

IBM Z Performance and Capacity Analytics  
Version 3 Release 1

*Administration Guide and Reference*



**Note**

Before using this information and the product it supports, read the information in [“Notices” on page 299](#).

This edition applies to version 3, release 1 of IBM Z Performance and Capacity Analytics (program number 5698-AS3) and to all subsequent releases and modifications until otherwise indicated in new editions.

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## Preface

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This book provides an introduction to IBM Z Performance and Capacity Analytics, the administration dialog and the reporting dialog. It describes procedures for installing the base product and its features and for administering IBM Z Performance and Capacity Analytics through routine batch jobs and the administration dialog.

It also describes how to setup and configure for extended reporting capability through interfacing analytics tools, both on and off-platform.

The terms listed are used interchangeably throughout the guide:

- MVS™, OS/390®, and z/OS.
- VM and z/VM®.

## Who should read this book

---

The *Administration Guide and Reference* is for the IBM Z Performance and Capacity Analytics administrator, the person who initializes the IBM Z Performance and Capacity Analytics database, and performs the customization and administration of the system.

Readers should be familiar with the following:

- Db2® and its utilities
- Query Management Facility (QMF), if QMF is used with IBM Z Performance and Capacity Analytics
- Time Sharing Option Extensions (TSO/E)
- Restructured Extended Executor (REXX) language
- Job control language (JCL)
- Interactive System Productivity Facility/Program Development Facility (ISPF/PDF) and its dialog manager functions

## Publications

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This section lists publications in the IBM Z Performance and Capacity Analytics library and any other related documents. It also describes how to access Tivoli publications online, how to order publications, and how to submit comments on publications.

### IBM Z Performance and Capacity Analytics library

The following documents are available in the IBM Z Performance and Capacity Analytics library:

- *Administration Guide and Reference*, SC28-3211  
Provides information about initializing the IBM Z Performance and Capacity Analytics database and customizing and administering IBM Z Performance and Capacity Analytics.
- *IBM i System Performance Feature Guide and Reference*, SC28-3212  
Provides information for administrators and users about collecting and reporting performance data generated by IBM i systems.
- *CICS Performance Feature Guide and Reference*, SC28-3214  
Provides information for administrators and users about collecting and reporting performance data generated by Customer Information Control System (CICS®).
- *Distributed Systems Performance Feature Guide and Reference*, SC28-3215

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*, SC28-3216

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 Performance Feature Guide and Reference*, SC28-3217

Provides information for administrators and users about collecting and reporting performance data generated by Information Management System (IMS).

- *Language Guide and Reference*, SC28-3218

Provides information for administrators, performance analysts, and programmers who are responsible for maintaining system log data and reports.

- *Messages and Problem Determination*, SC28-3219

Provides information to help operators and system programmers understand, interpret, and respond to IBM Z Performance and Capacity Analytics messages and codes.

- *Resource Accounting for z/OS*, SC28-3224

Provides information for users who want to use IBM Z Performance and Capacity Analytics to collect and report performance data generated by Resource Accounting.

- *System Performance Feature Guide*, SC28-3225

Provides information for performance analysts and system programmers who are responsible for meeting the service-level objectives established in your organization.

- *System Performance Feature Reference Volume I*, SC28-3226

Provides information for administrators and users with a variety of backgrounds who want to use IBM Z Performance and Capacity Analytics to analyze z/OS, z/VM, zLinux, and their subsystems, performance data.

- *System Performance Feature Reference Volume II*, SC28-3227

Provides information for administrators and users with a variety of backgrounds who want to use IBM Z Performance and Capacity Analytics to analyze z/OS, z/VM, zLinux, and their subsystems, performance data.

- *Usage and Accounting Collector User Guide*, SC28-3228

Provides information about the functions and features of the Usage and Accounting Collector.

- *IBM Online Library z/OS Software Products Collection Kit*,

CD containing all z/OS documentation.

## Accessing publications online

IBM posts publications for this and other products, as they become available and whenever they are updated, to the IBM Knowledge Center website:

<https://www.ibm.com/support/knowledgecenter/en/SSPNK7>

## Accessibility

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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, refer to the IBM Accessibility website:

<https://www.ibm.com/accessibility>

## Support information

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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 [Appendix A, “Support information,”](#) on page 297.

## Conventions used in this book

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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.

## 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

## Changes in this edition

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The changes in this edition relate to IBM Z Performance and Capacity Analytics V3.1.0 new function and enhancements.

This edition is an update of the previous edition of the same book. The changes in this edition include:

- Added a link to the new migration instructions: [Chapter 2, “Installing IBM Z Performance and Capacity Analytics ,” on page 11](#)
- Added new function: [“Introduction to the SMF Log Records component” on page 9](#)
- Updated: JCL samples to reflect changes in DLIB and TLIB structure
- Replaced:
  - ADRLA400 and ADRLWS by ADRLBIN
  - SDRLA400 and SDRLWS by SDRLBIN

This provides a common repository for binary parts that do not go into USS. It is relevant to the installation of non-z/OS components.

- Replaced:
  - ADRLIDM by ADRLUSS
  - SDRLIDM by SDRLUSS

This provides a repository for binary parts that must go into USS. For example, Java.

- Updated: [“Step 3: Installing the Data Mover” on page 41](#)
- Updated: [“Data Mover tips” on page 43](#)
- Added: Reference tables of parameters for configuring the Data Mover:
  - [“Input stage keywords” on page 69](#)
  - [“Process stage keywords” on page 71](#)
  - [“Output stage keywords” on page 73](#)
- Renamed: AS/400 to IBM i software running on IBM Power Systems hardware.
- Removed: BookManager references, now obsolete.
- Removed: JPN data set references. IBM Z Performance and Capacity Analytics is English only.

Technical changes are marked in the PDF with a vertical bar in the margin to the left of the change.



# Chapter 1. Introduction to IBM Z Performance and Capacity Analytics

IBM Z Performance and Capacity Analytics enables you to effectively manage the performance of your system by collecting performance data in a Db2 database and presenting the data in a variety of formats for use in systems management.

After reading this topic, you should have a basic understanding of IBM Z Performance and Capacity Analytics and be ready to install it.

IBM Z Performance and Capacity Analytics has two basic functions:

1. Collecting systems management data into a Db2 database.
2. Reporting on the data.

IBM Z Performance and Capacity Analytics consists of a base product and several optional features.

The IBM Z Performance and Capacity Analytics base can generate graphical and tabular reports using systems management data it stores in its Db2 database. To display graphical reports, IBM Z Performance and Capacity Analytics can use IBM Graphical Data Display Manager (GDDM) or web reporting tools such as IBM Cognos Analytics. You can also send the data to other platforms for further analysis and reporting using interfacing products such as Splunk and ELK.

The IBM Z Performance and Capacity Analytics Administration and Reporting dialogs enable you to specify your data collection and reporting requirements. An overview of the setup for data collection and reporting is shown in the following diagram. Use the Administration dialog to define to the Log Collector the type of log data that you want to collect from SMF, IMS, and other systems to store in Db2 databases. Use the Reporting dialog to define to the report generator the reports that you want produced.

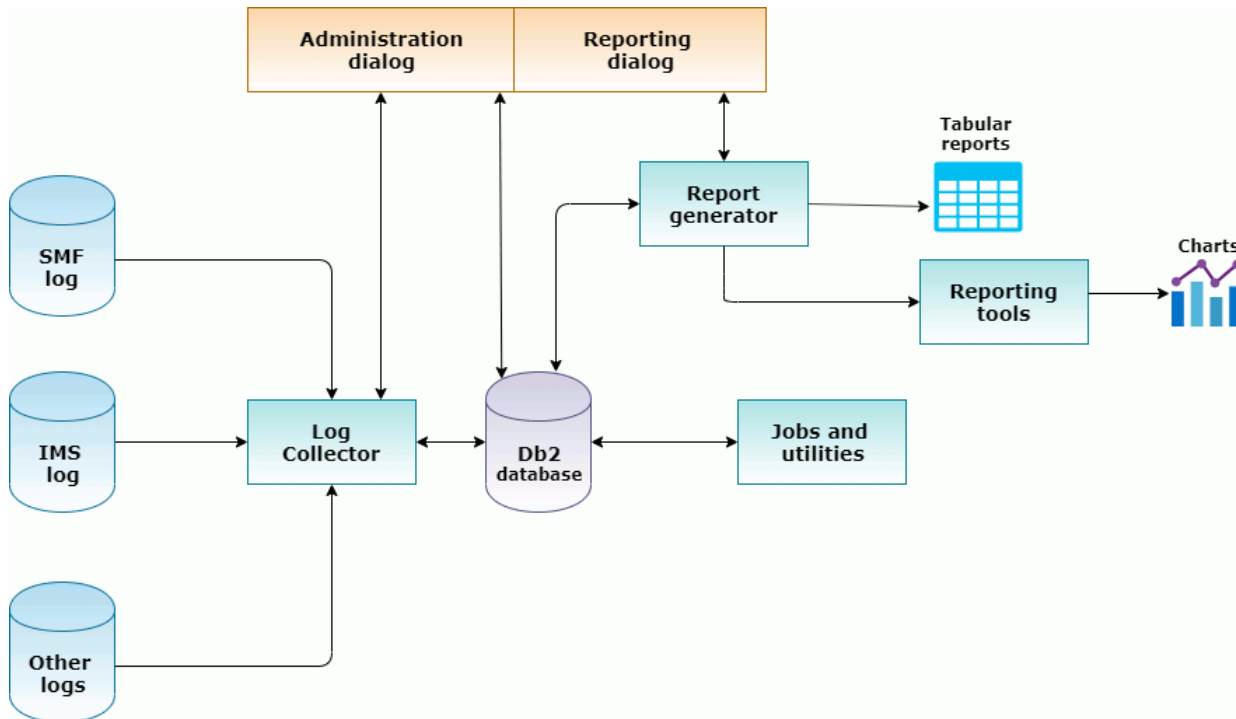


Figure 1. Overview of IBM Z Performance and Capacity Analytics

You can use IBM Z Performance and Capacity Analytics for batch data collection and periodic reporting. When familiar with batch operation, you can implement more advanced configurations for automated data gathering and continuous collection.

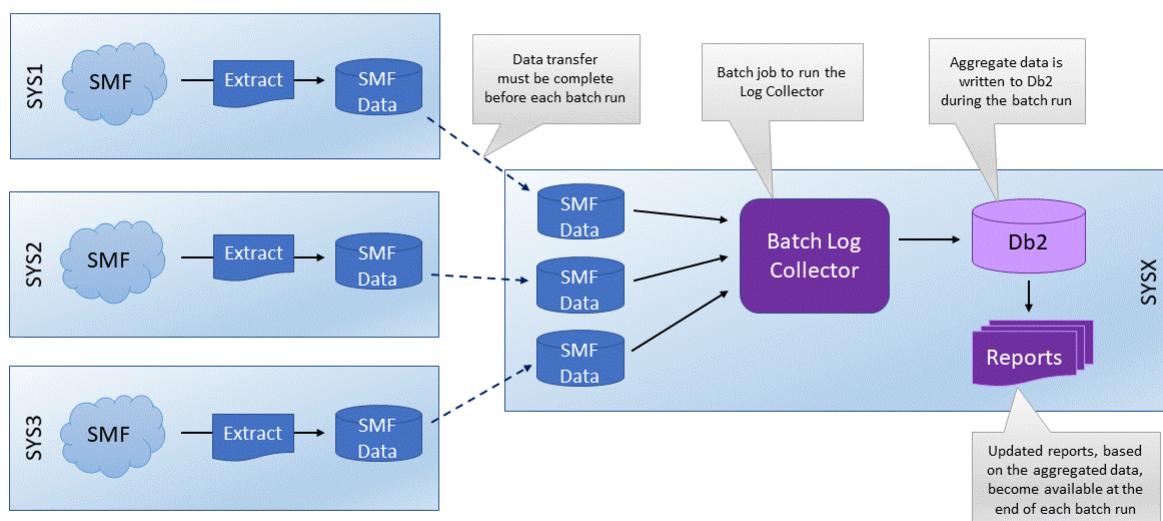


Figure 2. Overview of batch data collection

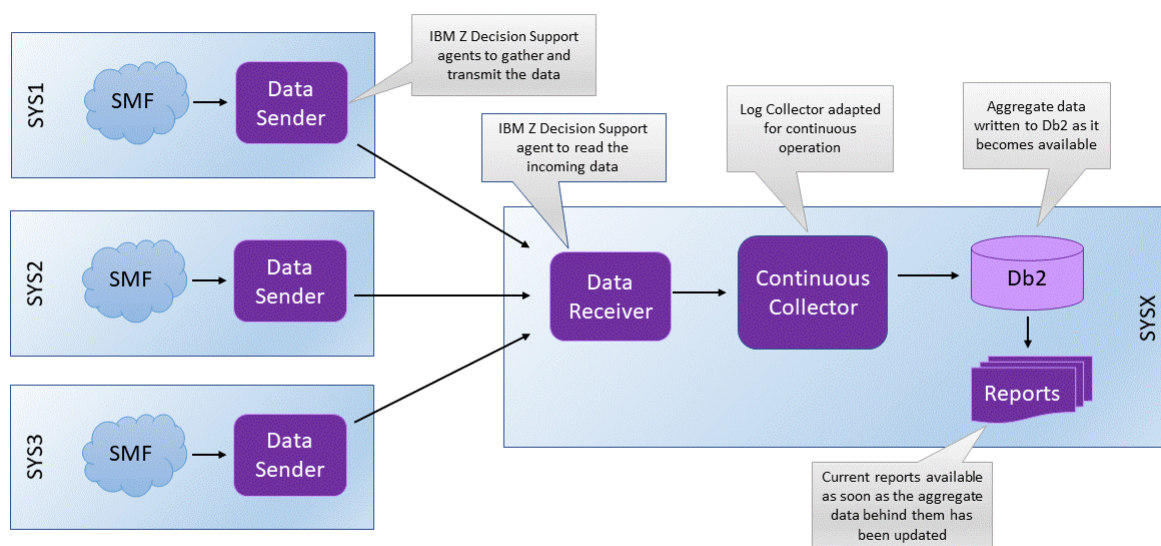


Figure 3. Overview of automated data gathering and continuous collection

## Introduction to the performance features

IBM Z Performance and Capacity Analytics performance features provide Db2 table definitions and table update instructions for collecting required systems management data. They also provide predefined queries, forms, and reports for presenting that data.

Resource Accounting for z/OS is part of the IBM Z Performance and Capacity Analytics base function.

The following performance features are additional to the base function:

- IBM i System Performance Feature
- Customer Information Control System (CICS) Performance Feature
- Distributed Systems Performance Feature
- Information Management System (IMS) Performance Feature
- Network Performance Feature
- System Performance Feature

These features are used to collect and report on systems management data, such as System Management Facility (SMF) data or IMS log data.

Each performance feature has *components*, which are groups of related IBM Z Performance and Capacity Analytics definitions. For example, the z/OS Performance Management (MVSPM) component consists of everything IBM Z Performance and Capacity Analytics needs to collect log data and create reports showing z/OS performance characteristics.

## Introduction to the log collector

---

At the center of IBM Z Performance and Capacity Analytics is the *log collector* program that reads and processes performance data. Log collector tasks are controlled by log, record, update, and other definitions in IBM Z Performance and Capacity Analytics system tables. For more information, see [“Log collector system tables” on page 219](#). You can add or modify definitions with both the administration dialog (see [“Introduction to the reporting dialog” on page 7](#)) and *log collector language* statements. For information on the administration dialog, see [“Introduction to the administration dialog” on page 7](#).

IBM Z Performance and Capacity Analytics provides both batch and interactive processing of log collector language statements. For a description of the log collector and the language, refer to the *Language Guide and Reference*.

The key function of the log collector is to read data and store it in *data tables* in the IBM Z Performance and Capacity Analytics database. The log collector groups the data by hour, day, week, or month. It computes sums, maximum or minimum values, averages, and percentiles, and calculates resource availability. The *collect process*, also referred to as *collecting data* or as *collect*, includes gathering, processing, and storing the data.

### Log definitions

IBM Z Performance and Capacity Analytics gathers performance data about systems from sequential data sets such as those written by SMF under z/OS, or by the Information Management System (IMS). These data sets are called *log data sets* or *logs*.

To collect log data, IBM Z Performance and Capacity Analytics needs log descriptions. The log collector stores descriptions of logs as *log definitions* in the IBM Z Performance and Capacity Analytics database. All log definitions used by IBM Z Performance and Capacity Analytics features are provided with the base product.

The administration dialog enables you to create log definitions or modify existing ones. For more information, see [“Working with log and record definitions” on page 148](#).

The log collector language statement, DEFINE LOG, also enables you to define logs. For more information, refer to the description of defining logs in the *Language Guide and Reference*.

### Record definitions

Each record in a log belongs to one unique record type. Examples of record types include SMF record type 30, generated by z/OS, and SMF record type 110, generated by CICS. For IBM Z Performance and Capacity Analytics to process a record, the record type must be defined. Detailed record layouts, field formats, and offsets within a record, are described in IBM Z Performance and Capacity Analytics *record*

*definitions.* All record definitions used by IBM Z Performance and Capacity Analytics features are provided with the base product.

The administration dialog enables you to create and modify record definitions. For more information, see [“Working with log and record definitions”](#) on page 148.

The log collector language statement, `DEFINE RECORD`, also enables you to define records. For more information, refer to the description of defining records in the *Language Guide and Reference*.

## Update definitions

Instructions for processing data and inserting it into tables in the IBM Z Performance and Capacity Analytics database are provided in *update definitions*. Each update definition describes how data from a source (either a specific record type, or a row of a table) is manipulated and inserted into a target (a row in a table). The update definitions used by an IBM Z Performance and Capacity Analytics component are provided with the feature that contains the component.

The administration dialog enables you to create update definitions or modify them. For more information, see [“Displaying and modifying update definitions of a table”](#) on page 184.

The log collector language statement, `DEFINE UPDATE`, also enables you to define updates. For more information, refer to the description of defining updates in the *Language Guide and Reference*.

## Table definitions

IBM Z Performance and Capacity Analytics stores data collected from log data sets in its database tables. It also stores IBM Z Performance and Capacity Analytics system data in system tables and site-specific operating definitions in lookup and control tables. A *table definition* identifies the database and table space in which a table resides, and identifies columns in the table. The table definitions used exclusively by the feature components in IBM Z Performance and Capacity Analytics are provided with the feature.

The administration dialog enables you to create or modify lookup and data table definitions. For more information, see [“Working with tables and update definitions”](#) on page 166.

## Log and record procedures

*Log procedures* and *record procedures* are user exit programs for specific data collection scenarios. Record procedures work on specific record types. Log procedures work on an entire log. The log and record procedures used by IBM Z Performance and Capacity Analytics features are provided with the base product.

For information about creating log and record procedure exits, refer to the *Language Guide and Reference*.

The administration dialog enables you to view and modify record procedure definitions, to identify record definitions that require processing by record procedures, and to define record definitions that are output from a record procedure. For more information, see [“Viewing and modifying a record procedure definition”](#) on page 164.

## Collect process

When definitions exist for a log, the log records, the log update instructions for record data, and target data tables, you can collect data from that log. You start the collect process:

- From the administration dialog.
- With the log collector language statement `COLLECT`.

The log collector retrieves stored definitions and performs the data collection that they define.

[Figure 4 on page 5](#) shows the collect process.

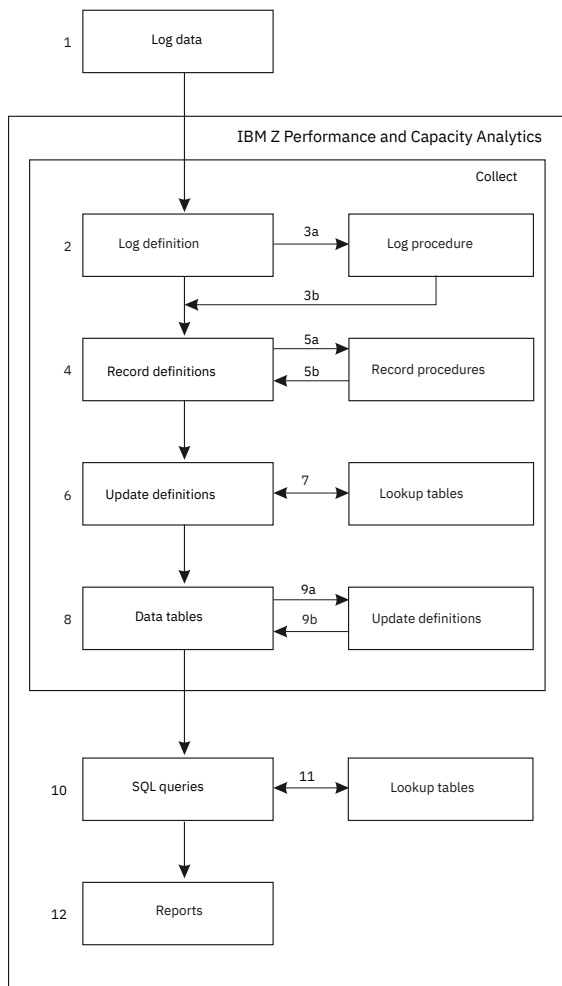


Figure 4. Overview of the data collection and processing steps

IBM Z Performance and Capacity Analytics processes data in these steps:

1. The operating system or other program writes data to a sequential log data set, which is the input to IBM Z Performance and Capacity Analytics.
2. You initiate the collect either through the dialog or by using an IBM Z Performance and Capacity Analytics language statement in a job, identifying a specific log type definition.
3. Optionally, the log definition might process the log data with a user exit program; a log procedure. If the log definition calls a log procedure:
  - a. The log procedure receives each record in the log as input.
  - b. Output from a log procedure varies in format and is usually a record mapped by an IBM Z Performance and Capacity Analytics record definition.
4. IBM Z Performance and Capacity Analytics looks for record definitions associated with the log definition in its system tables. It applies those record definitions to specific record types from the log or log procedure.
5. Optionally, a record definition might require processing by a user exit program; a record procedure. If a record definition requires processing by a record procedure:
  - a. The record procedure receives only a specific record type and is not called for other record types.
  - b. Output from a record procedure varies in format and is usually a record mapped by an IBM Z Performance and Capacity Analytics record definition.
6. IBM Z Performance and Capacity Analytics applies a specific update definition to each known record type and performs the data manipulations and database updates as specified.

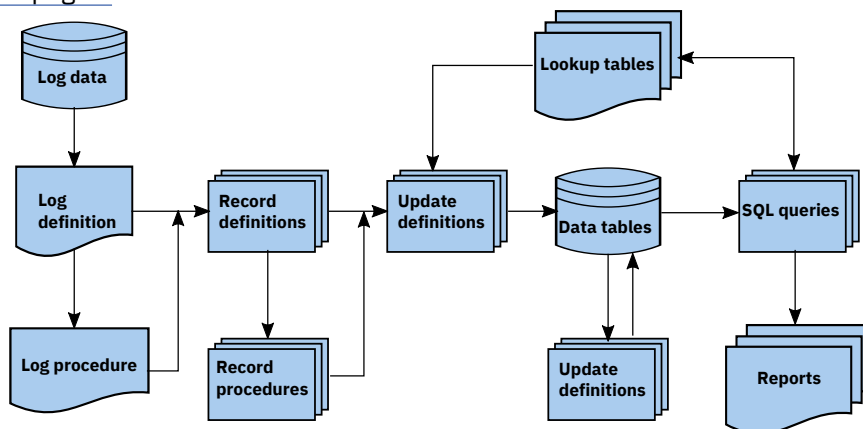
7. IBM Z Performance and Capacity Analytics often selects data from lookup tables to fulfill the data manipulations that update definitions require.
8. IBM Z Performance and Capacity Analytics writes non-summarized and first-level summarized data to data tables specified by the update definitions.
9. IBM Z Performance and Capacity Analytics uses updated tables as input for updating other, similar tables that are for higher summary levels. If update definitions specify data summarization:
  - a. IBM Z Performance and Capacity Analytics selects data from a table as required by the update definitions and performs required data summarization.
  - b. IBM Z Performance and Capacity Analytics updates other data tables as required by update definitions.
  - c. IBM Z Performance and Capacity Analytics might select data from lookup tables during this process (although that is not shown in the diagram for this step).
10. After IBM Z Performance and Capacity Analytics stores the data from a collect, you can display reports on the data. IBM Z Performance and Capacity Analytics uses a query to select the data for the report.
11. Optionally, IBM Z Performance and Capacity Analytics might select data from lookup tables specified in the query.
12. IBM Z Performance and Capacity Analytics creates report data, displaying, printing, and saving it as you requested.

For more information about collecting log data, see [“Setting up operating routines” on page 101](#).

## Introduction to the database

The IBM Z Performance and Capacity Analytics database contains system tables, lookup tables, and collected data. Log collector processing transforms large amounts of log data into useful information about your systems and networks. The volume of this information in the data tables is less than the volume of data read from logs.

An overview of the architecture and data flow from collecting, filtering and storing in the IBM Z Performance and Capacity Analytics Db2 database through to analysis and reporting is shown in [Figure 5 on page 6](#).



**Architecture - Data Flow**

*Figure 5. Overview of the setup for data collection and reporting*

IBM Z Performance and Capacity Analytics stores data that it collects in hourly, daily, weekly, and monthly tables, and in non-summarized tables. It maintains groups of tables that have identical definitions except for their summarization levels. For example, the EREP component of the System Performance feature creates the data tables EREP\_DASD\_D and EREP\_DASD\_M, which differ only because one contains daily data and the other, monthly data.



Because the IBM Z Performance and Capacity Analytics database is relational, you can:

- Combine information from any of your systems into a single report.
- Summarize by system within department, by department within system, or by whatever grouping is required.

You can keep data tables containing historical data for many years without using much space. The database size depends mainly on the number of short-term details you keep in it and not on summarized weekly or monthly data.

The IBM Z Performance and Capacity Analytics database contains operating definitions in its system tables. These definitions include those for logs, records, updates, and tables shipped with IBM Z Performance and Capacity Analytics. The database also contains lookup tables of parameters that you supply, such as performance objectives or department and workload definitions for your site.

## Introduction to the administration dialog

The administration dialog enables you to carry out the following tasks:

1. Install and customize IBM Z Performance and Capacity Analytics and its features.
2. Install and customize IBM Z Performance and Capacity Analytics components.
3. Work with log and record definitions.
4. Work with tables in the IBM Z Performance and Capacity Analytics database.
5. Create and run reports.

