Retrieve F12=Cancel
```

Figure 8. Topics in online book

This window displays a list of the online books and the commonly accessed help topics. To access an online book, press the tab key until the cursor is on the line containing the title of the book you want to view and press Enter. To view any of the other topics, press the tab key and F8 (Fwd) or F7 (Bkwd) until the cursor is on the line containing the topic you want to view, and press Enter. BookManager displays the topic that you selected.

To use BookManager to search for a word or phrase while you are in a book or bookshelf:

1. Select the Search pull-down from the menu bar.
2. Select Set up search in the Search pull-down.

   A pop-up is displayed for you to provide search information (Figure 9 on page 17).
3. Type words or phrases you want to find in the Search for field and press Enter.

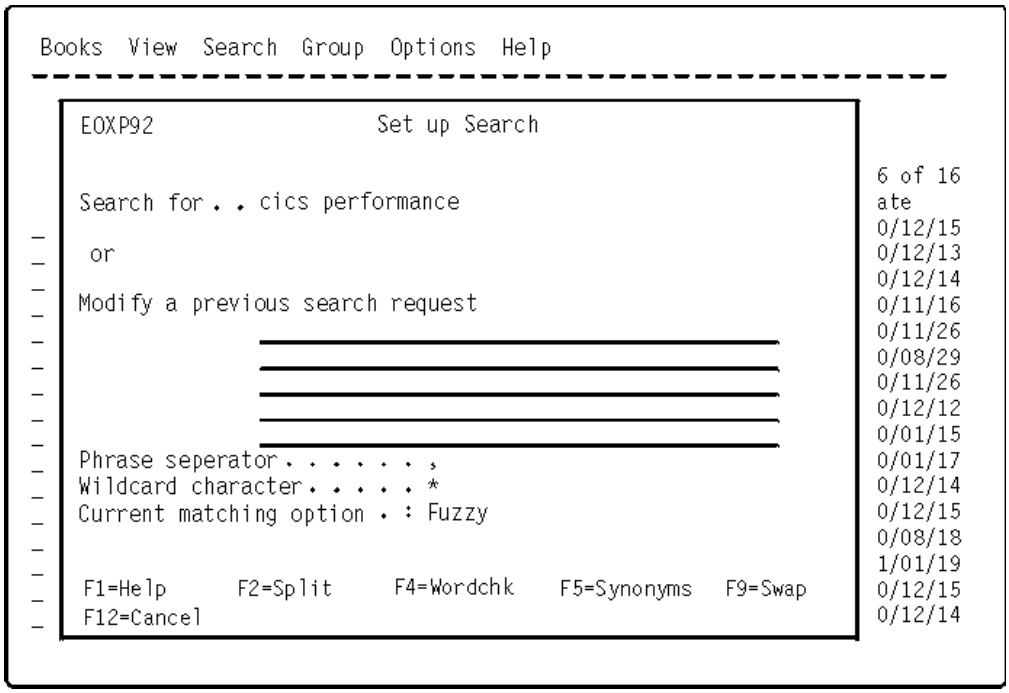


Figure 9. BookManager search pop-up

Listing books with search matches

If you use option 5, Search books, from the Help pull-down in the Reports window (or if you use the **INFO SEarch** command), BookManager searches every book in the bookshelf and displays a list of books that contain matches to the search argument you typed. The following figure shows an example of the List All Books with Matches pop-up.

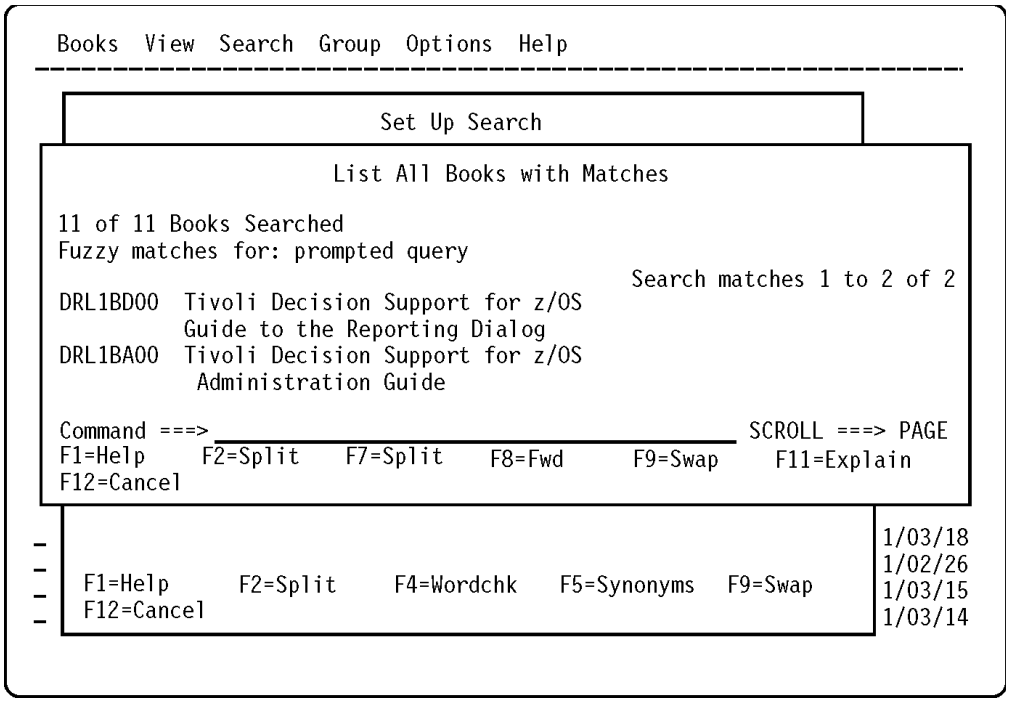


Figure 10. List All Books with Matches pop-up

Select a book to view by pressing the Tab key until the cursor is positioned on the book title and then pressing Enter. BookManager displays a list of topics with matches in the book you select.

Note: If you are in a book and start a search using the options on Search pull-down in BookManager, BookManager restricts its search to that book and displays a list of matching topics in the book. You can select topics from the list and look at them.

Moving around in a book

After you access an online book with BookManager, you can move forward or backward through it, go to a particular topic or section, link to information in another book, or return to a previous link or reference.

Moving forward or backward in a book

To scroll forward or backward, press **Fwd (F8)** or **Bkwd (F7)**.

You can move forward or backward less than a full screen. An example of when this might be useful is when you want to scroll to display an entire table or figure. To move forward or backward less than a full screen, type CSR on the command line but do not press Enter. Place the cursor anywhere in the line you want to be the top line on the screen and press **Fwd (F8)**, or place the cursor on the line you want to be the bottom line and press **Bkwd (F7)**.

Moving left or right in a book

You can move left and right in a book. This is useful when a report or table is wide, and you need to scroll sideways to see the rightmost part of it.

To scroll right, type **RIGHT** *nn* on the command line. (*nn* is the number of characters you want to scroll). To scroll back, type **LEFT** *nn*.

Going to a particular place in a book

Use the GoTo pull-down to jump to a particular topic in a book, or to jump to a particular part of a book such as the table of contents or index.

To go to a particular book topic, type the topic identifier (such as 3.0) on the command line, and press Enter. BookManager goes to the topic you requested.

Going to linked information

Each book contains links within itself and to other Tivoli Decision Support for z/OS books.

If you place the cursor on a word and press Enter, BookManager performs one of these actions:

- If the word is a reference to a table, a figure, or a topic, BookManager goes to the table, figure, or topic.
- If the word links to another part of the same book or to a different book, BookManager goes to the information the word links to.
- If the word is in the glossary or index, BookManager displays the match in a window.
- If multiple links exist, BookManager displays a list of choices.
- If no link exists, BookManager displays a message that there is no linked information associated with that word.

Returning to a previous link or reference

After you use a link to go to a different place, you can return to your starting location using either of these methods:

- Press **Unlink (F4)**.
- Select **GoTo** from the menu bar, then select **Previous link or reference**.

Each time you press **F4**, you return to the previous link or to the place immediately preceding your current location until you reach your starting location. If you have linked to another book, you must close the book before returning to the previous link.

Closing a book

To close an online book at any time, press **Exit (F3)**.

Depending on how BookManager is configured for your user ID, a confirmation pop-up might be displayed. To improve BookManager usability, you can configure BookManager to suppress this confirmation pop-up. See “Setting BookManager defaults” for more information.

Setting BookManager defaults

To improve BookManager usability, you can change your BookManager exit defaults.

When in a BookManager READ session, use the Options pull-down from the menu bar to set any of these permanent exit options:

- No exit confirmation from a book
- No exit confirmation from the bookshelf list
- Always place a closing bookmark

Getting help with online books

You can get help at any time while you are using online books. Select Help from the menu bar of any window or press **Help (F1)** to display BookManager help. For more information about BookManager, select option 4 **User's guide** from the BookManager **Help** pull-down, or refer to *BookManager Read/MVS: Displaying Online Books*.

Using Tivoli Decision Support for z/OS commands to navigate

You can immediately start an action anywhere in the Tivoli Decision Support for z/OS reporting dialog by typing these commands on the command line (uppercase letters indicate the abbreviation for the command):

DB2I Starts a DATABASE 2 Interactive (DB2I) facility session and displays its primary menu.

DISPLay REPort *report_ID*
Displays the specified report. From the Reports window, this command is simply **`DISPLay report_ID`**. By default, the report IDs are listed in the Report window next to their corresponding report descriptions. You can toggle the display to display either the report IDs or the report types and owners by pressing F11.

HELP Displays general help for the window or help for a message.

INFO Calls BookManager to display Topics in Online Books (a list of topics in the online library).

INFO SEarch *argument*
Calls BookManager and searches for *argument*. If you omit *argument*, then this command calls BookManager to display the Set Up Search pop-up.

ISPF

Displays the ISPF primary menu.

LOcate *argument*
In a Tivoli Decision Support for z/OS window, locates the first row that starts with *argument*.

PDF Displays the ISPF/PDF primary menu.

QMF

If your installation uses QMF with Tivoli Decision Support for z/OS, this command starts a QMF session and displays either its SQL primary window or its prompted query primary menu.

SOrt *column_name* **ASC|DESC**
Sorts a Tivoli Decision Support for z/OS list by the column you specify as *column_name* in either ascending or descending order. (You can also sort by column number by specifying the number of the column instead of the name. The first column after the selection field column on the left is column 1.)

Exiting the reporting dialog

When you have finished using the reporting dialog, press **F3** from the Reports window (Figure 6 on page 12).

Tivoli Decision Support for z/OS exits the reporting dialog and returns you to the place from which you started the reporting dialog. If you chose to display a confirmation pop-up whenever you exit the reporting dialog (from the Reporting Dialog Defaults pop-up) Tivoli Decision Support for z/OS prompts you to confirm your exit from the reporting dialog.

Chapter 3. Working with existing reports

This chapter explains how to select a report and perform actions on it. After reading this chapter, you should be familiar with these tasks:

- Displaying a report
- Saving report data
- Printing a report
- Viewing information about a report
- Printing a list of reports
- Deleting a report
- Opening an existing report definition
- Opening the definition of saved report data

Topics:

Displaying a report

Procedure

1. To display a report, select the report from the list (by typing a slash or other character in its selection field) in the Reports window, and press Enter.

```
Report  Batch  Group  Search  Options  Other  Help
------------------------------------------------------------------------------
                       Reports       ROW 221 TO 231 OF 438

Select a report. Then press Enter to display.

Group  . . . . . : All reports

/   Report                                          ID
_   Network Average Host Transit Time, Worst Case       NWNT06
_   Network Average Oper Transit Time, Worst Case       NWNT02
_   Network Average Transit Time Objective, Worst Case  NWNT04
_   Network Config Communication Controllers, Detail    NWNG08
_   Network Config Communication Controllers, Overview  NWNG02
_   Network Config Devices, Detail                      NWNG11
_   Network Config Last Collect Changed Devices         NWNG12
_   Network Config Last Collect Changed Software        NWNG13
_   Network Config Last Collect New Devices, Overview   NWNG01
_   Network Config Last Collect New Software, Overview  NWNG05
_   Network Config LUs, Detail                          NWNG10

Command ===> ____________________________________________________________
 F1=Help      F2=Split     F3=Exit      F4=Groups    F5=Search    F6=Listsrch
 F7=Bkwd      F8=Fwd       F9=Swap     F10=Actions  F11=Showtype F12=Cancel
```

Figure 11. Reports window

The Reports window displays the following information about existing reports:

Group Displayed above the list of reports and shows whether you have selected all reports (All reports) or restricted the display of reports to those in a specific group (name of group) or search criteria (Search).

/ Shows which item is selected (select an item from a list by typing a slash, or any other character, in this field).

Report
Shows the title of each report in the list.

ID Shows the ID of each report in the list. The Report window displays report IDs by default, but you can press **Showtype (F11)** to display the report type and owner columns.

Type Shows the report type of each report in the list:

QUERY
Indicates that the report has not been saved and exists as a query that must be run to generate the report.

TABDATA
Indicates that someone has run the query for the report and saved the results to a data set in a tabular format.

GRAPHDATA
Indicates that someone has run the query for the report and saved the results to a data set in a GDDM-based graphic report.

Owner
Identifies the user that owns the report in Tivoli Decision Support for z/OS. If no owner is listed, the report is public. This window lists only public reports and reports that you own.

When you select a report for display and press Enter, Tivoli Decision Support for z/OS runs the query associated with that report to extract current data, and then displays the report using its associated tabular or graphic format.

Predefined Tivoli Decision Support for z/OS reports are those shipped by IBM as part of the components of the features. For every predefined report, an SQL query extracts current data for the report, and a form specifies how the report is displayed. If you need to find the names of the query, form, and GDDM/ICU format associated with a report, follow the procedure described in Opening a report definition.

Tivoli Decision Support for z/OS report queries use variables that specify data selection criteria for columns in the data tables. If the query you select contains no variables, Tivoli Decision Support for z/OS displays the report. If the query contains variables, you must specify values for them that determine which rows of data the query selects when the report is built. See Specifying values for variables for more information.

2. To control which reports Tivoli Decision Support for z/OS displays in the list shown in the Reports window, there are several ways to do this:
   - Showing reports that belong to a report group, described in Working with report groups
   - Showing certain types of reports (queries, saved reports, or all types), described in Searching for reports
   - Showing reports that have similar attributes or descriptions, described in Searching for reports

Specifying values for variables

About this task

Tivoli Decision Support for z/OS uses variables in its report queries to let you specify the contents of the report. If the query contains variables, Tivoli Decision Support for z/OS displays the Data Selection pop-up where you can specify values for the variables.

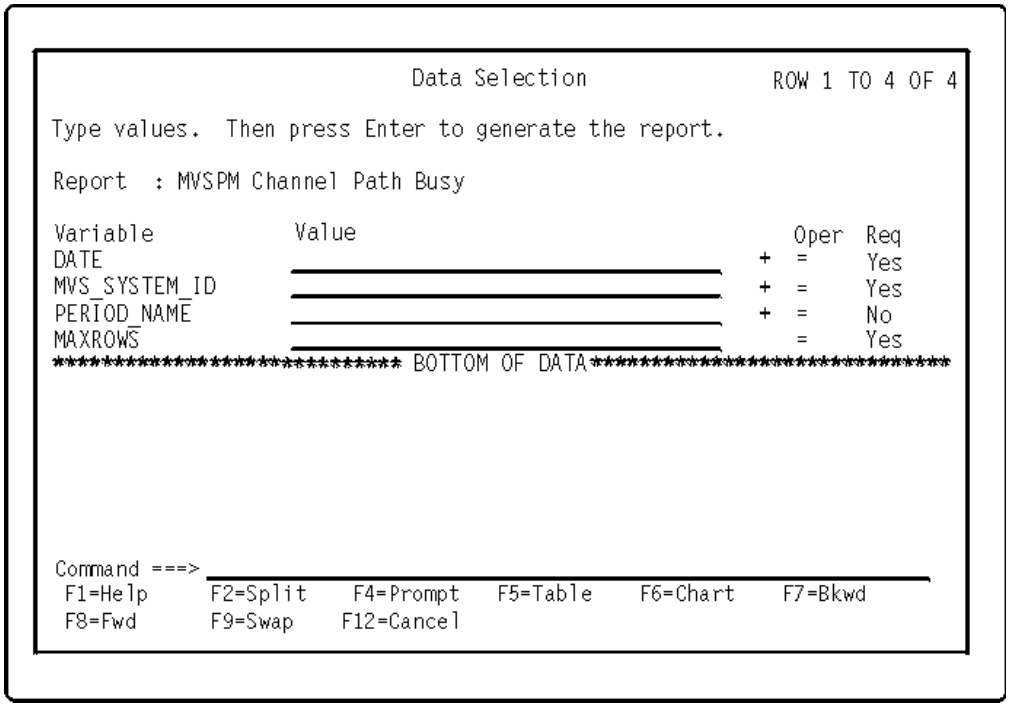


Figure 12. Data Selection pop-up

Procedure

1. Specify values for variables in the Data Selection pop-up.

   For example, suppose you select the MVSPM, Channel Path Busy report. When you press Enter, the Data Selection pop-up is displayed as shown in Figure 12.

   If the variable does not require you to provide a specific value (that is, its value in the Req column is No), you can select all available values for that variable by leaving the field blank. If the Req column has a value of Yes for the variable, you must specify a value for it.

   When specifying the values for variables (for example dates) you normally do not have to use quotes. However, you must use quotes if you specify a numeric value for a non-numeric column, or if you are using an IN operator and the values are both numeric and alphanumeric.

   The value you can specify for a variable depends on how the variable is used in the query associated with the report. The Oper column in the Data Selection pop-up shows how the variable is used:

   Operator
   Description of value specification

   = Specify one value to retrieve data rows that are an exact match for the value of the variable.

> Specify one value to retrieve data rows that have a value of the variable that is greater than the value you specify.

>= Specify one value to retrieve data rows that have a value of the variable that is greater than or equal to the value you specify.

< Specify one value retrieve data rows that have a value of the variable that is less than the value you specify.

<= Specify one value to retrieve data rows that have a value of the variable that is less than or equal to the value you specify.

IN Specify a list of values separated by blanks or commas. For example:

```
VOLSR1, VOLSR2 VOLSR3,VOLSR4
```

IN indicates that the query uses the variable in an SQL IN clause. An IN clause specifies that retrieval is based on an exact match of any of the values in a list of values. If some values in the list are numeric and some are alphanumeric, all values must be enclosed in quotes. For example:

```
'15A' '15B' '154'
```

LIKE Allows the use of global search characters to specify a value. The reporting dialog uses the pattern of the value you specify to retrieve data. Like operators are:

*** or %** Specifies zero or more characters of any value.

? or _ Specifies exactly one character of any value.

Note: You can combine global search characters when specifying variable values. For example, D?2* would match DB21, DB22, and DB2. It would not match DB322, because there can be only one character between the D and the first 2.

If there is a plus sign (+) beside the entry field for a variable, you can display a list of available values for that variable by positioning the cursor on the field and pressing F4 (Prompt). See Using prompts for more information about prompting for variables.

2. After you have specified values for the variables, press Enter.

   Tivoli Decision Support for z/OS runs the query and displays the report. If a chart format exists for the report, GDDM/ICU is called to display the chart. Otherwise, the report is displayed in a tabular format.

   Alternatively, you can press **Table (F5)** to force the use of a tabular format, or you can press **Chart (F6)** to call GDDM/ICU to display your report graphically.

   If GDDM/ICU is not installed on your system, all reports are shown in tabular format.

   The chart format defines how the chart looks; for example, if it is a bar chart or a line chart.

   If you specify a chart format that does not exist:

   If QMF is used
   QMF uses its default chart format to display the report graphically.

   If QMF is not used
   GDDM/ICU shows the report as a bar chart. You can either change the chart format while in the GDDM/ICU environment, or go back to the report definition and specify a valid chart format.

For more information about chart formats, see Opening a report definition, and the GDDM/ICU documentation.

Note: If you do not specify a value when prompted for one, Tivoli Decision Support for z/OS selects all possible values, for example for SYSTEM_ID, in the query. It does this by setting the value of SYSTEM_ID to `SYSTEM_ID`, which has the effect of nullifying the WHERE clause. Although the query runs without a problem, all systems are included in the report, and the report title is displayed as: `System ID: SYSTEM_ID`

Using prompts

About this task

Some data entry fields in the dialog windows are prompted fields, which you can identify by the plus sign (+) to the right of the field. You can use F4 (Prompt) to see a list of available query values for prompted fields. For example:

Procedure

1. In the Data Selection pop-up, place the cursor in the value field beside a variable identified with a plus sign (**+**) and press **F4**. (See Figure 12 on page 25.)

   Tivoli Decision Support for z/OS displays the Prompt for *variable_name* Values pop-up, where *variable_name* is the prompted field. For a large table, this might take some time. Figure 13 shows an example of the Prompt for DATE Values pop-up.

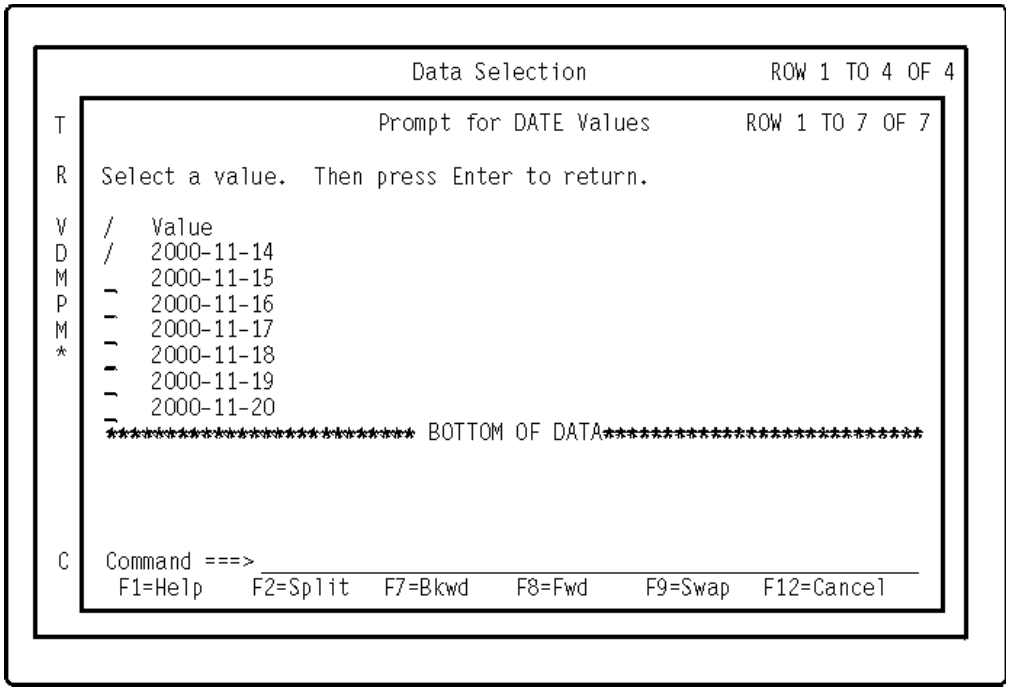


Figure 13. Prompt for DATE Values pop-up

2. Depending on the type of variable, select one or more values from the list by typing a slash or any character in the selection field, then press Enter.

   Tivoli Decision Support for z/OS returns to the Data Selection pop-up, where the values you selected are displayed.

3. Press Enter to display the report. If your installation uses QMF with Tivoli Decision Support for z/OS, QMF is used to display reports. For graphical reports, GDDM is used.
4. To exit the report, do either of the following:
   - If a tabular report is displayed, press **F3** to exit QMF.
   - If a graphic report is displayed, press **F9** to exit GDDM. The tabular version of the report is displayed with QMF or ISPF Browse. To exit, press **F3**.

Saving report data

About this task

You can save reports in data sets. Once the report is saved, you and any other reporting dialog user can see the report without running the query again.

In a typical configuration, each report is run once initially and saved to create a place for it in the report list. That report is then replaced daily, weekly, or monthly (depending on the frequency specified in the report) when the report is run again with the batch reporting facility. For more information about running reports in batch, see Using other Reporting Dialog functions and refer to the *Administration Guide and Reference*.

The report is created as either a tabular (TABDATA) report or a graphic (GRAPHDATA) report. Tivoli Decision Support for z/OS uses fields in the Dialog Parameters pop-up to determine what data sets to store the reports in. The Saved reports data set field specifies where to store tabular reports, and the Saved charts data set field specifies where to store charts.

To save reports to a file:

Procedure

1. From the Reports window, select the report to save.
2. Select option 4 **Save report data** from the Report pull-down.

   Tivoli Decision Support for z/OS displays the Saved Report Definition pop-up (Figure 14 on page 29).

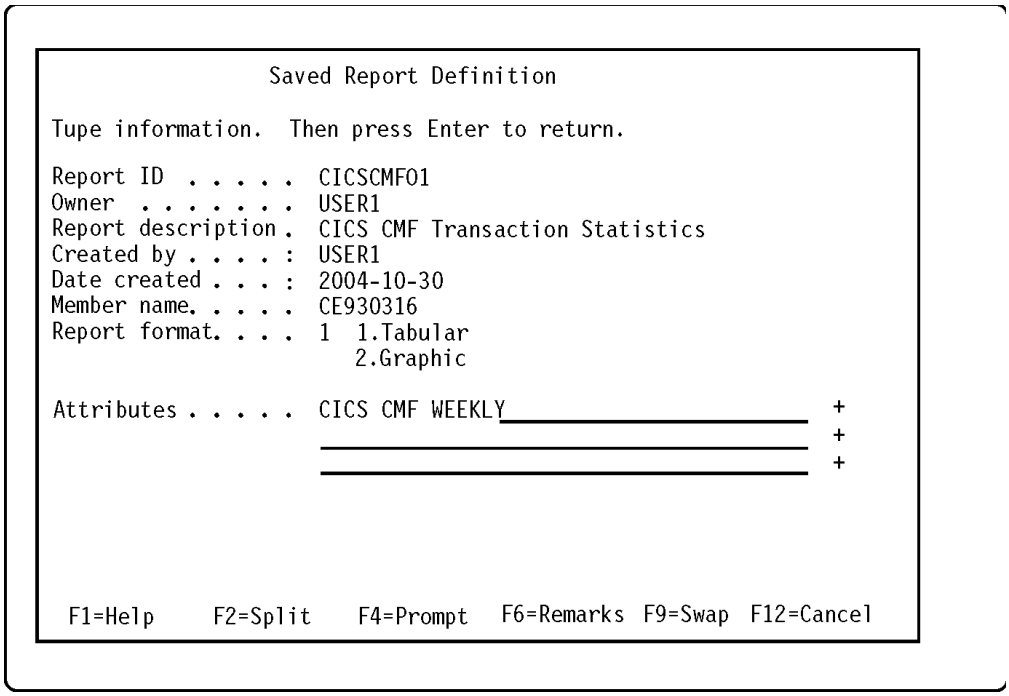


Figure 14. Saved Report Definition pop-up

3. Complete the entry fields as follows:

   Report ID
   A unique identifier for this report.

   Owner
   The owner (in Tivoli Decision Support for z/OS) of the report. You can specify your user ID to make this report private, or leave the field blank to make the report public.

   Report description
   A description of the report. This is the text that is displayed when listing reports.

   Member name
   The member of the data set in which the report is stored. You can use the Dialog Parameters pop-up, described in Customizing the reporting dialog, to find and change the name of the partitioned data set in which Tivoli Decision Support for z/OS stores saved reports.

   Attributes
   One or more attributes that you want to assign to your report. You can use these attributes later to search for this report and categorize it with other reports that share the same attributes. If you press **F4** with the cursor on the Attributes field, Tivoli Decision Support for z/OS displays a list of all available report attributes, from which you can select one or more for your report. You can add new attributes simply by typing them in the Attributes field.

4. If you want to associate some remarks with the report, press **Remarks (F6)**.

   Tivoli Decision Support for z/OS displays the Report Remarks pop-up. This pop-up contains blank lines on which you can enter your comments.

   Type your remarks, then press Enter to return to the Saved Report Definition pop-up.

5. When you have completed all of the fields in the Saved Report Definition pop-up, press Enter.

   Tivoli Decision Support for z/OS runs the query associated with the report you selected.

   If the query contains variables, you must specify their values before Tivoli Decision Support for z/OS can generate the report. See Specifying values for variables for more information.

Results

Tivoli Decision Support for z/OS saves the report data and returns to the Reports window. The report you just saved is displayed in the list under the name you specified in the Report description field in the Saved Report Definition pop-up. Its report type is either TABDATA or GRAPHDATA.

Printing a report

About this task

You can use the reporting dialog to print a report.

Note: If you are using the reporting dialog without QMF, you cannot print graphic reports directly with the print option. Graphic reports are printed in tabular format. You can, however, use GDDM to print saved graphic reports.

If you are using QMF with the reporting dialog, you can also print reports via QMF. Refer to the QMF documentation for more information about printing reports directly from QMF.

To print a report using the reporting dialog:

Procedure

1. From the Reports window, select the report.
2. Select option 6, Print, from the Report pull-down. If the query contains variables, the Data Selection pop-up is displayed.
3. You must specify values for variables before Tivoli Decision Support for z/OS can print the report. See Specifying values for variables for more information.

   After you have specified values for any variables, Tivoli Decision Support for z/OS runs the query.
4. When prompted, specify the report query output destination.
   a. If the report is a graphic report (that is, it has a chart format) and you are using the reporting dialog with QMF, Tivoli Decision Support for z/OS displays the Print Chart Options pop-up (Figure 15 on page 31). Type the nickname of the graphic printer defined in GDDM to which you want to route the report, and press Enter. For information about graphic printers defined in GDDM, refer to the *Administration Guide and Reference*.

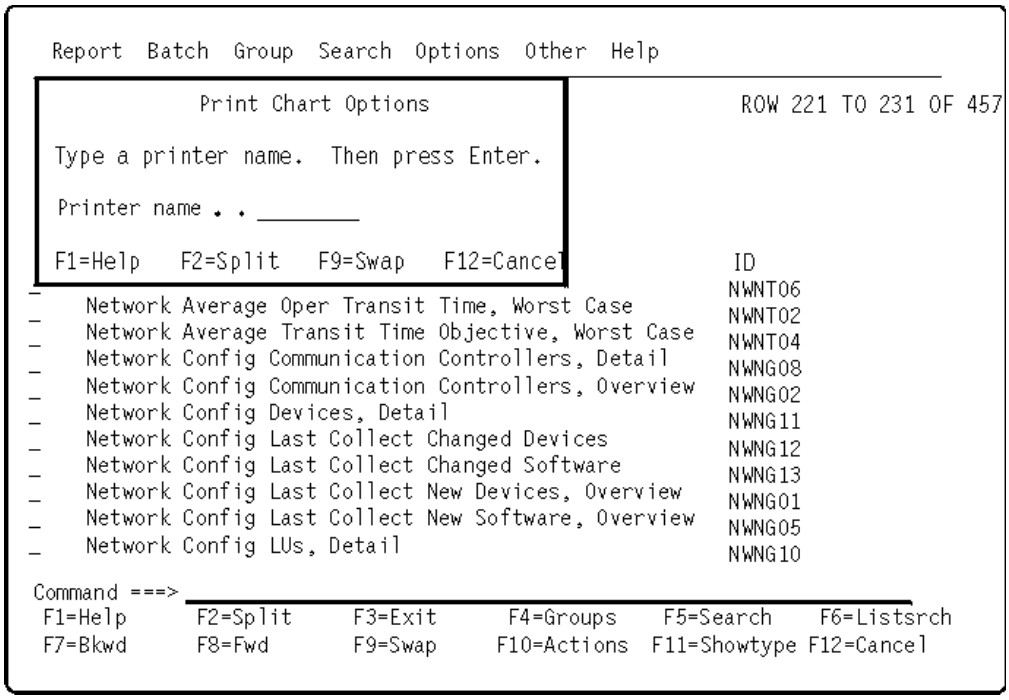


Figure 15. Print Chart Options pop-up

b. If the report has a tabular format, Tivoli Decision Support for z/OS displays the Print Options pop-up (Figure 16). Confirm a print action, specify an output destination (which can be a printer or a data set), and press Enter.

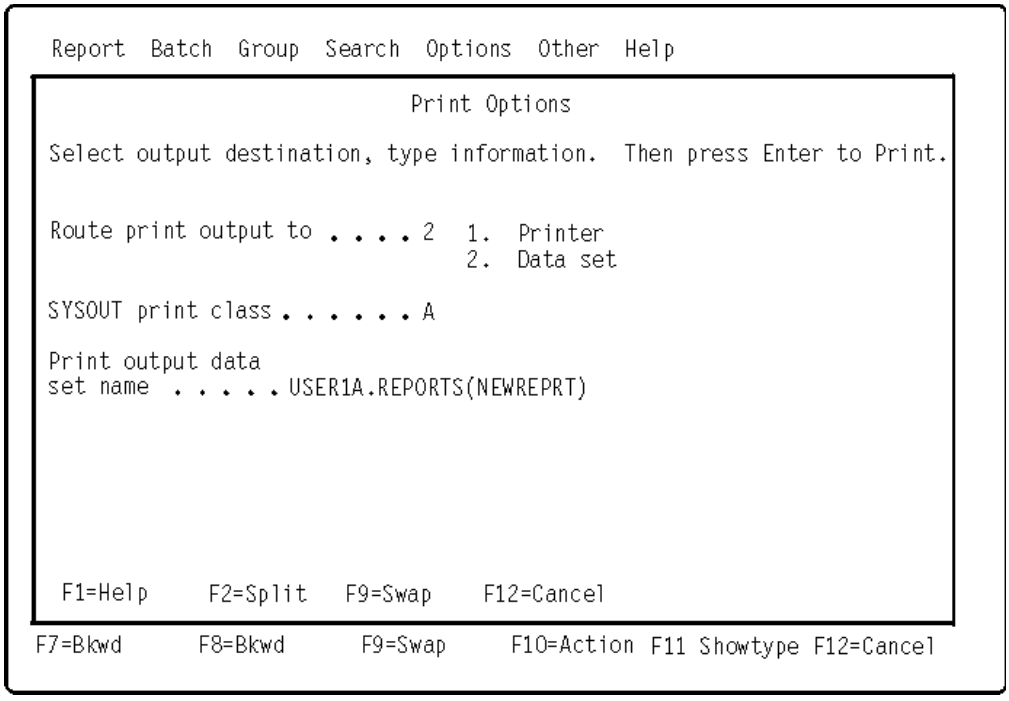


Figure 16. Print Options pop-up

Tivoli Decision Support for z/OS routes the output to the destination you specified.

5. You can also use these procedures to print reports saved in TABDATA format.
6. To print a saved graphic report (GRAPHDATA format), select the report to display, and press Enter. Tivoli Decision Support for z/OS invokes GDDM to display the chart.
   a. When GDDM displays the chart, press **F4**.
   b. GDDM displays a menu that contains a print option, which you can then use to print the chart. For more information about printing charts using GDDM, refer to the GDDM documentation.

Viewing information about a report

About this task

Tivoli Decision Support for z/OS can call BookManager to show you a description of a predefined Tivoli Decision Support for z/OS report from the Tivoli Decision Support for z/OS online library.

To view information about a report:

Procedure

1. From the Reports window, type a question mark (?) in the selection field beside the report and press Enter.

   Tivoli Decision Support for z/OS starts BookManager and displays information about the report.
2. When you have finished viewing the information, exit BookManager.

   Tivoli Decision Support for z/OS returns to the Reports window.

Printing a list of reports

About this task

To print the list of reports in the Tivoli Decision Support for z/OS Reports window:

Procedure

1. In the Reports window, select option 7 **Print list** from the **Report** pull-down.

   Tivoli Decision Support for z/OS displays the Print Options pop-up (Figure 16 on page 31).
2. Confirm the print action, specify an output destination (a printer or a data set), and press Enter.

   Tivoli Decision Support for z/OS prints the list of reports to the data set or printer you specified.

Deleting a report

About this task

If you no longer need a private report or a public report that you created, you can delete it. When you delete a report, Tivoli Decision Support for z/OS removes all references to the report in the dialog. If the query, form and any attributes associated with the report are unique to that report, Tivoli Decision Support for z/OS deletes those also. If another report uses the query, form, and attributes, Tivoli Decision Support for z/OS does not delete them. To delete a report:

Procedure

1. From the Reports window, select the report.
2. Select option 5 **Delete** from the **Report** pull-down.

   Tivoli Decision Support for z/OS displays a pop-up for you to confirm the deletion.
3. Press Enter to delete the report.

   Tivoli Decision Support for z/OS deletes the query, form, and attributes (unless another report refers to them), and removes the report ID from the list of available reports.

Opening a report definition

You can modify a Tivoli Decision Support for z/OS report. You can change the query and form associated with the report, and the report attributes that help identify the report.

Note: You can modify only your private reports and any public reports that you created. If you must modify a public report that you did not create, create a new report using the public report as a template, and then modify the new report. See Using an existing report as a template for a new report for more information.

There are two versions of the Report Definition pop-up. One is shown if you use QMF with the reporting dialog; the other one if you are using the built-in report generator. They are described in Opening a report definition when QMF is used or Opening a report definition when the built-in report generator is used.

Opening a report definition when QMF is used

About this task

To modify a report definition:

Procedure

1. From the Reports window, select the report.
2. Select option 2 **Open report definition** from the Report pull-down.

   Tivoli Decision Support for z/OS displays the Report Definition pop-up for the report you selected, (Figure 17 on page 34).

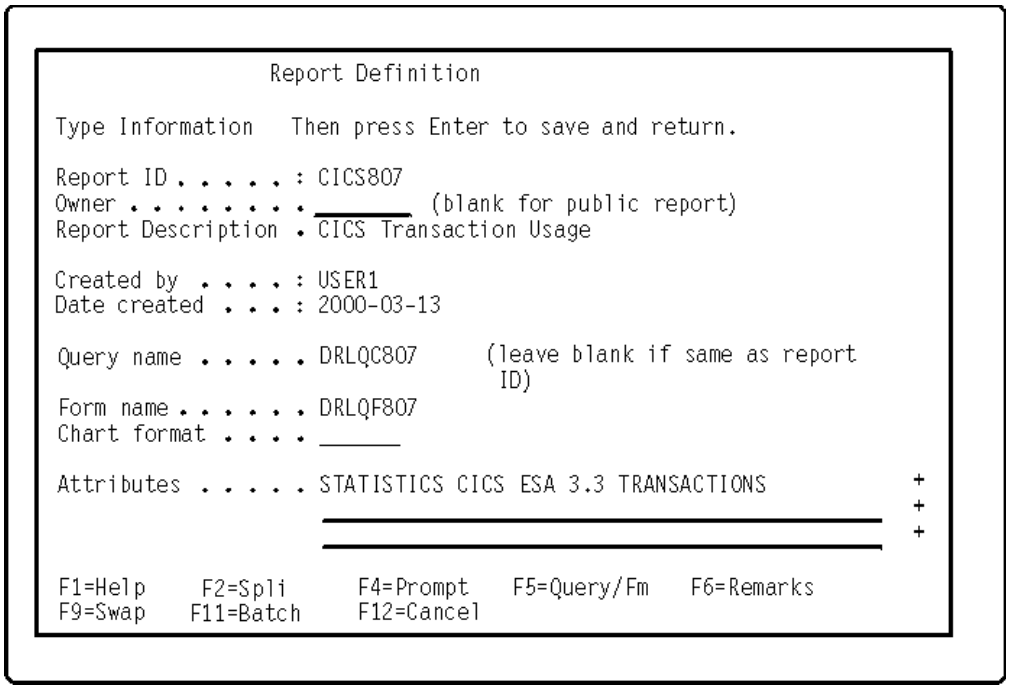


Figure 17. Report Definition pop-up when QMF is used

3. Type information in the fields you want to modify. This pop-up contains these fields:

   Report ID
   Identifies the report.

   Owner
   Identifies the owner (in Tivoli Decision Support for z/OS) of the report. This can be either your user ID (for a private report) or blank (for a public report).

   Report description
   Describes the report.

   Query name
   Identifies the name of the query associated with the report.

   Form name
   Identifies the name of the QMF form associated with the report.

   Chart format
   Identifies the name of the GDDM/ICU chart format associated with the report. If there is a chart format associated with the report, then the report is graphic; otherwise this field is blank, and the report is tabular.

   The format name can be a chart format that you have saved in GDDM/ICU, or one of these GDDM/ICU formats: bar, histogram, line, pie, polar, tower, surface, or table.

   Attributes
   Lists the attributes associated with this report. You can use these attributes to help you search for and organize groups of reports. After putting the cursor in one of the Attributes fields, press **Prompt (F4)** to see which values Tivoli Decision Support for z/OS allows there.

4. To change the query or form, press **Query/Fm (F5)**.

Tivoli Decision Support for z/OS invokes QMF, where you can modify the query or form. See Using QMF to create new queries for more information about working with QMF.

5. To edit remarks about the report, press **Remarks (F6)**.

   Tivoli Decision Support for z/OS displays the Report Remarks pop-up. After you have typed your remarks, press Enter to return to the Report Definition pop-up.

6. When you have finished modifying the report definition, press Enter.

   If you have made changes to the query or form, QMF prompts you to confirm that you want to replace the existing query.

Opening a report definition when the built-in report generator is used

About this task

This applies when you use Tivoli Decision Support for z/OS without QMF.

Some of the Tivoli Decision Support for z/OS predefined reports have one column more on the form than in the query. If you modify the form or the owner of any of these reports using the built-in report generator you must remove the extra column from the form: DB209, DFSMS05, DFSMS06, DFSMS07, DFSMS13, NWSM02, NWSM09, NWSM10, NWSM11, NWSM17, and NWSM18. (For information about how to change the form, see Modifying the form for a report.)

To modify a report definition:

Procedure

1. From the Reports window, select the report.
2. Select option 2 **Open report definition** from the Report pull-down.

   Tivoli Decision Support for z/OS displays the Report Definition pop-up for the report you selected. (Figure 18 on page 36).

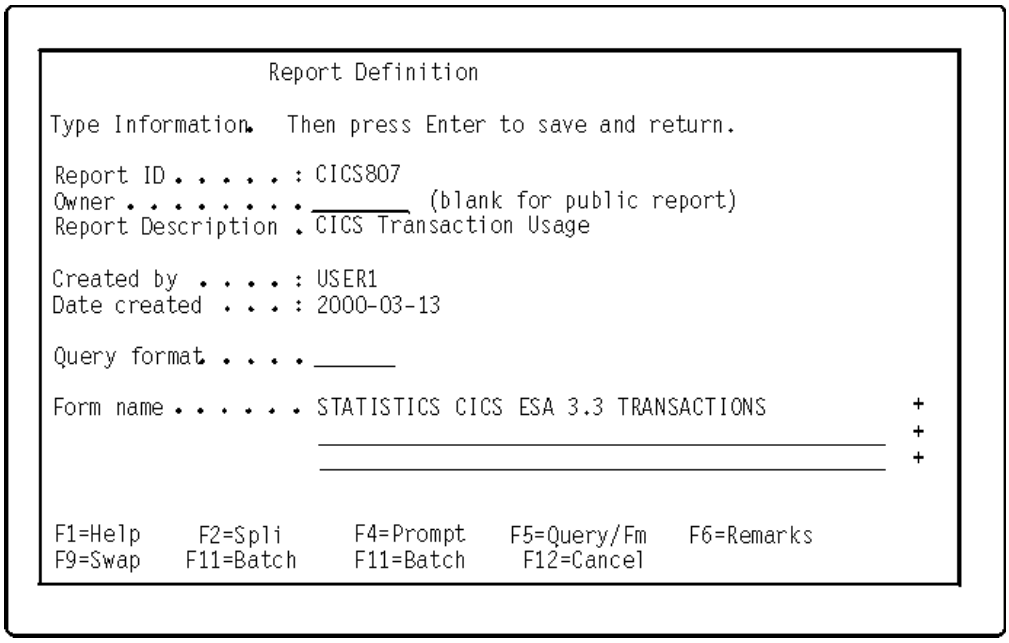


Figure 18. Report Definition pop-up when QMF is not used

3. Type information in the fields you want to modify. This pop-up contains these fields:

   Report ID
   Identifies the report.

   Owner
   Identifies the owner (in Tivoli Decision Support for z/OS) of the report. This can be either your user ID (for a private report) or blank (for a public report).

   Report description
   Describes the report.

   Chart format
   Identifies the name of the GDDM/ICU chart format associated with the report. If there is a chart format associated with the report, then the report is graphic; otherwise this field is blank, and the report is tabular.

   The format name can be a chart format that you have saved in GDDM/ICU, or one of these GDDM/ICU formats: bar, histogram, line, pie, polar, tower, surface, or table.

   Attributes
   Lists the attributes associated with this report. You can use these attributes to help you search for and organize groups of reports. After putting the cursor in one of the Attributes fields, press **Prompt (F4)** to see which values Tivoli Decision Support for z/OS allows there.

4. To change the query or form, press **Query/Fm (F5)**.

   A dialog lets you modify the query or form. See Using an existing report as a template for a new report for more information.

5. To edit remarks about the report, press **Remarks (F6)**.

   Tivoli Decision Support for z/OS displays the Report Remarks pop-up. After you have typed your remarks, press Enter to return to the Report Definition pop-up.

6. If you want to add header or footer lines to the report, press **F10**. See Adding page headers and footers to a report for information about using the Report Headers and Footers window.