All of these options are available from the Administration window (Figure 6 on page 7).

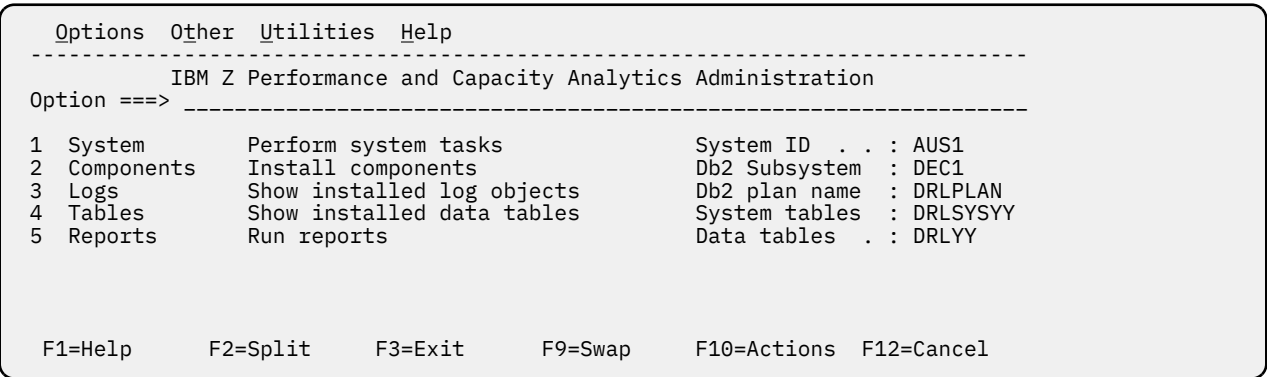


Figure 6. Administration window

## Introduction to the reporting dialog

The IBM Z Performance and Capacity Analytics reporting dialog enables you to display reports that present the log data stored in the product database. When you use the reporting dialog to display or print a report, IBM Z Performance and Capacity Analytics runs a *query* associated with the report to retrieve data from the database, and then displays, or prints, the results according to an associated *form*. If your installation uses QMF with IBM Z Performance and Capacity Analytics, QMF is started up when you work with queries and reports. Otherwise, IBM Z Performance and Capacity Analytics uses its own report generator.

Figure 7 on page 8 shows the Reporting dialog.

```
Reporting Dialog Defaults

Type information.  Then press Enter to save defaults.

Entry to dialog . . . 2_  1.  Display of previous selection
                        2.  Display of all reports
                        3.  Display of a selected group of reports

Group ID . . . . . + (required if group selected)
Group owner . . . . . (blank for public group)

Display of this window 1_  1.  No display
                        2.  Display at exit from dialog
                        3.  Display at entry to dialog

Confirmation of exit  1_  1.  Yes
                        2.  No

F1=Help    F2=Split    F4=Prompt    F9=Swap    F12=Cancel
```

Figure 7. Introducing the Reporting dialog

When you produce a report, you can specify values for the query that is used to select specific rows of data. You can display, print, or save, the retrieved data in either a tabular or a graphic report format.

**Note:** To generate and display graphic reports, IBM Z Performance and Capacity Analytics uses Graphical Data Display Manager (GDDM). If you are using IBM Z Performance and Capacity Analytics without QMF, GDDM is not required. If GDDM is not used, all reports are displayed in tabular form.

A report can consist of these items, which are identified in the *report definition*:

- A query for selecting data (required).
- A form that formats the data and specifies report headings and totals.
- Graphical Data Display Manager (GDDM) format for a graphic report.
- Report attributes (for creating logical groups of reports).
- Report groups to which the report belongs.
- Variables in the report.

When installing a component, you install a comprehensive set of predefined report queries, forms, and, optionally, GDDM formats for the component. The reporting dialog enables you to:

- Define new report definitions or modify existing ones.
- Define new queries and forms or modify existing ones, using QMF or the IBM Z Performance and Capacity Analytics built-in report generator.
- Display reports.
- Define reports for batch execution.

The *Guide to Reporting* describes the host reporting dialog. For a description of using the Common User Access (CUA) interface presented in IBM Z Performance and Capacity Analytics windows and helps, refer to the "Getting Started" section of that book.

## Introduction to the Key Performance Metrics components

IBM Z Performance and Capacity Analytics has four components called the Key Performance Metrics (also referred to as KPM) components. Specifically, there is one KPM component for each of z/OS, Db2, CICS, and IMS.

Within the IBM Z Performance and Capacity Analytics component list, you will see the components named as follows:

- Key Performance Metrics - z/OS
- Key Performance Metrics - CICS



- Key Performance Metrics - Db2
- Key Performance Metrics - IMS

These components are designed to only collect data that is considered to be key metrics for the monitoring of these subsystems. They can be installed stand alone, or they can be installed along with the corresponding existing base component. For example, the Db2 KPM component could be installed with or without the existing Db2 component being installed. Note that if you had both the Db2 KPM component and the existing base Db2 component installed, at collect time you only need to collect the SMF log the once to populate the data tables for both components.

The number of tables and columns within each of these tables will be significantly reduced in each of the KPM components. For this reason, the performance of collecting data into these components should be significantly improved when compared against their associated existing base components. For users who only reference metrics from the KPM tables, collecting only the KPM components should result in considerable CPU and elapsed time savings at collect time when compared to collecting the corresponding base components.

For details on each of the individual KPM components, refer to the appropriate guide in the table below.

| <i>Table 1. KPM components</i> |                                               |
|--------------------------------|-----------------------------------------------|
| <b>KPM Component</b>           | <b>Guide</b>                                  |
| Key Performance Metrics - z/OS | System Performance Feature Reference Volume I |
| Key Performance Metrics - CICS | CICS Performance Feature Guide and Reference  |
| Key Performance Metrics - Db2  | System Performance Feature Reference Volume I |
| Key Performance Metrics - IMS  | IMS Performance Feature Guide and Reference   |

Each KPM component uses table space profiles which allow the table, table space, and index settings within each KPM component to be easily modified in one place. Before installing the KPM components, refer to the topic [“Working with table space profiles”](#) on page 142.

## Introduction to the SMF Log Records component

The SMF Log Records component provides record definitions that allow you to view and analyze SMF records, whether or not you are currently collecting those records.

The SMF Log Records component provides functions that can be performed online using the display facility and in batch using the Log Collector **LIST RECORD** statement. You can perform these functions without installing a collect component that is based on the records of interest. Other utilities and Log Collector statements can also be used in conjunction with the SMF Log Records component.

You can examine the contents of records you are not currently collecting to help determine if they contain data you want to collect. You can also examine records you are currently collecting to provide a better understanding of the summarized data you are seeing in your reports.

### Getting ready to use the SMF Log Records component

Take the following steps to prepare for using the SMF Log Records component:

1. Install the SMF Log Records component.
2. Familiarize yourself with the Display Utility and **LIST RECORD** statement. Use the SMF Log Records component to explore these options.
3. Set a goal and work out how to achieve it using the SMF Log Records component.

### Using the SMF Log Records component

For more information about the SMF records you can display and analyze, refer to the topic [“SMF records”](#) on page 249.

Before you start examining SMF records in detail it is helpful to understand the contents of the log you are using. You can see the SMF record mappings applied to the records in your log by using the log statistics utility online or running the **LOGSTAT** statement online or in batch. For more information about using the log statistics utility, refer to the topic [“Displaying log statistics”](#) on page 152. For more information about using the **LOGSTAT** statement, refer to the topic “LOGSTAT” in the *Language Guide and Reference*.

To display the contents of individual records in detail you can use the online display utility. For more information about using the display utility, refer to the topic [“Displaying the contents of a log”](#) on page 153.

To generate detailed reports on individual records or sets of records focusing on specific fields of interest, you can use the list record utility online or the **LIST RECORD** statement online or in batch. For more information about using the list record utility, refer to the topic [“Creating a report on a record”](#) on page 154. For more information about using the LIST RECORD statement, refer to the topic “LIST RECORD” in the *Language Guide and Reference*.

## Introduction to the Usage and Accounting Collector

---

The CIMS Lab Mainframe collector is incorporated into IBM Z Performance and Capacity Analytics and called the Usage and Accounting Collector. This extracts z/OS accounting data which is used to populate Tivoli Usage and Accounting Manager databases on distributed platforms. The Usage and Accounting Collector does not require Db2 as prerequisite software on z/OS.

For a description of the Usage and Accounting Collector, see “System Overview” in the *Usage and Accounting Collector User Guide*.

For information on how to install the Usage and Accounting Collector, see [Chapter 7, “Installing the Usage and Accounting Collector,”](#) on page 289.

**Note:** Spectrum Writer is not included with UAC. Former CIMS Lab customers have a perpetual license for Spectrum Writer and should retain the CIMS Lab data sets so that they can make use of it. For support of Spectrum Writer, contact Pacific Systems. Customers that require access to CIMS Mainframe 12.2.1 should contact IBM support.

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## Chapter 2. Installing IBM Z Performance and Capacity Analytics

How to install IBM Z Performance and Capacity Analytics.

Follow these instructions to install IBM Z Performance and Capacity Analytics for the first time.

If you are migrating from an earlier version of IBM Z Performance and Capacity Analytics, follow the migration instructions documented in the tech note that is available from <https://www.ibm.com/support/pages/node/2950341>. However, the migration instructions should be read in conjunction with the installation instructions in this chapter to develop an installation and migration plan appropriate for your environment.

The initial installation process starts after a system programmer has performed the SMP/E installation. The SMP/E installation of the IBM Z Performance and Capacity Analytics base and its features is described in the *IBM Z Performance and Capacity Analytics Program Directory*.

You can also use this information to install IBM Z Performance and Capacity Analytics on other systems, or to install features that you did not install previously with the IBM Z Performance and Capacity Analytics base.

This section describes the following installation tasks:

- [“Installation prerequisites” on page 11](#)
- [“Step 1: Reviewing the results of the SMP/E installation” on page 13](#)
- [“Step 2: Setting up security” on page 15](#)
- [“Step 3: Initializing the Db2 database” on page 18](#)
- [“Step 4: Preparing the dialog and updating the dialog profile” on page 19](#)
- [“Step 5: Setting personal dialog parameters” on page 21](#)
- [“Step 6: Setting up QMF” on page 22](#)
- [“Step 7: Determining partitioning mode and keys” on page 23](#)
- [“Step 8: Creating system tables” on page 24](#)
- [“Step 9: Customizing JCL” on page 25](#)
- [“Step 10: Testing the installation of the base” on page 26](#)
- [“Step 11: Reviewing Db2 parameters” on page 28](#)
- [“Step 12: Installing components” on page 29](#)
- [“Installing multiple IBM Z Performance and Capacity Analytics systems” on page 29](#)
- [“Installing IBM Z Performance and Capacity Analytics features separately” on page 30](#)

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### Installation prerequisites

This section lists the hardware and software prerequisites.

#### Hardware prerequisites

IBM Z Performance and Capacity Analytics can run in any hardware environment that supports the required software.

### Software prerequisites

This section lists the software requirements to install and use IBM Z Performance and Capacity Analytics basic functions and optional component features. Refer to the *IBM Z Performance and Capacity Analytics Program Directory* for further information about mandatory and conditional requirements.

### Architecture considerations

IBM Z Performance and Capacity Analytics can run on a standalone system, or can be configured for multiple systems with hub and spoke architecture. For more information, refer to [“Continuous Collector configuration options”](#) on page 33.

Most of the prerequisites apply to the hub or standalone system, and do not need to be installed on every system that you want IBM Z Performance and Capacity Analytics to collect data from.

### Data gathering

IBM Z Performance and Capacity Analytics is installed on one or more hub systems, where data from multiple spoke systems is analyzed and archived. A system can be both a spoke and a hub.

A hub system requires:

- z/OS V2.2.0 or higher
- Db2 V11 or higher

While you can manually transfer data from the spoke systems to the hub, there is an automated data gathering agent that can be installed on the spoke systems running z/OS to gather SMF data.

A spoke system running the automated data gathering agent requires:

- z/OS V2.2.0 or higher
- IBM 64 bit Java 8

To enable automated data gathering by spokes, the hub needs:

- IBM 64 bit Java 8

Data can be gathered from the following applications on spoke systems:

#### z/OS systems

- z/OS 2.2.0 or higher
  - DFSMS/OAM
  - DFSMS/RMM
  - DFSMS/MVS
  - JES2 and JES3
  - EREP
  - Communications Server
  - Tivoli Workload Scheduler for z/OS
  - Tivoli Information Management for z/OS
  - MVS
- Db2 for z/OS V11.0.0 or higher
- CICS Transaction Server V5.2 or higher
- IMS V13 or higher
- IBM Security zSecure Manager for RACF z/VM 1.11.1 and higher
- IBM Tivoli NetView for z/OS – V 5.4.0 and higher
- Tivoli Storage Manager for z/OS (ADSM) V 7.1.6 and higher
- WebSphere MQ for z/OS V 7.1.0 and higher

- IBM HTTP Server V 6.1.0 and higher

#### **z/Linux systems**

- Red Hat Enterprise Linux 7.3
- SUSE Linux Enterprise Server 11+

#### **Power Systems running IBM i**

- Power Systems running IBM i 7.2 or 7.3

#### **AIX systems**

- AIX 7.1+

#### **HP-UX systems**

- HP-UX 11i V3+

#### **Solaris systems**

- Solaris 11.1

#### **Windows systems**

- Windows Server 2008, 2012 or 2016

### **Reporting**

Reports can be drawn directly from Db2 on the hub system or indirectly from Splunk or ELK installations that are fed by one or more hub systems. Basic reporting on a hub producing tabular textual reports requires no additional software. Other reporting options are:

#### **3270 graphical reporting**

- GDDM-PGF

#### **Cognos**

- Cognos Analytics V11.0.x (license bundled with IBM Z Performance and Capacity Analytics )

#### **QMF reporting**

- IBM QMF for IBM Z - to enable QMF reporting
- GDDM-REXX - this is required only if you are not using QMF for IBM Z

#### **Remote QMF reporting**

- QMF For Workstations V11

#### **Db2 IDAA**

To use Db2 IDAA to accelerate your queries:

- Db2 High Performance Unload for z/OS V5.1 – to enable high performance unloading

#### **To feed data off-platform for web reporting by Splunk or ELK**

- IBM 64 bit Java 8
- Optionally, the IBM Common Data Provider for z V 1.2 or higher to distribute the feed. The alternative is a direct feed from IBM Z Performance and Capacity Analytics to Splunk or ELK

## **Step 1: Reviewing the results of the SMP/E installation**

---

After SMP/E installation the following will be on your system. The locations and names listed here are based on the defaults, and may have been changed during the SMP/E installation at your site.

### **IBM Z Performance and Capacity Analytics data sets**

The data set names and descriptions of the product data sets are:

### **DRLvrn.SDRLCNTL**

Sample jobs and Db2 DBRM module

### **DRLvrn.SDRLDEFS**

Definitions of records, tables, and other objects

### **DRLvrn.SDRLEXEC**

REXX execs

### **DRLvrn.SDRLOAD**

Load modules

### **DRLvrn.SDRLSKEL**

ISPF skeletons

### **DRLvrn.SDRLBIN**

IBM i

### **DRLvrn.SDRLBIN**

Content for distributed platforms as well as reports.

### **DRLvrn.SDRLEXTR**

SMF extractor load modules

### **usr/lpp/IBM/IZPCA/v3r1m0/IBM**

The directory that contains the Data Mover and other apps. This is the target of the SDRLBIN DDDEF.

## **Local data sets**

The data set names and descriptions of the local operational data sets are:

### **&HLQ.LOCAL.ADMCFORM**

Local GDDM-Presentation Graphics Facility (GDDM-PGF) interactive chart utility (GDDM/ICU) formats

### **&HLQ.LOCAL.CHARTS**

Saved graphic reports (GDDM ADMGDF format)

### **&HLQ.LOCAL.CNTL**

Local IBM Z Performance and Capacity Analytics jobs

### **&HLQ.LOCAL.DEFS**

Local IBM Z Performance and Capacity Analytics definitions

### **&HLQ.LOCAL.EXEC**

Local IBM Z Performance and Capacity Analytics execs

### **&HLQ.LOCAL.MESSAGES**

Messages sent through the dialog

### **&HLQ.LOCAL.REPORTS**

Saved tabular reports

### **&HLQ.LOCAL.USER.DEFS**

Local IBM Z Performance and Capacity Analytics user/alter definitions

## **Language-dependent IBM Z Performance and Capacity Analytics data sets**

The last three letters in these data set names indicate the language version. xxx is ENU for English. For example, SDRLRENU contains the English report definition files.

### **DRLvrn.SDRLFxxx**

GDDM/ICU formats

### **DRLvrn.SDRLMxxx**

ISPF messages

### **DRLvrn.SDRLPxxx**

ISPF windows

### **DRLvrn.SDRLRxxx**

Definitions of reports

**DRLvrn.SDRLTxxx**

ISPF tables

## Step 2: Setting up security

---

### About this task

This topic describes how you can protect IBM Z Performance and Capacity Analytics data sets and the database.

Use RACF® or a similar product to protect the IBM Z Performance and Capacity Analytics data sets. Administrators and users must have read access to the DRL310 data sets and update access to the local data sets.

The data in the database is protected by Db2. Administrators and users must be granted Db2 privileges to be able to access the data, as follows:

- Administrators need SYSADM (system Db2 administrator authority for the IBM Z Performance and Capacity Analytics database. They also need the ability to use the prefixes of IBM Z Performance and Capacity Analytics tables (DRLSYS and DRL) as authorization IDs in Db2.
- Users need read access to the tables they use to produce reports, and update access to some of the IBM Z Performance and Capacity Analytics system tables (to be able to create their own reports).
- The user IDs that you use for IBM Z Performance and Capacity Analytics production jobs, such as collect, need DBADM authority.

This step describes two ways you can define authorities for IBM Z Performance and Capacity Analytics administrators and users:

- Using secondary authorization IDs.
- Without secondary authorization IDs.

Find out through the Db2 system administrator whether secondary authorization IDs are used on your Db2 system.

**Note:** If you are defining authorities without using secondary user IDs, the installation process is slightly different. See [“Security without secondary authorization IDs” on page 17](#) for more information.

Follow the instructions below to run the DRLJDBIN job to initialize the Db2 database when you are installing IBM Z Performance and Capacity Analytics for the first time.

### Procedure

1. Copy member DRLJDBIN in the DRLvrn.SDRLCNTL library to the &HLQ.LOCAL.CNTL library.

You might also need to copy and customize one of the following samples: DRLJDCV0, DRLJDCVA, or DRLJDCVB. Refer to the instructions in the comments in DRLJDBIN job for more information about using these samples.

2. Modify the job card statement to run your job.
3. Customize the job for your site.

Follow the instructions in the job prolog to customize it for your site.

#### Note:

- a. A person with Db2 SYSADM authority (or someone with the authority to create plans, storage groups, and databases, and who has access to the Db2 catalog) must submit the job.
  - b. Do not delete steps from DRLJDBIN. Even if you have DBADM authorization, you must grant DRL and DRLSYS authority for the IBM Z Performance and Capacity Analytics database.
4. Submit the job to:
    - Bind the Db2 plan used by IBM Z Performance and Capacity Analytics .

The plan does not give privileges (it contains only dynamic SQL statements) thereby making it safe to grant access to all users (PUBLIC).

If you change the name of the plan from the default (DRLPLAN) then you must update the def\_db2plan variable in DRLFPROF to specify the new plan name. You also need to modify any sample jobs that execute DRLPLC, DRL1PRE or DRLPLOGM to specify the PLAN parameter with the new plan name. Changing the plan name allows you to run versions of the IZPCA environment with incompatible DBRMs in the same Db2 subsystem.

- Create the Db2 storage group and database used by IBM Z Performance and Capacity Analytics .
- Grant Db2 DBADM authority as database administrators of DRLDB to DRL and DRLSYS.
- Create views on the Db2 catalog for IBM Z Performance and Capacity Analytics dialog functions for users who do not have access to the Db2 catalog.

## Security using secondary authorization IDs

### About this task

The most efficient way to give users privileges is to use secondary authorization IDs in Db2. With this method, privileges are granted to group IDs rather than user IDs, and all users who can use these secondary authorization IDs get the privileges.

The secondary authorization IDs a user has access to can be controlled in different ways. If you have RACF installed, users can usually use the RACF groups that they are connected to as secondary authorization IDs. If RACF is not installed, secondary authorization IDs can be assigned by the Db2 authorization exit.

This topic describes how to define the secondary authorization IDs using RACF. If you assign secondary authorization IDs in another way, consult your Db2 system administrator.

### Procedure

1. Create three RACF groups. The default RACF group IDs are DRL, DRLSYS, and DRLUSER

```
ADDGROUP DRL DATA ('IBM Z Performance and Capacity Analytics TABLES')
ADDGROUP DRLSYS DATA ('IBM Z Performance and Capacity Analytics SYSTEM TABLES')
ADDGROUP DRLUSER DATA ('IBM Z Performance and Capacity Analytics USERS')
```

The IDs DRL and DRLSYS are also prefixes for the IBM Z Performance and Capacity Analytics Db2 tables. If you plan to change the prefixes for IBM Z Performance and Capacity Analytics system tables and views (DRLSYS) or for other IBM Z Performance and Capacity Analytics tables and views (DRL) in [“Step 3: Initializing the Db2 database” on page 18](#), use your values as RACF group IDs.

If all users on your system need access to the IBM Z Performance and Capacity Analytics data, you do not need the DRLUSER group. If different users need access to different sets of tables, you can define several RACF group IDs, such as DRLMVS and DRLCICS, instead of the DRLUSER group.

You can use either RACF commands or RACF dialogs to specify security controls. These commands are samples. You may have to specify additional operands to comply with the standards of your organization.

2. Connect IBM Z Performance and Capacity Analytics administrators to all three groups.

Use RACF commands or RACF dialogs to connect user IDs to a group. This command is a sample.

```
CONNECT (user_ID1 user_ID2 ...) GROUP(DRLUSER)
```

**Note:** VIEWER users need to be connected to the above three groups (DRL , DRLSYS , DRLUSER).

3. Connect IBM Z Performance and Capacity Analytics (not VIEWER) users to the DRLUSER group only.

Use RACF commands or RACF dialogs to connect user IDs to a group. This command is a sample.

```
CONNECT (user_ID1 user_ID2 ...) GROUP(DRLUSER)
```



4. If you use different RACF group IDs, be sure to use them throughout all the steps listed .
5. If you use other group IDs than DRLUSER, you must modify the following fields in the Dialog Parameters window (see [Figure 9 on page 22](#)):

#### Users to grant access to

Users to grant access to must be specified when you create the system tables and when you install components. When you create the system tables it should contain all group IDs that should have access to IBM Z Performance and Capacity Analytics. To grant access to all users, specify PUBLIC.

When you install components, Users to grant access to should contain the group IDs that should have access to the component.

#### SQL ID to use (in QMF)

If QMF is used with IBM Z Performance and Capacity Analytics in your installation, the SQL ID to use in QMF must be specified by each user. It should be one of the groups the user is connected to or the user's own user ID.

6. If you use different RACF group IDs, you can make your RACF group IDs the default for all IBM Z Performance and Capacity Analytics users. Edit the IBM Z Performance and Capacity Analytics initialization exec DRLFPFROF, described in [“Step 4: Preparing the dialog and updating the dialog profile” on page 19](#). Variables def\_syspref, def\_othtbpf, def\_iduser1, and def\_idsqluser may need to be changed, depending on the changes you made to the IDs.

## Security without secondary authorization IDs

### About this task

If you are not using secondary authorization IDs in Db2, the installation process is slightly different. See [“Example: Installation steps when secondary user IDs are not used” on page 17](#) for more information.

If you are not using secondary authorization IDs in Db2, all privileges must be granted to individual users.

### Procedure

1. Grant authority to the administrators:
  - a) Create all tables and views with the administrator user ID as prefix. That is, replace DRLSYS and DRL with a user ID. Only one administrator is possible.
  - b) Grant SYSADM authority to all administrators.
2. Give authority to the users in one of two ways. This is done in [“Step 5: Setting personal dialog parameters” on page 21](#).
  - Specify a list of up to 8 user IDs in the field **Users to grant access to** in the **Dialog Parameters** window ([Figure 9 on page 22](#)).
  - Specify PUBLIC in the field **Users to grant access to**. This gives all users access to IBM Z Performance and Capacity Analytics data. This is easier to maintain than a list of user IDs.

For both cases, each user must specify his own user ID in the **SQL ID to use (in QMF)** field in the **Dialog Parameters** window, if QMF is used with IBM Z Performance and Capacity Analytics in your installation.

You must specify user IDs in the field **Users to grant access to** before you create the system tables. It is also used when you install components.

### Example: Installation steps when secondary user IDs are not used

Follow this example if you have several administrators. In the example, we assume that there are three administrators:

- ADMIN1 is the user who creates system tables.
- ADMIN2 and ADMIN3 are the other administrators.

When performing the installation, note these items:

- “[Step 3: Initializing the Db2 database](#)” on page 18 : Change DRL and DRLSYS in the DRLJDBIN job to ADMIN1, ADMIN2, and ADMIN3.
- “[Step 4: Preparing the dialog and updating the dialog profile](#)” on page 19: No changes.
- “[Step 5: Setting personal dialog parameters](#)” on page 21: Use ADMIN1 as prefix for system tables, ADMIN2 and ADMIN3 as prefix for other tables. For **Users to grant access to**, specify ADMIN1, ADMIN2, ADMIN3, and all user IDs for the end users. For SQL ID to use (in QMF), specify ADMIN1 (if QMF is used with IBM Z Performance and Capacity Analytics in your installation).
- “[Step 6: Setting up QMF](#)” on page 22: No changes.
- “[Step 8: Creating system tables](#)” on page 24: The system tables should be created with the prefix ADMIN1. Otherwise, there are no changes compared with the information in this step.
- “[Step 9: Customizing JCL](#)” on page 25: No changes.
- “[Step 10: Testing the installation of the base](#)” on page 26 and “[Step 12: Installing components](#)” on page 29: If one of the secondary administrators, for example ADMIN2, wants to install the Sample component or any other component, that administrator has to change the dialog parameters before the installation to use these settings:

**Prefix for system tables**

ADMIN1

**Prefix for other tables**

ADMIN2

**SQL ID to use (in QMF)**

ADMIN2

When the component is installed by ADMIN2, the installed Db2 objects are created with the prefix ADMIN2.

All Db2 objects can be read by all administrators, but an object can be created only with the current administrator's primary user ID.

To make your changes the default for all IBM Z Performance and Capacity Analytics users, you must change the initialization exec DRLFPROF as described in “[Step 4: Preparing the dialog and updating the dialog profile](#)” on page 19.

## Step 3: Initializing the Db2 database

---

### About this task

You must use IBM Z Performance and Capacity Analytics to perform several Db2-related installation tasks, which are described below.

**Note:** IBM Z Performance and Capacity Analytics is an update/insert intensive Db2 application. This means that during a collect, IBM Z Performance and Capacity Analytics adds and updates many rows in the Db2 tables. Normal Db2 processing logs these changes. Your Db2 administrator should verify that the capacity of the Db2 logs is sufficient to cope with the increase in logging activity.

If your operational Db2 system is constrained, consider implementing another (analytical) Db2 system for the IBM Z Performance and Capacity Analytics environment.

## Customizing the CICS Partitioning Feature

### About this task

To use the CICS Partitioning Feature, you must run the DRLJDBIP job. DRLJDBIP creates additional storage groups that are used in the partitioned table spaces of the CICS Partitioning Feature.

**Procedure**

1. Copy member DRLJDBIP in the DRLvr<sub>m</sub>.SDRLCNTL library to the HLQ.LOCAL.CNTL library.
2. Modify the job card statement to run your job.
3. Customize the job for your site.  
Follow the instructions in the job prolog.
4. Submit the job.

**Note:** A person with Db2 SYSADM authority (or someone who has access to the Db2 catalog) must submit the job.

## Step 4: Preparing the dialog and updating the dialog profile

---

**About this task**

The load library and the exec library must be allocated at the startup of your TSO logon procedure. IBM Z Performance and Capacity Analytics dynamically allocates other libraries and data sets as it starts, and allocates others as certain functions are performed. This step describes how to set up procedures for startup and for allocating the libraries and data sets that IBM Z Performance and Capacity Analytics needs.

Ensure that the load library, exec library, Db2 load library, QMF load library (optional), GDDM libraries, and load libraries, are accessible to your TSO session

**Procedure**

1. Make the load library (DRLvr<sub>m</sub>.SDRLLOAD), Db2 load library, QMF load library, and the GDDM load library accessible by performing one of these tasks:
  - a) Allocate the SDRLLOAD library, Db2 load library (SDSNLOAD), QMF load library (SDSQLOAD), and the GDDM load library (SADMMOD) to STEPLIB in the generic logon procedure.

```
//STEPLIB DD DISP=SHR,DSN=DRLvrm.SDRLLOAD
//        DD DISP=SHR,DSN=QMF.SDSQLOAD
//        DD DISP=SHR,DSN=GDDM.SADMMOD
//        DD DISP=SHR,DSN=DSN.SDSNLOAD
```

- b) Add SDRLLOAD, SDSQLOAD, SADMMOD, and SDSNLOAD to the link list.
  - c) Copy SDRLLOAD, SDSQLOAD, SADMMOD, and SDSNLOAD members to a library already in the link list. Make sure that the Db2 modules DSNALI, DSNHLI2, and DSNTIAR are linked in 31-bit addressing mode
2. Make the local exec library and the IBM Z Performance and Capacity Analytics exec library (DRLvr<sub>m</sub>.SDRLEXEC) accessible by performing one of these tasks:
  - a) Allocate the libraries to SYSPROC in the logon procedure. For example:

```
//SYSPROC DD DISP=SHR,DSN=&HLQ.LOCAL.EXEC
//        DD DISP=SHR,DSN=DRLvrm.SDRLEXEC
```

- b) Allocate the libraries to SYSEXEC in the logon procedure. For example:

```
//SYSEXEC DD DISP=SHR,DSN=&HLQ.LOCAL.EXEC
//        DD DISP=SHR,DSN=DRLvrm.SDRLEXEC
```

- c) Use the ALTLIB function to allocate the libraries.

If IBM Z Performance and Capacity Analytics is invoked by using the ALTLIB function on the application level, make sure that only the IBM Z Performance and Capacity Analytics exec library is

included. Allocate other exec libraries to user level by using the **ALTLIB ACT USER(EXEC)** command.

3. Make the ADMPC data set accessible by allocating it in the logon procedure. For example:

```
//ADMPC DD DISP=SHR,DSN=GDDM.SADMPCF
```

IBM Z Performance and Capacity Analytics dynamically allocates other libraries and data sets, such as the GDDM symbols data set GDDM.SADMSYM, when a user starts a dialog. [“Allocation overview” on page 90](#) describes the libraries that IBM Z Performance and Capacity Analytics allocates and when it allocates them.

4. If you have used any values other than default values for DRLJDBIN or for IBM Z Performance and Capacity Analytics data set names, you must modify the userid .DRLFPROF file (allocated copying the DRLFPROF member of DRLvrn.SDRLCNTL).

DRLEINI1 sets dialog defaults for all users. IBM Z Performance and Capacity Analytics stores defaults for each user in member DRLPROF in the library allocated to the ISPPROF ddname, which is usually *tsoprefix*.ISPF.PROFILE. Edit DRLFPROF to include default values so users do not need to change dialog parameter fields.

5. Allocate a sequential data set with name *user*.DRLFPROF, LRECL=80 BLKSIZE=32720 RECFM=FB and copy the DRLFPROF member of the SDRLCNTL library.
6. Locate and change any variable values that you have changed during installation.

**Note:**

- Change values for data set names that identify Db2 and, optionally, QMF and GDDM libraries.
- If you do not use QMF with IBM Z Performance and Capacity Analytics, change the value for qmfuse to NO.
- If you do not use GDDM with IBM Z Performance and Capacity Analytics, change the value for gddmuse to NO. (If QMF is used, GDDM must be used.)

[“Modifying the DRLFPROF data set” on page 79](#) shows the DRLFPROF file containing the parameters to be modified.

[“Overview of the Dialog Parameters window” on page 80](#) shows the administration dialog window and the default initialization values that DRLFPROF sets.

[“Dialog parameters - variables and fields” on page 81](#) describes parameters and shows the interrelationship of DRLEINI1 and the Dialog Parameters.

7. You can add IBM Z Performance and Capacity Analytics to an ISPF menu by using this ISPF statement:

```
CMD(%DRLEINIT) [DEBUG] [RESET] [DBRES] [REPORTS | R] [ADMINISTRATION | A]
```

To access a dialog from the command line of an ISPF window, any authorized user can issue the command **TSO %DRLEINIT** from the command line of an ISPF window.

The optional **DEBUG** parameter sets on a REXX trace for the initialization execs. This helps you solve problems with data set and library allocation.

The optional **RESET** parameter sets the ISPF profile variables to their default value. It has the same effect as deleting the DRLPROF member from the local (ISPPROF) profile library.

The optional **DBRES** parameter sets the ISPF profile variables for IBM Z Performance and Capacity Analytics to their default value (like Db2 Subsystem, Db2 Database, Db2 Storage Group). Only these values are deleted from the DRLPROF member of the local (ISPPROF) profile library. All the other values set and already stored in the profile are preserved.

The optional **REPORTS** parameter takes you directly to the reporting dialog. You can abbreviate this to R.

The optional **ADMINISTRATION** parameter takes you directly to the administration dialog. You can abbreviate this to A.

## Step 5: Setting personal dialog parameters

### About this task

If you have edited the dialog parameters profile, file DRLFPROF from the DRLvr $\bar{m}$ .SDRLCNTL library, and copied it into the sequential data set *userid*.DRLFPROF in “Step 4: Preparing the dialog and updating the dialog profile” on page 19 to match your installation values, you do not need to follow the instructions in this step to change the parameters unless you want to use the reporting dialog in administrator mode

Authorized administrators can use the reporting dialog in administrator mode to view or modify all reports. Otherwise, a reporting dialog user uses the dialog in end-user mode, the default. In this mode, a user can view only public and privately-owned reports. In end-user mode, a user can modify only reports he or she created.

IBM Z Performance and Capacity Analytics stores parameters for each user in member DRLPROF in the library allocated to the ISPPROF ddname, which is usually *tsoprefix*.ISPF.PROFILE

This topic describes the procedure for the IBM Z Performance and Capacity Analytics dialogs if you did not edit the DRLFPROF file. Perform this step if necessary.

### Procedure

1. From the command line of an ISPF/PDF window, type TSO %DRLEINIT to display the IBM Z Performance and Capacity Analytics Primary Menu (Figure 8 on page 21).

Reporting dialog users can access the **Dialog Parameters** window from the **Options** pull-down of the Primary Menu or the Reports window.

```

Options  Other  Utilities  Help
-----
                    IBM Z Performance and Capacity Analytics Administration
Option ==> -----
1 System          Perform system tasks          System ID   . . : SYS1
2 Components      Install components          Db2 Subsystem : SUB1
3 Logs           Show installed log objects      Db2 plan name : PLNPLAN
4 Tables         Show installed data tables     System tables : SYTSYSYY
5 Reports        Run reports                 Data tables  . : DATBL

F1=Help    F2=Split    F3=Exit    F9=Swap    F10=Actions  F12=Cancel

```

Figure 8. IBM Z Performance and Capacity Analytics Primary Menu

2. If you start from the Primary Menu, type 2 **Administration**, and press Enter to display the Administration window (see Figure 6 on page 7).
3. From the Administration window, select 1 **System**, to display the System window.

**Note:** If your installation does not use QMF, **Import QMF initialization query** is not selectable, and indicated by an asterisk (\*).

4. From the System window, select 1 **Dialog parameters**.

```

                        System
Select one of the following. Then press Enter.

1. Dialog parameters
2. System tables
3. Import QMF initialization query

F1=Help    F2=Split    F9=Swap    F12=Cancel

```

**Note:** If your installation does not use QMF with IBM Z Performance and Capacity Analytics, the contents of this window is slightly different from what you see here. Both versions of the Dialog Parameters window are shown in [“Overview of the Dialog Parameters window”](#) on page 80.

Dialog Parameters

Type information. Then press Enter to save and return.

More: +

DB2 subsystem name . . . . . DEC1

Database name . . . . . DRLDBYY\_

Storage group default . . . . SYSDEFLT

Prefix for system tables . . . DRLSYSYY

Prefix for all other tables . . DRLYY\_

Show panel IDs (yes/no) . . . YES

Buffer pool for data . . . . . BP0\_

Buffer pool for indexes . . . BP0\_

Users to grant access to . . . DRLUSRY\_ \_ \_ \_ \_

\_ \_ \_ \_ \_

Batch print SYSOUT class . . . A

Printer line count per page . . 60

SQLMAX value . . . . . 5000

F1=Help    F2=Split    F7=Bkwd    F8=Fwd    F9=Swap    F12=Cancel

Figure 9. Dialog Parameters window

**Note:** When you see a plus sign indicator (**More: +**) in the upper-right corner of an IBM Z Performance and Capacity Analytics window, press **F8** to scroll down.

If it shows a minus sign indicator (**More: -**), press **F7** to scroll up. For more information about using IBM Z Performance and Capacity Analytics dialog windows, refer to the description in the *Guide to Reporting*.

You must scroll through the window to display all its fields. [“Overview of the Dialog Parameters window”](#) on page 80 shows the entire Dialog Parameters window, both the version shown if QMF is used with IBM Z Performance and Capacity Analytics and the version shown if QMF is not used with it. [“Dialog parameters - variables and fields”](#) on page 81 has a description of the fields in the window.

#### 5. Make modifications and press **Enter**

Changes for administration dialog users and for end users are the same. You must identify the correct names of any data sets (including prefixes and suffixes) that you changed from default values during installation.

IBM Z Performance and Capacity Analytics saves the changes and returns to the System window. Although some changes become effective immediately, all changes become effective in your next session when IBM Z Performance and Capacity Analytics can allocate any new data sets you may have selected.

## Step 6: Setting up QMF

### About this task

**Note:** IBM Z Performance and Capacity Analytics can use QMF, for example, to display and work with reports. If your installation does not use QMF, the information in this topic does not apply, and option 3, **Import QMF** initialization query, is not selectable in the **System** window.

When IBM Z Performance and Capacity Analytics starts QMF, it runs a query, (DRLQINIT), to set the current SQL ID (by default, DRLUSER) that gives users required authority in QMF and lets them access objects in the QMF lists.

To import the QMF query from member DRLQINIT (in the DRLvrn.SDRLEDFS library) and save it in QMF as DRLSYS.DRLQINIT, from the **System** window, select 3, **Import QMF initialization query**, and press **Enter**.

System

Select one of the following. Then press Enter.

1. Dialog parameters
2. System tables
3. Import QMF initialization query

F1=Help    F2=Split    F9=Swap    F12=Cancel

IBM Z Performance and Capacity Analytics imports the query into QMF and then returns to the **System** window.

## Step 7: Determining partitioning mode and keys

### About this task

Some component definitions use the GENERATE statement to create the tables paces, partitioning, and indexes. The table space, partitioning, and index attributes can easily be changed by updating the appropriate profile in the GENERATE\_PROFILES and GENERATE\_KEYS system tables.

### Procedure

1. Consult the guide for the component you are installing.  
Many will have a job which must be run to set up Store groups, partition ranges or keys. Follow the instructions for that component before proceeding. If the component does not support Generated Table spaces and Indexes, you may skip this step.
2. When using GENERATE TABLESPACE the type of table space created is determined by the TABLESPACE\_TYPE field in the GENERATE\_PROFILES system table.
3. If you decide to use Range Partitioned table spaces TABLESPACE\_TYPE=RANGE, you will need to adjust the range values in the GENERATE\_KEYS system table.

### What to do next

The supplied values for these tables are in the member DRLTKEYS in the SDRLEDFS data set, and the tables are created and loaded during the creation of the IBM Z Performance and Capacity Analytics System Tables. These values may be reviewed prior to creating the IBM Z Performance and Capacity Analytics system tables. If changes are required, you may make a copy in your userid.LOCAL.DEFS data set and make the required changes prior to System Table creation.

Alternatively, once loaded into the System Tables these values may be changed by various methods:

- Using the IBM Z Performance and Capacity Analytics table edit facility.
- Using SQL UPDATE statements. For example, to change the TABLESPACE\_TYPE from the supplied value of RANGE to GROWTH for IMS the statement would look like the following example:

```
SQL UPDATE <sysprefix>.DELPART_PROFILES
      SET TABLESPACE_TYPE='GROWTH'
      WHERE PROFILE='IMS';
```

## Step 8: Creating system tables

### About this task

Before you can use all dialog functions, you must create the Db2 tables. These Db2 tables are used by IBM Z Performance and Capacity Analytics to store its definitions and are known as system tables.

To create system tables follow these steps:

### Procedure

1. From the **System** window, select **2, System tables**.

The **System Tables** window is displayed. (Figure 10 on page 24).

Figure 10. System Tables (not created) window

2. Press **F5 (Create)**.

IBM Z Performance and Capacity Analytics creates system tables and fills in information about feature components by searching DRLvrn.SDRLDEFS to see which features you have installed with SMP/E.

IBM Z Performance and Capacity Analytics displays messages in a browse window, if a problem has occurred. In this case, look for errors at the beginning of the listing. Resolve any errors such as this:

```
DSNT408I  SQLCODE = -904, ERROR:  UNSUCCESSFUL EXECUTION CAUSED BY AN
        UNAVAILABLE RESOURCE. REASON 00D70025, TYPE OF RESOURCE
        AND RESOURCE NAME DB2A.DSNDDBC.DRLDB.A.I0001.A001
```

For information about specific Db2 messages, refer to the *Messages and Problem Determination*. System messages should be error free, with a Db2 return code of zero. After creating the system tables, IBM Z Performance and Capacity Analytics returns to the System Tables window where you must press F12 to return to the System window.

During the process of creating system tables, these administrative reports are also created:

- PRA001 - INDEXSPACE cross-reference.
- PRA002 - ACTUAL TABLESPACE allocation.
- PRA003 - TABLE PURGE condition.
- PRA004 - LIST COLUMNS for a requested table with comments.
- PRA005 - LIST ALL TABLES with comments.



- PRA006 - LIST USER MODIFIED objects.

## Creating and updating system tables with a batch job

### About this task

You can also create, update, and delete IBM Z Performance and Capacity Analytics system tables by running TSO/ISPF in batch mode. Sample job DRLJCSTB shows an example of how to submit a request to program DRLEAPST to create system tables. You can update or delete system tables by passing a different request to DRLEAPST, as described in the comments in DRLJCSTB.

The TSO/ISPF batch job step must include:

- DRLFPROF DD referring to your DRLFPROF data set
- ISPPROF DD referring to a PDS with RECFM=F and LRECL=80. If you have made changes to the IBM Z Performance and Capacity Analytics dialog parameters and have not also made those changes in your DRLFPROF data set, then the ISPPROF DD should refer to your ISPF profile data set and you should not specify the RESET parameter to DRLEINIT.
- ISPPLIB, ISPMLIB, ISPSLIB, and ISPTLIB DDs referring to your IBM Z Performance and Capacity Analytics and ISPF panel, message, skeleton, and table data sets.
- ISPLOG DD referring to a data set with RECFM=VA and LRECL=125.
- SYSTSIN DD referring to instream data, or a data set, containing a command to invoke DRLEINIT, for example:

```
IPSTART CMD(%DRLEINIT RESET)
```

- DRLBIN (batch input) DD referring to instream data or a data set containing a command to invoke DRLEAPST with a request to perform the required function, for example:

```
DRLEAPST CREATE
```

DRLEAPST is the only program that can be invoked in this way.

## Step 9: Customizing JCL

### About this task

The DRLvrn.SDRLCNTL library contains several batch jobs that you can copy to &HLQ.LOCAL.CNTL and customize. Customization includes inserting correct data set names and the correct Db2 subsystem ID. These jobs, described in [“Setting up operating routines” on page 101](#), are:

#### DRLJBATR

A sample job for printing and saving all (or a selected subset) of the batch reports. See [“Using job DRLJBATR to run reports in batch” on page 126](#) for more information.

#### DRLJCOLL and DRLJCOxx

A sample job for collecting log data. See [“Collecting log data” on page 101](#) for more information.

#### DRLJCOPY

A sample job for backing up an IBM Z Performance and Capacity Analytics table space with the Db2 COPY utility. See [“Backing up the IBM Z Performance and Capacity Analytics database” on page 119](#) for more information.

#### DRLJDICT

A sample job for partitioning the CICS\_DICTIONARY table, if the CICS Partitioning Feature is going to be used. See the CICS Partitioning feature chapter in *CICS Performance Feature Guide and Reference* for more information.

## DRLJEXCE

A sample job for producing Tivoli Information Management for z/OS problem records. See [“Administering problem records” on page 131](#) for more information.

## DRLJEXCP

A sample job for partitioning the EXCEPTION\_T table, if the CICS Partitioning Feature is going to be used. See the CICS Partitioning feature chapter in *CICS Performance Feature Guide and Reference* for more information.

## DRLJPURG

A sample job for purging data from the database. See [“Purge utility” on page 117](#) for more information.

## DRLJREOR

A sample job for reorganizing the IBM Z Performance and Capacity Analytics database with the Db2 REORG utility. See [“Purge utility” on page 117](#) for more information.

## DRLJRUNS

A sample job for updating statistics on IBM Z Performance and Capacity Analytics table spaces with the Db2 RUNSTATS utility. See [“Monitoring the size of the IBM Z Performance and Capacity Analytics database” on page 122](#) for more information.

## DRLJTBSR

A sample job for producing a detailed report about the space required for all, or a subset of, a selected component’s tables. See [“Understanding table spaces” on page 111](#) for more information.

If you already have jobs for maintaining Db2, for example, COPY, REORG or RUNSTATS, you can continue to use them for this purpose, instead of using the IBM Z Performance and Capacity Analytics jobs.

## Step 10: Testing the installation of the base

### About this task

Before you install IBM Z Performance and Capacity Analytics feature components, ensure that the installation has been successful:

### Procedure

1. Install the Sample component using the information in [“Installing a component” on page 134](#). Although editing lookup tables is a usual part of online component installation, you need not edit the sample lookup table to successfully complete this test. For a description of what is provided with the sample component, see [“Sample component” on page 243](#).
2. After you install the Sample component, select **3, Logs**, from the **Administration** window and press **Enter**.

The Logs window is displayed ([Figure 11 on page 26](#)).

```

Log  Utilities  View  Other  Help
-----
                                Logs                                ROW  1 TO  1 OF  1

Select a log. Then press Enter to display record definitions.

/   Logs                Description
/   SAMPLE              Sample log definition
***** BOTTOM OF DATA *****

Command ==>
F1=Help   F2=Split   F3=Exit   F5=Log def  F6=Datasets  F7=Bkwd
F8=Fwd    F9=Swap    F10=Actions F11=Collect F12=Cancel

```

Figure 11. Logs window

3. From the **Logs** window, select the **SAMPLE** log and press **F11**.

The Collect window is displayed.

```

                                Collect

Type information.  Then press Enter to edit the collect JCL.

Data set   DRLxxx.SDRLDEFS(DRLSAMPL)_____ (reqd)
Volume . . . _____ (If not cataloged)
Unit . . . _____ (Required for batch if Volume defined)

Reprocess . . . . . 2   1. Yes
                        2. No
Commit after . . . . . 1  1. Buffer full
                        2. End of file
                        3. Specify number of records
Number of records . . . _____
Buffer size . . . . . 10
Extention . . . . . 2   1. K
                        2. M

Condition . . . . . _____ >
F1=Help      F2=Split    F4=Online   F5=Include   F6=Exclude
F9=Swap      F10=Show fld F11=Save def F12=Cancel

```

Figure 12. Collect window

4. Type DRLxxx.SDRLDEFS(DRLSAMPL) in the **Data set** field and press **F4**.

The online collect is started. When it finishes, it displays statistics about the data it collected.

5. Press **F3** to return to the **Logs** window after you finish looking at the messages.  
 6. Press **F3** to return to the **Administration** window  
 7. From the **Administration** window, select **5, Reports**, and press **Enter**.

The **Reporting Dialog Defaults** window is displayed. (Refer to *Guide to Reporting* for more information.)