7. When you have finished modifying the report definition, press Enter.

Opening the definition of saved report data

About this task

You can make some modifications to the definitions of saved report data.

Note: You can modify your private saved reports and those public reports that you created. If you must modify a public report that you did not create, create a new report using the public report as a template, run the report and save the data, and modify the new saved report definition. See Using an existing report as a template for a new report for more information.

To modify the definition for saved report data:

Procedure

1. From the Reports window, select the saved report. Saved report data files have a file type of TABDATA or GRAPHDATA.
2. Select option 2 **Open report definition** from the Report pull-down.

   Tivoli Decision Support for z/OS displays the Saved Report Definition pop-up (Figure 19).

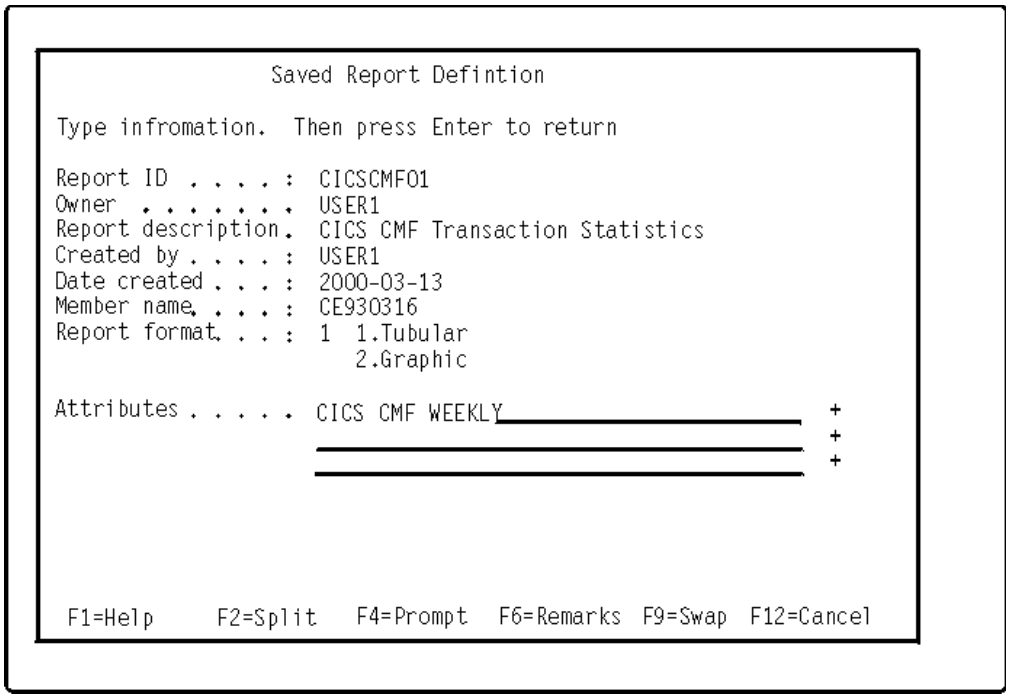


Figure 19. Saved Report Definition pop-up

3. Type information in the fields you want to modify, which can include only the Owner, Description, and Attribute fields. Saving report data describes these fields.
4. If you want to edit remarks about the report, press **Remarks (F6)**.

Tivoli Decision Support for z/OS displays the Report Remarks pop-up. After you have typed your remarks, press Enter to return to the Saved Report Definition pop-up.

5. When you have finished modifying the saved report definition, press Enter.

   Tivoli Decision Support for z/OS saves changes to the saved report definition and returns to the Reports window.

Chapter 4. Working with report groups

This chapter explains how to manipulate report groups. After reading this chapter, you should be familiar with these tasks:

- Listing report groups
- Displaying the contents of a report group
- Viewing and modifying a report group definition
- Adding a report to a group
- Creating a report group
- Deleting a report group

Topics:

Listing report groups

About this task

You can display a list of all available report groups.

Procedure

To display a list of report groups, press **F4** from the Reports window.
Tivoli Decision Support for z/OS displays the Report Groups pop-up (Figure 20 on page 40).

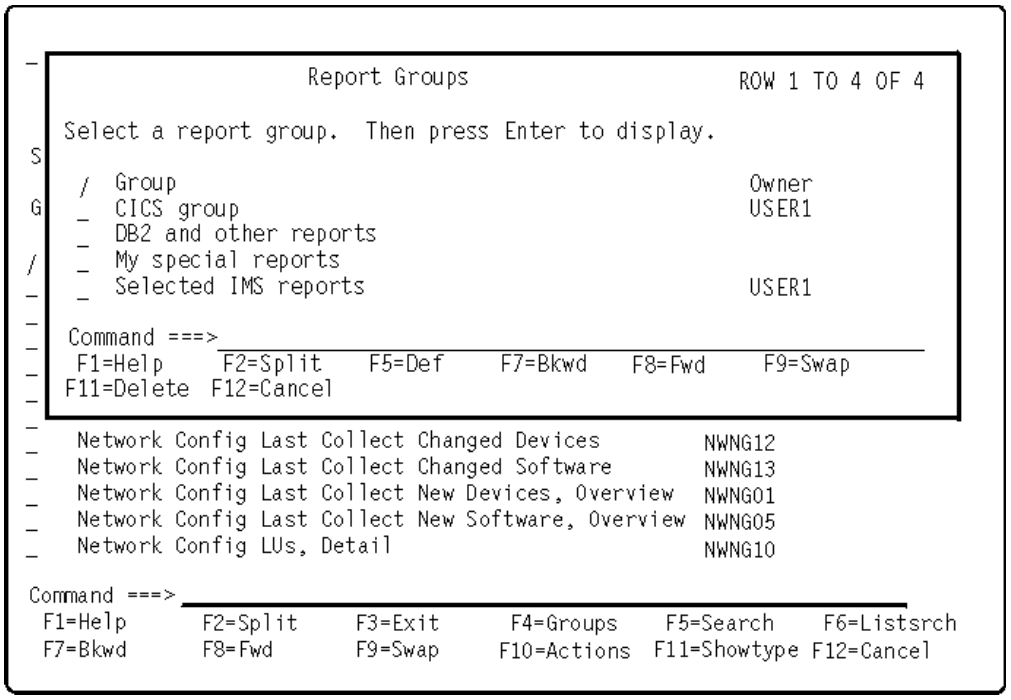


Figure 20. Report Groups pop-up

Displaying the contents of a report group

Procedure

1. To display the contents of a report group, select the report group and press Enter. Tivoli Decision Support for z/OS returns to the Reports window and lists the reports in the report group you selected.
2. To display the complete list of reports again, select option 1 **Show all reports** from the Search pull-down.

Viewing and modifying a report group definition

About this task

You can change the definition of a Tivoli Decision Support for z/OS report group. You can also add reports to a report group or delete reports from a report group.

A single report can belong to several groups. When you add a report to a group, Tivoli Decision Support for z/OS does not make a copy of the report, but adds only a reference to the report to the group. When you delete a report from a group, you do not delete the report itself, but only its reference in the group.

If you use several reports more frequently than others, you can add these reports to a new group.

To select and display the report group to modify:

Procedure

1. From the Reports window, press **F4**.

   Tivoli Decision Support for z/OS displays the Report Groups pop-up.
2. From the Report Groups pop-up, select the report group and press F5.

   Tivoli Decision Support for z/OS displays the Report Group Definition pop-up for the report group (Figure 21).

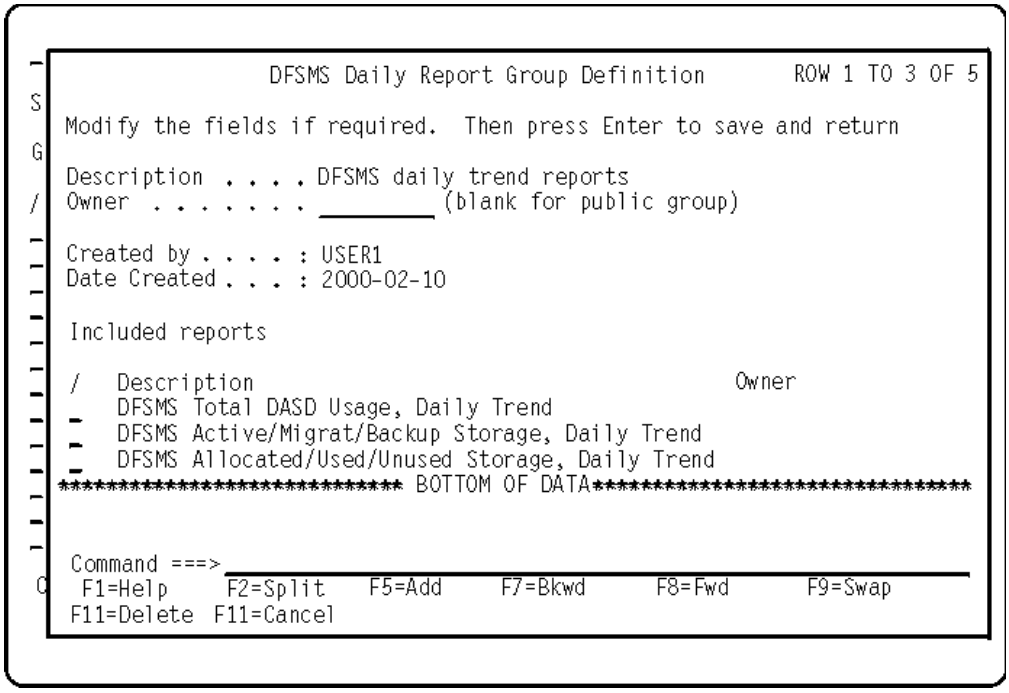


Figure 21. Report Group Definition pop-up

3. From the Report Group Definition pop-up, you can change the report group definition, add reports to the group, and delete reports from the group. The procedures for doing these tasks are described in the sections that follow:
   - "Changing the report group definition"
   - "Adding a report to the group" on page 42
   - "Deleting a report from the group" on page 42
4. When you finish changing the report group definition, press Enter. Tivoli Decision Support for z/OS saves the changes you made and returns to the Report Groups pop-up.

Changing the report group definition

Procedure

1. To change the report group definition from the Report Group Definition pop-up, type changes to the report group definition in the appropriate fields. You can change the description and the report group owner.
2. When you finish making changes, press Enter to save the changes.

Adding a report to the group

Procedure

1. To add a report to the group displayed in the Report Group Definition pop-up, press **F5**. Tivoli Decision Support for z/OS displays the Add Report to Group pop-up.
2. In the appropriate fields, type the ID and owner of the report. You can press **F4** to see a list of available report IDs.
3. After you complete the fields in the pop-up, press Enter to add the report. Tivoli Decision Support for z/OS adds the report to the report group and returns to the Report Group Definition pop-up.

Deleting a report from the group

Procedure

1. To delete a report from the group displayed in the Report Group Definition pop-up, select the report and press **F11**. Tivoli Decision Support for z/OS displays the Confirmation pop-up.
2. Press Enter to confirm the deletion and return to the Report Group Definition pop-up. Note that this does not delete the actual report, but only its place in the report group.

Creating a report group

About this task

When you install a component on your system, the predefined reports included with the component are stored in predefined groups. However, you may want to create new report groups. For example, you may want to store your private or weekly reports in one group.

To save selected reports in a group:

Procedure

1. From the Reports window (Figure 11 on page 23, select the reports you want to save in a group, then from the Group menu, select option 1 **Save selected reports in a group**.

   Tivoli Decision Support for z/OS displays the Report Group Definition pop-up (Figure 22 on page 43).

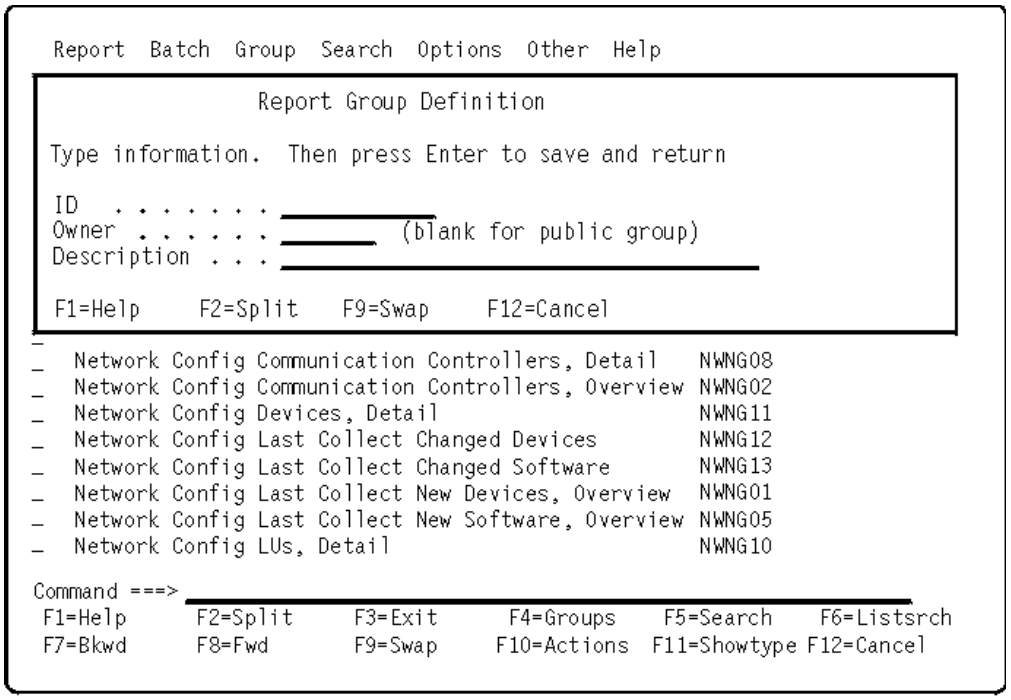


Figure 22. Report Group Definition pop-up, creating a report group

2. Specify the group ID, group owner, and a brief description in the fields. The report group can be either public or private:
   - To create a public group, leave the Owner field blank.
   - To create a private group, type your user ID in the Owner field.
3. When the specification is complete, press Enter. Tivoli Decision Support for z/OS saves the report group and returns to the Reports window.
4. From the Reports window, you can now press **F4** for the Report Groups pop-up, then select the new report group from the list. SeeFigure 20 on page 40.

Deleting a report group

About this task

You can delete your private report groups or the public report groups you have created. This action deletes only the report group definition, and not the reports referenced in the group.

Procedure

1. To delete a report group, select the report group you want to delete from the list displayed on the Report Groups pop-up and press **F11**. Tivoli Decision Support for z/OS displays the Confirmation pop-up.
2. Press Enter to confirm the deletion and return to the Report Groups pop-up.

Chapter 5. Searching for reports

This chapter explains how to search for reports. After reading this chapter, you should be familiar with these tasks:

- Searching by report description and attributes
- Saving search criteria
- Listing, modifying, and deleting saved search criteria

Topics:

Searching by description and attributes

About this task

Tivoli Decision Support for z/OS can display a list of reports that satisfy search criteria that you specify. These search criteria include the description (or part of the description) of a report, attributes associated with the report, whether the report is a query or saved data, and whether the report is public or private.

Procedure

1. To specify search criteria to search for reports, press **F5** from the Reports window.

   Tivoli Decision Support for z/OS displays the Search for Reports pop-up (Figure 23 on page 46).

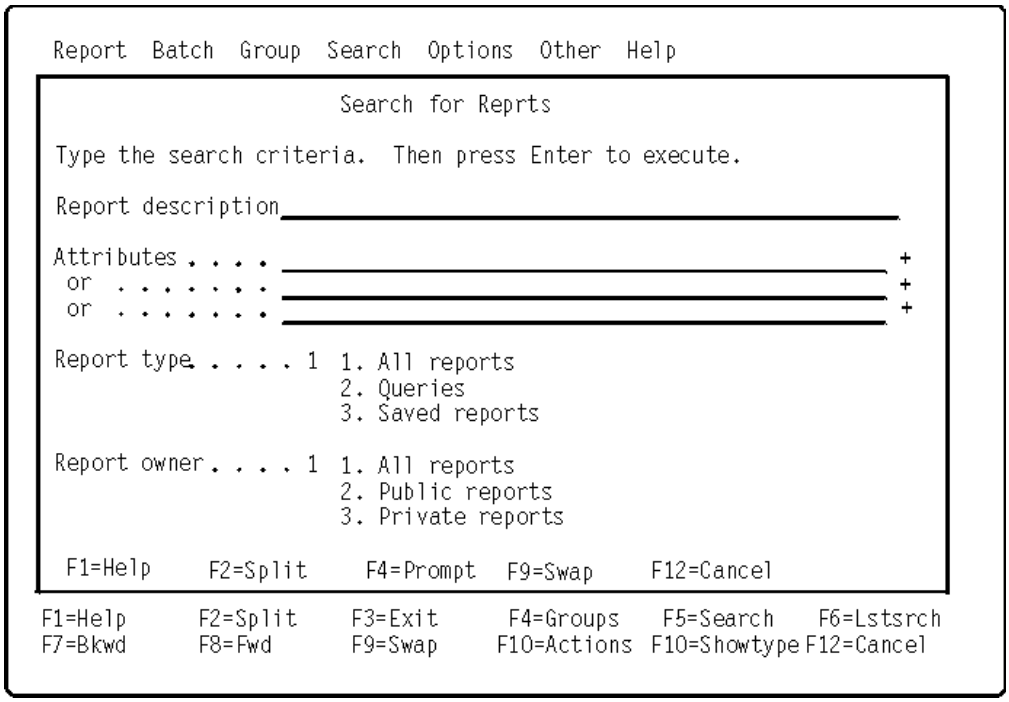


Figure 23. Search for Reports pop-up

2. Use the fields in the pop-up to specify criteria for the report description, attributes, type, and owner. You can specify values for one or more of these fields, in any combination, to narrow the search for the reports to display.
3. When you have specified all of your search criteria in the Search for Reports pop-up, press Enter. Tivoli Decision Support for z/OS returns to the Reports window and lists the reports that meet the description you specified.
4. You can save the search criteria that you specified. See Saving search criteria for more information.

Searching by report description

If you want to specify criteria for the report description, type all or part of the report description in the Report description field. You can use global search characters to search for all reports whose titles contain a particular string of text. Substitute global search characters for actual characters when you are unsure of how a word is spelled in the report titles, or when you want to search for report titles that contain the same word in different forms (such as abbreviations).

For example, to search for all reports that contain the word *migration* (which is sometimes abbreviated to migrat), type `*migrat*` in the Report description field. The first asterisk (*) takes the place of all words in the report description before migrat. The second asterisk takes the place of all letters in the word after migrat and any following words in the report description. Other global search characters include the percent (%) symbol (which works the same as the asterisk), and the question mark (?) and underscore (_), both of which can replace a single character in a string of text (instead of multiple characters).

Note: If you use underscores as global search characters, you must enclose the search argument (in this case, the report description) in single quotes.

Searching by report attributes

If you want to specify criteria for report attributes, specify the attributes that are common to the reports you are searching for. For example, to search for all CICS reports that are monthly, type `cics monthly` on one line of the Attributes field.

Attributes typed on the same line are connected by a logical AND operator; attributes typed on separate lines are connected a logical OR operator. For example, if you specify `cics overview` on one line of the Attributes field, and `cics trend` on another line, then Tivoli Decision Support for z/OS displays all CICS reports that are either overviews or trends.

To see a list of attributes, move the cursor to a line of the Attributes field and press **F4**. Tivoli Decision Support for z/OS displays a list of all valid attributes, from which you can select one or more for your search criteria. When you select more than one attribute from the list, Tivoli Decision Support for z/OS places these attributes on a single line of the Attributes field (thus linking them with a logical AND operator).

Searching by report type

If you want to narrow the search by including only report queries or only saved report data, type the appropriate number in the Report type field. The default is all types of reports.

If you want to narrow the search by including only public reports or only private reports, type the appropriate number in the Report owner field. The default is all reports to which you have access.

Saving search criteria

About this task

You can save the criteria you use to search for reports. You can then specify the search criteria again later, without having to retype values for the criteria fields.

To save the search criteria:

Procedure

1. Search for reports that meet the criteria that you specify. See Searching by description and attributes for more information. Tivoli Decision Support for z/OS displays the Reports window listing the reports that meet the search criteria you specified.
2. From the **Search** pull-down, select option 4 **Save current search criteria**. Tivoli Decision Support for z/OS displays the Save Search Criteria pop-up.
3. Specify a name for the search criteria, the owner, and a brief description.

   Name This value is used to identify the search criteria in the Saved Search Definition pop-up, and must not contain any blanks or special characters.

   Owner

   The search criteria can be either public or private:

   - If you want this search criteria to be public, leave the Owner field blank.
   - If you want this search criteria to be private, type your user ID in the Owner field.

Description
A brief description of the search criteria.

4. When the specification is complete, press Enter. Tivoli Decision Support for z/OS saves the search criteria using the name you specified and returns to the Reports window.
5. You can now select this search criteria in the future without having to specify search criteria on the Search for Reports pop-up, as described in the following section.

Listing, modifying, and deleting saved search criteria

About this task

You can display a list of search criteria saved from previous searches. From this list, you can select a saved criteria to run, modify, or delete.

Procedure

1. To list the saved search criteria: press **F6** from the Reports window. Tivoli Decision Support for z/OS displays the Search Criteria List pop-up (Figure 24), which lists all of the previously saved search criteria.

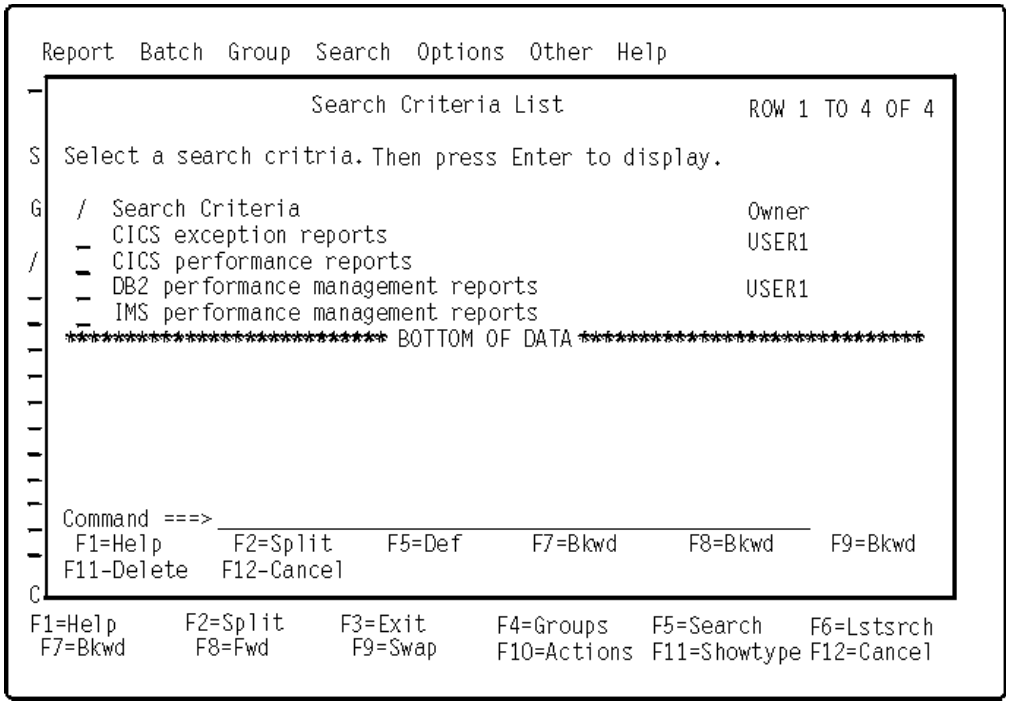


Figure 24. Search Criteria List pop-up

2. From this list, you can select saved criteria to use for your search. Select the criteria by typing a slash or any other character next to its name, and pressing Enter. Tivoli Decision Support for z/OS displays the list of reports that meet the search criteria.
3. You can view, modify, and delete the saved search criteria, as described in the following sections.

Viewing and modifying saved search criteria

Procedure

1. To view or modify a search criteria definition, select the saved search criteria from the Search Criteria List pop-up and press **F5**. Tivoli Decision Support for z/OS displays the Search Criteria Definition pop-up for the search criteria (Figure 25).

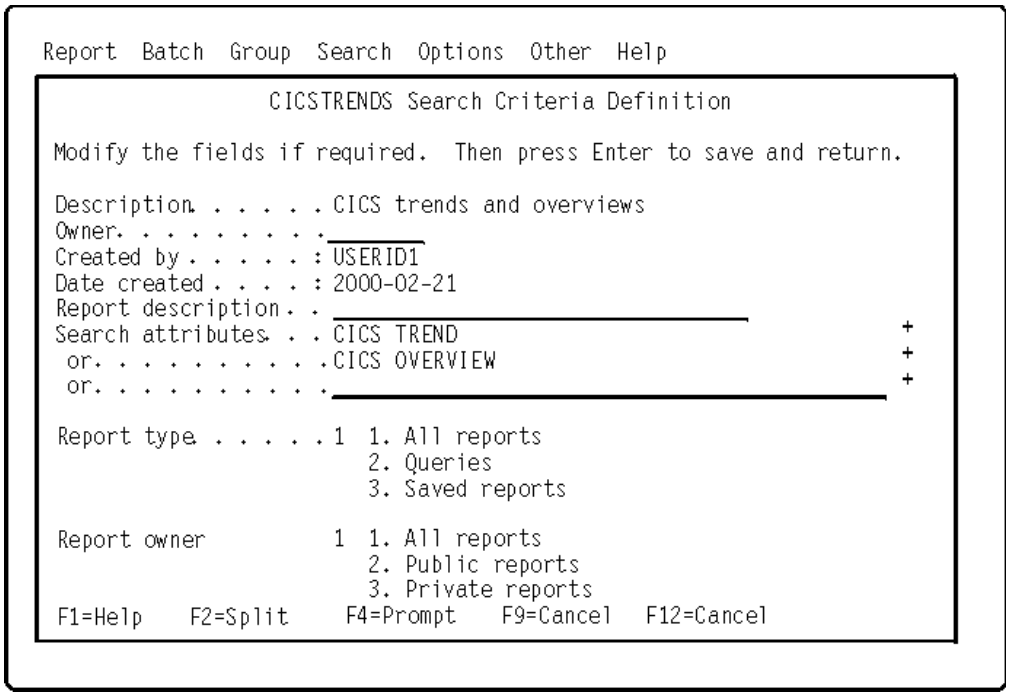


Figure 25. Search Criteria Definition pop-up

2. The fields in this pop-up follow the same conventions as the fields in the Search for reports pop-up, described in Searching by description and attributes. You can change these fields only if the saved search criteria is private, or if it is public and you created it.
3. When you have finished viewing or modifying the search criteria, press Enter. Tivoli Decision Support for z/OS returns to the Saved Criteria List pop-up.

Deleting saved search criteria

Procedure

1. To delete a saved search criteria from the list, select the search criteria to delete from the Search Criteria List pop-up and press **F11**. Tivoli Decision Support for z/OS displays the Confirmation pop-up.
2. From the Confirmation pop-up, press Enter to confirm the deletion. Tivoli Decision Support for z/OS deletes the search criteria you specified and returns to the Search Criteria List pop-up.

Chapter 6. Creating a new report using QMF

The Tivoli Decision Support for z/OS components installed on your system contain several predefined reports. Although these reports present the information in the Tivoli Decision Support for z/OS database in several useful ways, you might have a specific need for which you must create your own report. This chapter explains how to create a new report.

Note: Reports can be created using the reporting dialog's built-in report generator or QMF, if your installation uses QMF with Tivoli Decision Support for z/OS. This chapter describes how to create reports using QMF. For information on how to create reports using the built-in report generator, refer to Creating a new report with the report generator.

After reading this chapter, you should be familiar with these tasks:

- Using QMF to create new queries
- Using an existing report as a template for a new report
- Creating a query for a new report
- Modifying a form for a new report
- Saving a new report definition

Topics:

Using QMF to create new queries

Tivoli Decision Support for z/OS works with QMF to provide these ways for you to specify report queries:

- If you are not familiar with SQL, you can use QMF's prompted query language that lets you build a query by selecting choices in a menu-driven interface.
- If you are familiar with SQL, you can use QMF to build an SQL query.

The queries in the reports provided with Tivoli Decision Support for z/OS are written in SQL, so you must be familiar with SQL if you want to use them as a base for a new report.

Using an existing report as a template for a new report

About this task

The quickest way to create a new report is to base its query and form on an existing report that is similar to the report you need. Using an existing report as a template, you can use the reporting dialog to create a new report.

To create a report using an existing report as a template:

Procedure

1. From the Reports window, select the report you want to use as a template, then from the Reports menu, select option 1 **New**. Tivoli Decision Support for z/OS invokes QMF, which displays the SQL for the query associated with the report selected as a template. Figure 26 is an example of an SQL query.