8. Press Enter to display the Reports window.

```

Report  Batch  Group  Search  Options  Other  Help

                                Reports                                Row 1 to 9 of 9

Select a report. Then press Enter to display.

Group . . . . . : All reports

/ Report                                     ID
ACTUAL TABLESPACE SPACE allocation          PRA002
INDEXSPACE cross-reference                   PRA001
List all tables with comments                 PRA005
List columns for a requested table with comments PRA004
List User Modified Objects                    PRA006
/ Sample Report 1                             SAMPLE01
Sample Report 2                               SAMPLE02
Sample Report 3                               SAMPLE03
TABLE PURGE Condition                         PRA003
***** Bottom of data *****

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 13. Reports window

9. From the **Reports** window, select **Sample Report 1**. Type a character other than a question mark in the selection field and press **Enter**.

The **Data Selection** window is displayed.

Data Selection ROW 1 TO 1 OF 1

Type values. Then press Enter to generate the report.

ReportID . . . : Sample Report 1

| Variable                   | Value | > | + | = | Oper | Req |
|----------------------------|-------|---|---|---|------|-----|
| SYSTEM_ID                  |       |   |   |   |      | No  |
| ***** BOTTOM OF DATA ***** |       |   |   |   |      |     |

Command ==> \_\_\_\_\_

|         |          |             |            |            |         |
|---------|----------|-------------|------------|------------|---------|
| F1=Help | F2=Split | F4=Prompt   | F5=Table   | F6=Chart   | F7=Bkwd |
| F8=Fwd  | F9=Swap  | F10>Showfld | F11=Hdrval | F12=Cancel |         |

Figure 14. Data Selection window

10. Press **Enter** to generate the report.

The query associated with the report is run and the report is displayed through GDDM/ICU. If your installation does not have GDDM, the report is displayed in tabular format. (Figure 127 on page 246 shows the report.)

11. When you finish viewing the report, press **F9** to exit from GDDM/ICU, and press **F3** (Exit) to return to the **Reports** window.
12. From the **Reports** window, press **F3** to return to the **Administration** window.

## Step 11: Reviewing Db2 parameters

### About this task

Before you install components, you can review Db2 table and index space parameters such as:

- Buffer pool.
- Compression.
- Erase on deletion.
- Free space.
- Lock size.
- Number of partitions, for a partitioned space.
- Number of subpages, for an index space.
- Primary and secondary space.
- Segment size.
- Type of space.
- VSAM data set password.

These parameters can affect the performance of your system.

**Note:** Before you assign a buffer pool to a component index or table space, activate the buffer pool and add the USE privilege to the privilege set for the buffer pool.

**Procedure**

1. From the **Administration** window, select **2, Components**, and press **Enter**.
2. Select a component.
3. Select the **Space** pull-down.
4. Select **Tablespaces**, to change table space definitions, or select **Indexes**, to change index definitions.

**What to do next**

If you are unsure about the meaning of a field, press F1 to get help. For more information, refer to the CREATE INDEX and CREATE TABLESPACE command descriptions in the *Db2 for z/OS: SQL Reference*

IBM Z Performance and Capacity Analytics saves the changed definitions in your local definitions library. When you save a changed definition, it tells you where it is saving it, and prompts you for a confirmation before overwriting a member with the same name.

## Step 12: Installing components

---

**About this task**

You can now install IBM Z Performance and Capacity Analytics features. To install components, use the information in [“Installing a component” on page 134](#), and in these books:

**Feature name****Book name****AS/400 Performance**

*IBM i System Performance Feature Guide and Reference*

**CICS Performance**

*CICS Performance Feature Guide and Reference*

**Distributed Systems Performance**

*Distributed Systems Performance Feature Guide and Reference*

**IMS Performance**

*IMS Performance Feature Guide and Reference*

**System Performance**

*System Performance Feature Reference Volume I and II*

To install Resource Accounting for z/OS (part of the base function), see the *Resource Accounting for z/OS* book.

## Installing multiple IBM Z Performance and Capacity Analytics systems

---

**About this task**

You can install more than one IBM Z Performance and Capacity Analytics system on the same Db2 subsystem. This is useful if you want to develop and test new IBM Z Performance and Capacity Analytics applications.

**Note:** You cannot use Db2 Copy to copy the objects from the first installation to the new one. If you do, QMF definitions may be lost.

To install another IBM Z Performance and Capacity Analytics system, repeat the installation from [“Step 2: Setting up security” on page 15](#) to [“Step 12: Installing components” on page 29](#) and specify different values for:

- Db2 subsystem
- Database

- System table prefix
- Other tables prefix
- RACF groups (if necessary)
- Local data sets

For example, assume your user ID is BILL, and you want a private IBM Z Performance and Capacity Analytics system.

| Dialog parameter | Value |
|------------------|-------|
|------------------|-------|

|               |      |
|---------------|------|
| Db2 subsystem | DB2T |
|---------------|------|

|          |        |
|----------|--------|
| Database | BILLDB |
|----------|--------|

|                     |      |
|---------------------|------|
| System table prefix | BILL |
|---------------------|------|

|                    |      |
|--------------------|------|
| Other table prefix | BILL |
|--------------------|------|

|                          |      |
|--------------------------|------|
| Users to grant access to | BILL |
|--------------------------|------|

|                 |                        |
|-----------------|------------------------|
| Local data sets | BILL.DEFS....and so on |
|-----------------|------------------------|

Other users cannot use this system because BILL is not a Db2 secondary authorization ID nor a RACF group ID. If you want to share this new IBM Z Performance and Capacity Analytics system, establish a valid RACF group ID and use the group ID as the prefix instead of BILL.

## Installing IBM Z Performance and Capacity Analytics features separately

---

### About this task

Use this information if you are installing IBM Z Performance and Capacity Analytics features separately; that is, not at the same time as you installed the IBM Z Performance and Capacity Analytics base and any features. To install features follow these steps.

### Procedure

1. Follow the instructions in the *IBM Z Performance and Capacity Analytics Program Directory* to use SMP/E to install all the performance features required. If you have already installed a feature with SMP/E, you need not install it again unless you are reinstalling to correct a previous installation error.
2. Update IBM Z Performance and Capacity Analytics system tables with information about the features you are installing
  - a) From the IBM Z Performance and Capacity Analytics **Administration** window, select 1, System, to display the System window.
  - b) Select 2, System Tables, to display the System Tables window ([Figure 15 on page 31](#)).

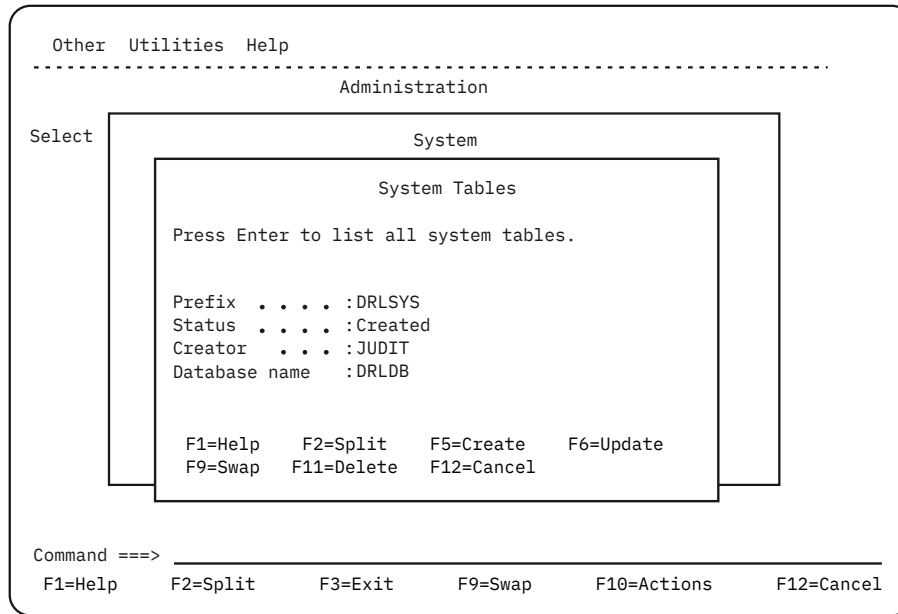


*Figure 15. System Tables (created) window*

- c) Press F6 (Update) to update the system tables with information about the newly installed features.
- d) Resolve any Db2 errors that appear at the top of the browse window. The successful installation of a component that is a part of the feature (described in [“Installing a component” on page 134](#)) verifies the feature's installation





## Chapter 3. Installing the SMF Extractor, Continuous Collector, Data Mover, and Publication Data Mover

After IBM Z Performance and Capacity Analytics has been installed, the database has been setup, components using SMF have been installed, and batch data collection is running successfully, you can optionally setup IBM Z Performance and Capacity Analytics for automated data gathering and continuous collection.

This section describes how to setup IBM Z Performance and Capacity Analytics in a hub and spoke configuration for automated data gathering and processing of SMF records whereby data is brought from the source systems (*spoke systems*) to a central system (*hub system*) where it is collected, stored, and analyzed.

This requires the following components to be installed:

### **SMF Extractor**

To extract SMF data to be sent to the Continuous Collector or Data Mover.

### **Continuous Collector**

To update the IBM Z Performance and Capacity Analytics Db2 databases using data from the SMF Extractor or Data Mover.

### **Data Mover**

To send SMF data from the spoke system (*sender*) and receive data on the hub system (*receiver*).

### **Optional: Publication Data Mover (*Publisher*)**

To send data from the Continuous Collector for off-platform reporting by Splunk or ELK, optionally using IBM Common Data Provider for z to assist the data transfer. Refer to the installation instructions for the Publication Data Mover in the *Capacity Planning Guide and Reference*.

**Note:** You can continue to collect SMF data using batch collection and transmitting it manually rather than using automated data gathering. Also you can use a combination of methods, collecting some data using batch collection, and other data using automated data gathering and continuous collection.

## Continuous Collector configuration options

There are several ways the Continuous Collector can be configured.

### **Standalone configuration**

When the only system you want to gather SMF data from is also the system on which you want to run your IBM Z Performance and Capacity Analytics Db2 database on, then you can set up a standalone configuration. This is the simplest configuration.

#### **One system, one database**

A standalone system is a hub system that is just processing its own SMF data.

The configuration is a mixture of the spoke and hub configurations. The SMF Extractor on the system with IBM Z Performance and Capacity Analytics and Db2 running collects SMF data and writes it directly to a local log stream either on DASD or a Coupling Facility. The paired Sender and Receiver Data Movers are omitted. The Continuous Collector (CC) reads the data from the log stream and updates the IBM Z Performance and Capacity Analytics database.

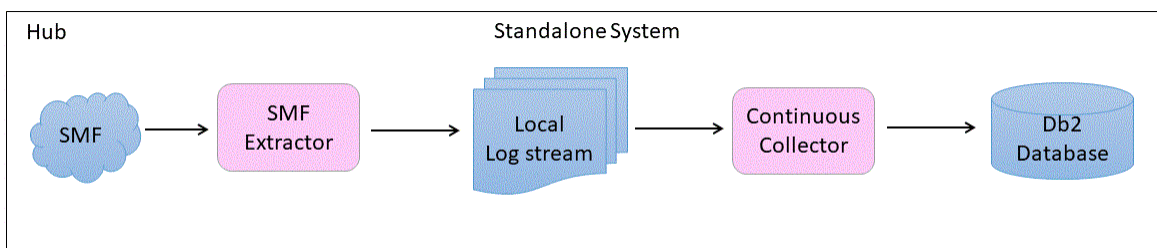


Figure 16. Continuous Collector: standalone configuration

## Hub and spoke configurations using the Data Mover

When there are multiple systems sending data to a single IBM Z Performance and Capacity Analytics system and a single Db2 database, IBM Z Performance and Capacity Analytics is set up in a hub and spoke configuration. SMF Extractor data is sent from the spoke systems to the hub using the IBM Z Performance and Capacity Analytics Data Mover and TCP/IP.

### One Spoke Data Mover, one Hub Data Mover

The configuration of a hub that is also processing its own SMF data is a combination of the Hub configuration and Standalone configuration. In this configuration, the SMF Extractor data written to a log stream on the remote (spoke) systems is read by the spoke Data Mover (Sender) and sent to the hub Data Mover (Receiver). The hub Data Mover writes the data from the spoke system to a local log stream. The Continuous Collector reads the data and updates the IBM Z Performance and Capacity Analytics database.

There are two primary ways to implement this:

Option A uses a completely separate processing route for the local data, keeping it isolated from the data from the Spokes until the aggregate records are written into the Db2 database. It requires that Db2 is set up with partitioning.

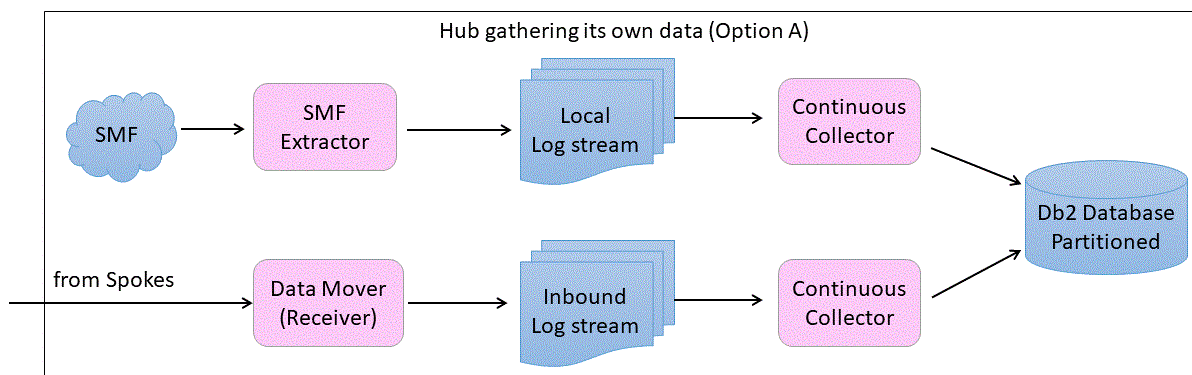


Figure 17. Continuous Collector: hub and spoke configuration option A (separate log streams, partitioned Db2 database)

Option B allows the SMF Extractor to freely write to the local log stream and serializes the access to the inbound log stream as the data is copied over. Both the Receiver Data Mover and the Copy Data Mover will need to specify the same enqueue on their log stream output stages.

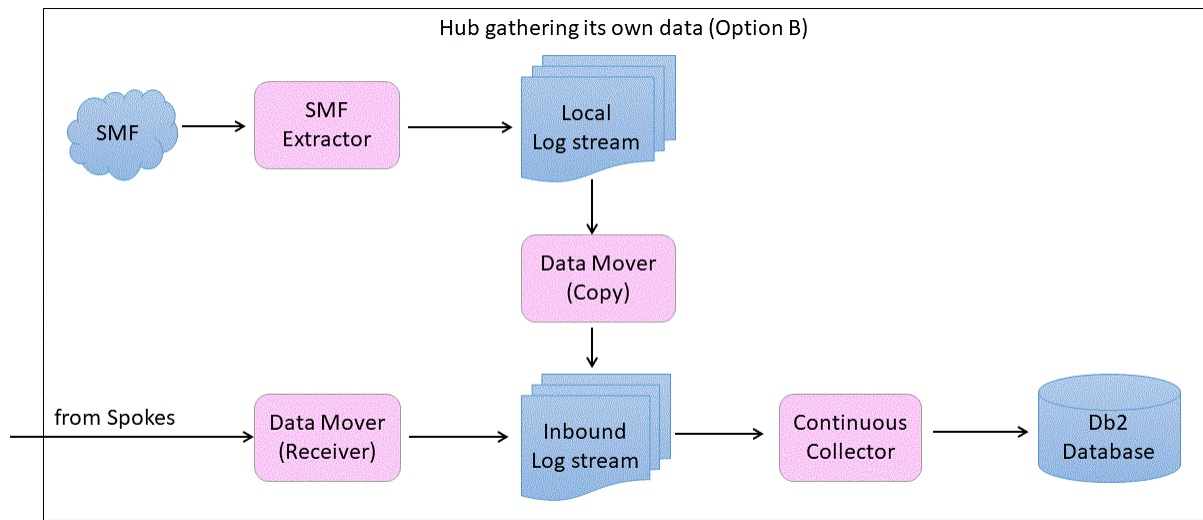


Figure 18. Continuous Collector: hub and spoke configuration option B (combined log streams)

### Multiple Spoke Data Movers, one Hub Data Mover

When there are multiple spoke systems, either in the same sysplex or in multiple sysplexes, the configuration is set up with the data from the spoke systems sent along parallel data paths to the hub. Depending on the volume of data the spoke systems are sending, the Spoke Data Movers can send data to a single Hub Data Mover (Figure 19 on page 35) or multiple Hub Data Movers (Figure 20 on page 36).

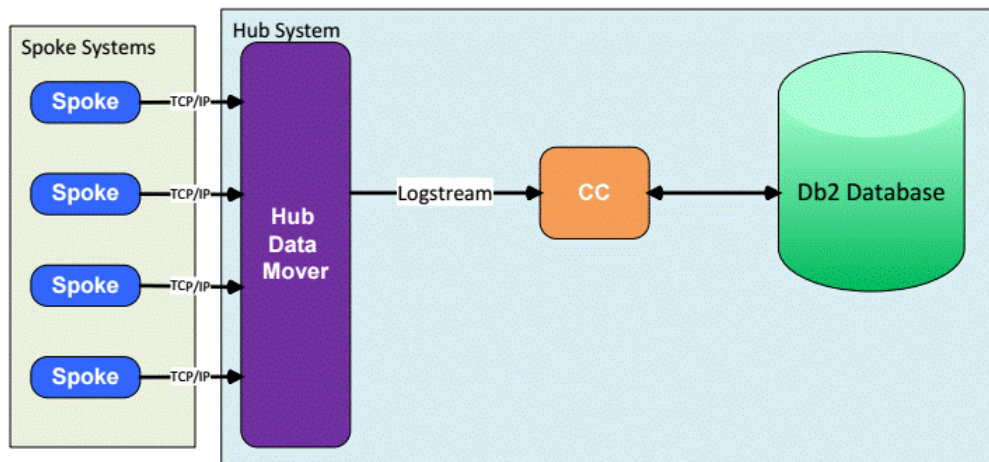


Figure 19. Continuous Collector: multiple Spoke systems and one Hub Data Mover

### Multiple Spoke Data Movers, multiple Hub Data Movers

**Important:** When multiple Hub Data Movers are used, it is recommended that multiple Continuous Collectors are used and the IBM Z Performance and Capacity Analytics Db2 database is profiled (or partitioned) to prevent contention between multiple update processes. This is shown in Figure 20 on page 36.

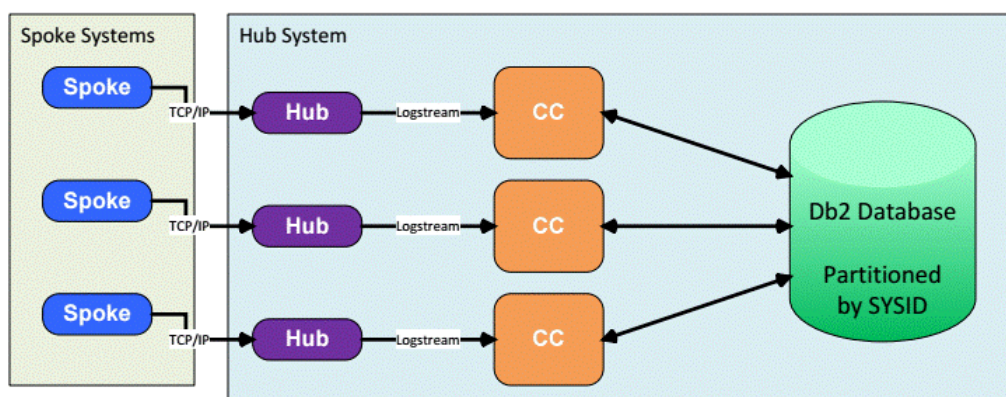


Figure 20. Continuous Collector: multiple Spoke systems and multiple Hub Data Movers

## Communications prerequisites

This section lists the log streams and TCP/IP ports needed for each component.

### SMF Extractor

- Log stream to send data to either the Data Mover or Continuous Collector.

### Continuous Collector

- Log stream to receive data from either the Data Mover or SMF Extractor.
- The standard recommendation is to have a single Continuous Collector per spoke on the hub. This could vary based on SMF traffic volume.

### Data Mover

- Log stream to receive data from the SMF Extractor (on the spokes) or send data to the Continuous Collector (on the hub).
  - Could need multiple log streams on the hub, one to each Continuous Collector.
- TCP/IP port over which Data Movers will communicate with each other (spoke and hub).
  - Assume one port per spoke.
  - Spoke systems need to be able to write to the port, and hub systems need to be able to read from the port.

### Publication Data Mover

- Log stream to send data from the Continuous Collector to the Publisher.
- TCP/IP port to send data from the Publisher off-platform, optionally to IBM Common Data Provider for z, for off-platform reporting by Splunk or ELK.

### Note on log streams:

- All log streams used by Data Movers can be either DASD-only or coupling facility-based.
- When using Data Movers, one log stream is needed on each spoke and one log stream is needed for each Continuous Collector on the hub. For example, if there are three spokes and one hub, with a Continuous Collector on the hub for each spoke plus one on the hub for the local SMF data, there is a total of seven log streams needed: one on each spoke and one for each Continuous Collector on the hub.
- Any log stream used by more than one system in a sysplex (such as when using sysplex log streams) must be defined on a coupling facility and cannot be DASD-only.
- When defining log streams:
  - Ensure the RETPD is greater than 0.

- AUTODELETE should have a value of YES to keep the log stream cleared of old data.

## Step 1: Installing the SMF Extractor

This section describes how to install the SMF Extractor.

### Before you begin

Consider the instructions in [“SMF Extractor tips” on page 38](#).

### About this task

The SMF Extractor runs on all systems (hub, spoke, and standalone). To install the SMF Extractor, the steps are as follows:

### Procedure

1. On a spoke system, define a log stream for the SMF Extractor. The log stream name must be unique per system, so include the SYSID in the name.

- a) Run the sample job [“UPDPOL - Update CFRM policy” on page 56](#) with only this statement:

```
DATA TYPE(CFRM) REPORT(YES)
```

- b) From the output of the UPDPOL job, extract the CF and STRUCTURE statements for all active coupling facilities and structures.

For example:

#### CF statement

```
CF NAME(CF01) DUMPSPACE(2000K) PARTITION(0A) CPCID(00)
TYPE(002827) MFG(IBM) PLANT(84) SEQUENCE(00000000168F7)
```

#### Structure statement

```
STRUCTURE NAME(CKPT1) SIZE(2004K)
PREFLIST(CF01, CF02, CF03, CF04)
```

- c) Update the Structure statement in for the DRL structure.
- d) Run the UPDPOL job again with all the definitions added in the previous steps.
- e) Implement the new CFRM policy.

The command to do that using a policy name of CSWPOL would be:

```
SETXCF START,POLICY,TYPE=CFRM,POLNAME=CSWPOL
```

For the JCL to do this, refer to the sample configurations:

- [“Defining a DASD-only log stream” on page 54](#)
- [“Defining a log stream on a coupling facility” on page 55](#)

2. Ensure the SDRLEXTR data set is APF-authorized.

On the spoke system, this data set may need to be transferred from the hub system.

3. Copy the DRLJSMFO member of SDRLCNTL to an appropriate PARMLIB and rename the member to SMFPsysi where sysi is the SMF System ID.

See [“DRLJSMFO - SMF Extractor control file” on page 57](#).

4. Customize this member to match your installation requirements:

- a) Change the value of OUTLGR to the name of the output log stream created in Step [“1” on page 37](#).
- b) Optionally, you can change the list of SMF records to be collected. For guidance, see [Chapter 2, “Installing IBM Z Performance and Capacity Analytics,” on page 11](#).

5. Copy the DRLJSMFX member of SDRLCNTL to the appropriate PROCLIB and rename the member to match the desired task name.  
This will run as a Started Task. See [“DRLJSMFX - SMF Extractor startup procedure” on page 58.](#)
6. Modify the JCL in this member:
  - a) Change the STEPLIB to point to the SDRLEXTR data set.
  - b) Do not change SMFP&SYSTEM. in the SMFXPARM statement.  
It must point to the PARMLIB and member name created in Step [“3” on page 37.](#)

### What to do next

This task should not be started until you are ready to collect data using the Continuous Collector.

The task can be tested by starting the task using the z/OS start command and ensuring it collects data based on the messages in the SMFXLOG output. For example, a successful collection message is:

```
VSX0160I VSXSMF 08:54:00.087 1st SMF record received; data collection started
```

## SMF Extractor tips

When preparing to install the SMF Extractor, consider the following instructions.

### Procedure

- The SMF Extractor must run at a high Dispatching Priority (DP).  
It must be as close to the SMF DP as possible. The recommended DP is SYSSTC (x'FE') since SMF usually runs at SYSTEM (x'FF') DP.
- Use the following values in the SMF Extractor JCL.
  - REGION=0M (on either the JOB or EXEC statement).
  - MAXQD (in the parameters for the VSXMAI) can be updated from the default of 2000 to a maximum of 9999, if necessary, when the SMF Extractor runs out of queue space. The value should be increased incrementally to balance functionality with available resources. A value of 5000 is usually enough for a very busy LPAR.
  - Do not specify a value for SUBTIME in the parameter member for VSXMAI.
- The primary performance metric for the SMF Extractor is the queue depth.  
This represents how much data is in the input queue to the SMF Extractor that is waiting to be written to the log stream. To check the queue depth issue the MVS command:

```
F jobname,STATUS
```

where *jobname* is the name of the task running the SMF Extractor.

The output from this command has a line that reads as follows:

```
VSX0141I VSXSTA 19:14:28.259 ** Queue depth control values: 2000 / 1950 Curr: 0 Max: 193
```

If the Max value is close to or exceeds the control values, the following needs to be checked:

- The MAXQD value in the SMF Extractor JCL can be increased up to a maximum of 9999.
- Verify that the Dispatching Priority of the SMF Extractor is at a similar value to the tasks that are generating SMF records, especially the SMF task.



## Step 2: Installing the Continuous Collector

This section describes how to install the Continuous Collector.

### About this task

The Continuous Collector runs on a hub or standalone system. To install the Continuous Collector, follow these steps.

### Procedure

1. Define a log stream to feed the Continuous Collector.

- The name of the log stream must be unique for each Continuous Collector.
- Define the log stream on the coupling facility (CF), if one exists in the sysplex, otherwise it can be DASD-only. For JCL to do this, refer to sample configuration members:
  - [“Defining a log stream on a coupling facility” on page 55](#)
  - [“Defining a DASD-only log stream” on page 54](#)

a) Run the sample job [“UPDPOL - Update CFRM policy” on page 56](#) with only the DATA TYPE(CFRM) REPORT(YES) statement.

b) From the output of the UPDPOL job, extract the CF and STRUCTURE statements for all active coupling facilities and structures.

For example:

#### CF statement

```
CF NAME(CF01) DUMPSPACE(2000K) PARTITION(0A) CPCID(00)
TYPE(002827) MFG(IBM) PLANT(84) SEQUENCE(0000000168F7)
```

#### Structure statement

```
STRUCTURE NAME(CKPT1) SIZE(2004K)
PREFLIST(CF01, CF02, CF03, CF04)
```

c) Update the Structure statement in for the DRL structure.

d) Run the UPDPOL job again with all the definitions added in the previous steps.

e) Implement the new CFRM policy.

The command to do that using a policy name of CSWPOL would be:

```
SETXCF START,POLICY,TYPE=CFRM,POLNAME=CSWPOL
```

For the JCL to do this, refer to [“Sample configuration members” on page 54](#):

- [“Defining a log stream on a coupling facility” on page 55](#)
- [“Defining a DASD-only log stream” on page 54](#)

2. If the log stream is on a coupling facility perform the following steps. If DASD-only, skip this step.

a) Run the sample job [“UPDPOL - Update CFRM policy” on page 56](#) with only this statement:

```
DATA TYPE(CFRM) REPORT(YES)
```

b) From the output of the above job, extract the CF and STRUCTURE statements for all active coupling facilities and structures.

Examples of these statements are:

### CF statement

```
CF NAME(CF01) DUMPSPACE(2000K) PARTITION(0A) CPCID(00)  
TYPE(002827) MFG(IBM) PLANT(84) SEQUENCE(0000000168F7)
```

### STRUCTURE statement

```
STRUCTURE NAME(CKPT1) SIZE(2004K)  
PREFLIST(CF01, CF02, CF03, CF04)
```

- c) Update the STRUCTURE statement in for the DRL structure.
- d) Run the UPDPOL job again with all the definitions added in the previous steps.
- e) Implement the new CFRM policy.

For example, the command to do that using a policy name of CSWPOL would be:

```
SETXCF START,POLICY,TYPE=CFRM,POLNAME=CSWPOL
```

3. Set up the procedure to run the Continuous Collector.

The collector can run as a batch job or a started task (STC). The model JCL is in the DRLJCCOL member of SDRLCNTL. See [“DRLJCCOL - Continuous Collector started task” on page 58](#). Copy this member into the appropriate procedure library (PROCLIB) and make the following changes:

- a) Confirm the **VER** parameter is correct for the version of IBM Z Performance and Capacity Analytics that is running, that is, 310 for the V3.1.0 release.
- b) Change the **IZPCALD** parameter to match the high-level qualifier for the IBM Z Performance and Capacity Analytics SMP/E target library, for example, IZPCA.V310.
- c) Change the **DB2LOD** parameter to match the high-level qualifier for the Db2 SMP/E target library, for example, DB2.VC10.
- d) Change the **SYSTEM** parameter to match the name of the Db2 instance, such as DSNA.
- e) Change **&PREFIX** to match the IBM Z Performance and Capacity Analytics configuration.

For example, if the default prefix of DRL is changed to XRL, the following values would be used:

```
SYSPREFIX=XRLSYS  
&PREFIX=XRL  
&DATABASE=XRLDB
```

- f) Change the log stream name to the name defined in either the CRLOGRCF or CRLOGRDS, depending on which method (CF or DASD) was used.
- g) Save the job with the name the Continuous Collector is going to run as.

4. Ensure the job has DBADM access to the Db2 instance.

5. Test starting the Continuous Collector as a started task to make sure the JCL is correct.

Verify the setup as follows:

- Ensure the Continuous Collector was able to open the Db2 database and the log stream.
- If not, correct the problem, for example, the log stream name and permissions. Then restart the task.
- Without data in the log stream, the following message is displayed and the job continues, waiting for data to arrive:

```
DRL0300I Collect started at 2019-09-17-09.40.51.  
DRL0386I Logstream logstreamname is empty, waiting for input.
```

However, if the Continuous Collector was previously run to test it, there may be some data in the log stream and this message will not be displayed.



## Step 3: Installing the Data Mover

The Data Mover is used on all hubs and spokes of hub and spoke systems. It is used to transport SMF data from separate z/OS images (spoke systems) to the hub.

### Before you begin

Before installing the Data Mover, consider the following and plan accordingly:

- “Data Mover tips” on page 43
- “Data Mover configuration options” on page 44.
- “Data Mover features and parameters reference” on page 65

### About this task

To install the Data Mover, follow these steps.

### Procedure

1. On the hub system, in OMVS, locate the source directory created when IBM Z Performance and Capacity Analytics V3.1.0 was installed.
  - It should be in `/usr/lpp/IBM/IZPCA/v3r1m0/IBM/`. If not in that location, issue this command to get the directory:

```
df | grep IZPCA
```

The output from the command will be similar to this example, noting that the high-level qualifier for the data sets (TIVDS.V3R1M0) will be different for your installation:

```
/IZPCA (TIVCFG.TIVDS.V3R1M0.ZFS) 32974/34560 4294967269 Available
/V2R3/usr/lpp/IBM/IZPCA/v3r1m0/IBM (TIVDS.V3R1M0.ZFS) 6350/7200 4294967290 Available
```

- If the source directory does not exist, it needs to be mounted. The TSO command to mount the filesystem read-only is:

```
MOUNT FILESYSTEM(prefix.zfs) TYPE (ZFS) MODE(READ) MOUNTPOINT(local_mountpoint)
```

2. On all systems, create a directory for the Data Mover based on your installation standards. For this example, it will be installed in `/var/IZPCA/DataMover`. Ensure that `/var/IZPCA` (or your alternative directory location) already exists or is created before extracting the Data Mover.
3. On the hub system, install the Data Mover by following these steps:
  - a) Extract the Data Mover using the command:

```
tar -xvof /usr/lpp/IBM/IZPCA/v3r1m0/IBM/DRLPJDM -C /var/IZPCA/
```

where

- `/usr/lpp/IBM/IZPCA/v3r1m0/IBM/DRLPJDM` is the source directory/file for IBM Z Performance and Capacity Analytics
- `/var/IZPCA` is where you want the contents of the tar file to reside and which is your destination directory for the Data Mover

This will create the following directories:

```
/var/IZPCA/DataMover
/var/IZPCA/DataMover/config
/var/IZPCA/DataMover/java
/var/IZPCA/DataMover/mappings
```

**Note:** The Data Mover must be installed on all hub and spoke systems.

- For the spoke systems that do not have IBM Z Performance and Capacity Analytics installed, copy the `/usr/lpp/IBM/IZPCA/v3r1m0/IBM/DRLPJDM` file to that system.
  - In addition, if multiple Data Movers are being installed on a single system (such as a hub), see [“Data Mover tips”](#) on page 43 for more information.
- b) Edit the extracted `../IZPCA/DataMover/DataMover.sh` script and update the **rundir** and **JAVA\_HOME** values in the following lines:

```
#
# Runtime directory. Other paths are relative to it.
#
# Probably better to use different directories if you are running
# multiple Data Movers on the same system.
#
rundir="/var/IZPCA/DataMover"
...
#
# -----
# Environment area - Where's Java?
# Need when running as a batch job/started task
#
export JAVA_HOME=/usr/lpp/java/J8.0_64 <- Path to the Java run libraries
```

- c) Edit the extracted `../IZPCA/DataMover/config/hub.properties` file and update the following lines:

```
...
routes = 1
route.1.name = Hub <- Ensure this value is Hub
...
input.1.type = TCPIP
input.1.port = 54020 <- Ensure this is the correct, available TCP/IP port
                        number
input.1.ssl = no <- This only needs to be set if SSL is used
...
outputs.1 = 1
#
output.1.1.type = LOGSTREAM
output.1.1.logstream = DRL.LOGSTRM <- This is the
stream                                IBM Z Performance and Capacity Analytics log
                                      that the Continuous Collector reads.
                                      This must match the log stream name
                                      created in the first step of installing
                                      the Continuous Collector.
```

See [“Sample configuration members”](#) on page 54 for the complete member listing.

4. On the spoke systems, install the Data Mover by following these steps on each spoke system:
- Create the `/usr/lpp/IBM/` directory if it doesn't already exist.
  - Send the file `/usr/lpp/IBM/IZPCA/v3r1m0/IBM/DRLPJDM` to the `/usr/lpp/IBM/` directory on each spoke using the standard data transfer protocol (SFTP, ...) of your installation.
  - Change to the `/usr/lpp/IBM/` directory and extract the Data Mover using the command:

```
tar -xvof /usr/lpp/IBM/IZPCA/v3r1m0/IBM/DRLPJDM -C /var/IZPCA/
```

This creates the same sub directories as were created on the hub in [“3.a”](#) on page 41.

- Edit the extracted `../IZPCA/DataMover/DataMover.sh` script and update the **rundir** and **JAVA\_HOME** values as for the hub in [“3.b”](#) on page 42.
- Edit the extracted `../IZPCA/DataMover/config/spoke.properties` file and update the following lines:

```
...
routes = 1
route.1.name = Spoke <- Ensure this value is Spoke
...
input.1.type = LOGSTREAM
input.1.logstream = IFASMF.CF.LS04 <- SMF Extractor log stream name
...
outputs.1 = 1
```

```
output.1.1.type = TCPIP
output.1.1.host = <host system name> <- Name or IP of Hub System
output.1.1.port = 54020 <- TCP/IP port of Hub Data Mover
```

See “Sample configuration members” on page 54 for the complete member listing.

f) Create the procedure to run the spoke Data Mover.

### What to do next

Complete the implementation by following the steps in “Step 4: Activating the Continuous Collector” on page 47.

## Data Mover tips

When preparing to install the Data Mover, consider the following instructions.

### Procedure

- Ensure the -Xmx16G parameter is in the Java statement in the DataMover.sh file to specify the maximum memory size for Java.  
See the sample in “DataMover.sh - Run the Data Mover” on page 59.
- When defining log streams ensure the **RETPD** is greater than 0.
- If multiple Data Movers, including Data Movers and Publication Data Movers, are to run on a single system such as a hub system, configure each Data Mover instance with its own working directory as follows:
  - For each Data Mover, copy the files from the Data Mover directory into a separate directory, such as `../DataMover1/jobname`.
  - Customize that directory for the Data Mover instance.
- The status of the Data Mover internal queues is key to ensuring the Data Mover is handling the traffic load sufficiently. To check the current Data Mover statistics, issue the command:

```
F jobname,APPL=DISPLAY
```

where *jobname* is the task name of the USS job that started when the Data Mover was started.

In this example of the output, the highlighted lines are the ones that indicate the queue depth, if any.

```
F PRLJDMP1,APPL=DISPLAY
DRLJ0078I ZOS Console: display
DRLJ0075I Route: 1 name: Hub
DRLJ0075I Input type: TCPIP
DRLJ0075I Port: 54020
DRLJ0075I Queued for output: 0
DRLJ0075I No active connections
DRLJ0075I 0 Processes(s):
DRLJ0075I No processes defined.
DRLJ0075I 1 Output(s):
DRLJ0075I Output: 1
DRLJ0075I Output Type: LOGSTREAM
DRLJ0075I log stream: DRL.LOGSTRM
DRLJ0075I Queued for input: 0
DRLJ0075I Received DRL.LOGSTRM packets
```

- To check the current Data Mover status, issue the command:

```
F jobname,APPL=STATUS
```

where *jobname* is the task name of the USS job that started when the Data Mover was started.

An example of the output from this command is:

```
F PRLJDMP1,APPL=STATUS
```

```
DRLJ0078I ZOS Console: status
DRLJ0093I Status for Route 1 is Running
```

## Data Mover configuration options

This section describes the configuration options for setting up the Data Mover and shows examples of the spoke and hub properties files. The Data Mover transfers SMF data from remote (spoke) systems to a central (hub) system.

### Hub configuration options

The hub system can be set up in many ways. This section describes the four configurations shown in Figure 21 on page 44 and for each configuration, shows an example of the configuration file (hub.properties file).

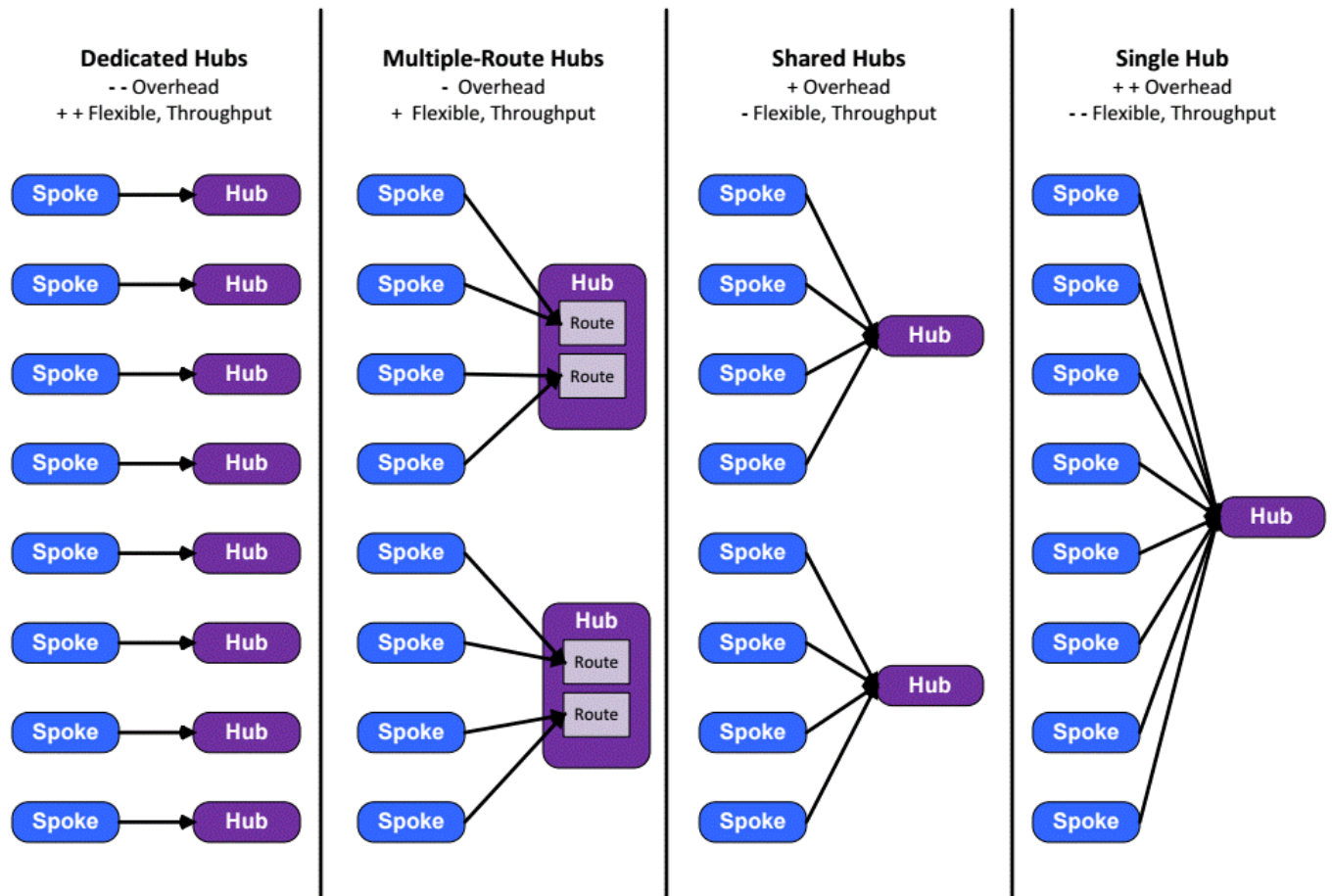


Figure 21. Hub configuration options

### Data Mover configuration files

The Data Mover configuration files are contained in the `.../DataMover/config` directory. The default names are `hub.properties` for the hub and `spoke.properties` for the spoke. These names are referenced in the Data Mover JCL (DRLJDMP) by specifying the name without the `.properties` extension.

```
//DRLJDMP PROC CONFIG='hub'
```

### Spoke configuration

For all the hub and spoke configuration options, the spoke configuration is the same.

### Spoke configuration

```

routes = 1
route.1.name = Spoke
input.1.type = LOGSTREAM
input.1.logstream = IFASMF.CF.LS04 <- The log stream the SMF Extractor writes to
input.1.block = 30
input.1.wipe = YES
input.1.strip_header = NO
input.1.check_LRGH = YES
input.1.sourcename = LOGSTREAM
input.1.sourcetype = RAWSMF
#
outputs.1 = 1
output.1.1.type = TCPIP
output.1.1.host = <name or IP of Hub> <- Name or IP of hub
output.1.1.port = 54020 <- The port the hub Data Mover is listening on for this spoke
output.1.1.use_ssl = NO
#

```

## Dedicated hubs

The dedicated hubs configuration specifies there is a one-to-one relationship between Data Movers on the spoke and the hub. Each spoke uses a unique port number, and each hub Data Mover listens on one port. The advantage of this configuration is that it provides the most flexibility and best capacity for throughput. The disadvantage of this configuration is that the system resources needed are the most of any option. The contents of the hub configuration (hub.properties file) is shown in the following example.

### Dedicated hubs configuration file

```

routes = 1 <- The number of ports the Data Mover listens to
outputs.1 = 1 <- The number of outputs for each input
route.1.name = Hub
input.1.type = TCPIP
input.1.port = 54020 <- The port in spoke.properties
input.1.ssl = no
outputs.1 = 1
output.1.1.type = LOGSTREAM
output.1.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.1.1.strip_rdw = NO

```

## Multi-route hubs

The multi-route configuration defines a many-to-one relationship between Data Movers on the spoke and hub systems. All spokes use a unique port number and the hub listens to multiple ports simultaneously. The advantage of this configuration is that it provides good flexibility and capacity for throughput. The disadvantage of this configuration is that the system resources needed are high although less than the dedicated approach. The contents of the hub configuration (hub.properties file) is shown in the following figure. This example is for three spokes.

### Multi-route hubs configuration file

```

routes = 3 <- This is the number of ports the Data Mover listens to
outputs.1 = 1 <- This is the number of outputs for First Spoke
route.1.name = Hub_1
route.2.name = Hub_2
route.3.name = Hub_3
# Input for First LPAR
input.1.type = TCPIP
input.1.port = 54020 <- The port in spoke.properties on Spoke 1
input.1.ssl = no
# Output for First Spoke
outputs.1 = 1 <- The number of outputs for Spoke 1
output.1.1.type = LOGSTREAM
output.1.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.1.1.strip_rdw = NO
#
# Input for Second Spoke
input.2.type = TCPIP
input.2.port = 54021 <- The port in spoke.properties on Spoke 2
input.2.ssl = no
# Output for First LPAR
outputs.2 = 1 <- The number of outputs for Spoke 2

```

```
output.2.1.type = LOGSTREAM
output.2.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.2.1.strip_rdw = NO
#
# Input for Third Spoke
input.3.type = TCPIP
input.3.port = 54020 <- The port in spoke.properties on Spoke 1
input.3.ssl = no
# Output for Third Spoke
outputs.3 = 1 <- The number of outputs for Spoke 1
output.3.1.type = LOGSTREAM
output.3.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.3.1.strip_rdw = NO
#
```

### Shared hubs

The shared hubs configuration specifies that there is a many-to-one relationship between Data Movers on the spokes and the hub. Each spoke communicating with a specific hub Data Mover uses the same port number and each hub Data Mover listens on one port. Multiple hub Data Movers are run on each hub LPAR. The advantage of this configuration is that the overhead is much less than the dedicated hub approach. The disadvantage of this configuration is that the flexibility is not as good as the dedicated and multi-route approaches and the throughput capacity is somewhat less. The contents of the hub configuration (hub.properties file) is shown in the following example. This is the same as the dedicated approach but with more than one hub Data Mover, each with a unique port, running.

#### Shared hubs configuration file

```
routes = 1 <- The number of ports the Data Mover listens to
outputs.1 = 1 <- The number of outputs for each input
route.1.name = Hub
input.1.type = TCPIP
input.1.port = 54020 <- The port in spoke.properties and must be unique on the LPAR
input.1.ssl = no
outputs.1 = 1
output.1.1.type = LOGSTREAM
output.1.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.1.1.strip_rdw = NO
```

### Single hub

The single hub configuration specifies that there is a many-to-one relationship between Data Movers on the spoke and the hub. Each spoke uses the same port number and there is only one hub Data Mover listening on the port. The advantage of this configuration is it uses significantly less resources than the other approaches. The disadvantage of this configuration is significantly less flexibility and capacity for throughput. The contents of the hub configuration (hub.properties file) is shown in the following example.

#### Single hub configuration file

```
routes = 1
outputs.1 = 1
route.1.name = Hub
input.1.type = TCPIP
input.1.port = 54020 <- This must match the port in all the spoke.properties
input.1.ssl = no
outputs.1 = 1
output.1.1.type = LOGSTREAM
output.1.1.logstream = DRL.LOGSTRM <- Log stream used by the Continuous Collector
output.1.1.strip_rdw = NO
```

### Optional monitoring options

You have the option of specifying the interval a TCPIP stage uses to generate statistics.

- For the TCPIP input stage, it is specified as:

```
input.r.stats_interval = x seconds
or
```

```
input.r.stats_interval = y minutes
```

- For the TCPIP output stage, it is specified as:

```
output.r.i.stats_interval = x seconds
```

or

```
output.r.i.stats_interval = y minutes
```

If this line is not present, or if the value is set to zero, no statistics output is generated. This interval is based on clock time, such that messages will be generated on the next clock interval after the TCPIP Input/Output stage has been created, and thereafter at the specified interval. For example: If the current time is 02:30:12, and the interval is set to 15 seconds, statistics will be generated at time 02:30:15 (3 seconds later), then 02:30:45, 02:31:00, and so on, at 15 second intervals.

Valid values for x are: 0, 15, 30, 60

Valid values for y are: 0, 1, 2, 5, 10, 15, 20, 30, 60

The text seconds and minutes in the configuration files are not case sensitive. Valid examples include: 15 minutes, 15 Minutes, 15 MINUTES, 15 MiNuTeS

## Step 4: Activating the Continuous Collector

After the SMF Extractors and any Data Movers (in a multiple-system configuration) have been installed, follow the instructions in this section to start up the Continuous Collector in a controlled manner.

### About this task

If you are not using IBM Z Performance and Capacity Analytics for the first time, the assumption is that the data from spoke systems, if used, is already being sent to the hub, or data collection for the hub systems is being implemented without any historical data. The data from spoke systems, if used, is already being sent to the hub or data collection for the hub systems is being implemented without any historical data. If multiple IBM Z Performance and Capacity Analytics databases are in use and need to be merged during this process, contact your IBM Support representative for assistance.

To implement the Continuous Collector, follow these steps:

### Procedure

1. Determine an optimal start time.

When the SMF Extractor is started, data in the current SMF MANx data sets will be duplicated by the IBM Z Performance and Capacity Analytics collection. Care must be taken to ensure data duplication is minimized by ensuring a timely switch of the SMF data sets to coincide with the startup of the IBM Z Performance and Capacity Analytics SMF Extractor.

2. Begin with starting the Continuous Collector on the hub or standalone system by following these steps:

- a) Issue the **I SMF** command to switch the SMF data set. Allow the SMF dump to occur while doing the next step.

After processing this dump, the SMF dump process will serve only as a backup source of data for IBM Z Performance and Capacity Analytics.

- b) Start the SMF Extractor as a Started Task. Check the log to ensure data is being collected.
- c) Run the IBM Z Performance and Capacity Analytics Batch Collector using the data starting with the next set of data after the last IBM Z Performance and Capacity Analytics batch collection run and ending with the SMF dump produced in “2.a” on page 47.
- d) After the Batch Collector completes updating, start the Continuous Collector.  
This was set up in “Step 2: Installing the Continuous Collector” on page 39.
- e) Verify that the data is being collected based on messages in the DRLLOG SYSOUT logs.

3. Pause the implementation at this point for a reasonable period of time (24-48 hours) to ensure that the Continuous Collector processes data without any issues on the hub or standalone system.
4. When ready, cut over the spoke systems one at a time by following these steps:
  - a) Issue the **I SMF** command to switch the SMF data set. Allow the SMF dump to occur while doing the next step.  
After processing this dump, the SMF dump process will serve only as a backup source of data for IBM Z Performance and Capacity Analytics.
  - b) Clear the log stream.  
To do this:
    - 1) Change to the `../DataMover/config` directory.
    - 2) In `clear.properties`, change the value of the log stream to the name of the log stream to be cleared.

```
input.1.logstream = logstreamname
```
    - 3) From the OMVS command prompt, change to the `../DataMover/` directory and run the command **DataMover.sh clear**
  - c) Start the SMF Extractor on the spoke system. Check that data is being collected and put into the log stream.
  - d) Following standard procedures, process the data from the SMF dump produced in [“4.a” on page 48](#).
  - e) After dump processing is complete, ensure the Data Mover is active on the hub. If it is not currently running, or this is the first spoke system to be implemented, start the Data Mover on the hub.
  - f) Start the Data Mover on the spoke system.
  - g) Verify that the data is being collected and sent to the hub by checking the messages in the logs.
  - h) Repeat these steps for each spoke system.

## Step 5: Installing the Publication Data Mover

---

The Publication Data Mover (also known as the *Publisher*) runs only on the hub or a standalone system. It is used to move data from the Continuous Collector off-platform to outboard data repositories for web reporting tools such as Splunk® and ELK (Elastic Stack).

### Before you begin

**Note:** If you are installing the Publication Data Mover, refer also to the *IBM Z Performance and Capacity Analytics Capacity Planning Guide and Reference*.

Before installing the Publication Data Mover:

- Ensure the Continuous Collector and Data Mover have been installed.
- Consider the [“Publication Data Mover tips” on page 50](#).

### About this task

To install the Publication Data Mover, follow these steps.

### Procedure

1. Ensure that all IBM Z Performance and Capacity Analytics components that are of interest have been installed, and that the data mappings for the components are unaltered.
2. Run the Data Mapping Utility (DRLJCDPS member of SDRLCNTL) after modifying the sample job by following the comments in the supplied member.



The modifications to this sample job include specifying a USS directory name to store the JSON files. These files are referenced in subsequent steps.

- a) The first utility (DRLELSTT) creates a list of all the data tables in the database.  
This is used as input to the other two utilities to ensure they produce consistent output.
- b) The second utility (DRLEMTJS) creates a `table.json` file for every table in the database.  
Each file maps the contents of the table. The `table.json` files are required by the Publication Data Mover.
- c) The third utility (DRLEMCDS) creates an `izpca.streams.json` file that contains the IBM Common Data Provider for z stream definitions for each database table. The `izpca.streams.json` file is required by IBM Common Data Provider for z and needs to be copied into the configuration folder for the IBM Common Data Provider for z User Interface.

3. Copy the JSON files created in “2” on page 48 above to the mappings directory:

```
cp /u/your/output/directory/TableMaps/* publisher/mappings
```

4. Create a Publisher log stream.

The JCL to do this is in “[Defining a log stream on a coupling facility](#)” on page 55 or “[Defining a DASD-only log stream](#)” on page 54 depending on whether a coupling facility or DASD-only log stream is used. The log stream name must be unique per system, so include the SYSID in the name.

If this log stream is on a coupling facility, perform these steps:

- a) Run the sample job “[UPDPOL - Update CFRM policy](#)” on page 56 with only the statement `DATA TYPE(CFRM) REPORT(YES)`.
- b) From the output of the above job extract the CF and STRUCTURE statements for all active coupling facilities and structures.

Examples of these statements are:

#### CF statement

```
CF NAME(CF01) DUMPSPACE(2000K) PARTITION(0A) CPCID(00)
TYPE(002827) MFG(IBM) PLANT(84) SEQUENCE(00000000168F7)
```

#### STRUCTURE statement

```
STRUCTURE NAME(CKPT1) SIZE(2004K)
PREFLIST(CF01, CF02, CF03, CF04)
```

- c) Update the STRUCTURE statement in for the DRL structure.
- d) Run the UPDPOL job again with all the definitions added in the previous steps.
- e) Implement the new CFRM policy.

For example, the command to do that using a policy name of CSWPOL would be:

```
SETXCF START,POLICY,TYPE=CFRM,POLNAME=CSWPOL
```

5. Update the parameters for the Continuous Collector JCL created earlier in “3” on page 40 and add this statement after the COLLECT statement with the log stream name defined above:

```
DISTRIBUTE TO publish_logstream_name
```

6. Create a new Data Mover instance to be used as the Publication Data Mover. Copy the `../DataMover` directory to `../publisher`.

Sample commands are:

```
cd /var/IZPCA/
cp -R Data Mover publisher
```

7. Edit `../publisher/Publication.properties` as follows:

- a) Change `input.1.logstream` to the newly created publication log stream name.

- b) Change process.1.1.encoding if your system uses a JSON code page that is different to the default 1047.
  - c) Change output.1.1.port to the output port on the TCPIP stage that the IBM Common Data Provider for z Data Streamer is listening on.
8. Create a started task to run the Publisher. The sample JCL is in [“Sample configuration members”](#) on page 54.

### What to do next

**Important:** If you install new IBM Z Performance and Capacity Analytics components or apply maintenance that alters the structure or content of the IBM Z Performance and Capacity Analytics tables, the Data Mapping Utility in [“2”](#) on page 48 and subsequent JSON file copy in [“3”](#) on page 49 must be run again.

## Publication Data Mover tips

When preparing to install the Publication Data Mover, consider the following advice.

### Procedure

- When defining log streams, ensure the **RETPD** is greater than 0.
- If multiple Data Movers, including Data Movers and Publication Data Movers, are to run on a single system such as a hub system, configure each Data Mover instance with its own working directory as follows:
  - For each Data Mover, copy the files from the Data Mover directory into a separate directory, such as `../DataMover<jobname>`.
  - Customize that directory for the Data Mover instance.
- The status of the Publication Data Mover internal queues is key to ensuring the Data Mover is handling the traffic load sufficiently. To check the current Data Mover statistics, issue the **F *jobname*,APPL=DISPLAY** command, where *jobname* is the task name of the USS job that started when the Publication Data Mover was started.

The highlighted lines are the ones that indicate the queue depth, if any.