```
SQL QUERY       DRL.DRLQC807                                    LINE 1

SELECT TRANSACTION_ID,
       PROGRAM_NAME,
       SUM(TRANSACTIONS),
       SUM(RESTARTS),
       SUM(DYNAMIC_ROUTING_L),
       SUM(DYNAMIC_ROUTING_R),
       SUM(STORAGE_VIOLATIONS)
  FROM &PREFIX CICS_S_TRAN_D
  WHERE (MVS_SYSTEM_ID=&MVS_SYSTEM_ID AND
         CICS_SYSTEM_ID=&CICS_SYSTEM_ID AND
         DATE >= &FROM_DATE AND DATE <= &TO_DATE)
  GROUP BY TRANSACTION_ID, PROGRAM_NAME
  ORDER BY 3 DESC
*** END ***


1=Help        2=Run        3=End       4=Print       5=Chart       6=Draw
7=Backward    8=Forward    9=Form     10=Insert     11=Delete     12=Report
Command ===>                                                     SCROLL=PAGE
```

Figure 26. Sample SQL query in QMF

2. Edit the SQL query using QMF. If you do not want to change the query, but just want to change the form, see the notes at the end of this section.
3. When you have finished editing the query, you can take one of the following actions:
   - Edit the form of the report (described in Modifying the form for a new report).
   - Exit QMF by pressing F3. Tivoli Decision Support for z/OS displays the Report Definition pop-up.

     You need not save the report query or form using the QMF SAVE command before exiting QMF. Tivoli Decision Support for z/OS saves the query and form automatically after you return to the reporting dialog and complete the Report Definition pop-up. Saving the definition of a new report describes how to save the definition of your new report.

What to do next

Note: When using existing reports as templates:

1. If you have changed the query, form, or chart format of the template report in QMF, you must change the names of these fields in the Report Definition window when you are saving the report. Otherwise, QMF attempts to overwrite the existing data set members. Also, you must change the Report description field so that your new report has a description different from that of the template report.
2. You can change the template form without changing the query. When QMF displays the query of the report you selected, press the Form function key (F9). QMF displays the Form window, from which you can edit the form. (See Editing the form for information about editing the form.) When you finish changing the form, press the Exit function key (F3) to return to Tivoli Decision Support for z/OS. After you complete the Report Definition pop-up, the report is saved with the new form and the unchanged query.

3. If the query you use as a template is an SQL query (as all queries supplied with features are), then this method of creating a report requires you to edit the SQL query in QMF. Although this method is quicker because you can alter an existing query to fit your requirements instead of creating a new query, it requires some knowledge of SQL. Creating a query for a new report describes the QMF prompted query language, which is a more intuitive method of creating a query that does not require knowledge of SQL.
4. When you use an existing report as a template for a query, QMF picks up the form associated with the report. However, depending on how you modify the query (for example, if you change the number of columns), the form might not be usable. If you press **F2** to run the query in QMF, QMF resets the form to a default format.

   If you want to use the form associated with the template report, you must either:

   - Run the query using the QMF RUN command and specify the name of the form. To learn the name of the form, press the Form function key in QMF to go to the Form window. The name of the form is displayed at the top of the window. The QMF RUN command uses this format:

     ```
     RUN QUERY (FORM=formname
     ```

     where *formname* is the name of the QMF form. When you use this command, QMF runs the current query and displays the results using the form you specify.
   - Exit QMF (by pressing the End function key) without running the query. Tivoli Decision Support for z/OS displays the Report Definition pop-up. After you complete this pop-up, the report is saved with the new query and the unchanged form. You can then use Tivoli Decision Support for z/OS to display the report.

Creating a query for a new report

About this task

Tivoli Decision Support for z/OS reports are defined using QMF. When you display a report, Tivoli Decision Support for z/OS runs the QMF query associated with that report. When you create a report, you must create a new QMF query and, optionally, a new QMF form for the report.

To create a QMF query for a new report:

Procedure

1. From the Reports window, select option 1 **New**. QMF displays the Prompted Query Tables pop-up (Figure 27 on page 54).

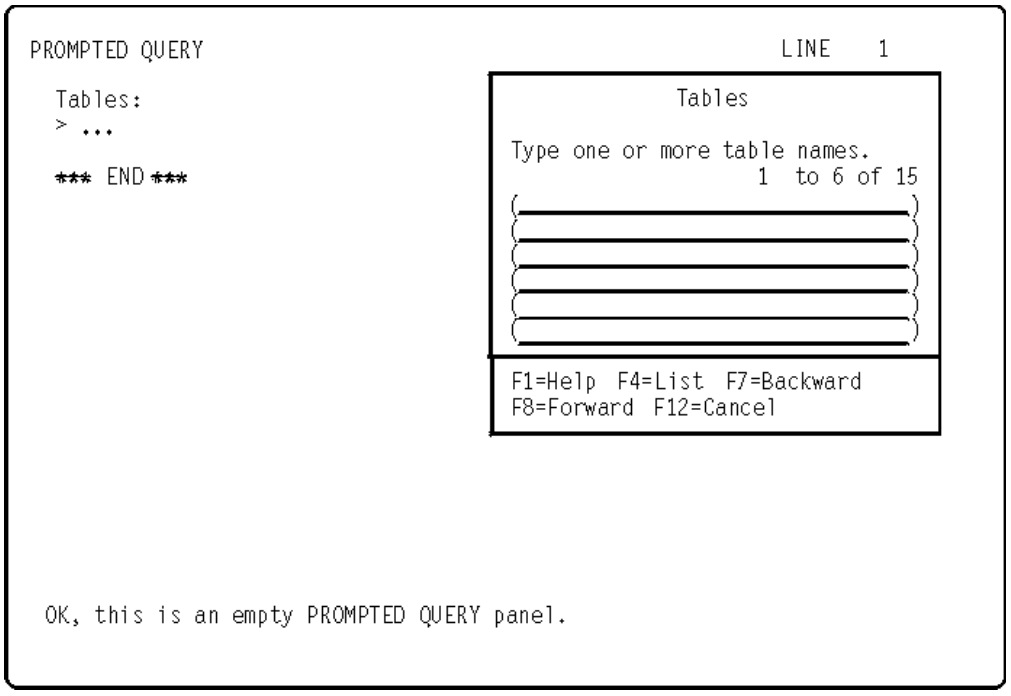


Figure 27. QMF Prompted Query Tables pop-up

2. To see a list of available tables, press **F4**. QMF displays the Table List pop-up (Figure 28).

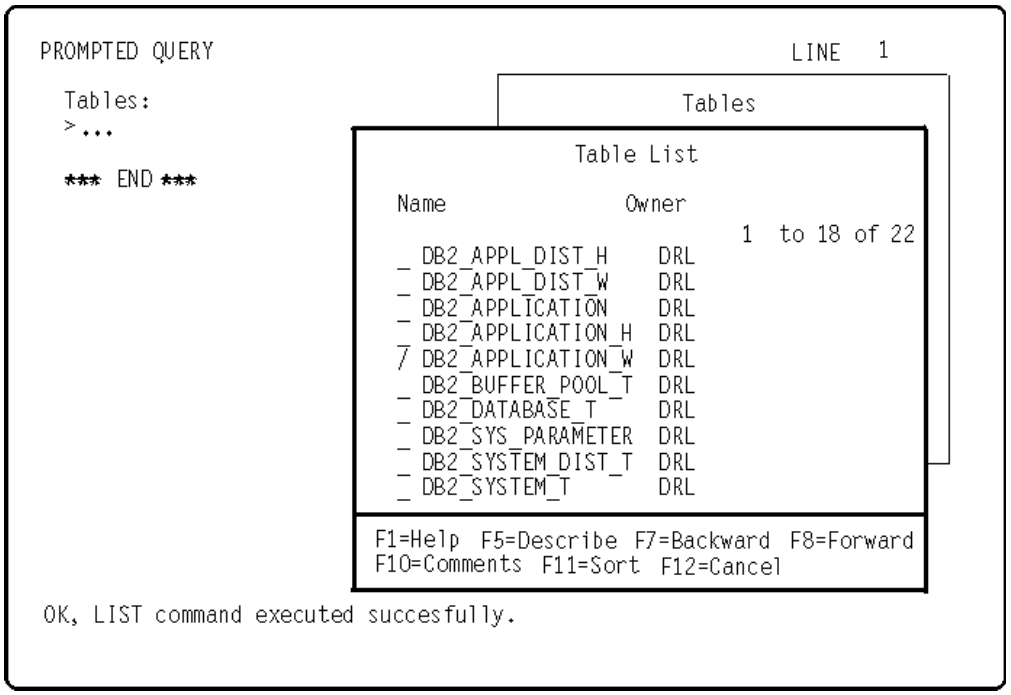


Figure 28. Table List pop-up

3. Select a table from the list, and press Enter. QMF returns to the Prompted Query Tables pop-up and displays the name of the table you selected.
4. Press Enter again to insert the table name into the query. Tivoli Decision Support for z/OS displays the Prompted Query Specify pop-up (Figure 29 on page 55

page 55).

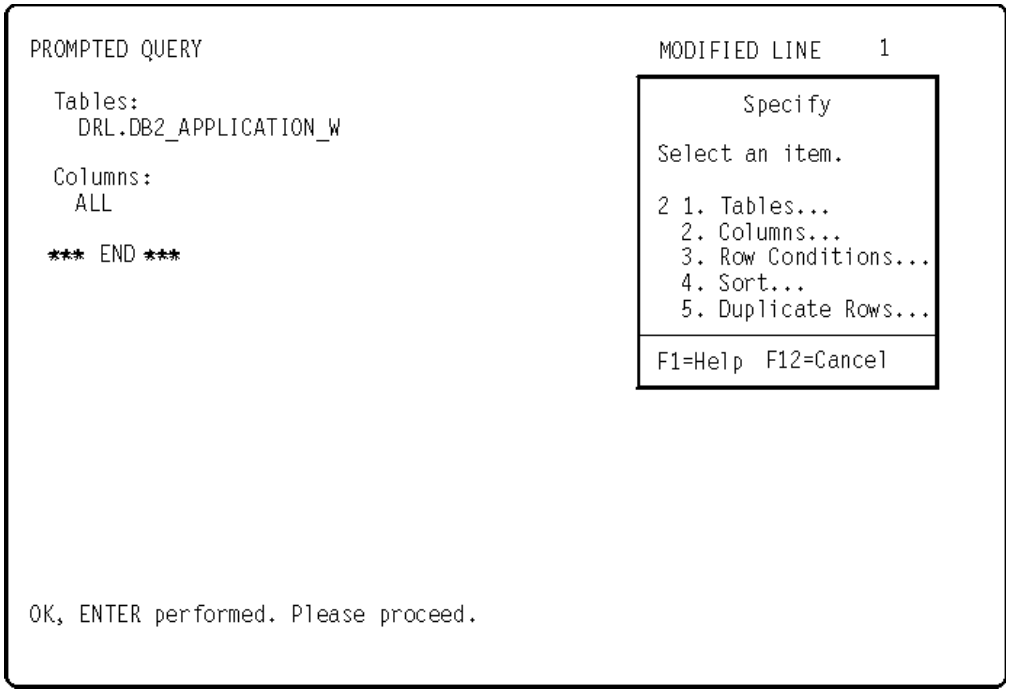


Figure 29. Prompted Query Specify pop-up

5. From the Specify pop-up, select option 2 **Columns**. QMF displays the Prompted Query Columns pop-up (Figure 30).

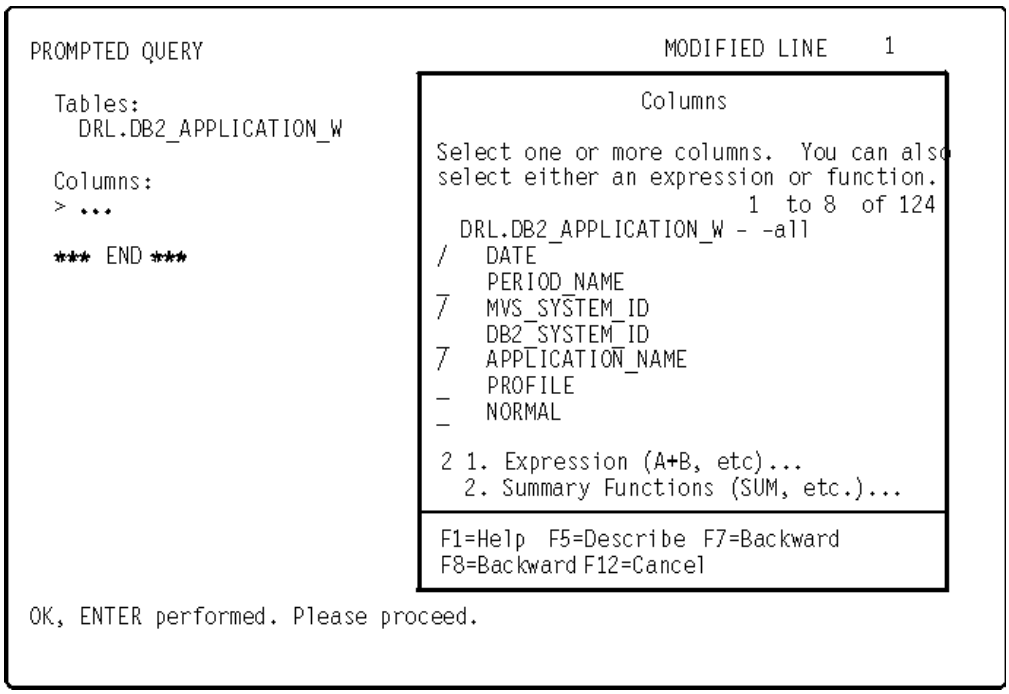


Figure 30. Prompted Query Columns pop-up

6. Select one or more columns from the pop-up. If you want to include summary functions in the query, select option 2 **Summary Functions** at the bottom of

the pop-up, then press Enter. QMF inserts the columns you selected into the query and displays the Summary Functions pop-up (Figure 31).

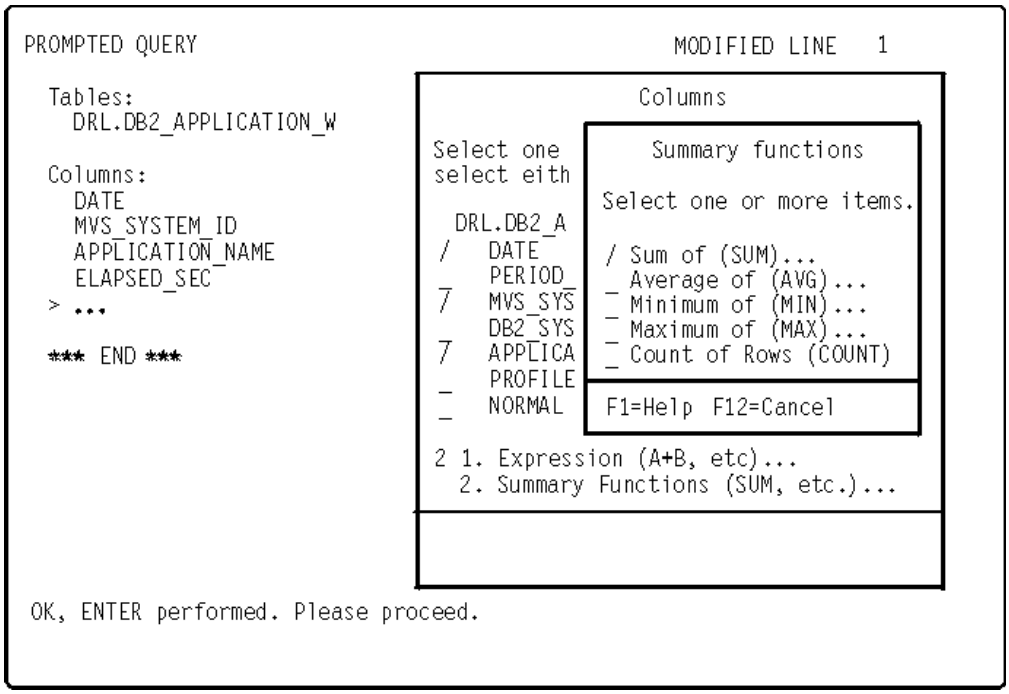


Figure 31. Summary Functions pop-up

7. If you are including summary functions in your query, select the type of function you want from the Summary Functions pop-up. QMF displays the Summary Function Items pop-up (Figure 32).

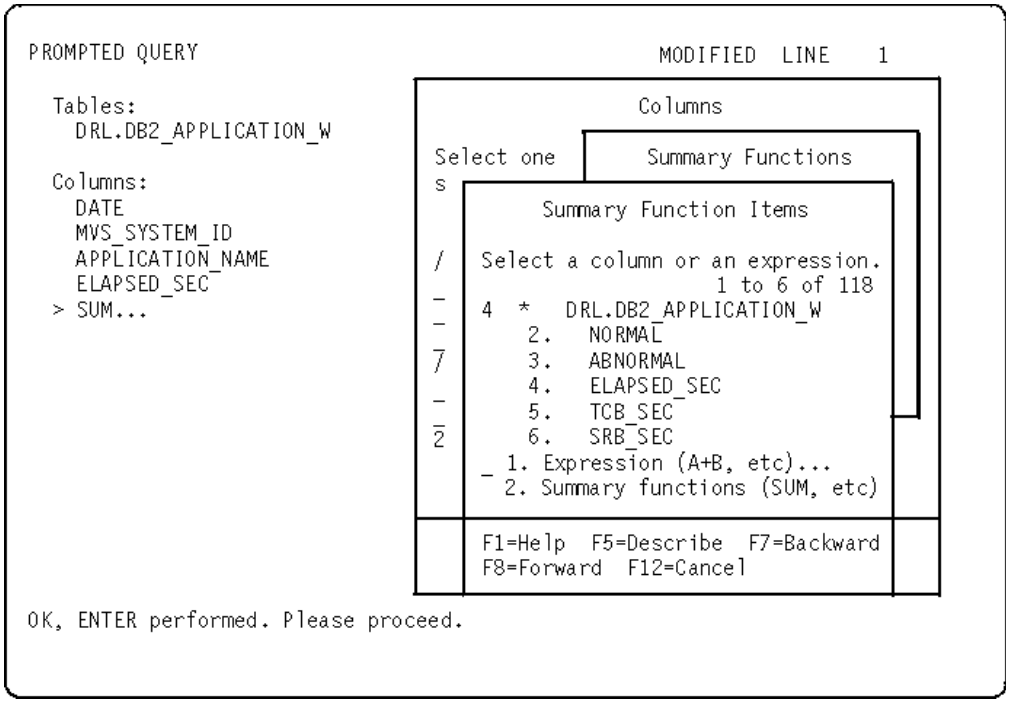


Figure 32. Summary Function Items pop-up

8. Select a summary function from the list and press Enter. QMF inserts the summary function you selected into the query and returns to the Prompted Query Specify pop-up.
9. Select option 3 **Row conditions** to specify row conditions. QMF displays the Row Conditions pop-up.
10. Follow the screens to specify row conditions, comparison operators, and condition connectors. You can include variables in place of actual values in your query. This lets you use the same query to produce several reports. In QMF, variables begin with an ampersand (&) and are no longer than 17 characters. By default, a variable is not required. To make a variable required, in the query use the operator less than (<) or greater than (>), or in the WHERE clause specify as the value an expression rather than a variable.

    For more information about how to specify variables in QMF, refer to the *Query Management Facility: Reference* or the QMF online help. When you have finished, QMF inserts the row condition you specified into the query and returns to the Prompted Query Specify pop-up (Figure 33).

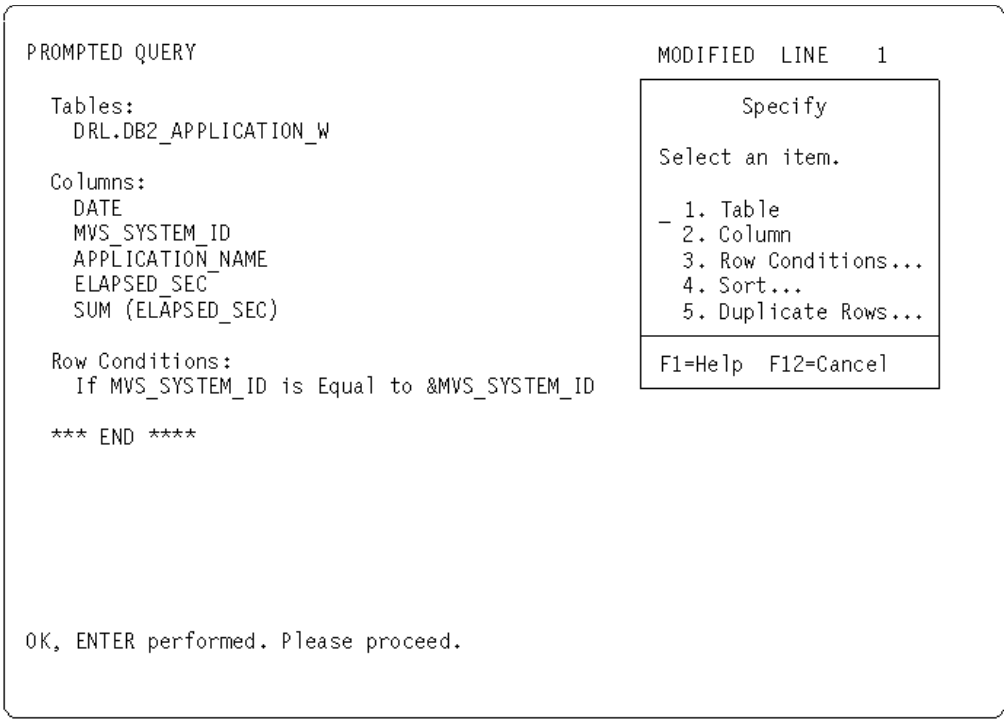


Figure 33. Row condition inserted in the query

You can further refine your query by specifying a sort order and whether to display duplicate rows. For more information about these options, refer to *Query Management Facility: Reference* or the QMF online help. When you finish making changes to the prompted query, press **F12** to leave the Specify pop-up.

11. If you want to see the SQL statement that QMF generates from your prompted query, press **F4**. QMF displays the SQL pop-up that contains the SQL statement equivalent to your query (Figure 34 on page 58).

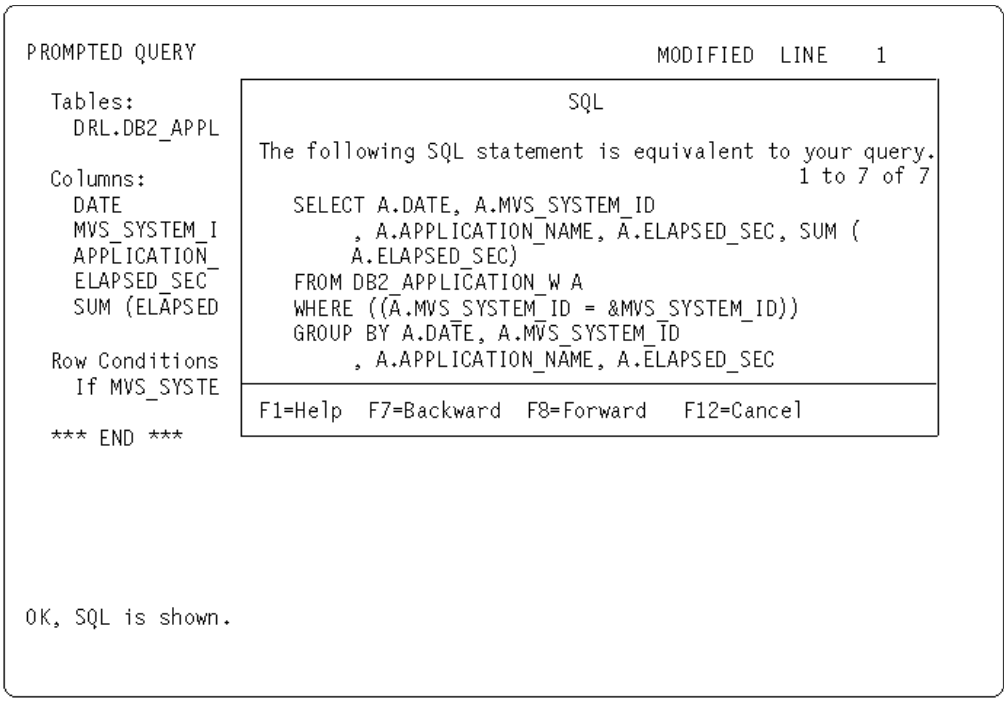


Figure 34. QMF Prompted Query SQL pop-up

12. Press **Cancel (F12)** to leave the pop-up.
13. Type RUN QUERY or press **Run (F2)** to run the query from QMF. If you have variables defined in your query, QMF displays the RUN Command Prompt pop-up so that you can provide values for them (Figure 35).

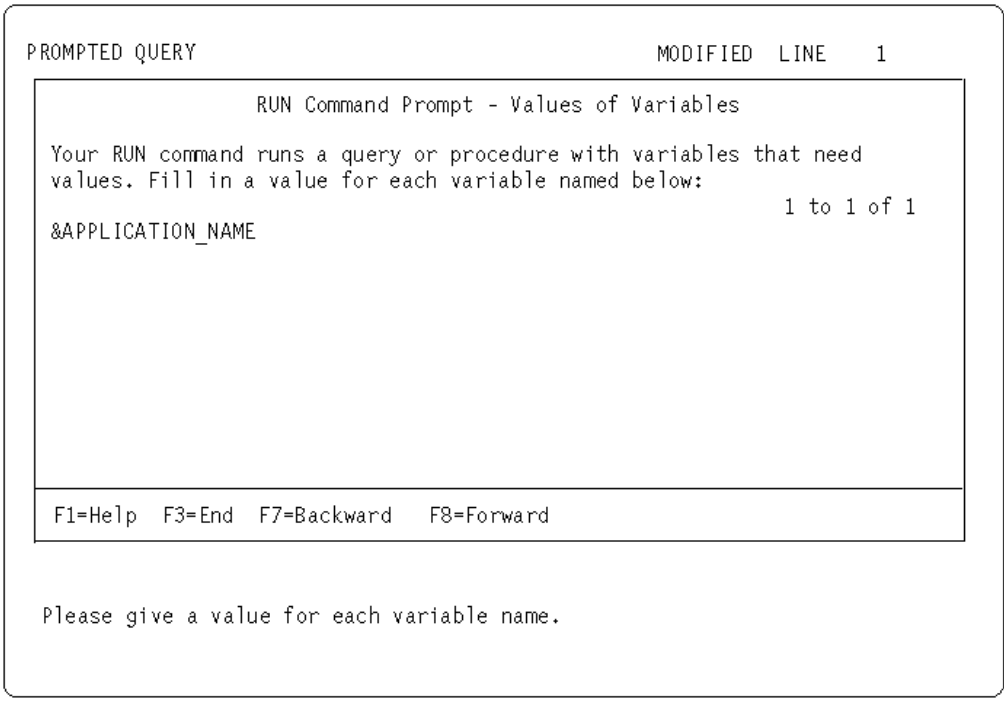


Figure 35. QMF RUN Command Prompt pop-up

14. Specify values for each variable name, then press Enter.

The procedure for specifying variables in QMF differs from the procedure for specifying variables in Tivoli Decision Support for z/OS. QMF does not provide prompted fields nor does it display an operator to indicate how the variable is applied to the query. Also, QMF requires that you delimit text values with single quotes, where Tivoli Decision Support for z/OS automatically inserts them when necessary. (See Specifying values for variables for more information about specifying variables in Tivoli Decision Support for z/OS.)

15. When specification of values for the variables is complete, press Enter. QMF runs the query and displays your report.
16. From the window in which your report is displayed, press **Exit (F3)**. Tivoli Decision Support for z/OS exits QMF and displays the Report Definition pop-up, which you can complete by following the instructions in Saving the definition of a new report.

    Note: You need not save the report query or form using the QMF SAVE command before exiting QMF. Tivoli Decision Support for z/OS saves the query and form automatically after you complete the Report Definition pop-up.

Modifying the form for a new report

About this task

You can use QMF to create reports from data stored in the database. After you retrieve data by running a query or displaying a table or view, QMF formats it into a report and displays the report.

If you do not specify a form when you select the data, the report format is based on a default form comprised of values assigned by QMF. You can change the format of your report by changing the values on the form.

Procedure

To display the form and modify its values, either:

- Press **Form (F9)**.
- Type SHOW FORM on the command line and press Enter.

A main form window is displayed (Figure 36 on page 60).