```
F DRLJPUB1,APPL=DISPLAY
DRLJ0078I ZOS Console: display
DRLJ0075I Route: 1 name: Publish
DRLJ0075I   Input type: DATA_LOGSTREAM
DRLJ0075I   Log stream name: IFASMF.DEMOPLX.CDPZ.RECS
DRLJ0075I   Queued for output: 0
DRLJ0075I   Generated 435 packets
DRLJ0075I   Discarded 0 null records
DRLJ0075I 2 Processes(s):
DRLJ0075I   Process: 1
DRLJ0075I     Process Type: LGRHFilter
DRLJ0075I     Queued for input: 0
DRLJ0075I     Queued for output: 0
DRLJ0075I     Received 435 packets
DRLJ0075I     Emitted 46 packets
DRLJ0075I   Process: 2
DRLJ0075I     Process Type: JSON
DRLJ0075I     Queued for input: 0
DRLJ0075I     Queued for output: 0
DRLJ0075I     Received 46 packets
DRLJ0075I     Emitted 87 packets
DRLJ0075I 1 Output(s):
DRLJ0075I   Output: 1
DRLJ0075I     Output Type: TCPIP
DRLJ0075I     Queued for input: 0
DRLJ0075I     Host: zserveros.centers.ihost.com:51401
DRLJ0075I     Output Type: TCPIP_Sender
DRLJ0075I     Queued for input: 0
DRLJ0075I     Host: zserveros.centers.ihost.com:51401
DRLJ0075I     Received 87 packets
DRLJ0075I     Transmitted 87 packets
```

- To check the current Data Mover status, issue the **F *jobname*,APPL=STATUS** command, where *jobname* is the task name of the USS job that started when the Publication Data Mover was started.

```
F DRLJPUB1,APPL=DISPLAY
DRLJ0078I ZOS Console: status
DRLJ0093I Status for Route 1 is Running
```

## Step 6: Streaming with a remote Data Mover

You can use the IBM Z Performance and Capacity Analytics Data Mover to receive and buffer data on a remote system.

### About this task

In this scenario, the Data Mover is installed onto the remote system that is running Splunk or ELK. It is used to receive the data from the host and write it out to disk from where Splunk or ELK can then read it.

This is the preferred setup because it provides a level of buffering in the event of a data surge and data not yet ingested into Splunk or ELK is saved to disk. It also enables IBM Z Performance and Capacity Analytics to use its buffered TCP/IP transmission technology to reduce the risk of data loss if either end drops out.

Currently there is no automatic deletion of old ingestion files, so they must be manually erased.

### Procedure

1. Install the Data Mover on the remote system that is running Splunk or ELK.
  - a) First, ensure you have a 64 bit, Java 8 runtime installed on the target system.
  - b) Use FTP to download a Data Mover working directory from the z/OS system to the target system.
    - You need the main directory, the java subdirectory and the config subdirectory.
    - You do not need the mapping directory.
    - The DataMover.jar file must be transferred as binary.
    - The remaining files need to be transferred as text in FTP to convert to ASCII.
2. Customize the Data Mover startup scripts.

The Data Mover startup script directory to be configured and used will depend on your target system platform. These sample startup scripts reside in the Data Mover sub-directory:

- DataMover.bat (*for Windows*)
- DataMover.sh (*for non-Windows*)

#### Sample DataMover.bat (Windows)

The sample DataMover.bat does not require customization but needs to be started from the Data Mover working directory.

```
REM - Windows Batch script to run the Data Mover from its working directory

@ECHO OFF

IF [%1]==[SSL] (
    set PARMs=%1 %2 %3 %4 %5 %6 %7 %8 %9
) ELSE IF [%1]==[version] (
    set PARMs=%1 %2 %3 %4 %5 %6 %7 %8 %9
) ELSE (
    set PARMs=config=.\config\%1.properties
)

java -Xmx8G -Djava.util.logging.config.file=".\logging.properties" -cp ".\java\*"
com.twentyfirstcsw.datamover.DataMover %PARMs%
```

### Sample DataMover.sh (non-Windows)

The sample DataMover.sh requires customization:

- Update the **rundir** parameter with the correct working directory for the Data Mover.
- Update the **JAVA\_HOME** parameter with the correct path for your installed Java.

```
#!/bin/sh
#
# Shell script to run the Data Mover from its working directory
#
# -----
# Configuration area - tailor to suit your installation
#
#
# Runtime directory. Other paths are relative to it.
#
# Probably better to use different directories if you are running
# multiple DataMovers on the same system.
#
rundir="/opt/IZPCA/DataMover/datamover"
#
# logging.properties controls which messages get sent where
#
logfile="logging.properties"
#
# The main executable
#
jarfile="java/DataMover.jar"
#
# The config file that tells it what to do.
#
config="config/$1.properties"
#
# -----
# Environment area - Where's Java?
# Need when running as a batch job/started task
#
export JAVA_HOME=/Library/Java/JavaVirtualMachines/jdk1.8.0_151.jdk/Contents/Home
export PATH=$PATH:$JAVA_HOME/bin
#
# -----
# Execution area - don't change things below the line
#
#
# Get to the runtime directory
#
cd $rundir
#
# Work out what the parms are
#
parms="config=$config"
#
if test "$1" = "SSL"
then
    parms="$1 $2 $3 $4 $5 $6 $7 $8 $9"
fi
#
if test "$1" = "version"
then
    parms="$1 $2 $3 $4 $5 $6 $7 $8 $9"
fi
#
# Run the DataMover
#
export CLASSPATH=./java/*
java -Djava.util.logging.config.file="$logfile" com.twentyfirstcsw.datamover.DataMover $parms
```

3. Verify that the Data Mover is working by issuing the following command from the DataMover directory:

```
.\DataMover version (for Windows)
```

or

```
./DataMover.sh version (for non-Windows)
```

It should produce a few lines of output identifying itself as a Data Mover, identifying the operating system, and giving a dummy value for the system name and sysplex id.

#### 4. Create a Hopper directory.

This is a directory that the Data Mover will write incoming data into, and from which Splunk or ELK will read it. The hopper acts as a disk buffer, allowing the Data Mover to write data out ahead of what Splunk or ELK has ingested. It provides persistence for uningested data in the event that Splunk or ELK is running slow or is unavailable.

#### 5. Customize the catcher.properties file located in the DataMover/config subdirectory.

- Update the **output.1.1.directory** parameter with your hopper directory for the data.
- Change the **port** if required, otherwise leave as the default 45020.
- In Splunk, the hopper directory is determined by the system environment parameter **CDPDR\_PATH**. Ensure this is set correctly to the desired hopper directory location.
- In ELK, the directory location for the ELK hopper is specified in the sample file B\_IZPCA\_Input.lsh.

```
#
# Config
#
routes = 1
#
# Route 1 - Receive from TCPIP and Buffer to disk for Splunk/ELK to pick up
#
route.1.name = Catcher
#
# Single input is TCPIP
#
input.1.type = TCPIP
input.1.port = 45020
#
# Output to hopper
#
outputs.1 = 1
#
# This puts the data that arrives each week into a different directory
# You need to manually delete directories that are a couple of weeks old - after checking
# their data got ingested ok
#
output.1.1.type = File
output.1.1.directory = D:\\Hopper
output.1.1.subdir = week
output.1.1.format = json
#
```

#### 6. Start the Data Mover.

From the Data Mover directory issue the command:

- **.\DataMover catcher** (for Windows)
- **./DataMover.sh catcher** (for non-Windows)

The Data Mover will start and display the Hostname and IP address it is using, listening on port 45020 (default).

```
DRLJ0188I DataMover on Hostname: LAPTOP-XXXXXX IP-Addr: x.xx.xxx.xxx
DRLJ0047I TCPIP Listening for input on port 45020
```

Use these values when configuring your Data Mover on z/OS to connect with.

#### 7. If you are using multiple networks on your remote platform, you have the option of specifying a network interface that a TCPIP stage will use.

- For the TCPIP input stage, it is specified as:

```
input.r.nif = id
```

## Sample configuration members

- For the output stages, it is specified as:

`output.r.i.nif = id`

where *id* can be either a valid IP address (IPv4 or IPv6) or a valid network interface name.

.r is the route number. For example: `input.1.nif` where 1 is the route number, that is, the input stage for route 1. For route 2, it would be `input.2.nif`.

For `output.r.i.nif`, the r is the route number and the i is the output stage index (as you can define multiple outputs for the same route).

You can get a list of your systems network names with the command:

- **. \DataMover networks** (for Windows)
- **./DataMover.sh networks** (for non-Windows)

8. To stop the Data Mover anytime issue the command: **stop**. If the Data Mover fails to terminate issue the command: **force** or press **Ctrl+C**.

9. Modify the PubShadow configuration.

a) On z/OS, configure a Data Mover with a customized publisher.properties to connect to your Data Mover running remotely for Splunk or ELK.

b) Modify the encoding to ASCII in the process step as follows:

`process.1.2.encoding = ISO8859-1`

c) Modify the TCPIP output parameters with the IP address of your remote Data Mover and the correct port.

`output.1.1.host = x.xx.xxx.xxx`

`output.1.1.port = 45020`

10. Optional: Setup SSL.

If you want to use SSL to protect the link, follow the instructions for setting up SSL between Data Movers on a TCP/IP link between z/OS systems.

a) When running on Windows, use `DataMover.bat` instead of `DataMover.sh`.

b) Edit `DataMover.bat` and add your java bin path to the set PATH statement. For example:

`set PATH=%PATH%;C:\Program Files\Java\jdk1.8.0_201\bin`

c) Run:

**DataMover.bat SSL GEN**

## Sample configuration members

---

Sample JCL and associated members are provided with IBM Z Performance and Capacity Analytics to help with your configuration and installation tasks.

Before running for the first time, tailor the members to suit the specific requirements of your installation.

### Defining a DASD-only log stream

This is an example of the JCL for defining a DASD-only log stream.

Customize the JCL before running the job by following the instructions in the comments.

**Note:** RETPD must be greater than zero.

```

//CRLOGRDS JOB (IZPCA)
//*****
//* DEFINE IZPCA LOG STREAM ON DASD *
//*****
//* Change the following: *
//* <LOG_STRM> - Log stream name. Name must be unique by *
//* SYSID. Recommended name is *
//* <SYSID>.DRL.LOGSTRM *
//***** /*
//IXCMIAPU EXEC PGM=IXCMIAPU
//STEPLIB DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DATA TYPE(LOGR)

DEFINE LOGSTREAM NAME(<LOG_STRM>)
DESCRIPTION(IZPCA_LOGSTREAM)
DASDONLY(YES)
MAXBUFSIZE(33024)
LS_SIZE(1024)
AUTODELETE(YES)
RETPD(1)
HLQ(DRL)
HIGHOFFLOAD(80)
LOWOFFLOAD(0)
DIAG(YES)

/*
//

```

Figure 22. JCL to define a DASD-only log stream

## Defining a log stream on a coupling facility

This is an example of the JCL for defining a log stream on a coupling facility.

Customize the JCL before running the job by following the instructions in the comments.

**Note:** RETPD must be greater than zero.

```
//CRLOGRCF JOB (IZPCA)
//*****
//* DEFINE IZPCA LOG STREAM ON COUPLING FACILITY *
//*****
//* Change the following: *
//*   <LOG_STRUCT> - Structure name. Name must be unique by *
//*                   SYSID. Recommended name is *
//*                   <SYSID>_DRL_LOG *
//*   <LOG_STRM> - Log stream name. Name must be unique by *
//*                   SYSID. Recommended name is *
//*                   <SYSID>_DRL.LOGSTRM *
//***** /*
//IXCMIAPU EXEC PGM=IXCMIAPU
//STEPLIB DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DATA TYPE(LOGR)

DEFINE STRUCTURE NAME(<LOG_STRUCT>)
LOGSNUM(2)
MAXBUFSIZE(33024)
AVGBUFSIZE(1024)

DEFINE LOGSTREAM NAME(<LOG_STRM>)
DESCRIPTION(IZPCA_LOGSTREAM)
STRUCTNAME(<LOG_STRUCT>)
STG_DUPLEX(NO)
LS_SIZE(1024)
AUTODELETE(YES)
RETPD(1)
HLQ(DRL)
HIGHOFFLOAD(80)
LOWOFFLOAD(0)
DIAG(YES)

/*
//
```

Figure 23. JCL to define a log stream on a coupling facility

## UPDPOL - Update CFRM policy

UPDPOL is an example of the JCL required to update the CFRM policy.

Customize the JCL before running the job by following the instructions in the comments.



```

//UPDPOL JOB (IZPCA)
//*****
//* UPDATE CFMR POLICY
//*****
//* First, run this job with only the 'DATA TYPE(CFRM) REPORT(YES)'
//* statement. From the output select all active CF and
//* STRUCTURE statements. Copy those statements where indicated
//* below. Then, make the changes below and submit the job
//
// Change the following:
// <POLICY_NAME> - Policy Name. The policy name should be
// unique but must include all active
// definitions from currently active CFMR
// <CF_LIST> - Coupling Facility Names. Create this list
// of CFs within the SYSPLEX (based on the CF
// statements in Policy).
// <LOG_STRUCT> - Log structure name. This name must be
// unique by SYSID. Recommended name is:
// <SYSID>.DRL.LOGSTRM
// Duplicate the STRUCTURE statement for each
// SYSID in the SYSPLEX, creating a unique for
// each SYSID.
//*****
//IXCMIAPU EXEC PGM=IXCMIAPU
//STEPLIB DD DISP=SHR,DSN=SYS1.MIGLIB
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
DATA TYPE(CFRM) REPORT(YES)
/* Remove this line after the first run of this job */
DEFINE POLICY NAME(<POLICY_NAME>) REPLACE(YES)

<INSERT ACTIVE CF AND STRUCTURE STATEMENTS FROM REPORT GENERATED>

STRUCTURE NAME(<LOG_STRUCT>) SIZE(10M)
INITSIZE(8000K)
PREFLIST(<CF_LIST>)
/*
//

```

Figure 24. UPDPOL: Update CFMR policy

## DRLJSMFO - SMF Extractor control file

Sample member DRLJSMFO is provided in the SDRLCNTL library. It contains parameters and instructions for configuring the SMF Extractor control file.

Before the first startup of the SMF Extractor, customize the parameters by following the instructions in the comments.

```

*****
* NAME: DRLJSMFO
*
* FUNCTION: SMF EXTRACTOR CONTROL FILE.
*
* COPY THIS MEMBER TO A DATA SET AS SMFpsys1 WHERE sys1 IS THE
* SMF ID OF THE SYSTEM WHERE THE MEMBER WILL BE USED.
*
* THESE PARAMETERS MUST BE CUSTOMIZED TO MATCH YOUR INSTALLATION
* REQUIREMENTS PRIOR TO THE FIRST STARTUP OF THE SMF EXTRACTOR.
*
* SET OUTLGR TO THE NAME OF THE OUTPUT LOG STREAM
* SET SMFREC TO A COMMA SEPARATED LIST OF SMF RECORDS TO BE RECORDED
*
*****
OUTLGR=logstreamname
NEWTIME=0010
SMFREC=14,15,30,42,60,61,64,65,70,71,72,73,74,85,90,94,99,100,101,113

```

Figure 25. DRLJSMFO: Parameters for the SMF Extractor control file

For example:

```

OUTLGR=SMFPSYSA
NEWTIME=0010
SMFREC=14,15,30,42,60,61,64,65,70,71,72,73,74,85,90,94,99,100,101,113

```

### DRLJSMFX - SMF Extractor startup procedure

Sample member DRLJSMFX is provided in the SDRLCNTL library. It contains the JCL for the SMF Extractor startup procedure.

Before the first startup of the SMF Extractor, customize the parameters by following the instructions in the comments.

```
//*****  
//* NAME: DRLJSMFX *  
/* *  
/* FUNCTION: SMF EXTRACTOR STARTED TASK PROC *  
/* *  
/* THE SMFXPARM DATA SET SHOULD CONTAIN THE CONTROL FILES FOR */  
/* EACH SYSTEM ON WHICH THE EXTRACTOR IS RUN. */  
/* Change CNTL and the member to the name of your data set */  
/* name and member name for the SMFXPARM for your system */  
/*=====*/  
//SMFEXTP PROC SYSTEM=SYSA /* SMF SYSTEM ID */  
//VSXMAI EXEC PGM=VSXMAI,REGION=0M,  
// PARM='TRACE(Y),MSGVL(9),SDUMP(Y),MAXSD(2),MAXQD(4000)'  
/*  
//STEPLIB DD DISP=SHR,DSN=DRL.SDRLEXTR  
//SYSPRINT DD SYSOUT=*  
//SMFXPARM DD DISP=SHR,DSN=CNTL(SMFP&SYSTEM.)  
//SYSUDUMP DD SYSOUT=*  
//SMFXPRNT DD SYSOUT=*  
/*
```

Figure 26. DRLJSMFX: JCL for the SMF Extractor startup procedure

### DRLJCCOL - Continuous Collector started task

Sample member DRLJCCOL is provided in the SDRLCNTL library. It contains the JCL for a started task to collect SMF data continuously.

Customize the sample JCL by following the instructions in the comments.

```

//DRLJCCOL JOB (ACCT#),'CONTINUOUS COLLECT'
//*****
//* NAME: DRLJCCOL *
//* *
//* FUNCTION: Sample procedure for started task to collect *
//* SMF data continuously. *
//* *
//*****
//* Customization: *
//* a. Change VER to match your IZPCA version. *
//* b. Change IZPCALD to match the HLQ you used for IZPCA. *
//* c. Change DB2LOD to match your Db2 HLQ and version. *
//* d. Change the IZPCA parameters to match your system *
//* SYSPREFIX - default DRLSYS *
//* SYSTEM - default DSN *
//* &PREFIX - default DRL *
//* &USERS - default DRLUSER *
//* &STOGROUP - default DRLSG *
//* &DATABASE - default DRLDB *
//* e. Change logstream-name to a valid log stream name. *
//* *
//*****
// SET VER=310
// SET IZPCALD=IZPCA.V&VER.
// SET DB2LOD=DB2.VC10
//*
//DRLSMFCC EXEC PGM=DRLPLC,REGION=0M,
// PARM=('SYSPREFIX=DRLSYS,SYSTEM=DSN,&STOGROUP=DRLSG','
// '&PREFIX=DRL,&DATABASE=DRLDB,&USERS=DRLUSER')
//STEPLIB DD DISP=SHR,DSN=&IZPCALD..SDRLLOAD
// DD DISP=SHR,DSN=&DB2LOD..SDSNLOAD
//DRLIN DD *
SET USERS='DRLUSER';
COLLECT SMF CONTINUOUSLY FROM logstream-name
COMMIT AFTER 5 MINUTES
BUFFER SIZE 100 M;
/*
//DRLOUT DD SYSOUT=*
//DRLDUMP DD SYSOUT=*

```

Figure 27. DRLJCCOL: JCL for the Continuous Collector started task

## DataMover.sh - Run the Data Mover

This is a sample Shell script to run the Data Mover.

Customize the script with installation-specific details before running it.

```
# Shell script to run the Data Mover
#
# -----
# Configuration area - tailor to suit your installation
#
# Runtime directory. Other paths are relative to it.
#
# Recommended to use different directories if you are running
# multiple Data Movers on the same system.
#
rundir="/IDSz/DataMover"
#
# logging.properties controls which messages get sent where
#
logfile="logging.properties"
#
# The main executable
#
jarfile="java/DataMover.jar"
#
# The config file that tells it what to do.
#
config="config/$1.properties"
#
# -----
# Environment area - Where's Java?
# Need when running as a batch job/started task
#
export JAVA_HOME=/usr/lpp/java/J8.0_64
export PATH=$PATH:$JAVA_HOME/bin
#
# -----
# Execution area - don't change things below the line
#
# Get to the runtime directory
#
cd $rundir
#
# Work out what the parms are
#
if test "$1" = "SSL"
then
  parms="$1 $2 $3 $4 $5 $6 $7 $8 $9"
else
  parms="config=$config"
fi
#
# Run the Data Mover. Specify the maximum memory size for Java.
#
Java -Xmx16G -Djava.util.logging.config.file="$logfile" -jar "$jarfile" $parms
```

Figure 28. *DataMover.sh* - Run the Data Mover

### hub.properties - Configure a Data Mover on a hub system

This is a sample configuration for a Data Mover running on a hub system.

Customize before use by following the instructions in the comments.

```
# This is a sample configuration to for a Data Mover running on a Hub System
#
# You need to modify:
#   The port the input TCPIP stage will listen on
#   The name of the log stream in the output stage
#
routes = 1
route.1.name = Hub
#
# Listen for connections from the Spokes and receive their data.
#
# If you want to use SSL you need to perform the certificate exchange before you
# change the value to YES
#
input.1.type = TCPIP
input.1.port = 54020
input.1.ssl = no
#
# For output, the data is written into the log stream
#
outputs.1 = 1
#
output.1.1.type = LOGSTREAM
output.1.1.logstream = <Log stream name>
output.1.1.strip_rdw = NO
#
```

Figure 29. *hub.properties* - Configure a Data Mover on a hub system

### spoke.properties - Configure a Data Mover on a spoke system

This is a sample configuration for a Data Mover running on a spoke system.

Customize before use by following the instructions in the comments.

```
# This is a sample configuration to for a Data Mover running on a Spoke System
#
# You need to modify:
#   The name of the log stream in the INPUT stage
#   The host name and port in the output TCPIP stage
#
routes = 1
route.1.name = Spoke
#
# Our input arrives in a log stream, put there by RT/SMF
#
# This will take the data from the log stream and then erase it once it is sent.
#
input.1.type = LOGSTREAM
input.1.logstream = <log stream name>
input.1.block = 30
input.1.wipe = YES
input.1.strip_header = NO
input.1.check_LRGH = YES
input.1.sourcename = LOGSTREAM
input.1.sourcetype = RAWSMF
#
# For output, we send them to the hub
#
# If you want to use SSL you need to perform the certificate exchange before you
# change the value to YES
#
outputs.1 = 1
#
output.1.1.type = TCPIP
output.1.1.host = <host system name>
output.1.1.port = 54020
output.1.1.use_ssl = NO
#
```

Figure 30. *spoke.properties* - Configure a Data Mover on a spoke system

### publication.properties - Transfer data from the log stream

This is a sample configuration for taking the data from the log stream then erasing it after it is sent.

Customize before use by following the instructions in the comments.

```
# Input arrives in a log stream, put there by the COLLECTOR
#
# This will take the data from the log stream and then erase it after it is sent.
#
# You need to modify:
#
#   The name of the log stream in the input stage
#   The name of the host and port number in the TCPIP output stage
#
input.1.type = LOG STREAM
input.1.log stream = IFASMF.CF.LS04
input.1.wipe = YES
input.1.strip_header = NO
input.1.check_LRGH = YES
input.1.sourcename = COLLECTOR
input.1.sourcetype = AGGREGATE
#
process.1 = 1
#
# Convert to JSON
#
process.1.1.type = JSON
process.1.1.encoding = IBM-1047
process.1.1.float_format = IBM
#
# Send to CDPz
#
outputs.1 = 1
#
# Over TCPIP
#
output.1.1.type = TCPIP
output.1.1.host = host_name
output.1.1.port = 45020
output.1.1.directory = buffer
#
```

Figure 31. *publication.properties - Transfer data from the log stream*

### clear.properties - Erase all records from a log stream

This is a sample configuration for erasing all records from a log stream.

Customize before use by following the instructions in the comments.

```

# This is a sample configuration to erase all records from a log stream
#
# You need to modify:
#
#   The name of the log stream that the input stage will clear
#
# Note the clear operation is irreversible.
# Once the data is gone, it is gone.
# So be sure you want to do this.
#
routes = 1
route.1.name = Clear
#
# clear=yes makes the Data Mover clear the log stream and then terminate.
#
input.1.type = LOGSTREAM
input.1.logstream = IFASMF.CF.LS0
input.1.clear = yes
input.1.block = 30
input.1.sourcename = LOGSTREAM
input.1.sourcetype = RAWSMF
#
# Dummy console output stage
#
outputs.1 = 1
#
output.1.1.type = CONSOLE
#

```

Figure 32. *clear.properties* - Erase all records from a log stream

## Status monitoring commands reference

This section shows the status commands used to monitor the operation of the IBM Z Performance and Capacity Analytics data collection processes.

### Log stream status

This command shows the status of a log stream.

```
D LOGGER,C,LSN=logstreamname,D
```

where *logstreamname* is the name of the log stream of interest.

Example of the command output with key values highlighted.

```

D LOGGER,C,LSN=DRL.LOGSTRM,D
IXG601I  01.43.45  LOGGER DISPLAY 469
CONNECTION INFORMATION BY LOGSTREAM FOR SYSTEM ZT01
LOGSTREAM          STRUCTURE          #CONN STATUS
-----
DRL.LOGSTRM        *DASDONLY*          000002 IN USE
  DUPLEXING: STAGING DATA SET
    STGDSN: DRL.DRL.LOGSTRM.ZT00PLEX
      VOLUME=TEC000  SIZE=0000002700 (IN 4K)  % IN-USE=025
GROUP: PRODUCTION
OFFLOAD DSN FORMAT: DRL.DRL.LOGSTRM.<SEQ#>
  CURRENT DSN OPEN: YES                      SEQ#: A0002221
  ADV-CURRENT DSN OPEN: NO                   SEQ#: -NONE-
JOBNAME: PRLJCCOL  ASID: 0028
R/W CONN: 000000 / 000001
RES MGR./CONNECTED: *NONE* / NO
IMPORT CONNECT: NO
JOBNAME: PRLSMFEX  ASID: 005B
R/W CONN: 000000 / 000001
RES MGR./CONNECTED: *NONE* / NO
IMPORT CONNECT: NO

NUMBER OF LOGSTREAMS:  000001

```

Figure 33. *Status command: SMF Extractor statistics*

## SMF Extractor statistics

This command shows the SMF Extractor statistics.