```
FORM.MAIN

COLUMNS:             Total Width of Report Columns: 34
 NUM  COLUMN HEADING                    USAGE   INDENT  WIDTH  EDIT  SEQ
 ---  --------------------------------   ------  ------  -----  ----  ---
   1  DATE                                       2       10     TDY-  1
   2  APPLICATION_NAME                           2       12     C     2
   3  ELAPSED_SEC                        SUM     2       12     E     3
      *** END ***


PAGE:     HEADING  ===> MVS System: &MVS_SYSTEM_ID
          FOOTING  ===> &PRODUCT_NAME:  &REPORT_ID
FINAL:    TEXT     ===>
BREAK1:   NEW PAGE FOR BREAK?  ===> NO
          FOOTING  ===>
BREAK2:   NEW PAGE FOR BREAK?  ===> NO
          FOOTING  ===>
OPTIONS:  OUTLINE? ===> YES                 DEFAULT BREAK TEXT? ===> YES

1=Help        2=Check     3=End    4=Show       5=Chart     6=Query
7=Backward    8=Forward   9=       10=Insert    11=Delete   12=Report
OK, FORM is displayed.
COMMAND ===> _____________________________________  SCROLL ===> PAGE
```

Figure 36. A sample main form window

Editing the form

To change the definition of the form, edit the fields in the main form window by doing any of the following actions:

- Type over the previous values and press Enter.
- Insert a column by placing the cursor in the column above the insert location and pressing **Insert (F10)**.
- Delete a column by placing the cursor in that column and pressing **Delete (F11)**.

Note: The Insert and Delete functions are valid only for the column data fields.

Here is a brief description of the fields in the main form window:

NUM field

Contains a value assigned by QMF to the column order. You cannot change this value on a forms screen. To change the order of the column in your report, rearrange the numbers in the SEQ column.

COLUMN HEADING

Specifies the text that is displayed as the column headings. To specify new column headings in your report, type the new headings over the former headings and press Enter. If you want a column heading to be displayed on two or more lines, type an underscore (_) at the points where you want the heading to split.

For example, if you want the heading LAST YEAR'S FIGURES to be displayed on three lines with one word on each line, enter:

```
LAST_YEAR'S_FIGURES
```

USAGE codes

Define how QMF uses column data to produce reports and charts. Some of the functions you can perform with usage code are:

- Exclude a column and its values from your report or chart with the OMIT usage code.

- Display one line of summary data for each set of values in the column with the GROUP usage code.
- Add or perform another aggregate function on data in a column using the SUM or another aggregation usage code.
- Provide summary data across the report using aggregation, GROUP, and ACROSS usage codes.

Refer to *Query Management Facility: Reference* or the QMF online help for complete descriptions of the usage codes.

INDENT field
Specifies the number of spaces between a column and the column to its left. For the left-most column, the INDENT value is the number of spaces between the column and the left margin.

WIDTH field
Specifies the number of characters used for the column.

EDIT code
Determines the formatting of character, graphic, numeric, and time data for each column. Refer to *Query Management Facility: Reference* or the QMF online help for complete descriptions of the edit codes.

SEQ field
Specifies the sequence in which the columns are displayed in the report. The initial values in the SEQ field are the same as those in the NUM field. To change a SEQ value, type the new sequence numbers in the SEQ column.

PAGE HEADING and FOOTING
Specifies the text that is displayed at the top and bottom of each page of the report. You can use global variables (such as &DATE and &PAGE) to specify the text. You can also use Tivoli Decision Support for z/OS variables, such as &REPORT_TITLE and &REPORT_ID, to specify this text. For more information about how Tivoli Decision Support for z/OS uses variables in a form, see "Using variables in forms" on page 62.

FINAL TEXT
Specifies text to be displayed at the end of your report. You can use global variables to specify the text.

BREAK*n* fields

Specifies whether to start a new page at each level-1 or level-2 break. The FOOTING fields located under the BREAK*n* fields let you specify text at the footing of each level of break. To start a new page at a particular break level, type YES in the appropriate BREAK field.

OUTLINE option
Specifies whether to suppress the printing of repeated values that are displayed in the break control columns. The OUTLINE option applies to breaks of every level.

DEFAULT BREAK TEXT
Specifies whether to display the default break text at each break level. The default break text is a string of asterisks: one (*) for the lowest-level break, two (**) for the second lowest break, and so forth, up to a maximum of six levels. The asterisks are replaced at break levels where you have specified break footing text.

Besides the fields in the main form window, QMF has several other form windows that you can use to tailor the format of your report. You can access these windows from the main form window by pressing **F4** (Show). When you press **F4**, QMF displays a pop-up with a list of possible form windows it can show. To show a different window, type the number in the list that corresponds to the window you want to show. Then press Enter to display the window. Some of the other windows that you can use to change the form are:

Form.page
: Changes the alignment and text of headings and footings

Form.options
: Changes options such as the width of the report page, maximum number of columns, and how QMF breaks a page

Form.final
: Specifies text to be printed at the end of the report

For more information about these windows and how to use them to change the form of a report, refer to *Query Management Facility: Reference* or the QMF online help.

Using variables in forms

You can use global variables in forms wherever text is displayed, such as in headings and detail text, or in form calculations. The variables in a form can also be the same as those you used in a query. For example, suppose you have an SQL SELECT statement in your query structured like this:

```
SELECT ...
  FROM ...
  WHERE SYSTEM_ID=&SYSTEM_ID
```

Your report form might have title text like this:

```
System ID: &SYSTEM_ID
```

When you run this report in Tivoli Decision Support for z/OS, the reporting dialog prompts you to specify a value for SYSTEM_ID. The value you specify (for example, MVS1) is used in the query and is also displayed in the report title.

Note: If you do not specify a value when prompted for one, Tivoli Decision Support for z/OS selects *all* possible values for SYSTEM_ID in the query. It does this by setting the value of SYSTEM_ID to SYSTEM_ID, which has the effect of nullifying the WHERE clause. Although the query runs without a problem, the report title would then be displayed as:

```
System ID: SYSTEM_ID
```

Alternatively, you can specify the report title on the form as:

```
System ID: &1
```

where `&amp.1` indicates that the system ID is in the first column of the report. The report then shows the first system ID on the page as part of the title.

Creating and displaying a graphic report

To display a graphic report of the data, press the Chart key (F5). QMF starts GDDM/ICU to display the graphic report using the default chart format.

When GDDM/ICU displays the graphic report, you can print it by pressing F4 (Print). GDDM/ICU displays a print options menu. For more information about printing a chart from GDDM/ICU, refer to the GDDM documentation.

You can also use GDDM/ICU to create or modify a chart format for your report data. For more information about using GDDM/ICU, refer to the GDDM documentation.

When you use QMF to display an existing graphic report (using the Chart function key), the chart format is different than the form that is displayed when you use Tivoli Decision Support for z/OS to display the report. The reason for this is that QMF displays the report using the default form, whereas Tivoli Decision Support for z/OS uses the chart format specified in the report definition. To display a graphic report in QMF using the format defined in the Tivoli Decision Support for z/OS report definition, use this command:

```
DISPLAY CHART (ICUFORM=chartform
```

where *chartform* is the name of the chart format defined in the report definition. To learn the name of the chart format, select the report in the reports window and then select 2, Open Report Definition, from the Report pull-down. Tivoli Decision Support for z/OS displays the report definition for the selected report.

Saving the definition of a new report

About this task

After you specify the QMF query and form for your new report and exit QMF, Tivoli Decision Support for z/OS displays the Report Definition pop-up (Figure 37).

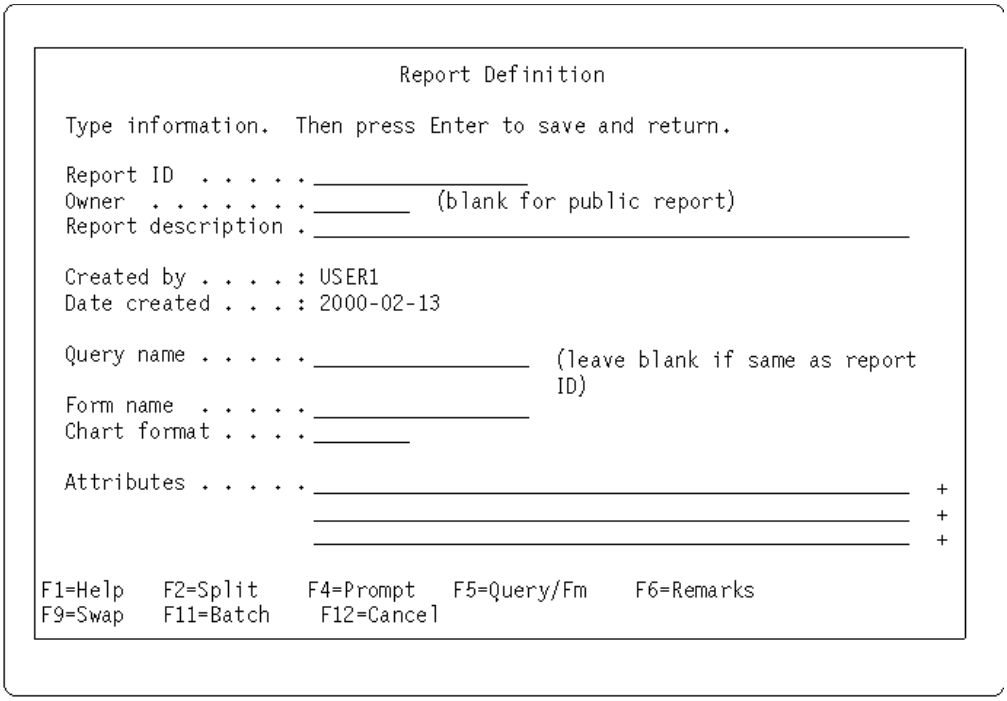


Figure 37. Report Definition pop-up, saving a QMF report

To save the report definition:

Procedure

1. Complete the entry fields as follows:

   Report ID
   A unique identifier for this report.

   Owner
   The owner (in Tivoli Decision Support for z/OS) of the report. You can specify your user ID to make this a private report, or leave the field blank to make the report public.

   Report description
   A description of the report. This is the text that is displayed when listing reports.

   Query name
   A unique name for the QMF query. If you leave this field blank, Tivoli Decision Support for z/OS uses the value of the report ID for the query name

   Form name
   A unique name for the QMF form. Note: If you have modified the default form, you must enter a value in the Form name field or you will lose the changed form.

   Chart format
   The chart format used for generating graphic reports. If you leave this field blank, Tivoli Decision Support for z/OS displays the report in tabular form. The format name can be a chart format that you have saved in GDDM/ICU or one of these GDDM/ICU formats supplied with QMF: bar, histogram, line, pie, polar, tower, surface, or table.

   Attributes
   One or more attributes that you want to assign to your report. You can use these attributes later to search for this report and categorize it with other reports that share the same attributes. With the cursor on the Attributes field, press **Prompt (F4)** to see a list of all available report attributes, from which you can select one or more for your report. You can add new attributes by typing them in the Attributes field.

2. If you want to associate remarks with the report, press **Remarks (F6)**.

   Tivoli Decision Support for z/OS displays the Report Remarks pop-up. Type remarks in the space and press Enter to return to the Report Definition pop-up.

3. If you want to use the Tivoli Decision Support for z/OS batch reporting utility to generate this report, press **Batch (F11)** to display the Batch Settings pop-up. See Changing the batch settings for a report for information about using the batch reporting utility and the Batch Settings pop-up.

   Type batch selections in the appropriate fields in the Batch Settings pop-up. When you have completed all of the fields, press Enter to return to the Report Definition pop-up.

4. When you have finished defining the report, press Enter. Tivoli Decision Support for z/OS saves the report definition and returns to the Reports window.

Chapter 7. Creating a new report with the report generator

The Tivoli Decision Support for z/OS components installed on your system contain several predefined reports. Although these reports present the information in the Tivoli Decision Support for z/OS database in several useful ways, you might have a specific need for which you must create your own report. This chapter explains how to create a new report.

Note: Reports can be created using the reporting dialog's built-in report generator or QMF, if your installation uses QMF with Tivoli Decision Support for z/OS. This chapter describes how to create reports using Tivoli Decision Support for z/OS's own report generator. For information on how to create reports using QMF, refer to Creating a new report using QMF

After reading this chapter, you should be familiar with these tasks:

- Creating and saving a new report definition
- Using an existing report as a template for a new report
- Creating a query for a new report
- Creating and modifying a form for a new report
- Adding page headers and footers to a report

Topics:

Using SQL to work with queries

Tivoli Decision Support for z/OS queries are written in SQL, so you must be familiar with SQL to define new reports or modify the reports provided with Tivoli Decision Support for z/OS.

This chapter uses simple examples to show you how to create or change an SQL query for a report. For more information about SQL, refer to *DATABASE 2 SQL Learner's Guide* or *DATABASE 2 SQL Reference*.

Note: The Tivoli Decision Support for z/OS SQL parser is not as sophisticated as a DB2 interactive interface. You should therefore avoid complex queries.

Using an existing report as a template for a new report

The quickest way to create a new report is to base its query and form on an existing report that is similar to the report you need. Using an existing report as a template, you can use the reporting dialog to create a new report.

Example:

Assume that you want to create a report that is similar to Sample Report 3, which is shipped with Tivoli Decision Support for z/OS (see Figure 55 on page 87).

Instead of showing the number of CPU seconds used per department, you want to show the number of pages printed by each department during a certain time period.

Note: Some of the Tivoli Decision Support for z/OS predefined reports have one column more on the form than in the query. If you run Tivoli Decision Support for z/OS without QMF, and use any of these reports as a template, you must remove the extra column from the form: DB209, DFSMS05, DFSMS06, DFSMS07, DFSMS13, NWSM02, NWSM09, NWSM10, NWSM11, NWSM17, and NWSM18. For information about changing the form, see Modifying the form for a report.

Creating a report definition using a template

About this task

To create a report using an existing report as a template:

Procedure

1. From the Reports window, select the report you want to use as a template. For example:

   To find Sample Report 3, type `lo samp` on the command line, press Enter, then select it from the list.
2. Select option 1 **New** from the Reports pull-down. Tivoli Decision Support for z/OS displays the Report Definition pop-up. When creating a new report based on an existing report, you can fill in the fields as shown in the example in Figure 38.

```
                    Report Definition

 Type information. Press Enter to save the report definition and return!

 Report ID  . . . . . TESTREP1_________
 Owner  . . . . . . . ________ (blank for public report)
 Report description. Test copy of sample report no 3_____________________

 Created by . . . . . User1
 Date created . . . . 2004-07-15

 Chart format . . . . DRLGHORB_

 Attributes . . . . . Test User1 example______  +
                      ____________________________________________________  +
                      ____________________________________________________  +

This is a template
  F1=Help       F2=Split       F4=Prompt      F5=Query/Fm      F6=Remarks
  F9=Swap      F11=Batch       F12=Cancel
```

Figure 38. Report Definition pop-up, changing a report with the Tivoli Decision Support for z/OS report generator

3. Complete the entry fields as follows:

   Report ID
   A unique identifier for this report.

   Owner
   The owner (in Tivoli Decision Support for z/OS) of the report. You can specify your user ID to make this a private report or leave the field blank to make the report public.

   Report description
   A description of the report. This is the text that is displayed when listing reports. When you base a new report on an existing report, it is important that you change the report description.

Chart format

The chart format used for generating graphic reports. If you leave this field blank, Tivoli Decision Support for z/OS displays the report in tabular form.

The format name can be a chart format that you have saved in GDDM/ICU or one of these GDDM/ICU formats: bar, histogram, line, pie, polar, tower, surface, or table.

Attributes

One or more attributes that you want to assign to your report. You can use these attributes later to search for this report and categorize it with other reports that share the same attributes. With the cursor on the Attributes field, press **Prompt (F4)** to see a list of all available report attributes from which you can select one or more for your report. You can add new attributes by typing them in the Attributes field.

4. If you want to associate remarks with the report, press **Remarks (F6)** to display the Report Remarks pop-up. Type remarks in the space, and press Enter to return to the Report Definition pop-up.
5. If you want to add header or footer lines to the report, press **F10**. See Adding page headers and footers to a report for information about using the Report Headers and Footers pop-up.
6. If you want to use the batch reporting utility to generate this report, press **Batch (F11)** to display the Batch Settings pop-up. See Changing the batch settings for a report for information about using the batch reporting utility and the Batch Settings pop-up.

   Type batch selections in the fields in the Batch Settings pop-up. When you have completed all the fields, press Enter to return to the Report Definition pop-up.
7. When you have finished defining the report, you can:
   - Press **Query/Fm (F5)** to define the SQL query and a form for the new report. See Changing the SQL query and the form.
   - Press Enter to save the report definition and return to the Reports window.

Changing the SQL query and the form

When you press **Query/Fm (F5)** on the Report Definition pop-up, the SQL Query pop-up for the report is shown.

Example:

If you are basing your new report on Sample Report 3, the SQL query looks like the example in Figure 39 on page 68.

```
SQL Query              DRLQ.DRLQ0213                              LINE 1

 -- DRLQ0213

SELECT A.PROFILE
     , SUM(B.ELAPSED_DB2_SEC)/SUM(B.ELAPSED_SEC) * FLOAT(100)
     , SUM(B.TCB_DB2_SEC)/SUM(B.ELAPSED_DB2_SEC) * FLOAT(100)
     , (SUM(B.IO_WAIT_SEC)/SUM(B.ELAPSED_DE2_SEC) +
        SUM(B.OTHER_READ_SEC)/SUM(B.ELAPSED_DB2_SEC) +
        SUM(B.OTHER_WRITE_SEC)/SUM(B.ELAPSED_DB2_SEC) * FLOAT(100)
     ,  SUM(B.LOCK_LATCH_SEC)/SUM(B.ELAPSED_DB2_SEC) * FLOAT(100)
     , (SUM(B.SERVICE_TASK_SEC)/(B.ELAPSED_DB2_SEC) +
        SUM(B.ARC_LOGWAIT_SEC)/SUM(B.ELAPSED_DB2_SEC) +
        SUM(B.ARC_LOGREAD_SEC)/SUM(B.ELAPSED_DB2_SEC) * FLOAT(100)
     , (SUM(B.ELAPSED_DB2_SEC)/(B.TCB_DB2_SEC) -
        SUM(B.IO_WAIT_SEC) - SUM(B.LOCK_LATCH_SEC) -
        SUM(B.OTHER_READ_SEC) - SUM(B.OTHER_WRITE_SEC) -
        SUM(B.SERVICE_TASK_SEC) - SUM(B.ARC_LOGREAD_SEC) -
        SUM(B.ARC_LOGWAIT_SEC) * FLOAT(100) / SUM(B.ELAPSED_DB2_SEC)
  FROM &PREFIX.DB2_APPLICATION A,
 1=Help        2=Run        3=End       4=Print      5=Chart     6=Draw
 7=Backward    8=Forward    9=Form     10=Insert    11=Delete   12=Report
Command ===> ____________________________________________________________
```

Figure 39. SQL Query pop-up, modifying a report with Tivoli Decision Support for z/OS's report generator

Example:

This query selects the system ID, department name, and CPU seconds used from the sample table SAMPLE_M. (For an overview of the sample reports and tables, refer to *Administration Guide and Reference*.) The SUM in `SUM(CPU_SECONDS)` is a column function, which causes the sum of a collection of CPU_SECONDS values to be shown.

The WHERE clause in the query limits the data shown to a certain time period and a certain system. `&FROM_MONTH`, `&TO_MONTH`, and `&SYSTEM_ID` are variables. Variables are used to make the query more flexible. When the report is run, you are prompted to enter values for these variables to specify which system and time period you want to include in the report. Variables are preceded by an ampersand (&) and can be 18 characters, including the ampersand.

The GROUP BY and ORDER BY clauses affect the formatting of the report. The data on the report is grouped by system ID and department name and ordered by CPU seconds used per department, in descending order.

1. You can edit the query on this window or go into ISPF Edit. If you want to use ISPF Edit to edit the query, press **F10** or type `EDIT` on the command line. In ISPF Edit, you can use line commands when changing the query. When you have finished editing the query, press **F3** to return to the SQL Query pop-up.

   If you want to delete the entire query and start writing from the beginning, type `CLEAR` on the command line on the SQL Query pop-up.

   You can add comments to the query, for example to explain your modifications. Start each comment line with two dashes (– –). Comments are not shown in the report.

   Example: To make the report show the number of pages printed per department instead of the number of CPU seconds used, go to the first line of the report, the SELECT clause, and change `SUM(CPU_SECONDS)` to `SUM(PAGES_PRINTED)`.
2. When you have changed the query, you can press **F2** to see the result of your changes. To run the report from the SQL Query pop-up, you must substitute any variables in the query with actual values.

   The result of the query is displayed in tabular form. **Example:**

In this example, you would need to enter values for &FROM_MONTH, &TO_MONTH, and &SYSTEM_ID.

3. When you change a query, you must also change the form that is associated with it. The form determines the layout of the report. (For more information about the report form, see Modifying the form for a report.) Press **F9** to go to the Form for Report *report name* pop-up.

   Example: In our example, the form is as shown in Figure 40.

```
FORM.MAIN               DRLQ.DRLFD213

COLUMNS:                   Total Width of Report Columns: 52
 NUM COLUMN HEADING                                USAGE   INDENT  WIDTH EDIT SEQ
 --- --------------                                 ------- ------  ----- ---- ---
   1 Profile                                               0       12    C    1
   2 Elapsed_DB2_time                               OMIT    1       7     P2   2
   3 DB2_TCB_time                                          1       7     P2   3
   4 I/O _wait_time                                        1       7     P2   4
   5 Lock_latch_time                                       1       7     P2   5

PAGE:    HEADING  ===>  &REPORT_TITLE
         FOOTING  ===>  &PRODUCT_NAME: &REPORT_ID
FINAL:   TEXT     ===>
BREAK1:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
BREAK2:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
OPTIONS: OUTLINE? ===>  YES                DEFAULT BREAK TEXT?  ===>  NO

1=Help        2=Check       3=Check        4=Show        5=Chart        6=Query
7=Backward    8=Forward     9=            10=Insert     11=Delete      12=Report
OK, FORM is displayed.
COMMAND  ===> _                                                SCROLL  ===>  PAGE
```

Figure 40. Report form definition pop up

   Example:

   You must change the column heading CPU_seconds to, for example, Pages_printed. In this example, no more changes to the form are needed.

4. When you have changed the form, you can press **F2** to save the current report definition and display the report. If the query contains variables, you are prompted for values for these variables on the Data Selection pop-up.

   When you have specified values for the variables, you can press Enter to display the report. You can also press **F4** to display the report in tabular form, or **F5** to display the report as a chart. If the report does not have a chart format defined in the report description, the default format, bar chart, is used.

   Example:

   Press Enter on the Data Selection pop-up to display the report as a chart. Tivoli Decision Support for z/OS calls GDDM to display the report. Press **F9** to leave GDDM when you have finished viewing the report. The tabular version of the report is displayed. Press **F3** to return to the Form for Report *report name* pop-up.

5. When you have finished working with the form, press Enter to save it. Then press Enter to save the query.

   On the Report Definition pop-up, you can press **F10** to add or change header or footer lines for the report. For more information about header and footer lines, see Adding page headers and footers to a report.

   When you have finished working with the report, press Enter to save the report definition. Your report is included in the list of reports, and can be selected and displayed.

   Example:

The report now shows the number of pages printed per department with the department that printed the most pages at the top of the report. It might look like Figure 41.

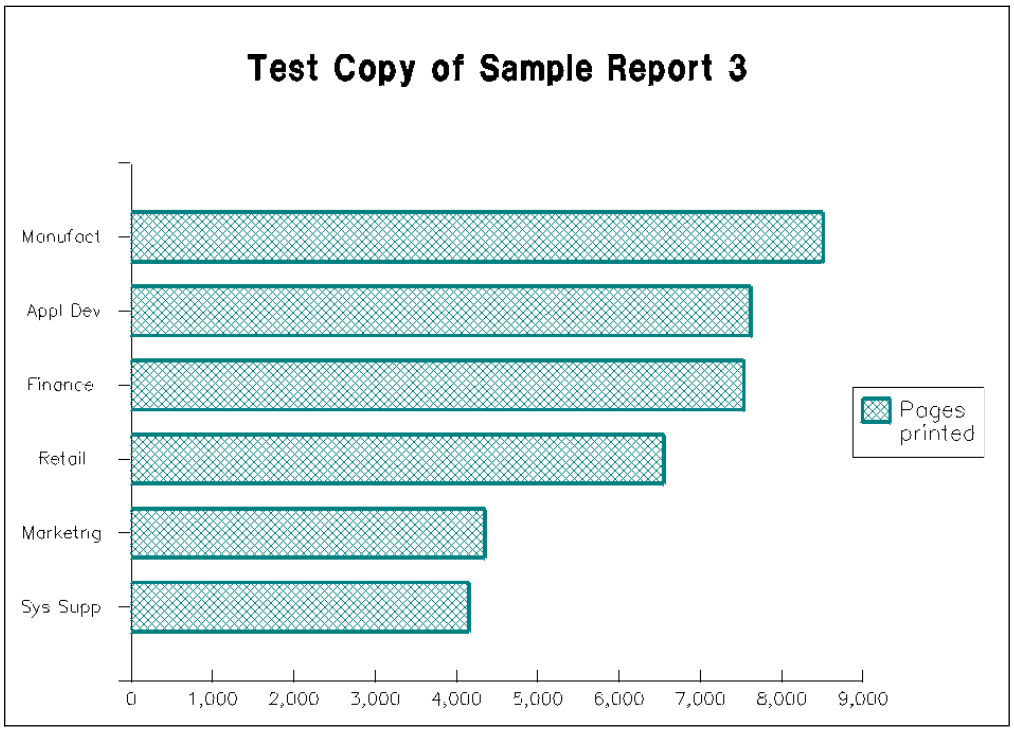


Figure 41. The changed copy of Sample Report 3.

Creating a query and form for a new report

You create a new report in Tivoli Decision Support for z/OS by creating an SQL query to extract the information you want from the database. There is a form specifying the layout of the report connected to the query. By changing the form you can, for example, change the width of the columns and the column heading texts.

Example:

Assume that you want to create a tabular report that looks like the example in Figure 42 on page 71 showing the number of transactions and pages printed for a number of users in different departments. (Only the first page of the report is shown here. In the dialog you can page forward with **F8**.)

```
                        An Example of a New Report


            Depart-   User                          Pages
Date        ment      ID        Transactions      printed
----------  --------  --------  ------------  -----------
2000-01-01  Appl Dev  ADAMS             1109          821
                      JONES             1138         1055
                      SMITH              870          864
                                ------------  -----------
                             *          3117         2740

            Finance   GEYER              509          529
                      HAAS               786          648
                      PARKER             462          704
                      SPENCER            800          640
                                ------------  -----------
                             *          2557         2521

            Manufact  LEE               1197         1086
                      LUTZ               606          623
                      MEHTA              968          748
                      PULASKI            716          738
                                ------------  -----------
                             *          3487         3195
```

Figure 42. An example of a tabular report

Creating a new report definition without using a template

About this task

To create a report definition for a new report without using a template:

Procedure

1. Select option 1 **New** from the Reports pull-down. Tivoli Decision Support for z/OS displays the Report Definition pop-up.

   Example:

   When creating a new report, you can fill in the fields as in Figure 43.

```
                   Report Definition

Type information.  Then press Enter to save and return.

Report ID  . . . . . NEWREPORT________
Owner  . . . . . . . ________ (blank for public report)
Report description   An example of a new report_____________________________

Created by . . . . . USER1
Date created . . . . 2000-05-12

Query name . . . . . DRLQD213___________  (leave blank if same as report
                                         ID)
Form name  . . . . . DRLFD213___________
Chart format . . . . DRLGD213_

Attributes . . . . . EXAMPLE TEST NEW_____________________________________  +
                     _____________________________________________________  +
                     _____________________________________________________  +

 F1=Help       F2=Split       F4=Prompt      F5=Query/Fm      F6=Remarks
 F9=Swap      F11=Batch       F12=Cancel
```

Figure 43. Report Definition pop-up, defining a new report with Tivoli Decision Support for z/OS's report generator

2. Complete the entry fields as follows:

Report ID
A unique identifier for this report.

Owner
The owner (in Tivoli Decision Support for z/OS) of the report. You can specify your user ID to make this a private report or leave the field blank to make the report public.

Report description
A description of the report. This is the text that is displayed when listing reports.

Query name
The name of the SQL query used to extract the data you want displayed.

Form name
The name of the form definition file used to define the presentation of the data.

Chart format
The chart format used for generating graphic reports. If you leave this field blank, Tivoli Decision Support for z/OS displays the report in tabular form.

The format name can be a chart format that you have saved in GDDM/ICU, or one of these GDDM/ICU formats: bar, histogram, line, pie, polar, tower, surface, or table.

Attributes
One or more attributes that you want to assign to your report. You can use these attributes later to search for this report and categorize it with other reports that share the same attributes. With the cursor on the Attributes field, press **Prompt (F4)** to see a list of all available report attributes from which you can select one or more for your report. You can add new attributes by typing them in the Attributes field.

3. If you want to associate remarks with the report, press **Remarks (F6)**.

   Tivoli Decision Support for z/OS displays the Report Remarks pop-up. Type remarks in the space, and press Enter to return to the Report Definition pop-up.
4. If you want to use the batch reporting utility to generate this report, press **Batch (F11)**.

   Tivoli Decision Support for z/OS displays the Batch Settings pop-up. See Changing the batch settings for a report for information about using the batch reporting utility and the Batch Settings pop-up.

   Type batch selections in the fields in the Batch Settings pop-up. When you have completed all the fields, press Enter to return to the Report Definition pop-up.
5. If you want to add header or footer lines to the report, press **Query/Fm (F5)**. See Adding page headers and footers to a report for information about using the Report Header and Footer pop-up.
6. When you have finished defining the report, you can:
   - Press **Query/Fm (F5)** to define the SQL query and, optionally, a form for the new report. See Creating a new SQL query and a form.
   - Press Enter to save the report definition and return to the Reports window.

Creating a new SQL query and a form

About this task

When you press **Query/Fm (F5)** in the Report Definition pop-up, the SQL Query pop-up (Figure 44) is shown.

```
SQL Query              NEWREPORT                              LINE 1

 -- NEWREPORT
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 ____________________________________________________________________
 1=Help        2=Run         3=End       4=Print      5=Chart     6=Draw
 7=Backward    8=Forward     9=Form     10=Insert    11=Delete   12=Report
Command ===> ____________________________________________________________
```

Figure 44. SQL Query pop-up, creating a new report

An SQL query is used to find information in tables to display it in a report. The SQL language uses normal English words to do this. Some commonly used clauses in a query are:

SELECT
: You select columns in the order you want them to be displayed in the report (for example, user ID, system ID).

FROM
: You select the columns from one or more tables.

WHERE
: You select the rows (in the columns) for which a certain condition is true.

ORDER BY
: You can order the rows in the columns in a certain order. For example, you can order the rows of a column in alphabetical order by name.

SORT BY
: You can sort the rows in the columns in ascending or descending order.

GROUP BY
: You can group the rows in the columns.

For more information about SQL, refer to *DATABASE 2 SQL Learner's Guide* or *DATABASE 2 SQL Reference*

Procedure

1. Write the query in the SQL Query pop-up.

   If you want to delete the entire query and start again, type `CLEAR` on the command line on the SQL Query pop-up.

If you know the names of the table and columns you want to use, you can start typing the query. Otherwise, Tivoli Decision Support for z/OS helps you find out which tables and columns to use.

2. To see a list of tables available on your system, press **Chart (F5)**.

   Tivoli Decision Support for z/OS displays the Tables pop-up (Figure 45).

```
                                Tables          ROW 229 TO 242 OF 277

Select table(s).  Then press Enter to see the column definitions.

/   Tables              Prefix    Type
_   SAMPLE_H            DRL       TABLE
/   SAMPLE_M            DRL       TABLE
_   SAMPLE_USER         DRL       TABLE
_   SCHEDULE            DRLSYS    TABLE
_   SPECIAL_DAY         DRLSYS    TABLE
_   USER_GROUP          DRL       TABLE
_   VMACCT_SESSION_D    DRL       TABLE
_   VMACCT_SESSION_M    DRL       TABLE
_   VMPARM              DRL       TABLE
_   VMPRF_CONFIG_T      DRL       TABLE
_   VMPRF_DASD_D        DRL       TABLE
_   VMPRF_DASD_H        DRL       TABLE
_   VMPRF_DASD_M        DRL       TABLE
_   VMPRF_PROCESSOR_D   DRL       TABLE

Command ===> ____________________________________________________________
 F1=Help     F2=Split    F7=Bkwd     F8=Fwd      F9=Swap     F12=Cancel
```

Figure 45. Tivoli Decision Support for z/OS Tables pop-up

If you want to see information about the table, you can type a question mark (**?**) beside the table, and press Enter. Tivoli Decision Support for z/OS goes into BookManager and displays information about the table from the relevant online book. Press **F3** to return to the table list.

3. Select one or more tables, and press Enter.

   Example:

   For this example, select the SAMPLE_M table. To locate it, type `lo samp` on the command line and press Enter.

   Tivoli Decision Support for z/OS displays the Columns of Selected Tables pop-up. If you need information about a column, you can type a question mark (**?**) beside the column, and press Enter. Tivoli Decision Support for z/OS goes into BookManager and displays information about the column and table from the relevant online book. Press **F3** to return to the column list (Figure 46 on page 75).

```
                      Columns of selected Tables         ROW 1 TO 8 O

Select columns to generate a Query. Then press Enter to return.

/   Column              Type        Len   Key  Table
/   DATE                DATE        4     Yes  SAMPLE_M
_   SYSTEM_ID           CHAR        4     Yes  SAMPLE_M
/   DEPARTMENT_NAME     CHAR        8     Yes  SAMPLE_M
/   USER_ID             CHAR        8     Yes  SAMPLE_M
/   TRANSACTIONS        INTEGER     4     No   SAMPLE_M
_   RESPONSE_SECONDS    INTEGER     4     No   SAMPLE_M
_   CPU_SECONDS         FLOAT       8     No   SAMPLE_M
/   PAGES_PRINTED       INTEGER     4     No   SAMPLE_M
*************************** BOTTOM OF DATA ***************************


Command ===> ____________________________________________________________
 F1=Help     F2=Split    F7=Bkwd     F8=Fwd      F9=Swap    F12=Cancel
```

Figure 46. Tivoli Decision Support for z/OS Columns of Selected Tables pop-up

4. Select the columns you want to use, and press Enter.

   Example:

   For this example, select the DATE, DEPARTMENT_NAME, USER_ID, TRANSACTIONS, and PAGES_PRINTED columns, and press Enter. (A confirmation pop-up might be displayed, asking you to confirm that you want to replace the existing query definition. Press Enter.)

   The table and column names are copied to your SQL Query pop-up, and SQL SELECT and FROM clauses are added (see Figure 47).

   Example:

   In our example, DRL is the table prefix; it might be something else in your installation. The prefix is shown in the Prefix for all other tables field on the Dialog Parameters window.

```
SQL Query              NEWREPORT                              LINE 1

 -- NEWREPORT

  SELECT DATE, DEPARTMENT_NAME, USER_ID, TRANSACTIONS, PAGES_PRINTED
    FROM DRL.SAMPLE_M
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
 1=Help       2=Run        3=End       4=Print      5=Chart     6=Draw
 7=Backward   8=Forward    9=Form     10=Insert    11=Delete   12=Report
Command ===> ________________________________________________________
```

Figure 47. SQL Query pop-up, table and columns selected

Note: If you know the name of the table you want to use, but are unsure about the column names, you can enter the name of the table in your SELECT statement, and press **F6** to see a list of the columns included in that table.

If you have selected a table from the Tables pop-up and want to use another table, you must go back to the Tables pop-up and:

- Select a new table, or
- Press **Cancel (F12)** from the Tables pop-up without selecting a table, and enter a new table name in the query.

5. Edit the query, to add more clauses.

   Example:

   In our example, we want to show the sum of transactions and pages printed for each user. Press **F10** to go into Edit mode, and change the query so that it looks like this:

   ```
   SELECT DATE, DEPARTMENT_NAME, USER_ID,
          SUM(TRANSACTIONS),
          SUM(PAGES_PRINTED)
    FROM DRL.SAMPLE_M
   ```

   Press **F3** to leave Edit mode.

6. You can specify conditions for the rows to use with a WHERE condition. You can use variables in this condition to make the query more flexible. Variables are preceded by an ampersand (&), and can be 18 characters, including the ampersand. When the report is run, the Data Selection pop-up is displayed, and you can specify values for the variables.

   Example

   In our example, no WHERE condition is needed. An example of a query with a WHERE condition is shown in Figure 39 on page 68.

7. Select the order in which the information should be shown with an ORDER BY condition, or specify a GROUP BY condition.

   Example:

   In our example, we must group the date, department name, and user ID columns. We also order the date (column 1), department name (column 2), and user ID (column 3) columns in ascending order. Add these clauses to the query:

   ```
   GROUP BY DATE, DEPARTMENT_NAME, USER_ID
   ORDER BY 1 ASC, 2 ASC, 3 ASC
   ```

8. Press **F4** to run the query to verify that the report contains the information you want.

   Note:

   a. If the query contains variables, you must replace those variables with values before you can run the query.
   b. If you get an SQL error message when you try to run the query, there is probably something wrong with the query's syntax. A column name might be misspelled, or a comma might be missing.

   Example:

   The report you see after pressing **Run (F4)** can look like the example inFigure 48 on page 77. (Only the first page of the report is shown here. In the dialog you can page forward with **F8**.)

```
DATE       DEPARTMENT USER
           NAME       ID
---------- ---------- -------- ----------- -----------
2000-01-01 Appl Dev   ADAMS           1109         821
2000-01-01 Appl Dev   JONES           1138        1055
2000-01-01 Appl Dev   SMITH            870         864
2000-01-01 Finance    GEYER            509         529
2000-01-01 Finance    HAAS             786         648
2000-01-01 Finance    PARKER           462         704
2000-01-01 Finance    SPENCER          800         640
2000-01-01 Manufact   LEE             1197        1086
2000-01-01 Manufact   LUTZ             606         623
2000-01-01 Manufact   MEHTA            968         748
2000-01-01 Manufact   PULASKI          716         738
2000-01-01 Marketng   KWAN             637         577
2000-01-01 Marketng   STERN            474         792
2000-01-01 Retail     GOUNOT           798         790
2000-01-01 Retail     MARINO           653         685
2000-01-01 Retail     PEREZ            716        1060
2000-01-01 Sys Supp   PIANKA           770        1210
2000-01-01 Sys Supp   THOMPSON         509         395
2000-02-01 Appl Dev   ADAMS            422         650
2000-02-01 Appl Dev   JONES            893         826
2000-02-01 Appl Dev   SMITH            842         842
2000-02-01 Finance    GEYER            379         515
2000-02-01 Finance    HAAS             674         771
•••
```

Figure 48. An intermediate report shown with Run (F4)

Tivoli Decision Support for z/OS displays the results of the query. Press **F3** to go back to the SQL Query pop-up.

Modify the query if necessary, and press **F4** again to check the results.

You can add comments to the query, for example to explain your modifications. Start each comment line with two dashes (– –). Comments are not shown in the report.

9. When you are satisfied with the contents of the query, you can change the layout of the report.
   a. Press **F11** to go to the Form for Report *report name* pop-up.

      Example:

      The Form for Report NEWREPORT pop-up is shown. (For a new report, you might need to press **F5** to build the form from the query.) The resulting form can look like the example in Figure 49 on page 78.

```
FORM.MAIN               NEWREPORT

COLUMNS:                   Total Width of Report Columns: 52
 NUM COLUMN HEADING                                USAGE   INDENT  WIDTH EDIT SEQ
 --- --------------                                ------- ------  ----- ---- ---
   1 DATE                                                 0       10    C    1
   2 DEPARTMENT_NAME                                      1       8     C    2
   3 USER_ID                                              1       8     C    3
   4                                                      1       11    L0   4
   5                                                      1       11    L0   5

PAGE:    HEADING  ===>  &REPORT_TITLE
         FOOTING  ===>  &PRODUCT_NAME: &REPORT_ID
FINAL:   TEXT     ===>
BREAK1:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
BREAK2:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
OPTIONS: OUTLINE? ===>  YES                DEFAULT BREAK TEXT?  ===>  NO

1=Help        2=Check       3=Check        4=Show        5=Chart        6=Query
7=Backward    8=Forward     9=            10=Insert     11=Delete      12=Report
OK, FORM is displayed.
COMMAND  ===> _                                              SCROLL  ===>  PAGE
```

Figure 49. A new report form

b. First of all, you must add column headings for columns four and five. Move the cursor to the empty line after column three, and type `Transactions`. Type `Pages_printed` on line five. (The underscore (_) makes printed Pages appear on two lines.)

   If you run the report using **F4**, you will notice that some headings are uppercase and some are lowercase. Also, some headings are truncated because they are too long. To solve this, you can either add an underscore to break the heading into two lines, or increase the width of the column.

   - Change the width of the transactions column to 12 instead of 11.
   - Change the heading `DEPARTMENT_NAME` to `Depart-_ment`, and press **F4** again.
   - Change other headings from uppercase to lowercase if needed.

c. Break the report into sections to make the information more readable. You can also summarize data for each section. You do this with usage codes. (For a full description of the usage codes available, see Usage codes.) Fill in the usage code columns as shown in the example in Figure 50 on page 79.

```
FORM.MAIN               NEWREPORT

COLUMNS:                   Total Width of Report Columns: 52
 NUM COLUMN HEADING                                USAGE   INDENT  WIDTH EDIT SEQ
 --- --------------                                ------- ------  ----- ---- ---
   1 Date                                          BREAK1   0       10    C    1
   2 Department                                    BREAK2   1       8     C    2
   3 User_ID                                               1       8     C    3
   4 Transactions                                  SUM      1       12    L0   4
   5 Pages_printed                                 SUM      1       11    L0   5

PAGE:    HEADING  ===>  &REPORT_TITLE
         FOOTING  ===>  &PRODUCT_NAME: &REPORT_ID
FINAL:   TEXT     ===>
BREAK1:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
BREAK2:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
OPTIONS: OUTLINE? ===>  YES               DEFAULT BREAK TEXT?  ===>  NO

1=Help        2=Check       3=Check        4=Show        5=Chart        6=Query
7=Backward    8=Forward     9=            10=Insert     11=Delete      12=Report
OK, FORM is displayed.
COMMAND  ===> _                                              SCROLL  ===>  PAGE
```

Figure 50. A modified report form

With these usage codes, the date and department names are shown only once instead of being repeated. The transactions and pages printed columns are summarized for each department and time period.

d. When you have finished working with the form, press Enter to save it. Then press Enter to save the query.

10. On the Report Definition pop-up, you can press **F10** to add header and footer lines to your report. For more information about adding header and footer lines, see Adding page headers and footers to a report.
11. When you have finished working with the report, press Enter to save the report definition. Your report is included in the list of reports, and can be selected and displayed.

Modifying the form for a report

About this task

After you retrieve data by running a query, it is formatted into a report and displayed.

You can change the format of your report by changing the values on the form. If you change the query by, for example, adding or deleting columns, you must change the form so that the number of columns in the query matches the number of columns on the form. The columns must also be in the same order in the query as on the form.

Procedure

To display the form and modify its values, press **Form (F9)** on the SQL Query pop-up. Tivoli Decision Support for z/OS shows the Form for report *report name* pop-up (Figure 51 on page 80).

```
FORM.MAIN               Sample Report 2

COLUMNS:                   Total Width of Report Columns: 52
 NUM COLUMN HEADING                              USAGE   INDENT  WIDTH EDIT SEQ
 --- --------------                              ------- ------  ----- ---- ---
   1 Month_start_date                            BREAK1  0       10    C    1
   2 System_ID                                   OMIT    1       6     C    2
   3 Department_name                             BREAK2  1       10    C    3
   4 User_ID                                             1       8     C    4
   5 Transactions                                SUM     1       8     L    5
   6 Average_response_seconds                    AVERAGE 1       8     L2   6
   7 CPU_seconds                                 SUM     1       8     L2   7
   8 Pages_printed                               SUM     1       8     L    8

PAGE:    HEADING  ===>  &REPORT_TITLE
         FOOTING  ===>  &PRODUCT_NAME: &REPORT_ID
FINAL:   TEXT     ===>
BREAK1:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
BREAK2:  NEW PAGE FOR BREAK?  ===>  NO
         FOOTING  ===>
OPTIONS: OUTLINE? ===>  YES                DEFAULT BREAK TEXT?  ===>  NO

1=Help        2=Check       3=End          4=Show        5=Chart        6=Query
7=Backward    8=Forward     9=            10=Insert     11=Delete      12=Report
OK, FORM is displayed.
COMMAND  ===> _                                                SCROLL  ===>  PAGE
```

Figure 51. A sample report form

These function keys are available:

F2 Use Check to verify that the form definitions are correct.

F4 Use Show to display forms.

F5 Use Chart to display the report in the form of a chart.

F6 Use Query to display queries.

F10 Use Insert to insert lines in the column list.

F11 Use Delete to delete lines from the column list.

F12 Use Report to display reports.

You can also type `CLEAR` on the command line to remove all input from the Form window.

Editing the form

To change the definition of the form, edit the fields on the form pop-up. You can:

- Type over the previous values, and press Enter.
- Insert a column by placing the cursor in the column above the insert location and pressing **Insert (F10)**.
- Delete a column by placing the cursor in that column and pressing **Delete (F11)**.

Here is a brief description of the fields on this pop-up:

Final text
: If you have specified that you want a final summary line, you can add text that is displayed to the left of the first column summarized. The text is left-justified, and truncated if it does not fit. You can use global variables in the text, provided that the same variables are used in the query.

Num field
: Shows the column order for tabular reports as defined in the query. The number of columns and the order of the columns on the form must be the

same as in the query. To change the order of the columns in your report, change the order of the columns in the query.

Column heading
Specifies the text to be displayed as column headings. To specify new column headings for your report, type the new headings over the existing headings, and press Enter. If you want a column heading to be displayed on two or more lines, type an underscore (_) at the points where you want the heading to split.

For example, if you want the heading RESPONSE TIME to be displayed on two lines with one word on each line, type:

```
RESPONSE_TIME
```

Usage codes

Usage codes define how column data is used to produce reports and charts. You can, for example, break a report into smaller sections with BREAK usage codes. For more information about usage codes, see Usage codes.

Indent
Specifies the number of characters used to indent the column.

Width field

Specifies the number of characters used for the column. When specifying the width, take into account if the data contains a minus sign, decimal or thousands separators, or a percent sign.

Edit codes
Edit codes determine the formatting of character, graphic, numeric, and time data for each column. For more information about edit codes, see Edit codes.

Seq Specifies the order in which the columns are displayed (the sequence).

Usage codes

Usage codes define how column data should be used to produce reports and charts. If, for example, you do not want a column to be included at all, you use the OMIT usage code. If you select to show or print a column as it is, the usage code is blank.

Some usage codes let you decide how a column should be formatted. Others let you perform calculations. They are called *aggregation* usage codes.

You can, for example:

- Add or perform another aggregate function on data in a column using the SUM or another aggregation usage code.
- Provide summary data across the report using aggregation, GROUP, and ACROSS usage codes.

These usage codes are supported in the Tivoli Decision Support for z/OS built-in report generator:

ACROSS

Use the ACROSS usage code to display data horizontally for one of the columns in your report. When you use ACROSS for one column, you must use GROUP for one or more of the other columns. For the remaining

columns, you can use the OMIT usage code. In that case, the summary line for each group value can contain several sets of results from the columns that use aggregations. There is one set for each group of values in the column that uses ACROSS.

A report can have only one column with the ACROSS usage code. If you specify more than one ACROSS column, you get an error message.

Example:

Sample report 1 uses the ACROSS usage code for the Department_name column. (See Figure 52 on page 85 and Figure 53 on page 86.)

MVS52, MVS Number of Jobs with Tape Mounts, Daily Trend, is another example of a report with an ACROSS usage code.

BREAKn

Use break usage codes to divide the information in your report into smaller sections, to make the report easier to read and understand. There are six levels of break codes (n=1-6) that provide columns for different levels of breaks. Any change in the value of the column causes a break; subtotals are displayed for columns whose usage is one of the aggregation usages.

You can use each break level only once in a report, and the break levels must come in sequence (that is, you can specify BREAK1 and BREAK2, but you cannot specify BREAK1 and BREAK3).

To be able to show breaks in a meaningful way in a report, the SQL query must contain an ORDER BY clause for the column or columns for which you specify BREAKn.

Example:

Sample Report 2 uses BREAK usage codes for the Month_start_date and Department_name columns. (See Figure 54 on page 86.) MVS53, MVS Jobs Statistics by Period and User Group, Daily, is another example of a report with BREAK usage codes.

GROUP

Use the GROUP usage code to display one line of summary data for each set of values in the column. The summary line can display only values that are the same for each member of the group, such as the value in a control column or the results of columns whose usage is an aggregation code.

Note that blank usage codes cannot be used with GROUP usage codes.

To be able to present reports with GROUP usage codes in a meaningful way, the SQL query must use an ORDER BY clause for the column or columns for which you specify GROUP.

Example:

Sample report 1 uses the GROUP usage code for the Time column. (See Figure 52 on page 85 and Figure 53 on page 86.) MVS52, MVS Number of Jobs with Tape Mounts, Daily Trend, is another example of a report with a GROUP usage code.

blank If no usage code is given, the column is displayed without any aggregation or summary. This usage code cannot be used with the GROUP usage code.

The following usage codes are aggregation usage codes:

SUM The sum of the values in the column. The data in the column must be numeric.

AVERAGE
The average of the values in the column. The data in the column must be numeric.

MAXIMUM
The greatest value in the column. The data in the column must be numeric.

MINIMUM
The smallest value in the column. The data in the column must be numeric.

FIRST The first value in the column. The data in the column can be numeric or character (edit code C) data.

LAST The last value in the column. The data in the column can be numeric or character (edit code C) data.

COUNT
The number of values in the column. The data in the column can be numeric or character (edit code C) data.

TPCT The percentage each value is of the column total. This aggregation usage code replaces the data value with a calculation. The data in the column must be numeric.

Example:

Sample Report 2 (Figure 54 on page 86) is an example of a report that uses aggregation usage codes. The form for Sample Report 2 is shown in Figure 55 on page 87.

Edit codes

Edit codes determine the formatting of character, graphic, numeric, and time data for each column. You can use the edit codes listed below in the Tivoli Decision Support for z/OS built-in report generator. `n` defines the number of decimal places after the decimal separator, if applicable. `n` can be 0. If `n` is omitted, it is assumed to be 0.

E Displays the numbers in exponential (scientific) notation.

In Displays the numbers with any decimal places, negative sign, and leading zeros, but no thousands separators.

Jn Displays the numbers with any decimal places and leading zeros, but no negative sign or thousands separators.

Kn Displays the numbers with any decimal places, negative sign, and thousands separators, but no leading zeros.

Ln Displays the numbers with any decimal places and negative sign, but no leading zeros or thousands separators.

Pn Displays the numbers with a percent sign, any decimal places, negative sign, thousands separators, but no leading zeros.

C Displays the numbers as character data, without thousands separators or decimal places.

Other QMF edit codes used in the predefined reports, such as edit codes for DATE, or TIME, are interpreted as edit code C, character data. If you are basing a new report on a predefined report, you must replace such edit codes with edit code C.

The table below shows examples of how edit codes affect the formatting of values. For example, it shows the effect of the edit code if the number -1234567.885 is written to a column with the width 15.

Table 1. Examples of how edit codes affect the formatting of values

Edit code	Result	Leading zeros	Negative sign	Thousands separator	Percent sign
E	-1.23456789E+06	No	Yes	No	No
I2	-00001234567.89	Yes	Yes	No	No
J2	000001234567.89	Yes	No	No	No
K2	-1,234,567.89	No	Yes	Yes	No
L2	-1234567.89	No	Yes	No	No
P2	-1234567.89%	No	Yes	No	Yes

Displaying a graphic report from the Form for Report pop-up

To display a graphic report from the Form for Report *report name* pop-up, press **F4**. Tivoli Decision Support for z/OS displays the Data Selection pop-up. Specify values for variables, and press Enter. Tivoli Decision Support for z/OS starts GDDM/ICU to display the graphic report. (If GDDM/ICU is not installed on your system, all reports are shown in tabular format.) The chart format specified in the report description is used when displaying the report. If you press **Chart (F6)** on the Data Selection pop-up to display a tabular report as a chart, the default chart format, bar chart, is used.

When GDDM/ICU displays the graphic report, you can print it by pressing F4 (Print). GDDM/ICU displays a print options menu. For more information about printing a chart from GDDM/ICU, refer to the GDDM documentation.

You can also use GDDM/ICU to create or modify a chart format for your report data. For more information about using GDDM/ICU, refer to the GDDM documentation.

Adding page headers and footers to a report

About this task

You can add up to four lines of text to be displayed and printed at the top of your reports, and up to four lines to be displayed and printed at the bottom of tabular reports. You can use variables that are defined in the query or these special variables:

&REPORT_TITLE
substituted with the defined report description

&REPORT_ID
substituted with the report name

&PRODUCT_NAME
substituted with the words Tivoli Decision Support for z/OS Report

The variables are substituted with values when the report is run.

Header lines are displayed and printed at the top of each page of a report. Footer lines are displayed and printed at the bottom of each page of a tabular report. Footer lines are not used on graphic reports.

To define header or footer lines for your report:

Procedure

1. From the Report Definition pop-up, press **Query/Fm (F5)** then **Form (F9)**. The report form definition pop-up is displayed.
2. Type in header and footer information in the PAGE: HEADING and PAGE: FOOTING fields.
3. Press Enter to save the header and footer texts and return to the report description.

Sample reports

The Sample Component, shipped with Tivoli Decision Support for z/OS, contains sample reports. For a description of the Sample Component, refer to the *Administration Guide and Reference.*

Figure 52 shows the chart version of Sample Report 1.

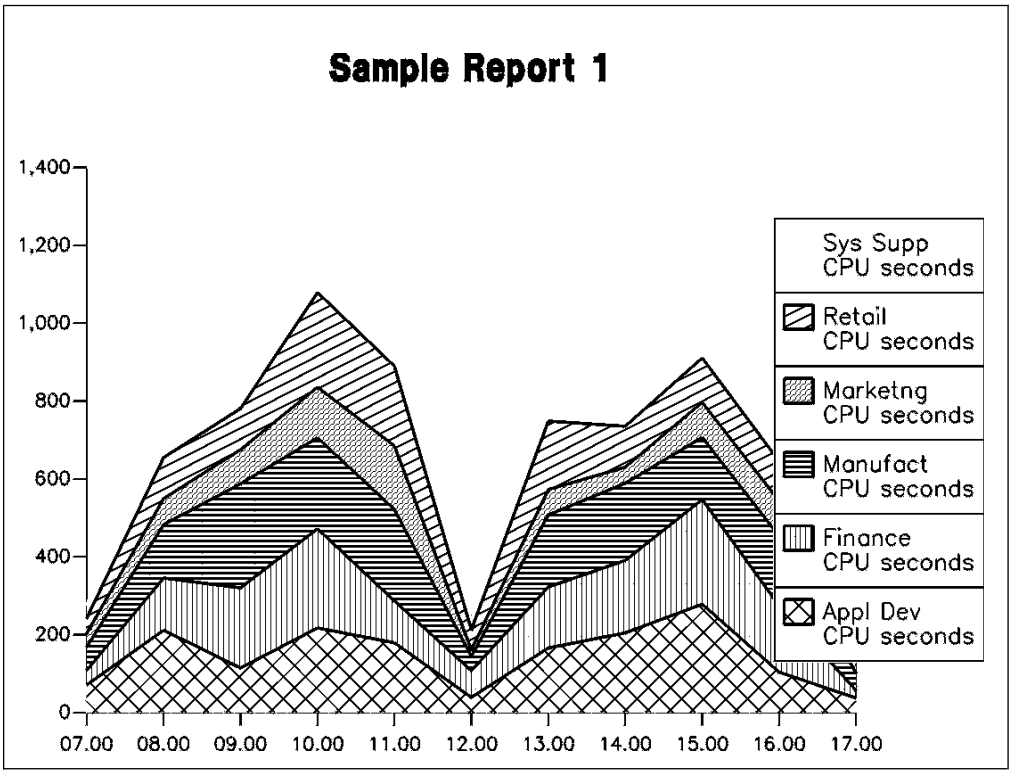


Figure 52. Sample Report 1, chart version

Figure 53 on page 86 shows the tabular version of Sample Report 1.

Sample Report 1

Time	<Appl Dev-> CPU seconds	<-Finance-> CPU seconds	<Manufact-> CPU seconds	<Marketng-> CPU seconds	<-Retail--> CPU seconds	<Sys Supp-> CPU seconds	<--TOTAL--> CPU seconds
	<-----------Department name---------->						
07.00	70.45	37.94	59.64	34.55	38.94	33.67	275.19
08.00	211.18	134.12	137.35	66.45	105.73	84.02	738.85
09.00	114.02	205.97	267.25	87.63	105.80	38.65	819.32
10.00	217.00	254.56	233.83	129.98	243.34	123.26	1201.97
11.00	178.85	107.87	234.51	163.52	204.87	100.02	989.64
12.00	38.74	68.49	36.60	16.74	51.48	39.54	251.59
13.00	165.48	156.54	185.19	65.45	175.58	76.02	824.26
14.00	204.09	186.38	198.06	41.67	104.72	105.56	840.48
15.00	278.02	268.75	159.89	89.63	114.41	76.31	987.01
16.00	103.34	171.02	178.80	89.73	102.26	88.08	733.23
17.00	36.93	19.73	44.10	59.58	43.30	3.79	207.43
	1618.10	1611.37	1735.22	844.93	1290.43	768.92	7868.97

Tivoli Decision Support for z/OS Report: SAMPLE01

Figure 53. Sample Report 1, tabular version

Figure 54 shows Sample Report 2.

Sample Report 2

Month start date	Department name	User ID		Trans-actions	Average response seconds	CPU seconds	Pages printed
2000-01-01	Appl Dev	ADAMS		1109	3.84	244.13	821
		JONES		1138	3.40	228.79	1055
		SMITH		870	4.27	183.03	864
			*	3117	3.84	655.95	2740
	Finance	GEYER		509	4.29	115.97	529
		HAAS		786	3.56	137.48	648
		PARKER		462	6.79	171.51	704
		SPENCER		800	3.33	172.82	640
			*	2557	4.50	597.78	2521
•••							
				36396	4.03	7868.97	38711

Tivoli Decision Support for z/OS Report: SAMPLE02

Figure 54. Sample Report 2

Figure 55 on page 87 shows Sample Report 3

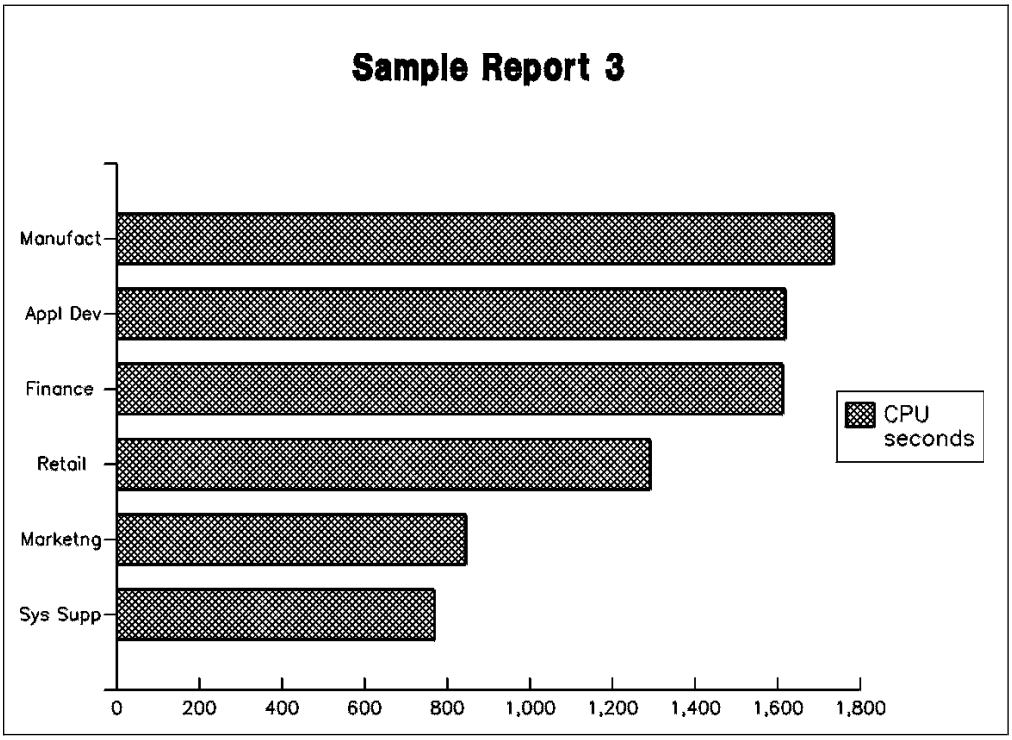


Figure 55. Sample Report 3

Chapter 8. Using other Reporting Dialog functions

This chapter describes how to change batch settings for reports, define reports for batch processing, run reports in batch mode, view and send messages in Tivoli Decision Support for z/OS, and set dialog parameters.

Topics:

Changing the batch settings for a report

About this task

You can associate batch settings with a report to specify whether the report should be run in batch, how often it should be run (daily, weekly, or monthly), and where the batch reporting utility should direct the report output.

You set the batch settings from the Batch Settings pop-up, which you can display for a report using either of these methods:

- Select the report in the Reports window, and then select option 1 **Set batch options for report** from the **Batch** pull-down
- Press **Batch (F11)** in the Report Definition pop-up for the selected report

Figure 56 on page 90 shows the Batch Settings pop-up.

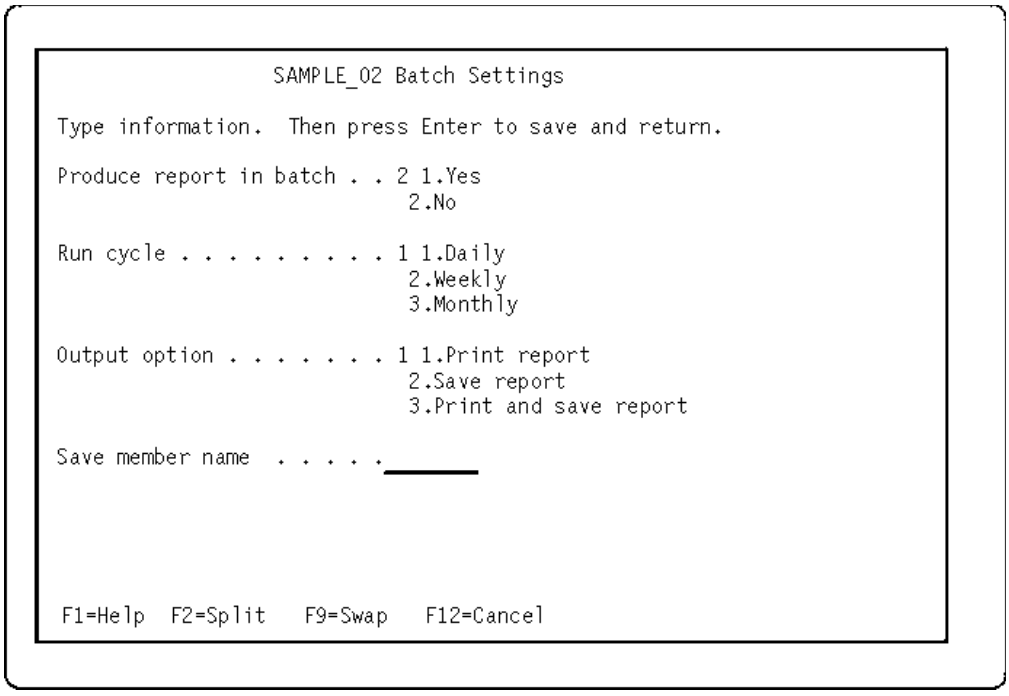


Figure 56. Batch Settings pop-up

To change the settings in the Batch Settings pop-up:

Procedure

1. To have Tivoli Decision Support for z/OS produce the report in batch, type 1 in the Produce report in batch field. Type 2 (the default) to produce the report in the foreground (interactively).
2. For reports you want Tivoli Decision Support for z/OS to produce in batch, specify in the Run cycle field the frequency with which you want the report run.
3. For reports you want Tivoli Decision Support for z/OS to produce in batch, specify in the Output option field where to direct the output of the report.
4. If you specified Save or Print and save in the Output option field, specify a member name in which to save the report in the Save member name field.

   Note: You can select Print for graphic reports only if you are using QMF with the reporting dialog.
5. When you have completed the fields in the Batch Settings pop-up, press Enter. Tivoli Decision Support for z/OS saves the settings for the report and returns to either the Reports window or the Report Definition pop-up, depending on how you invoked the Batch Settings pop-up.

Defining reports for batch execution

All Tivoli Decision Support for z/OS reports can be produced in batch. However, most of them are not suited for it because you must supply values for all the variables used in the queries and forms.

For example, a typical query looks like this:

```
SELECT column1, column2, ...
 FROM table
 WHERE DATE <= &FROM_DATE
    AND DATE >= &TO_DATE
    AND SYSTEM_ID = &SYSTEM_ID
```

When the report is displayed in the dialog, Tivoli Decision Support for z/OS prompts you for the values for FROM_DATE, TO_DATE, and SYSTEM_ID. If you run this report in batch must supply these values in the job, and you must change them when you want the reports to cover a different time period.

It would be better to change the query to something like this:

```
SELECT SYSTEM_ID, column1, column2, ...
 FROM table
 WHERE DATE >= CURRENT DATE - 7 DAYS
```

This query requires no variables and always covers the last week.

The forms used for the Tivoli Decision Support for z/OS reports also contain at least three variables (REPORT_TITLE, PRODUCT_NAME, and REPORT_ID). For a batch report, you should create a new form without these variables.

Using an existing report as a template for a new report describes how to create a new report by using an existing report as a base. You can use this method to create reports that are better suited for batch processing.

Running reports in batch mode

About this task

You can run reports that you need on a regular basis using the batch utility instead of running them in the foreground. The reporting dialog lets you specify criteria for running batch jobs. Typically, you use the reporting dialog to prepare reports for batch reporting, and then use the batch reporting utility to run them. For more information about Tivoli Decision Support for z/OS batch reporting, refer to the *Administration Guide and Reference*.

To run one or more individual reports in batch mode using the reporting dialog:

Procedure

1. From the Reports window, select the reports you want to run in batch mode. Then select option 2 **Invoke batch** from the **Batch** pull-down.

   If any of the reports that you have selected contain variables that require values, Tivoli Decision Support for z/OS displays the Batch Reports Data Selection pop-up (Figure 57 on page 92). This pop-up contains entry fields for all of the variables in all of the selected reports.

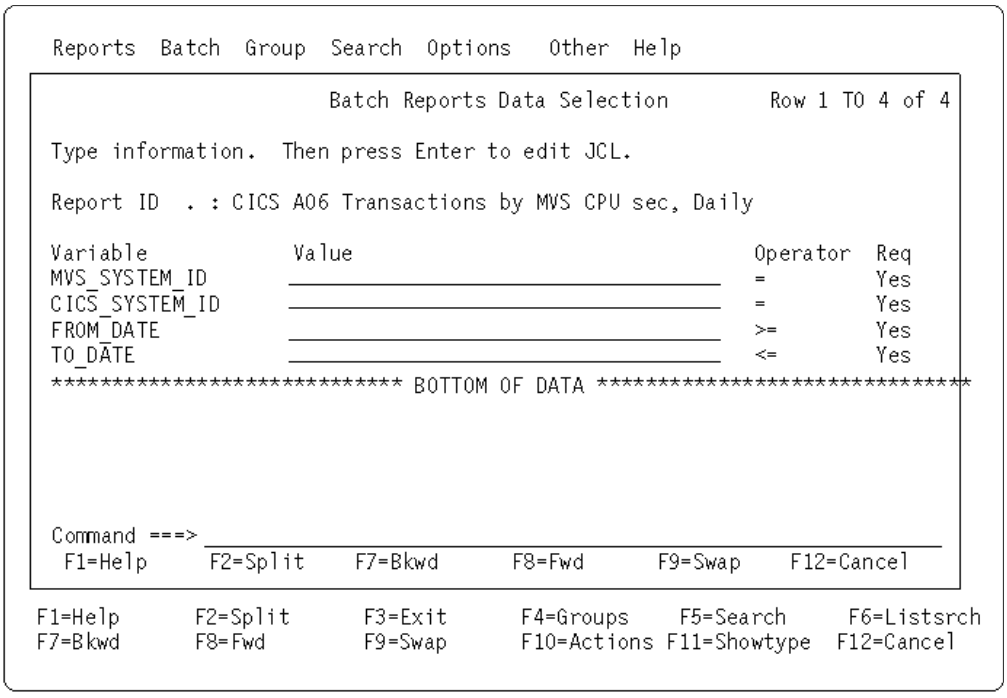


Figure 57. Batch Reports Data Selection pop-up

2. Provide values for the variables by typing the values in the fields provided. Note that the Batch Reports Data Selection pop-up does not let you specify values using prompted fields.
3. After you complete all the necessary fields on the Batch Reports Data Selection pop-up, press Enter.

   Tivoli Decision Support for z/OS begins an ISPF editing session with the JCL file to be submitted to run the reports.

   Figure 58 shows sample JCL. If your installation does not use QMF, no QMF libraries are included.

```
EDIT ---- USER1.SPFTEMP1.CNTL ------------------------------ COLUMNS 001 072
****** **************************** TOP OF DATA ****************************
000001 //USER1A  JOB  (ACCOUNT),'NAME'
000002 //*
000003 //*
000004 //*
000005 //*****************************************
000006 //* BATCH REPORTING
000007 //*****************************************
000008 //EPDMBAT EXEC PGM=IKJEFT01,DYNAMNBR=25
000009 //STEPLIB  DD DISP=SHR,DSN=DRLxxx.SDRLLOAD
000010 //         DD DISP=SHR,DSN=QMFloadlibrary
000011 //         DD DISP=SHR,DSN=db2loadlibrary
000012 //SYSPROC  DD DISP=SHR,DSN=DRL.LOCAL.EXEC
000013 //         DD DISP=SHR,DSN=DRLxxx.SDRLEXEC
000014 //         DD DISP=SHR,DSN=QMCLISTlibrary
000015 //SYSEXEC  DD DISP=SHR,DSN=DRL.LOCAL.EXEC
000016 //*****************************************
Type SUBMIT on the command line to start batch processing.
COMMAND ===>                                              SCROLL ===> PAGE

 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Figure 58. ISPF editing session with JCL

4. If necessary, make changes in the job card information. When the JCL is ready, type SUBMIT at the command line and press Enter.

Tivoli Decision Support for z/OS submits the batch job and returns to the Reports window.

What to do next

To run reports that are members of a particular group or associated with a particular batch cycle:

1. Without selecting any reports in the Reports window, select option 2 **Invoke batch** from the **Batch** pull-down.

   Tivoli Decision Support for z/OS displays the Batch Reports Selection pop-up (Figure 59). Note: If you are using the reporting dialog without QMF, the Printer field is not shown on this window.

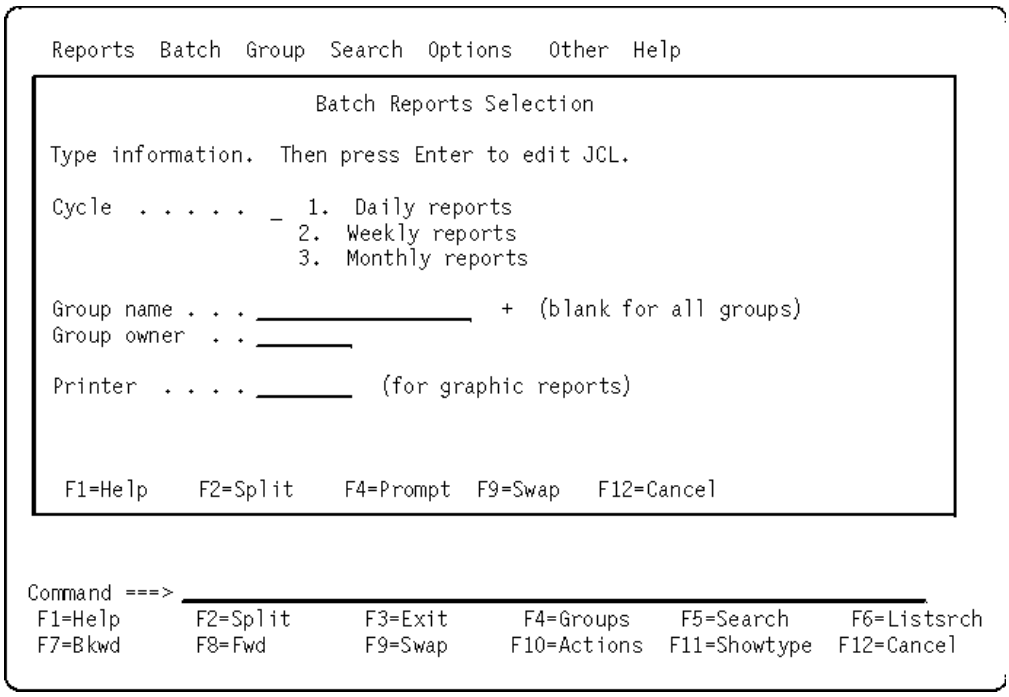


Figure 59. Batch Reports Selection pop-up

2. Select the execution cycle of the batch reports you want to submit (daily, weekly, or monthly) and type the corresponding number in the Cycle selection field. The default is 1 (daily).
3. If the reports you want to run are in a group, type the name of the group in the Group name entry field. The Group name is a prompted field; to see a list of groups that are currently defined, move the cursor to the Group name field and press **F4**. If the group is not public, type the name of the owner in the Group owner field. (For more information about working with report groups, see Working with report groups.)

   If you do not specify a report group, Tivoli Decision Support for z/OS uses all reports included in the specified batch execution cycle.

   After you specify the execution cycle and (optionally) the group name and owner, press Enter.

   If any of the reports contain variables, Tivoli Decision Support for z/OS displays the Batch Reports Data Selection pop-up. Type the values for the variables in the fields and press Enter to return to the Batch Reports Selection pop-up.

4. When you have completed all of the fields in the Batch Reports Selection pop-up, press Enter. Tivoli Decision Support for z/OS begins an ISPF editing session with the JCL for the batch job.
5. If necessary, edit the job card information in the JCL. Submit the job by typing `SUBMIT` at the command line and pressing Enter.

   Tivoli Decision Support for z/OS submits the job for batch processing and returns to the Reports window.

Viewing and sending messages

About this task

Tivoli Decision Support for z/OS administrators and users can send messages to each other using the Tivoli Decision Support for z/OS messages option.

Note: Tivoli Decision Support for z/OS users can use this option to send messages to Tivoli Decision Support for z/OS administrators, but not to each other. An administrator can send messages to any Tivoli Decision Support for z/OS user.

To send a message to an administrator (or, if you are an administrator, to a Tivoli Decision Support for z/OS user):

Procedure

1. Select option 6 **Messages** from the **Other** pull-down on the Reports window. Tivoli Decision Support for z/OS displays the Message Options pop-up.
2. In the Message Options pop-up, select option 2 **Send message**. Tivoli Decision Support for z/OS displays the Message Text pop-up.
3. Complete the Message Text pop-up with the user ID of the administrator to whom you are sending the message, the subject of the message, and the message text itself.
4. When you finish typing the message, press **F5** to send it. Tivoli Decision Support for z/OS sends the message and returns to the Message Options pop-up.

What to do next

You can look at messages that you have sent to the Tivoli Decision Support for z/OS administrator and that the administrator has sent to you (and, if you are an administrator, messages the Tivoli Decision Support for z/OS users have sent to you).

To view messages that you have sent or received:

1. In the Reports window, select option 6 **Messages** from the **Other** pull-down. Tivoli Decision Support for z/OS displays the Message Options pop-up.
2. In the Message Options pop-up, select option 1 **View messages**. Tivoli Decision Support for z/OS displays the Message Log window (Figure 60 on page 95).

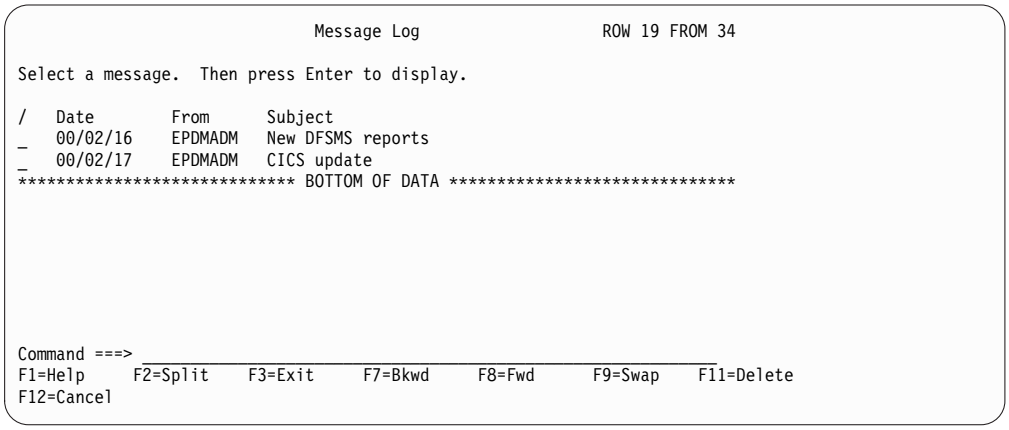


Figure 60. Message Log window

3. Select the message that you want to display from the list in the Message Log window and press Enter. Tivoli Decision Support for z/OS displays the Message Text pop-up containing the text of the message you select.
4. When you finish viewing the message, press **Cancel (F12)** to return to the Message Log window.

To delete a message in the Message Log window, select the message you want to delete and press **Delete (F11)**. Tivoli Decision Support for z/OS prompts you to confirm the delete action.

Customizing the reporting dialog

About this task

You can set dialog parameters to control which data sets Tivoli Decision Support for z/OS uses to store your reports, charts, and messages. These dialog parameters also control some aspects of the Tivoli Decision Support for z/OS environment.

To view or change the dialog parameters:

Procedure

1. Select option 1 **Dialog parameters** from the Options pull-down in the Reports window. Tivoli Decision Support for z/OS displays the Dialog Parameters pop-up.
2. You can change the values of the parameters by typing over the information that you want to change, and then press Enter.

   Note:

   - Some of these parameters do not take effect in the dialog until you exit and restart.
   - Not all of the parameters in the Dialog Parameters pop-up are related to the reporting dialog. For a complete description of the Tivoli Decision Support for z/OS dialog parameters, refer to the *Administration Guide and Reference*.

Chapter 9. Reporting Dialog Navigation Reference

This section describes the functions you can access from the Reports window. You access these functions by moving the cursor to the menu-bar option whose pull-down contains the function you want, and pressing Enter. With the pull-down displayed, select an option in one of these ways:

- Type its number in the selection field inside the pull-down and press Enter.
- Press the up arrow or down arrow keys until the cursor is on the line of the action you want to perform, and then press Enter.

Figure 61 shows the Reports window.

```
  Report  Batch  Group  Search  Options  Other  Help
_____________________________________________________________________________
                    Tivoli Decision Support for OS/390 Reports       ROW 25 TO 32 OF 625

Select a report. Then press Enter to display.

Group  . . . . . : All reports

/   Report                                          ID
_   Network Average Host Transit Time, Worst Case       NWNT06
_   Network Average Oper Transit Time, Worst Case       NWNT02
_   Network Average Transit Time Objective, Worst Case  NWNT04
_   Network Config Communication Controllers, Detail    NWNG08
_   Network Config Communication Controllers, Overview  NWNG02
_   Network Config Devices, Detail                      NWNG11
_   Network Config Last Collect Changed Devices         NWNG12
_   Network Config Last Collect Changed Software        NWNG13
_   Network Config Last Collect New Devices, Overview   NWNG01
_   Network Config Last Collect New Software, Overview  NWNG05
_   Network Config LUs, Detail                          NWNG10

Command ===> _____________________________________________________________
 F1=Help      F2=Split     F3=Exit      F4=Groups    F5=Search    F6=Listsrch
 F7=Bkwd      F8=Fwd       F9=Swap     F10=Actions  F11=Showtype F12=Cancel
```

Figure 61. The Reports window

Topics:

The Report pull-down

The Report pull-down (Figure 62 on page 98) provides options to let you perform actions on individual reports. If QMF is installed on your system, it is used to perform some of the actions below. Otherwise, Tivoli Decision Support for z/OS's built-in report generator is used.

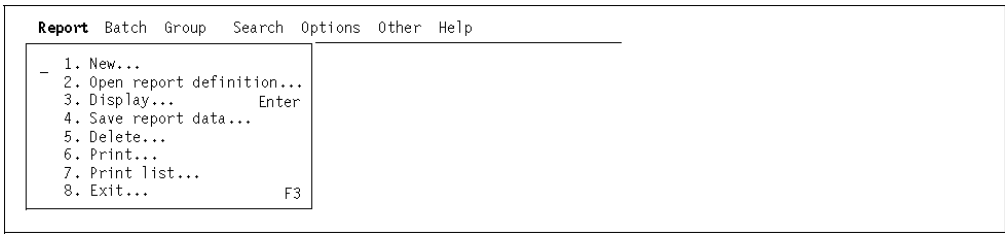


Figure 62. Report pull-down

The Report pull-down contains these options:

New See Creating a new report using QMF or Creating a new report with the report generator.

Open report definition
See Opening a report definition.

Display
See Displaying a report.

Save Report Data
See Saving report data.

Delete See Deleting a report.

Print See Printing a report.

Print list
See Printing a list of reports.

Exit See Exiting the reporting dialog.

The Batch pull-down

The Batch pull-down (Figure 63) provides options that let you use the batch utility to process reports.

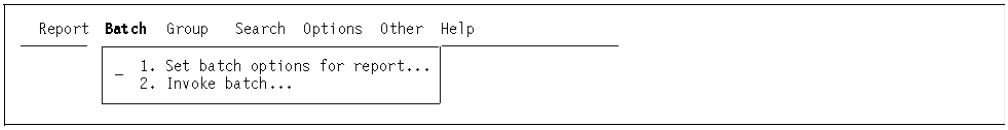


Figure 63. Batch pull-down

The Batch pull-down contains these options:

Set batch options for report
See Changing the batch settings for a report.

Invoke batch
See Running reports in batch mode.

The Group pull-down

The Group pull-down (Figure 64 on page 99) provides options that let you perform actions on groups of reports.

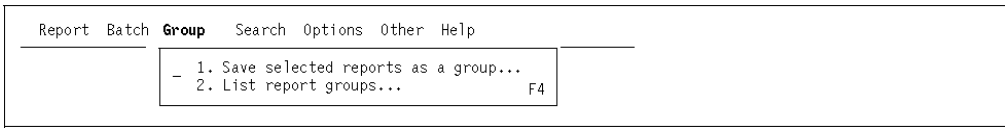


Figure 64. Group pull-down

The Group pull-down contains these options:

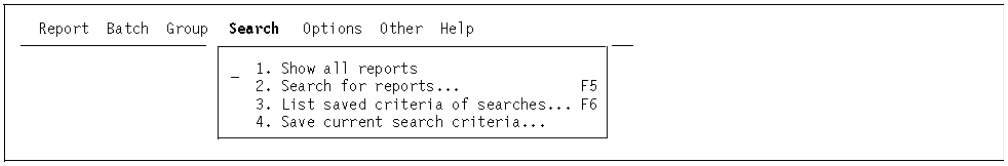
Save selected reports as a group
See Creating a report group.

List report groups
See Listing report groups.

The Search pull-down

The Search pull-down (Figure 65) provides options that let you search the list of reports for reports that meet criteria you specify.

Figure 65. Search pull-down



The Search pull-down contains these options:

Show all reports
Shows all available reports.

Search for reports
See Searching by description and attributes.

List saved criteria of searches
See Listing, modifying, and deleting saved search criteria.

Save current search criteria
See Saving search criteria.

The Options pull-down

The Options pull-down () provides options that let you customize the way the reporting dialog works for you.

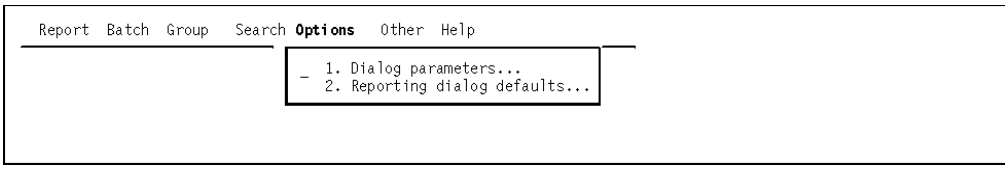


Figure 66. Options pull-down

The Options pull-down contains these options:

Dialog parameters
See Customizing the reporting dialog.

Reporting dialog defaults
See Starting the reporting dialog for the first time.

The Other pull-down

The Other pull-down (Figure 66 on page 99) provides options that let you access services outside of the reporting dialog.

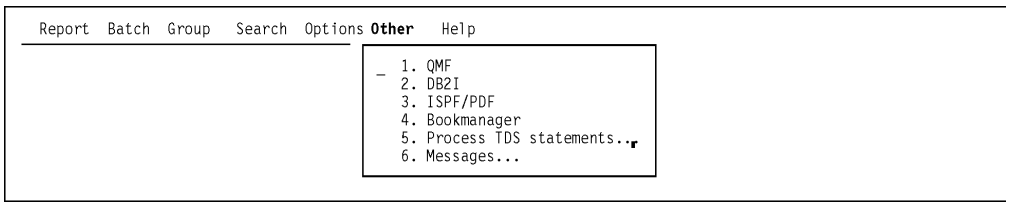


Figure 67. Other pull-down

The Other pull-down contains these options:

QMF Initiates a QMF session, if QMF is available in your installation.

DB2I Initiates a DB2I session.

ISPF/PDF
Initiates an ISPF/PDF session.

BookManager
Initiates a BookManager session. See Finding information in online books.

Process Tivoli Decision Support for z/OS statements
Refer to the *Administration Guide and Reference*.

Messages
See Viewing and sending messages.

The Help pull-down

The Help pull-down (Figure 67) provides options that let you access online help information, including online books.

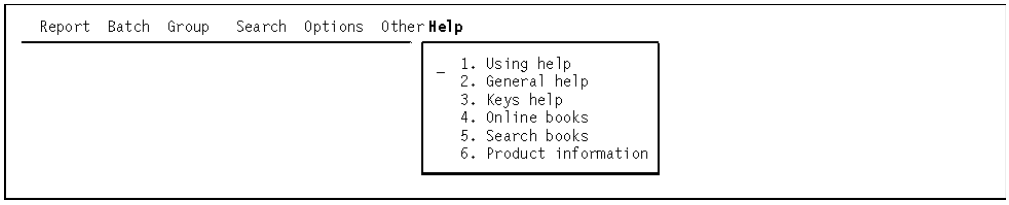


Figure 68. Help pull-down

The Help pull-down contains these options:

Using help
See Getting help on using help.

General help
See Getting general help.

Keys help
See Getting keys help.

Online books
See Finding information in online books.

Search books
See Listing books with search matches.

Product information
Displays licensed program number, copyright, and support information for Tivoli Decision Support for z/OS.

Chapter 10. Installing and using TDS web reporting

This section describes the web reporting functionality available in the TDS product.

TDS web reporting uses a component common to many Tivoli products, Tivoli Common Reporting, as its framework. Tivoli Common Reporting provides the ability to run queries of arbitrary complexity and present the data in a variety of output formats such as HTML, PDF and Excel.

There are a number of steps you need to follow to correctly install, configure and use TDS web reporting, detailed in the following paragraphs.

To install Tivoli Common Reporting and configure it for TDS web reporting:

- Configure DB2 on z/OS for JDBC access.
- Install Tivoli Common Reporting.
- Add in the JDBC drivers for accessing DB2 on z/OS.
- Add TDS web reporting parameters file.

To import and test a TDS web reporting report pack:

- Import a TDS web reporting report pack.
- Test TDS web reporting.

Topics:

Configure DB2 on z/OS for JDBC access

In order for a JDBC client program, such as Tivoli Common Reporting, to communicate with DB2 on z/OS, DB2 itself must be configured to handle incoming connections.

This involves setting up special stored procedures and tables and ensuring that WLM is installed.

Details can be found in the relevant *Application Programming Guide and Reference for Java* for your version of DB2 for z/OS.

For example, the steps required to configure DB2 for JDBC access are listed in chapter 8 of the DB2 for z/OS V9.1 documentation, located at:

http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/DSNJVK13/CCONTENTS?SHELF=DSNSHKA3&DN=SC18-9842-03&DT=20081113050325

Install Tivoli Common Reporting

The Tivoli Common Reporting component of TDS web reporting is shipped on a CD or DVD (the installation media) with the TDS product. It is also available as a download from Passport Advantage if you have an entitlement to access it.

Installation of Tivoli Common Reporting is not covered in detail here as the documentation included on the installation media offers more in-depth instructions.

See the document "tcr_users_guide.pdf" in the "tcrProduct\en" directory for details on how to install Tivoli Common Reporting. Chapter 2 is the relevant chapter.

If you are installing Tivoli Common Reporting 1.2 on a system that already has an earlier version, you should un-install the earlier version first.

Add in the JDBC drivers for accessing DB2 on z/OS

About this task

In order to access the TDS data stored in DB2 for z/OS, you need to install the correct JDBC drivers and license into Tivoli Common Reporting.

Procedure

1. Obtain a valid license for accessing DB2 for z/OS. For a device connecting to DB2 for z/OS, such as a central server running Tivoli Common Reporting, the DB2 Connect Personal Edition license (D58FELL) is required (one per device).
2. Once you have organized the correct licenses, you need to copy the following files to the drivers directory for Tivoli Common Reporting. For example, with a default Windows install, this directory is located at:

   ```
   C:\ibm\tivoli\tip\products\tcr\lib\birt-runtime-2_2_1\ReportEngine\
   plugins\org.eclipse.birt.report.data.oda.jdbc_2.2.1.r22x_v20070919\
   drivers
   ```

   The files required are:

   db2jcc.jar
   Universal type 4 JDBC driver

   db2jcc_license_cisuz.jar
   License file
3. Once these files have been copied, you may need to stop and restart the Tivoli Common Reporting server.

Add TDS web reporting parameters file

About this task

In addition to the JDBC drivers, the TDS web reporting report packs use an external file to control which DB2 server and instance to connect to. This allows changes to be made to the DB2 server configuration easily without regenerating the report packs or reconfiguring database parameters within Tivoli Common Reporting itself.

Procedure

1. Create a file in the root directory of the device where Tivoli Common Reporting is running (this is typically C:\ under Windows). The file should be called tdszweb_params.txt and contain five lines with the following information:
   - JDBC connection string
   - User ID to use
   - Password for that user ID
   - Standard schema name
   - System schema name

   For example:

   ```
   jdbc:db2://bobs_mainframe.bobs_company.com:5000/QXPBOB1
   bob
   bobs_password
   drl.
   drlsys.
   ```
2. The JDBC connection string is available from the administrators who set up DB2 for z/OS for JDBC access. The components are typically:
   - A fixed prefix for DB2 JDBC connections, "jdbc:db2://".
   - The DNS name of the System z. For example, "bobs_mainframe.bobs_company.com".
   - A fixed separator for the port, ":".
   - The port number to connect to. For example, "5000".
   - A fixed separator for the instance, "/".
   - The database instance. For example, QXPBOB1.
   - Any other configuration details such as debugging. For example, ":traceFile=c:/db2.trc;traceLevel=-1;".
3. Since the user ID and password are stored in clear text, the following best practices should be adhered to for security when running Tivoli Common Reporting in a server environment. If each user has their own copy of Tivoli Common Reporting (and the required licenses), they can configure the parameters file to use their own user ID. Best practices include:
   - Limit access to the machine where Tivoli Common Reporting is running.
   - Use a functional ID rather than one that belongs to a user.
   - Limit the power of that functional ID as much as practicable. That means no write access to the database, and limit TSO and other non-database access.
4. The schema and system schema should be left as "drl." and "drlsys." respectively unless you have used different naming standards when installing TDS.
5. Synchronize the user ID and password in this parameters file with RACF on z/OS. The use of a functional ID may ease that process if the normal password expiry rules can be relaxed.

Import a TDS web reporting report pack

About this task

The latest TDS web reporting report pack is shipped with the TDS product and is located in the SDRLWS(DRLWEBRP) member.

Procedure

Download the SDRLWS(DRLWEBRP) member by means of FTP (or other method) in binary mode as drlwebrp4.zip (for example), then import into Tivoli Common Reporting.
The *Tivoli Common Reporting User's Guide* has details on how to import report packs and that document should be followed for the correct steps. Chapter 4 in the *Tivoli Common Reporting User's Guide* is the relevant chapter for Tivoli Common Reporting 1.2.
The TDS web reporting reports are currently based on the actual reports already available in the product. However, due to differences between TDS reporting and Tivoli Common Reporting, the formats may be slightly different.
Future web reports will follow a different naming standard to make this clear (the addition of a "W" suffix to differentiate it). For example, the web reporting version of CICS404 will be CICS404W.

Test TDS web reporting

About this task

to test the TDS web reporting:

Procedure

1. Following the instructions in the *Tivoli Common Reporting User's Guide*, log in and click on the **Reporting** and **Common Reporting** links in the left-side panel. The report navigator appears in the main panel.
2. Open up the tdsz tree (using the **+** to the left of it) and select **pra**. These are the system reports which should be available regardless of which components are installed.
3. Right-click on the **pra004_ListColumnsForARequestedTableWithComments** report and select **View As**, **HTML**.
4. Use the drop-down box to select **DAY_OF_WEEK** (or another table) then click on the **Run** button. A report should appear showing the requested data.
5. If no tables appear in the drop-down box, then there is something wrong with the JDBC connection to the TDS database instance. Re-check all steps to ensure they have been performed correctly.

Using TDS web reporting

Other reports can be run in a similar fashion to PRA004 by using exactly the same process detailed above. Keep in mind that the TDS web reporting report packs contain all of the published reports, whether the related components are installed within TDS or not.

This may mean that reports can be run which produce errors, since the relevant tables may not exist.

Chapter 3 of the *Tivoli Common Reporting User's Guide*, "Working with reports", describes how to use Tivoli Common Reporting as a reporting tool.

Chapter 4, "Administering Tivoli Common Reporting", and chapter 5, "Tivoli Common Reporting command reference", describe how to perform all the administrative tasks required to provide Tivoli Common Reporting functionality.

Further information

Certain TCR documentation and other information sources are either referenced in this document or are very useful.

They are:

- *TCR User's Guide*, SC23-8737-01, which is located on the TCR 1.2 installation media under `tcrProduct\en`
- Release notes, which are located on the TCR 1.2 installation media under `tcrProduct\en`
- Using BIRT Designer, located on the TCR 1.2 installation media under `tcrProduct\doc`
- Using TIP Charts, located on the TCR 1.2 installation media under `tcrProduct\doc`
- TCR documentation on IBM's public library site:

  http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/com.ibm.tivoli.tcr.doc/tcr_welcome.html

- Future TDS web reporting report packs will be shipped as APARs but the tools and the report source files that we use to generate them are still released on OPAL. Navigate to:

  http://www-01.ibm.com/software/brandcatalog/portal/opal

  and choose **Tivoli Decision Support for z/OS** from the **Tivoli Products** drop-down box.
- The IBM developerWorks hosts three forums related to Tivoli Common Reporting:

  General Discussion
  http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1177

  Specific Product Reports
  http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1180

  Tips and Techniques
  http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1181
- The Tivoli Common Reporting space on developerWorks: .

  https://www.ibm.com/developerworks/community/groups/service/html/communityview?communityUuid=9caf63c9-15a1-4a03-96b3-8fc700f3a364

Appendix. 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.

Topics:

Searching knowledge bases

You can search the available knowledge bases to determine whether your problem was already encountered and is already documented.

Searching the information center

IBM provides extensive documentation that can be installed on your local computer or on an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, and reference information.

Searching the Internet

If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem.

To search multiple Internet resources for your product, use the **Web search** topic in your information center. In the navigation frame, click **Troubleshooting and support** ▸ **Searching knowledge bases** and select **Web search**. From this topic, you can search a variety of resources, including the following:

- IBM technotes
- IBM downloads
- IBM developerWorks®
- Forums and newsgroups
- Google

Obtaining fixes

A product fix might be available to resolve your problem. To determine what fixes are available for your IBM software product, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/software/support/.
2. Click **Downloads and drivers** in the **Support topics** section.
3. Select the **Software** category.
4. Select a product in the **Sub-category** list.

5. In the **Find downloads and drivers by product** section, select one software category from the **Category** list.
6. Select one product from the **Sub-category** list.
7. Type more search terms in the **Search within results** if you want to refine your search.
8. Click **Search**.
9. 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://www-304.ibm.com/support/customercare/sas/f/handbook/home.html.

Receiving weekly support updates

To receive weekly email notifications about fixes and other software support news, follow these steps:

1. Go to the IBM Software Support website at http://www.ibm.com/support/us/.
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 email 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 a product segment, for example, **Application servers**. A third list is displayed.
7. In the third list, select a product sub-segment, for example, **Distributed Application & Web Servers**. A list of applicable products is displayed.
8. Select the products for which you want to receive updates, for example, **IBM HTTP Server** and **WebSphere® Application Server**.
9. Click **Add products**.
10. After selecting all products that are of interest to you, click **Subscribe to email** on the **Edit profile** tab.
11. Select **Please send these documents by weekly email**.
12. Update your email 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 email 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.

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 website at http://www.lotus.com/services/passport.nsf/ WebDocs/Passport_Advantage_Home and click **How to Enroll**.

  By phone

  For the phone number to call in your country, go to the IBM Software Support website 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 website 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 website 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 website 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.

To contact IBM Software support, follow these steps:

1. "Determining the business impact"
2. "Describing problems and gathering information" on page 112
3. "Submitting problems" on page 112

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.
- 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 https://www-947.ibm.com/support/entry/portal/support?lnk=msdTS-supo-usen. 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://www-304.ibm.com/support/customercare/sas/f/handbook/home.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 website daily, so that other users who experience the same problem can benefit from the same resolution.

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Bibliography

Topics:

Tivoli Decision Support for z/OS publications

The Tivoli Decision Support for z/OS library contains the following publications and related documents.

Administration Guide and Reference, SH19-6816
Provides information about initializing the Tivoli Decision Support for z/OS database and customizing and administering Tivoli Decision Support for z/OS.

CICS Performance Feature Guide and Reference, SH19-6820
Provides information for administrators and users about collecting and reporting performance data generated by Customer Information and Control System (CICS®).

Distributed Systems Performance Feature Guide and Reference, SH19-4018
Provides information for administrators and users about collecting and reporting performance data generated by operating systems and applications running on a workstation.

Guide to Reporting, SH19-6842
Provides information for users who display existing reports, for users who create and modify reports, and for administrators who control reporting dialog default functions and capabilities.

IMS CSQ Feature Guide and Reference, SH19-6825
Provides information for administrators and users about collecting and reporting performance data generated by Information Management System (IMS™).

Language Guide and Reference, SH19-6817
Provides information for administrators, performance analysts, and programmers who are responsible for maintaining system log data and reports.

Messages and Problem Determination, SH19-6902
Provides information to help operators and system programmers understand, interpret, and respond to Tivoli Decision Support for z/OS messages and codes.

System Performance Feature Reference Volume I, SH19-6819
Provides information for administrators and users with a variety of backgrounds who want to use Tivoli Decision Support for z/OS to analyze z/OS, z/VM®, zLinux, and their subsystems, performance data.

System Performance Feature Reference Volume II, SH19-4494
Provides information for administrators and users with a variety of backgrounds who want to use Tivoli Decision Support for z/OS to analyze z/OS, z/VM, zLinux, and their subsystems, performance data.

Usage and Accounting Collector User Guide, SC23-7966
Provides information about the functions and features of the Usage and Accounting Collector.

AS/400 System Performance Feature Guide and Reference, SH19-4019
Provides information for administrators and users about collecting and reporting performance data generated by AS/400® systems.

Resource Accounting for z/OS, SH19-4495
Provides information for users who want to use Tivoli Decision Support for z/OS to collect and report performance data generated by Resource Accounting for z/OS.

Glossary

A

administration
A Tivoli Decision Support for z/OS task that includes maintaining the database, updating environment information, and ensuring the accuracy of data collected.

asterisk length
The length of a field that extends to the end of the containing structure.

attribute
A single-word text string that can be associated with a report to categorize it.

C

case expression
An expression that specifies a value as being dependent on a given condition.

collect A process used by Tivoli Decision Support for z/OS to read data from input log data sets, interpret records in the data set, and store the data in DB2 tables in the Tivoli Decision Support for z/OS database.

component
An optionally-installable part of a Tivoli Decision Support for z/OS feature. Specifically in Tivoli Decision Support for z/OS, a component refers to a logical group of objects used to collect log data from a specific source, to update the Tivoli Decision Support for z/OS database using that data, and to create reports from data in the database.

E

environment information
All of the information that is added to the log data to create reports. This information can include data such as performance groups, shift periods, installation definitions, and so on.

F

form The template that contains the specifications for displaying or printing a report or chart.

G

graphic report
Tivoli Decision Support for z/OS report data displayed using a GDDM/ICU chart format.

I

internal data type
A data type used within Tivoli Decision Support for z/OS during the processing of data.

K

key columns
The columns of a DB2 table that together constitute the key.

key values
Values that are used to sort records into groups.

L

log Any sequential data set used as input to Tivoli Decision Support for z/OS.

log collector
A Tivoli Decision Support for z/OS program that processes log data sets, and provides other Tivoli Decision Support for z/OS services.

log collector language
A collection of Tivoli Decision Support for z/OS statements used to supply definitions to and invoke services of the log collector.

log definition
The description of a log data set processed by the log collector.

log procedure
A program module called as a user exit to process certain log data sets.

lookup expression
Returns a value from a lookup table.

lookup table
A Tivoli Decision Support for z/OS DB2 table that contains grouping, translation, or substitution information.

P

Tivoli Decision Support for z/OS database
A set of DB2 tables that contain the environment information and performance data used by Tivoli Decision Support for z/OS to generate reports.

private report
A report owned by a user. Only the owner or an Tivoli Decision Support for z/OS administrator can use a private report. Contrast with *public report*.

prompted query
A query created using QMF's prompted query language. The prompted query language is an intuitive method that non-SQL users can use to create queries.

public report
A report that is not owned by any user. There are no restrictions on who uses the report, but only the creator of the report or the Tivoli Decision Support for z/OS administrator can modify or delete it. Contrast with *private report*.

purge conditions
Instructions for purging old data from the Tivoli Decision Support for z/OS database.

Q

query A statement that acts as a request to a database for information that meets specific conditions.

R

record definitions
The descriptions of different types of records contained in the log data sets used by Tivoli Decision Support for z/OS, including detailed record layout and data formats.

record procedure
A program module that is called to process some or all types of log records.

record type
The classification of records in a log data set.

repeated section
A section of a record that occurs more than once, with each occurrence adjacent to the previous one.

report definition language
Tivoli Decision Support for z/OS statements used to define reports and report groups.

report group
A collection of Tivoli Decision Support for z/OS reports that can be referred to by a single name or label.

reporting dialog
A set of host or workstation panels used to request reports.

resource group
A collection of resources that are identified as belonging to a particular department or division. Resources are organized into groups to reflect the structure of an organization.

resource information
Environment information that describes the elements in a system (for example, a network).

S

section
A structure within a record that contains one or more fields and may contain other sections.

source The record or DB2 table that contains data used to update a Tivoli Decision Support for z/OS DB2 table.

Structured Query Language (SQL)
The language used to define the specific conditions that data must meet to be included in a report.

system tables
DB2 tables that store information that controls log collector processing, Tivoli Decision Support for z/OS dialogs, and reporting.

T

tabular report
Tivoli Decision Support for z/OS report data displayed using a tabular format.

target The DB2 table in which Tivoli Decision Support for z/OS stores data from the source record or table.

threshold
The maximum or minimum acceptable

level of utilization. Utilization measurements are compared with threshold levels.

U

update definitions
Instructions for entering data into DB2 tables from records of different types or from other DB2 tables.

updates
Instructions in Tivoli Decision Support for z/OS for how to process data from log data sets to DB2 tables.

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U

W

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