```
F jobname,STATUS
```

where *jobname* is the name of the task running the SMF Extractor.

Example of the command output with key status values highlighted.

```
F PRLSMFEX,STATUS
VSX0111I VSXCON 01:21:47.479 Command <STATUS> received from CONSID=0300000D CONSNAME=JMACERA
VSX0133I VSXSTA 01:21:47.479 ++ SMFU83 Status display: ++
VSX0136I VSXSTA 01:21:47.479 ** > Server is ready to capture SMF records < **
VSX0127I VSXSTA 01:21:47.480 ** #C21CAT Created by PRLSMFEX STC on 2019/04/30 17:01:44
VSX0135I VSXSTA 01:21:47.480 ** SMFU83 Started by PRLSMFEX STC on 2019/04/30 17:01:44
VSX0134I VSXSTA 01:21:47.480 ** SMFU83 Server has been restarted 1 times this IPL
VSX0141I VSXSTA 01:21:47.480 ** Queue depth control values: 2000 / 1950 Curr: 0 Max: 166
VSX0173I VSXSTA 01:21:47.480 SQ Cntrs: NQ=000270B4x DQ=000270B4x
VSX0130I VSXUT1 01:21:47.481 ** SMF Types collected:
(014,015,030,042,060,061,064,065,070,071,072,073)
VSX0130I VSXUT1 01:21:47.481 ** SMF Types collected: (074,085,090,094,099,100,101,113,118,119)
VSX0159I VSXLSE 01:21:47.481 :: SMF exit SYSTS0.IEFU85 Module VSXU85 is active ::
VSX0159I VSXLSE 01:21:47.481 :: SMF exit SYSTS0.IEFU84 Module VSXU84 is active ::
VSX0159I VSXLSE 01:21:47.481 :: SMF exit SYSTS0.IEFU83 Module VSXU83 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSJES2.IEFU84 Module VSXU84 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSJES2.IEFU83 Module VSXU83 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSOMVS.IEFU85 Module VSXU85 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSOMVS.IEFU84 Module VSXU84 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSOMVS.IEFU83 Module VSXU83 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSSTC.IEFU85 Module VSXU85 is active ::
VSX0159I VSXLSE 01:21:47.482 :: SMF exit SYSSTC.IEFU84 Module VSXU84 is active ::
VSX0159I VSXLSE 01:21:47.483 :: SMF exit SYSSTC.IEFU83 Module VSXU83 is active ::
VSX0159I VSXLSE 01:21:47.483 :: SMF exit SYS.IEFU85 Module VSXU85 is active ::
VSX0159I VSXLSE 01:21:47.483 :: SMF exit SYS.IEFU84 Module VSXU84 is active ::
VSX0159I VSXLSE 01:21:47.483 :: SMF exit SYS.IEFU83 Module VSXU83 is active ::
VSX0139I VSXSTA 01:21:47.483 ** SVC dumps will be created for certain abends
VSX0131I VSXSTA 01:21:47.484 ** Tracing is active; MSGLVL is 9
VSX0144I VSXSTA 01:21:47.484 ** VSXPC1 abended 0 times; 2 abends are allowed before termination
VSX0349I VSXSTA 01:21:47.484 ++ Id=0000 M=VSXMAI TCB=006F8588x EP=00007000x TT=00000000
07297748x
VSX0349I VSXSTA 01:21:47.484 ++ Id=PR01 M=VSXPRT TCB=006FC580x EP=00017458x TT=00000000
0018A03Ax
VSX0349I VSXSTA 01:21:47.484 ++ Id=CM02 M=VSXCON TCB=006F82E0x EP=00011900x TT=00000000
009B8010x
VSX0349I VSXSTA 01:21:47.484 ++ Id=WR03 M=VSXWTR TCB=006F80A8x EP=0001AA70x TT=00000003
7E560F1Ax
VSX0349I VSXSTA 01:21:47.485 ++ Id=SM04 M=VSXSMF TCB=006CE3A8x EP=00017D90x TT=00000000
9CA1B4F7x
VSX0349I VSXSTA 01:21:47.485 ++ Id=HR05 M=VSXHRB TCB=006CE1F8x EP=00016C70x TT=00000000
37357ECFx
VSX0360I VSXSTA 01:21:47.485 -- Allocated dsn:
.
VSX0361I VSXSTA 01:21:47.485 -- SCNT(00000001) MXSTK(00000011) STK1(00000000) CRSH(00000000)
VSX0362I VSXSTA 01:21:47.485 -- RECR( 159924) CPLS( 5147) RECW( 159861) SMXC( 0)
VSX0363I VSXSTA 01:21:47.485 -- EOVC( 0) RSLC( 0) WSLC( 0) IBUF( 1000)
VSX0129I VSXSTA 01:21:47.485 ++ End-of-list ++
```

Figure 34. Status command: SMF Extractor statistics

## Data Mover and Publication Data Mover status

This command shows the status of the Data Mover task.

The output of this command may differ depending on the number of routes and processes defined in the parameters.

```
F DM_USS,APPL=STATUS
```

where *DM\_USS* is the name of the USS task (usually ending with a 1). For example, if the Data Mover is started as DRLJDM, this value would be DRLJDM1.

Example of the command output with key status values highlighted:



```
F DRLJDMH,APPL=STATUS
DRLJ0078I ZOS Console: status
DRLJ0093I Status for Route 1 is Running
```

## Data Mover and Publication Data Mover statistics

This command shows the statistics from the Data Mover task.

The output of this command may differ depending on the number of routes defined in the parameters.

```
F DM USS,APPL=DISPLAY
```

where *DM USS* is the name of the USS task (usually ending with a 1). For example, if the Data Mover is started as DRLJDM, this value would be DRLJDM1.

Example of the command output with key values highlighted.

```
F DRLJDMH,APPL=DISPLAY

DRLJ0078I ZOS Console: display
DRLJ0075I Route: 1 name: Hub
DRLJ0075I Input type: TCPIP
DRLJ0075I Port: 54020
DRLJ0075I Queued for output: 0
DRLJ0075I 1 active connections
DRLJ0075I Inbound connection from: 129.42.208.176:
DRLJ0075I Generated 44,133 packets
DRLJ0075I 0 Processes(s):
DRLJ0075I No processes defined.
DRLJ0075I 1 Output(s):
DRLJ0075I Output: 1
DRLJ0075I Output Type: LOGSTREAM
DRLJ0075I Log stream: IFASMF.DEMOPLX.IZPCA.RECS
DRLJ0075I Queued for input: 0
DRLJ0075I DRLJ0075I Received 44,133 packets
```

Figure 35. Data Mover or Publication Data Mover statistics

## Data Mover features and parameters reference

This section describes features of the Data Mover and the parameters for configuring and running the Data Mover efficiently.

The Data Mover runs one or more internal data transfer pipelines (routes). Each route has:

- one input stage
- zero or more process stages
- one or more output stages

Internally the data is processed in packets, the size of which is determined by the **.block** value in the input stage. Typically, this is a small batch of 50-100 records. This strikes a good balance between the overhead of moving the packets and the time spent processing individual records.

The input, process, and output stages do the following:

1. The input stage executes first, reads data and passes packets of data to the first process stage (or to the output stages if there are no process stages).
2. The process stages then execute sequentially, passing data packets down the chain until they are fully processed.
3. The final process stage passes the packet to the output stage.
4. The output stages then execute in parallel, writing the data out to one or more destinations.

There is a pacing mechanism in place that provides dynamic feedback to the input stage on how well the Data Mover is processing the data packets that it has generated. If it is taking a long time to process them,

the input stage will stop reading data until they have caught up. This avoids scenarios where the input stage just keeps reading data until the Data Mover runs out of storage.

The pacing mechanism uses trackers. A tracker is an object that keeps track of data packets created by the input stage (or derived from packets it is tracking). Each data packet gets a single tracker to watch it. If there are no free trackers, the input stage cannot create another data packet. When all of the data packets associated with a tracker have been unlinked from it (usually when all the output stages are done with them), the tracker returns to being a free tracker that the input stage can use to track another data packet. You can set the number of stages an input tracker has by using the `.trackers` value.

## Memory management

Consider these configuration options for memory management to enable the Data Mover to run efficiently.

- Use a 64-bit JVM and set the maximum heap size (`-Xmx`) to 16GB or larger.
- The `.block` and `.trackers` value on the input stage control the number of records that are going to be in storage at any one time. To estimate the memory used by a route, multiply these two values, multiple again by the average record size (anything from 2K to 32K for SMF records), and add another 20 percent.
- For TCP/IP transmission, you need to specify a fairly high trackers number (150 or more) because of the way the failure detection on the transmission works. It will hold onto a packet for several seconds before it decides it has been delivered successfully. The number of trackers on the input stage also works as a pacing mechanism for the TCP/IP connection. If you have 100 trackers and it holds onto the packets for 4 seconds, then it will end up sending about 25 packets a second. Multiply by the block count and the average record size to estimate the data volume being transmitted.
- You also need to specify a fairly high number of trackers (100 or more) for stages that repack the data. These are typically process stages like JSON, CSV, and SQL. These stages take the data out of the packets it arrives in, transform it, and then pack the new data into new packets, hanging onto those packets until they are full. If there are not enough input packets, the process can stall, which will result in it sending on all of the packets it has after it detects that it is no longer receiving input. This will free up the packets and release the trackers associated with them, allowing more data to be read. Memory usage for routes that repack the data can be twice that of normal routes.
- For the other stages, you should need no more than twice as many trackers as you have input and process stages, with, say, a minimum of 6. This will avoid a backlog of unprocessed data building up in the Data Mover because it can read the data in faster than it can write it out.

## Troubleshooting

If the Data Mover is not processing data often enough or seems to be stalling, increase the `.block` setting (to put more records in each packet) and the `.trackers` setting (to allow more packets into the Data Mover).

## Record formats

The Data Mover expects to deal with two primary types of data: textual data and LGRH data.

### Textual data

This is unformatted data that is simply split into records. Many of the Data Movers process stages cannot handle it, so processing is generally restricted to input, transport and output.

### LGRH data

This is data that has been output by an IBM Z Performance and Capacity Analytics application, either the SMF Extractor or the Collector. Each record is prefixed with an LGRH header that contains metadata describing the record.

There are two major distinctions of LGRH data:

#### SMF data

Consists of SMF records.

#### Table data

Consists of data output from the Continuous Collector in a specific binary data format.

The JSON and CSV process stages will only work with LGRH Table data and require access to a set of mapping files in order to be able to parse the binary data format.

### JSON and CSV data

The JSON and CSV stages transform LGRH Table data into textual data in specific JSON and CSV formats. The File output stage partially parses these formats and makes use of information from the data records when deciding where to write them out.

## Configuration

The Data Mover reads its configuration from a Java .properties file.

The syntax of this file is *keyword = value*, and all the reading and parsing is done by Java.

The primary keywords in the file are:

### routes

This specifies the number of routes defined in the config file. While most configurations just run a single route, there are some that run two or more routes. You do need to watch the total memory usage across all of the routes running with an Data Mover as they all run within the same JVM and use a shared memory pool.

### route.r.name

This defines a name for the *r*th route that is used in some message and trace output.

### input.r

This is the input stage for the *r*th route. Its parameters take the form *input.r.keyword*.

### process.r

This is the number of processes stages that are defined for the *r*th. If not present it defaults to 0.

### process.r.n

This is the *n*th process stage for the *r*th route. Its parameters take the form *process.r.n.keyword*.

### outputs.r

This is the number of output stages that are defined for the *r*th route.

### output.r.n

This is the *n*th output stage for the *r*th route. Its parameters take the form *output.r.n.keyword*.

The attributes of each stage are specified with further keyword extensions.

## Stages, keywords, and parameter settings

Stages are specified through the *stage.type* keyword. Parameters for each stage can be adjusted to tailor the Data Mover to suit your installation.

The stages and type keywords are:

### Input stages

#### JOIN

Receive data from a process SPLIT stage

#### LOGSTREAM

Read from a log stream

#### TCPIP

Open a TCP/IP port to listen for connection requests

### Process stages

#### CONSOLE

Send data to the console (stdout) as text

#### CSV

Convert output records from the Continuous Collector into Comma Separate Value records

#### JSON

Convert output records from the Continuous Collector into JSON records

### **FILTER**

Filter by required record types

### **SPLIT**

Propagate data to a JOIN input stage

## **Output stages**

### **CONSOLE**

Dump data to the sysout (JOBLOG)

### **FILE**

Write data to the USS file system

### **LOGSTREAM**

Write to a log stream

### **TCPIP**

Connect and write data to a remote TCP/IP server

## **Common keywords**

The common keywords are used on many stages and always have the same meaning.

### **Common keywords**

#### **.type**

The name of the stage.

#### **.block**

For stages that generate data packets, this is the number of records to put in each data packet.

#### **.trackers**

For input stages, this is the number of trackers to use to manage the data loaded from the input source.

#### **.sourcetype**

A short, single word description of the source of the data. Some stages (JSON and CSV) generate the source name for the data packets they output from the data they place inside them. Specifically they set the source name to be a value derived from the name of the IBM Z Performance and Capacity Analytics Db2 table associated with the source of the data.

#### **.sourcename**

A short, single token name for the data stream.

#### **.pacing**

A delay, in milliseconds, that is added between each data packet that is processed. Used to artificially slow the Data Mover down.

#### **.encoding**

The Java name for the code page that is to be used to encode the data. Used on stages that transform the data.

#### **.float\_format**

This tells the stage the format of the floating point numbers in its input. Values are:

##### **IEEE**

The Java standard

##### **IBM**

IBM S360 encoding

### **Setting .block and .trackers**

On the spoke, the input is from a log stream and needs packing up for transmission to the hub.

The defaults, with 17161 for a log stream stage are:

**input.1.block = 10**

**input.1.trackers = 100**

On the hub, there is a TCPIP input stage, with defaults:

**input.1.trackers = 100**

There is no .block setting as the TCPIP stage simply receives complete data packets with however many blocks the spoke put inside them.

Each spoke that connects to the hub gets its own set of trackers, using the value above. These trackers do not have the 4 second lifespan that the spoke trackers do, so the hub can cycle through them all within a second or so. The value should be at least 25% of the highest spoke tracker value. Higher values can be specified, but that increases the volume of data, although the data is not held very long.

If you increase the spoke .trackers value, then also increase the corresponding hub .trackers value.

## Input stage keywords

The input stages are: **JOIN, LOGSTREAM, TCPIP.**

| Table 2. Data Mover: Input stage parameter settings |                      |          |                                  |           |                                                                  |                |
|-----------------------------------------------------|----------------------|----------|----------------------------------|-----------|------------------------------------------------------------------|----------------|
| Input stage                                         | Command              | Required | Default value                    | Data type | Accepted values                                                  | Case sensitive |
| JOIN                                                | input.r.channel      | Y        | No default                       | String    | Channel name                                                     | Y              |
| LOGSTREAM                                           | input.r.logstream    | Y        | No default                       | String    | Log stream name;<br>1-26 characters                              | Y              |
|                                                     | input.r.block        | N        | 10                               | Integer   | value > 0                                                        |                |
|                                                     | input.r.sourcename   | Y        | No default                       | String    | Source name<br>associated with the<br>records                    | Y              |
|                                                     | input.r.sourcetype   | Y        | No default                       | String    | Source type<br>associated with the<br>records                    | Y              |
|                                                     | input.r.wipe         | N        | no                               | String    | yes   no                                                         | N              |
|                                                     | input.r.strip_header | N        | no                               | String    | yes   no                                                         | N              |
|                                                     | input.r.check_LGRH   | N        | yes                              | String    | yes   no                                                         | N              |
|                                                     | input.r.clear        | N        | no                               | String    | yes   no                                                         | N              |
|                                                     | input.r.encoding     | N        | The environment's local encoding | String    | UTF-8   The encoding use for the data being placed in the packet | N              |
|                                                     | input.r.trackers     | N        | 100                              | Integer   | value > 0                                                        |                |
|                                                     | input.r.checkpoint   | N        | yes                              | String    | yes   no                                                         | N              |
|                                                     | input.r.pacing       | N        | 0                                | Integer   | value ≥ 0                                                        |                |
|                                                     | input.r.max_pack     | N        | 0                                | Integer   | value ≥ 0                                                        |                |
|                                                     | input.r.max_idle     | N        | 0                                | Integer   | value ≥ 0                                                        |                |
|                                                     | input.r.max_overflow | N        | 50                               | Integer   | value ≥ 0                                                        |                |

Table 2. Data Mover: Input stage parameter settings (continued)

| Input stage | Command                | Required | Default value | Data type | Accepted values                                                                                                      | Case sensitive |
|-------------|------------------------|----------|---------------|-----------|----------------------------------------------------------------------------------------------------------------------|----------------|
| TCPIP       | input.r.port           | Y        | No default    | Integer   | TCP/IP port; value ≤ 65535                                                                                           |                |
|             | input.r.use_ssl        | N        | no            | String    | yes   no                                                                                                             | N              |
|             | input.r.trackers       | N        | 100           | Integer   | value > 0                                                                                                            |                |
|             | input.r.nif            | N        | null          | String    | Network interface; must be a valid IPv4, IPv6_STD or IPv6_HEX_COMPRESSED address                                     |                |
|             | input.r.stats_interval | N        | 0             | Integer   | 0, 15, 30, 60 seconds, or 0, 1, 2, 5, 10, 15, 20, 30, 60 minutes;<br>Example:<br>input.r.stats_interval = 15 seconds | N              |

**JOIN**

Receive data from a process SPLIT stage.

**.channel**

This specifies the name of a channel that the input stage listens on. When the SPLIT stage sends a packet to a channel, JOIN stages listening to that channel will receive a copy of it.

Because the JOIN stage is an input stage, each pipeline processing split data must be defined as a separate route.

**LOGSTREAM**

Read from a log stream.

**.logstream**

The name of the log stream to read data from.

Symbolic substitution is supported.

**.wipe**

Set to yes to mark data in the log stream for deletion after it has been processed by the Data Mover.

This parameter is only relevant to the LOGSTREAM input stage. It only applies to spoke systems as it is only a spoke system that takes input from a log stream.

**.checkpoint**

Set to yes (the default) to maintain a restart checkpoint in a USS file. It is updated only after the Data Mover has finished processing the data, and indicates the point in the log stream to start reading from if the Data Mover crashes.

If you turn it off (set to no), then ensure the .checkpoint file is erased to avoid problems if you later turn it back on.

This parameter is only relevant to the LOGSTREAM input stage. It only applies to spoke systems as it is only a spoke system that takes input from a log stream.

**.check\_LGRH**

When set to yes, this causes the stage to check that each record it reads has a valid LGRH header at the front of it. If it finds a record without such a header (indicating that it is either reading the

wrong log stream, or an application other than IBM Z Performance and Capacity Analytics is writing to the log stream), the Data Mover issues an error message and shuts down.

#### **.clear**

Use with caution. If set to yes, it causes the Data Mover to mark all the data in the input log stream as ready for deletion. The Data Mover then shuts down, leaving the log stream effectively empty. See the `clear.properties` sample configuration file “[clear.properties - Erase all records from a log stream](#)” on page 62.

#### **TCPIP**

Open a TCP/IP port to listen for connection requests.

#### **.port**

This specifies the TCP/IP port number that the input stage is to open to listen for connections on.

It expects to be connected to by another Data Mover. Once connected, it will receive complete data packets from the other Data Mover.

### **Process stage keywords**

The process stages are: **CONSOLE**, **CSV**, **FILTER**, **JSON**, **SPLIT**.

| Table 3. Data Mover: Process stage parameter settings |                          |                                |               |           |                                                                  |                |
|-------------------------------------------------------|--------------------------|--------------------------------|---------------|-----------|------------------------------------------------------------------|----------------|
| Process stage                                         | Command                  | Required                       | Default value | Data type | Accepted values                                                  | Case sensitive |
| CONSOLE                                               |                          |                                |               |           |                                                                  |                |
| CSV                                                   | process.r.n.encoding     | N                              | UTF-8         | String    | UTF-8   The encoding use for the data being placed in the packet | N              |
|                                                       | process.r.n.delimiter    | N                              | , (comma)     | String    | The delimiter in your CSV                                        | N              |
|                                                       | process.r.n.float_format | N                              | IEEE          | String    | IEEE   IBM                                                       | N              |
|                                                       | process.r.n.block        | N                              | 30            | Integer   | value > 0                                                        |                |
| FILTER                                                | process.r.n.as           | Y                              | No default    | String    | SMF   IZPCA                                                      | N              |
| JSON                                                  | process.r.n.encoding     | N                              | UTF-8         | String    | UTF-8   The encoding use for the data being placed in the packet | N              |
|                                                       | process.r.n.float_format | N                              | IEEE          | String    | IEEE   IBM                                                       | N              |
|                                                       | process.r.n.block        | N                              | 15            | Integer   | value > 0                                                        |                |
| SPLIT                                                 | process.r.n.channels     | Y                              | No default    | Integer   | value > 0                                                        |                |
|                                                       | process.r.n.channel.x    | Y- if process.r.n.channels > 0 | No default    | String    | Channel name                                                     | Y              |

#### **CONSOLE**

Send data to the console (stdout) as text. Packets are passed through to the next stage.

#### **CSV**

Convert output records from the Continuous Collector into Comma Separate Value records.

### **.delimiter**

This specifies a single character that is to be used as a delimiter between values. The default is a comma.

If you use a different character in the CSV file, you must specify that delimiter to the program reading in the CSV data.

## **FILTER**

Filter by required record types.

### **.as**

Only data in LGRH format can be filtered. This specifies whether it is SMF encoded data (SMF) or table encoded data (IBM Z Performance and Capacity Analytics).

### **.smf\_types**

This specifies the count of SMF filter directives for SMF filtering.

### **.smf\_type.i**

This contains the *i*th SMF filtering directive. Specify no more than one directive for each SMF type.

The format of the entry is:

```
type subtype subtype subtype ...
```

The type is required, the subtypes are optional and, if present, delimited by a space.

The directives define a pass list. Any SMF record that arrives at the filter stage and does not match a directive will be blocked. Packets propagated onwards from the filter stage will only contain SMF records that match a pass directive.

Only use subtype filtering for those records that have subtypes and that follow the normal SMF conventions for defining subtypes in the SMF<sub>x</sub>STY field.

### **.tables**

This specifies the number of table filter directives present for table filtering.

### **.table.i**

This contains the *i*th table filtering directive. Specify no more than one directive for each SMF type.

The format of the entry is:

```
table_name
```

This is the name of the table specified in the record. For IBM Z Performance and Capacity Analytics originated data, this is the Db2 table name, such as KPMZ\_LPAR\_H. There is no support for wild cards.

The directives define a pass list. Any table record that arrives at the filter stage and does not match a directive will be blocked. Packets propagated onwards from the filter stage will only contain table records that match a pass directive.

## **JSON**

Convert output records from the Continuous Collector into JSON records.

## **SPLIT**

Propagate data to a JOIN input stage.

### **.channels**

This is the count of join channels that the data packet should be copied to.

### **.channel.i**

This is the name of the *i*th channel.

The data packet (and all the records in it) is propagated to the JOIN input stage corresponding to each listed channel.

Typically, each Split or Join route passes the data through a different process stage (Filter, JSON, CSV) and then sends its output to a different destination.



Note that the data continues onwards in the route that executed the split.

## Output stage keywords

The output stages are: **CONSOLE**, **FILE**, **LOGSTREAM**, **TCPIP**.

| Table 4. Data Mover: Output stage parameter settings |                             |          |                                                       |           |                                                                                                                    |                |
|------------------------------------------------------|-----------------------------|----------|-------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------|----------------|
| Output stage                                         | Command                     | Required | Default value                                         | Data type | Accepted values                                                                                                    | Case sensitive |
| CONSOLE                                              |                             |          |                                                       |           |                                                                                                                    |                |
| FILE                                                 | output.r.n.filename         | N        | a blank string                                        | String    | Output filename                                                                                                    | Y              |
|                                                      | output.r.n.directory        | N        | . (a fullstop, meaning the current working directory) | String    | Output directory                                                                                                   | Y              |
|                                                      | output.r.n.format           | N        | text                                                  | String    | Text   LGRH   JSON   CSV   SQL                                                                                     | N              |
|                                                      | output.r.n.subdir           | N        | None                                                  | String    | None   Packet   Period   Hour   Day   Week   Month   Year                                                          | N              |
|                                                      | output.r.n.data_dating      | N        | no                                                    | String    | yes   no                                                                                                           | N              |
| LOGSTREAM                                            | output.r.n.logstream        | Y        | No default                                            | String    | Logstream name                                                                                                     | Y              |
|                                                      | output.r.n.check_LGRH       | N        | yes                                                   | String    | yes   no                                                                                                           | N              |
|                                                      | output.r.n.sync             | N        | no                                                    | String    | yes   no                                                                                                           | N              |
|                                                      | output.r.n.enqueue_name     | N        | null                                                  | String    | Enqueue name                                                                                                       | Y              |
| TCPIP                                                | output.r.n.port             | Y        | No default                                            | Integer   | TCPIP port                                                                                                         |                |
|                                                      | output.r.n.host             | Y        | No default                                            | String    | TCPIP host                                                                                                         | Y              |
|                                                      | output.r.n.use_ssl          | N        | no                                                    | String    | yes   no                                                                                                           | N              |
|                                                      | output.r.n.use_buffer       | N        | yes                                                   | String    | yes   no                                                                                                           | N              |
|                                                      | output.r.n.directory        | N        | buffer                                                | String    | TCPIP Directory                                                                                                    | Y              |
|                                                      | output.r.n.pacing           | N        | 0                                                     | Integer   | value ≥ 0                                                                                                          |                |
|                                                      | output.r.n.catchup_trackers | N        | 100                                                   | Integer   | value > 0                                                                                                          |                |
|                                                      | output.r.n.nif              | N        | null                                                  | String    | Network interface                                                                                                  |                |
|                                                      | output.r.n.stats_interval   | N        | 0                                                     | Integer   | 0, 15, 30, 60 seconds, or 0, 1, 2, 5, 10, 15, 20, 30, 60 minutes.<br>Example:<br>input.r.stats_interval=15 seconds | N              |

**CONSOLE**

Dump data to the sysout (JOBLOG).

**FILE**

Write data to the USS file system.

**.directory**

This is the directory that the data gets written out to.

**.filename**

If present, this forces all of the data to be written out to a file with this file name.

If not present, the data will be written out into files corresponding to the sourceType value in the arriving data packets. After processing by a JSON or CSV stage, this will correspond to the name of the IBM Z Performance and Capacity Analytics Db2 table that the data came from.

**.subdir**

This has a range of values and serves to automatically break the data files up amongst a subdirectory structure. The values are:

**None**

No subdirectory is used.

**Hour**

A separate subdirectory is created for data for each hour.

**Day**

A separate subdirectory is created for data for each day.

**Week**

A separate subdirectory is created for data for each week.

**Month**

A separate directory is created for data for each month.

**Year**

A separate directory is created for data for each year.

**Period**

The code will pick a subdirectory to use based upon the aggregation period indicated in the sourceType. Timestamp data is written to a daily directory. Hourly data is written to a weekly directory. Daily data is written to a monthly directory. Weekly and monthly data is written to a yearly directory.

**Packet**

This uses the sourceType as the subdirectory name and writes each packet's data out into a separate timestamped file.

**.format**

This specifies the format of the data. Values are: Text, LGRH, JSON, CSV. The latter 3 enable some special processing in the File stage to improve the quality of the output.

**.data\_dating**

This works with LGRH, JSON, and CSV format data and requires a time-based subdir setting (that is, neither None nor Packet).

Normally the date from the data packet is used by the subdir element to determine the subdirectory that the data will be written to. This will typically reflect the time that the record was processed.

If you specify yes, then the records in the packet will be processed individually and each record's timestamp (Epoch for JSON and CSV files) will be extracted and used to determine which directory it gets written to. This can significantly increase the overhead of writing a data packet out, so only use it when really required.

**LOGSTREAM**

Write to a log stream.

**.logstream**

The name of the output log stream.

Symbolic substitution is supported.

**.sync**

If set to yes, log stream I/O occurs in synchronous mode.

If set to no or omitted, the faster async I/O method is used.

**.enqueue\_name**

If you have multiple Data Movers writing to the same log stream, ensure that they all have the same `.enqueue_name` values specified. This will cause them to wait on the same Sysplex scoped enqueue to get access to the log stream before they write a data packet out to it. This ensures that the sequence of the records they are writing out is preserved.

If the Data Mover is the only one writing to the log stream, you should not specify a value for `.enqueue_name` as it incurs a small performance overhead.

**TCPIP**

Connect and write data to a remote TCP/IP server.

**.hostname**

This is the name of the machine that the TCP/IP output stage should try and connect to.

You can use localhost for this machine (although this may vary with your TCP/IP implementation).

**.port**

This specifies the port on the target machine that the stage should try and connect to.

The destination can be either a Data Mover (local or remote), or a local IBM Common Data Provider for z Data Streamer as described in the IBM Common Data Provider for z Open Streaming API.

**.use\_ssl**

If set to yes, SSL will be used for secure communications. See the installation instructions for details.

**.buffer**

This is the name of a USS directory used to buffer data packets if communications with the remote system are down. It can accumulate quite a lot of data packets.

**Advanced configurations**

The samples provided with IBM Z Performance and Capacity Analytics cover the simple scenarios for which you need to configure the Data Mover. This section looks at some of the more complex scenarios you might wish to deploy.

**SMF filtering**

In this scenario, the Data Mover is to receive SMF records, but needs to remove some of them before feeding them into the log stream for the Continuous Collector. Note that it is more efficient to change the parameters of the SMF Extractor to only collect the records that you want the Continuous Collector to process, but if that is not possible, you can use the technique described here for the Data Mover.

The data flow is illustrated in [Figure 36 on page 76](#).

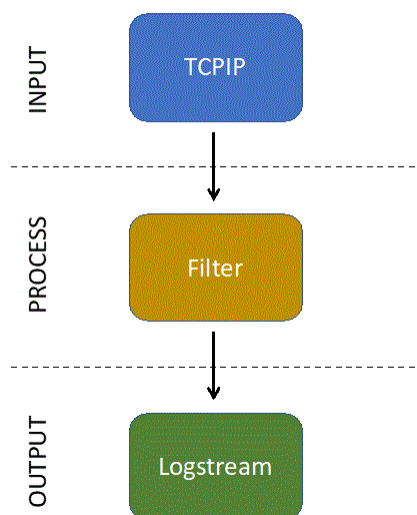


Figure 36. Data Mover configuration scenario: SMF filtering

The input is received over TCP/IP and written out to the log stream for the Continuous Collector, as usual for the hub, but a filter process has been inserted into the middle. The filter process will be given a list of the SMF types and subtypes that are to be passed through to the Collector.

A configuration for this scenario is shown in the following example.

```

#
# This is a sample configuration for a Data Mover running on a
# Hub System
#
routes = 1
route.1.name = Hub
#
# Listen for connections from the Spokes and receive their data.
#
# If you want to use SSL you need to perform the certificate exchange
# before you change the value to YES
#
input.1.type = TCPIP
input.1.port = 54020
input.1.ssl = no
#
# Filter out unwanted SMF records
#
process.1 = 1
#
process.1.1.type = FILTER
process.1.1.as = SMF
process.1.1.smf_types = 5
process.1.1.smf_type.1 = 30
process.1.1.smf_type.2 = 42
process.1.1.smf_type.3 = 70
process.1.1.smf_type.4 = 113
process.1.1.smf_type.5 = 120
#
# For output, we write the data into the log stream
#
outputs.1 = 1
#
output.1.1.type = LOGSTREAM
output.1.1.logstream = IFASMF.CF.LS02
output.1.1.sync = YES
#

```

Figure 37. SMF filtering configuration

The filter will be automatically invoked against all data packets received by the TCPIP stage. What records remain from each data packet will then be passed to the LOGSTREAM stage for output.

**Data splitting**

In this scenario, the Data Mover is to receive data from a single source and distribute it two recipients, optionally filtering the stream sent to one or both of the data destinations.

The data flow is illustrated in [Figure 38 on page 77](#).

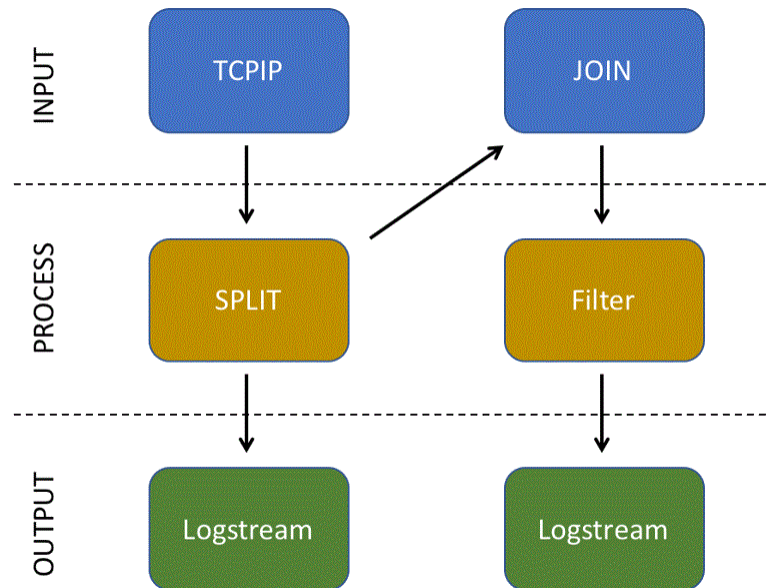


*Figure 38. Data Mover configuration scenario: data splitting*

This is a more complex configuration. Two routes are used, one being the primary input and the other the joined secondary route.

- The primary route receives the data, splits a copy off to the secondary route, and then writes it out to a log stream.
- The secondary route receives the split input, filters it, and then writes the filtered SMF data out to a separate log stream.

A configuration for this scenario is shown in the following example.

```

#
# This is a sample configuration for a Data Mover running on a
# Hub System
#
routes = 2
route.1.name = Primary
route.2.name = Secondary
#
# Listen for connections from the Spokes and receive their data.
#
# If you want to use SSL you need to perform the certificate exchange
# before you change the value to YES
#
input.1.type = TCPIP
input.1.port = 54020
input.1.ssl = no
#
# Copy the data across to the other side
#
process.1 = 1
#
process.1.1.type = SPLIT
process.1.1.channels = 1
process.1.1.channel.1 = secondary
#
# For output, we write the data into the log stream
#
outputs.1 = 1
#
output.1.1.type = LOGSTREAM
output.1.1.logstream = IFASMF.CF.PRI
output.1.1.sync = YES
#
# Receive the joined input
#
input.2.type = JOIN
input.2.channel = secondary
#
# Filter the data in the secondary channel
#
process.2 = 1
#
process.2.1.type = FILTER
process.2.1.as = SMF
process.2.1.smf_types = 5
process.2.1.smf_type.1 = 30
process.2.1.smf_type.2 = 42
process.2.1.smf_type.3 = 70
process.2.1.smf_type.4 = 113
process.2.1.smf_type.5 = 120
#
# For output, we write the data into the log stream
#
outputs.2 = 1
#
output.2.1.type = LOGSTREAM
output.2.1.logstream = IFASMF.CF.SEC
output.2.1.sync = YES
#

```

*Figure 39. Data splitting configuration*

Data packets received through the TCPIP stage will be copied to the secondary stream and then written out to the primary log stream. Data packets reaching the secondary route will be filtered and the surviving records will be written out to the secondary log stream.

## Chapter 4. Installation reference

### Dialog parameters

This topic describes dialog parameters that are set initially by member DRLEINI1 in the DRLxxx.SDRLEXEC library and read from the *userid*.DRLFPROF data set. IBM Z Performance and Capacity Analytics initializes a new user's first dialog session with parameter settings from *userid*.DRLFPROF. From that point forward, a user's dialog parameters are in personal storage in member DRLFPROF in the library allocated to the ISPPROF ddname, which is usually *tsoprefix*.ISPF.PROFILE. If DRLFPROF exists, a user changes parameter values through the Dialog Parameters window. DRLEINI1 continues to set parameters that do not appear in the Dialog Parameters window. It does this when a user starts IBM Z Performance and Capacity Analytics.

[“Step 4: Preparing the dialog and updating the dialog profile” on page 19](#) describes the installation step where *userid*.DRLFPROF is customized for your site. It refers to this section for descriptions of:

- [“Modifying the DRLFPROF data set” on page 79](#)
- [“Overview of the Dialog Parameters window” on page 80](#)
- [“Dialog parameters - variables and fields” on page 81](#)
- [“Allocation overview” on page 90](#)

### Modifying the DRLFPROF data set

#### About this task

The DRLFPROF data set contains user modifiable parameters. A sample of the DRLFPROF data set is provided in member DRLFPROF in library SDRLCNTL. To customize DRLFPROF with your site specific values, allocate a data set with the name *userid*.DRLFPROF and copy in the sample DRLFPROF member from the SDRLCNTL library.

For a description of the fields that can be modified in the *userid*.DRLFPROF data set, see [“Dialog parameters - variables and fields” on page 81](#).

When editing the *userid*.DRLFPROF data set, note that:

- IBM Z Performance and Capacity Analytics regards any characters after the */\** characters as comments. This means that */\** JCL comments cannot be used. A closing *\*/* is recommended but not required.
- The format for field assignment is: field-name = value */\** comment *[/]* except as noted below. No other tokens may be present. Tokens are case insensitive.
- Each field assignment must be completed on one line. Continuation is not supported.
- Any value (even integer values) can be given as a REXX-style string, delimited by the single (') or double (") quotation marks. Escaping of delimiter characters works in the same way as a REXX string.
- If a value does not begin with a ' or " character, only the first blank-separated word present after the = character is taken.
- Though sequence numbering in DRLFPROF may not cause errors, it is not supported and should be turned off.
- For the fields DEF\_JCLSTA1, DEF\_JCLSTA2, DEF\_JCLSTA3 and DEF\_JCLSTA4, the value is taken as any characters between the = and the */\**, or end of the line if no comment is present. Delimiting this value with double quotation marks (") is highly recommended but not required.
- If the above recommendations are adhered to, the DRLFPROF file syntax is a subset of REXX syntax and so syntax highlighting can be used for easier editing.

## Overview of the Dialog Parameters window

The parameters displayed in the Dialog Parameters window depend on whether your installation uses QMF. This section shows the parameters used when QMF is used. For an overview of the parameters used when QMF is not installed on your system, refer to [Figure 41 on page 81](#).

### Dialog Parameters when QMF is used

Figure 40 on page 80 is a logical view of the Dialog Parameters window, which is available from the System window of the administration dialog and from the Other pull-down of the reporting dialog. You can change the personal settings that control their your dialog sessions. For a description of the fields in this window, see “Dialog parameters - variables and fields” on page 81.

Dialog Parameters

Type information. Then press Enter to save and return.

More: +

```

Db2 subsystem name . . . . . DSN
Db2 plan name for IZPCA . . . . DRLPLAN
Database name . . . . . DRLDB
Storage group default . . . . DRLSG
Prefix for system tables . . DRLSYS
Prefix for all other tables . DRL
Show IZPCA environment data . NO (YES or NO)

Buffer pool for data . . . . BP0
Buffer pool for indexes . . . BP0

Users to grant access to . . DRLUSER  -----
                                -----

SQL ID to use (in QMF) . . . DRLUSER
QMF language . . . . . PROMPTED (SQL or PROMPTED)
SYSOUT class (in QMF) . . . Q
Default printer . . . . . (for graphic reports)
SQLMAX value . . . . . 5000

Reporting dialog mode . . . 1 1. End-user mode
                             2. Administrator mode

Dialog language . . . . . 1 1. English

Db2 data sets
  Prefix . . . . . DSN810
  Suffix . . . . .
QMF data sets prefix . . . QMF810

IBM Z Performance and Capacity Analytics data sets prefix . . . DRL310
Temporary data sets prefix . (user_ID substituted)

Local definitions data set DRL.LOCAL.DEFS
Local GDDM formats data set DRL.LOCAL.ADMCFORM
Local messages data set . . DRL.LOCAL.MESSAGES
Saved reports data set . . . DRL.LOCAL.REPORTS
Saved charts data set . . . DRL.LOCAL.CHARTS

Job statement information (required for batch jobs):
//(user_ID substituted) JOB (000000,XXX),'USER1',MSGLEVEL=(1,1),
// NOTIFY=(user_ID substituted),MSGCLASS=Q,CLASS=E,REGION=4096K
//*

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

Figure 40. Dialog Parameters window, when QMF is used

### Dialog Parameters when QMF is not used

Figure 41 on page 81 is a logical view of the Dialog Parameters window, which is available from the System window of the administration dialog and from the Other pull-down of the reporting dialog. IBM Z Performance and Capacity Analytics users can change personal settings that control their dialog sessions. For a description of the fields in this window, see “Dialog parameters - variables and fields” on page 81.



Dialog Parameters

Type information. Then press Enter to save and return.

More: +

```

Db2 subsystem name . . . . . DSN
Db2 plan name for IZPCA . . . . DRLPLAN
Database name . . . . . DRLDB
Storage group default . . . . DRLSG
Prefix for system tables . . DRLSYS
Prefix for all other tables . DRL
Show IZPCA environment data . . NO   (YES or NO)

Buffer pool for data . . . . . BP0
Buffer pool for indexes . . . . BP0

Users to grant access to . . DRLUSER   _____
                                   _____

Batch print SYSOUT class . . . A
Printer line count per page 60
SQLMAX value . . . . . 5000

Reporting dialog mode . . . . 1   1. End-user mode
                                   2. Administrator mode

Dialog language . . . . . 1   1. English

Db2 data sets
  Prefix . . . . . DB2.V820
  Suffix . . . . .

IZPCA data sets prefix . . . IZPCA182
Temporary data sets prefix   (user_ID substituted)

Local defs data set . . . . . DRL.LOCAL.DEFS
Local User defs data set . . DRL.LOCAL.USER.DEFS
Local GDDM formats data set  DRL.LOCAL.ADMCFORM
Local messages data set . . . DRL.LOCAL.MESSAGES
Saved reports data set . . . DRL.LOCAL.REPORTS
Saved charts data set . . . . DRL.LOCAL.CHARTS

Job statement information (required for batch jobs):

//(user_ID substituted) JOB (000000,XXXX),'USER1',MSGLEVEL(1,1),
//  NOTIFY=&SYSUID,MSGCLASS=Q,CLASS=E,REGION=4096K
//*
//*
F1=Help      F2=Split    F7=Bkwd    F8=Fwd     F9=Swap    F12=Cancel

```

Figure 41. Dialog Parameters window, when QMF is not used

## Dialog parameters - variables and fields

Most variable names in *userid.DRLFPROF* and field names in the Dialog Parameters window are directly related. The following table describes the relationship between the variables and fields and describes how IBM Z Performance and Capacity Analytics uses the values to allocate libraries or control other dialog functions. It also describes variables and fields that do not have exact equivalents.

“Modifying the DRLFPROF data set” on page 79 shows the user-modifiable area of the file that is processed at the product startup. The “Overview of the Dialog Parameters window” on page 80 shows the Dialog Parameters window. “Allocation overview” on page 90 describes the data sets allocated by IBM Z Performance and Capacity Analytics.

| <i>userid.DRLFPROF</i> variable name                                                                   | Dialog Parameters field name | Default value | Your value |
|--------------------------------------------------------------------------------------------------------|------------------------------|---------------|------------|
| modtenu                                                                                                | N/A                          | None          |            |
| The fully qualified name of the user tables' library, if any. The maximum supported value is 99999999. |                              |               |            |
| db2plib2                                                                                               | N/A                          | SDSNPF        |            |

## Dialog parameters - variables and fields

| <b>userid.DRLFPROF variable name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Dialog Parameters field name</b> | <b>Default value</b> | <b>Your value</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|-------------------|
| The Db2 panel library, which, depending on the value of db2def, is either a fully qualified name or a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |                      |                   |
| db2plibe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                 | SDSNPFPE             |                   |
| The English Db2 panel library, which, depending on the value of db2def, is either a fully qualified name or a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |                      |                   |
| db2plibk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                 | SDSNPFPK             |                   |
| qmfprint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                 | YES                  |                   |
| Specifies whether the QMF output is saved in the DSQPRINT data set (YES) or in the SYSOUT class (NO).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                      |                   |
| def_db2subs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Db2 subsystem name                  | DSN                  |                   |
| <p>The Db2 subsystem where IBM Z Performance and Capacity Analytics resides.</p> <p>This required field can be 4 alphanumeric characters. The first character must be alphabetic.</p> <p>The default value is DSN. If the value in this field is something other than DSN, it was changed during installation to name the correct Db2 subsystem.</p> <p>Do not change the value to name another Db2 subsystem to which you might have access. IBM Z Performance and Capacity Analytics must use the Db2 subsystem that contains its system, control, and data tables.</p>                                                                                                    |                                     |                      |                   |
| def_db2plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Db2 plan name for IZPCA             | DRLPLAN              |                   |
| <p>The Db2 plan name to which the distributed IBM Z Performance and Capacity Analytics for z/OS DBRM has been bound.</p> <p>This required field can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default value for this field is DRLPLAN. If the value in this field is something other than DRLPLAN, it may have been changed during installation to refer to a customized plan name for IBM Z Performance and Capacity Analytics .</p> <p>Only change the plan name shown here if instructed to do so by your IBM Z Performance and Capacity Analytics system administrator.</p>                                                       |                                     |                      |                   |
| def_dbname                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Database name                       | DRLDB                |                   |
| <p>The Db2 database that contains all IBM Z Performance and Capacity Analytics system, control, and data tables. The value of this field is set during installation.</p> <p>This required field can be up to 8 alphanumeric characters. The first character must be alphabetic. The value of this field depends on the naming conventions at your site.</p> <p>The default database is DRLDB. If this value is something other than DRLDB, it is likely the default value for your site.</p> <p>Do not change this name to identify another Db2 database to which you have access. You must use the Db2 database that contains IBM Z Performance and Capacity Analytics.</p> |                                     |                      |                   |
| def_storgrp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Storage group default               | DRLSG                |                   |
| <p>The storage group that IBM Z Performance and Capacity Analytics uses for the Db2 database identified in the Database name field.</p> <p>This required field can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRLSG. If the value of the field is something other than DRLSG, it was changed during installation.</p> <p>Do not change the value of this field to another storage group to which you might have access; IBM Z Performance and Capacity Analytics uses the value of this field to create new tables.</p>                                                                                                     |                                     |                      |                   |
| def_syspref                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Prefix for system tables            | DRLSYS               |                   |
| <p>The prefix of all IBM Z Performance and Capacity Analytics system and control Db2 tables. The value of this field depends upon your naming conventions and is determined during installation.</p> <p>This required field can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRLSYS. If the value is something other than DRLSYS, it was changed during installation.</p> <p>Do not change the value; IBM Z Performance and Capacity Analytics uses this value to access its system tables.</p>                                                                                                                               |                                     |                      |                   |
| def_othtbpfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Prefix for all other tables         | DRL                  |                   |
| <p>The prefix of IBM Z Performance and Capacity Analytics data tables in the Db2 database.</p> <p>Valid values are determined at installation.</p> <p>This required field can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRL. If the value is something other than DRL, it was changed during installation.</p>                                                                                                                                                                                                                                                                                                             |                                     |                      |                   |

| <i>userid</i> .DRLFPFROF variable name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Dialog Parameters field name | Default value | Your value |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|------------|
| def_drlshwid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Show IZPCA environment data  | NO            |            |
| <p>Specifies whether or not to display the IBM Z Performance and Capacity Analytics environment data in the main panels.</p> <p>This required field can have a value of YES or NO.</p> <p>The default value for this field is NO.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |               |            |
| def_tsbpool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Buffer pool for data         | BP0           |            |
| <p>The default buffer pool for IBM Z Performance and Capacity Analytics table spaces. This field can have values from BP0 to BP49, from BP8K0 to BP8K9, from BP16K0 to BP16K9, from BP32K to BP32K9. The buffer pool implicitly determines the page size. The buffer pools BP0, BP1, ..., BP49 hold 4-KB pages. The buffer pools BP8K0, BP8K1, ..., BP8K9 hold 8-KB pages. The buffer pools BP16K0, BP16K1, ..., BP16K9 hold 16-KB pages. The buffer pools BP32K, BP32K1, ..., BP32K9 hold 32-KB pages.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |               |            |
| def_ixbpool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Buffer pool for indexes      | BP0           |            |
| <p>The default buffer pool for IBM Z Performance and Capacity Analytics indexes. This field can have values from BP0 to BP49 (The buffer pool for indexes must identify a 4-KB buffer pool).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |               |            |
| def_iduser1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Users to grant access to     | DRLUSER       |            |
| <p>The user IDs or group IDs of users who are granted Db2 access to the next component you install. Users or user groups with Db2 access to a component have access to the tables and views of the component. You can specify up to 8 users or group IDs in these fields.</p> <p>You must specify a value for at least one of the fields.</p> <p>Each user ID or group ID can be 8 alphanumeric characters. The first character must not be numeric.</p> <p>The default is DRLUSER, as shipped by IBM. You can use any user group ID that is valid for your Db2 system. You should use one such group ID to define a list of core IBM Z Performance and Capacity Analytics users (who might include yourself). It is a good idea to leave such a core group as the value in one of the fields, regardless of whether you control user access to various components by adding other group IDs.</p> <p>You can grant users access to the tables and views of a component by listing them here before you install the component.</p> <p>Consider using RACF group IDs or Db2 secondary authorization IDs and specifying them in these fields before installing a component. It is easier to connect individual user IDs to an authorized group than it is to grant each individual access to each table or view that they need.</p> |                              |               |            |
| def_idsqlusr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SQL ID to use (in QMF)       | DRLUSER       |            |
| <p>This field is used only if your installation uses QMF.</p> <p>The Db2 primary or secondary authorization ID to which you are connected. IBM Z Performance and Capacity Analytics uses the value of this field in the SET CURRENT SQLID as it starts QMF. The ID must have Db2 authorization to IBM Z Performance and Capacity Analytics tables and views.</p> <p>This required field can be up to 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRLUSER. If the value is something other than DRLUSER, it was changed during installation.</p> <p>You can change this value to your user ID if you have Db2 authorization to IBM Z Performance and Capacity Analytics tables and views.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |               |            |
| def_qmflng                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | QMF language                 | PROMPTED      |            |
| <p>The QMF language for creating reports and queries, either SQL (structured query language) or PROMPTED QUERY.</p> <p>PROMPTED QUERY is the default QMF language for IBM Z Performance and Capacity Analytics.</p> <p>This is a required field, if your installation uses QMF.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |               |            |
| def_qmfprt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SYSOUT class (in QMF)        | Q             |            |
| <p>The SYSOUT class for report data sets that QMF generates, or for output that QMF routes to a printer. The default value is <b>Q</b>.</p> <p>This is a required field, if your installation uses QMF.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |               |            |
| def_printer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Default printer              | blank         |            |
| <p>The GDDM nickname of a printer to use for printing graphic reports. The printer should be one capable of printing GDDM-based graphics.</p> <p>The printer name must be defined in the GDDM nicknames file, allocated to the ADMDEFS ddname. Refer to <i>QMF: Reference</i> and <i>GDDM User's Guide</i> for more information about defining GDDM nicknames.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |               |            |
| def_drlprt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Batch print SYSOUT class     | A             |            |
| <p>This field is used only if your installation does not use QMF.</p> <p>A valid SYSOUT class for printing tabular reports in batch. Valid values are A-Z, 0-9, and *.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |               |            |

## Dialog parameters - variables and fields

| <i>userid</i> .DRLFPROF variable name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Dialog Parameters field name | Default value | Your value |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|------------|
| def_pagelen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Printer line count per page  | 60            |            |
| <p>This field is used only if your installation does not use QMF.</p> <p>The number of report lines that should be printed on each page when you print tabular reports online and in batch.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |               |            |
| def_drlmax                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SQLMAX value                 | 5000          |            |
| <p>The maximum number of rows for any single retrieval from an IBM Z Performance and Capacity Analytics table when using an IBM Z Performance and Capacity Analytics-Db2 interface for such functions as listing tables, reports, or log definitions.</p> <p>The value of this required field is the maximum allowed size of the IBM Z Performance and Capacity Analytics Db2 table to be retrieved. The default value is 5000 rows of data.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |               |            |
| def_rptdialg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reporting dialog mode        | 1             |            |
| <p>The dialog mode for using the reporting dialog. Any option you save applies to future sessions.</p> <p>You can choose administrator mode to access reports belonging to all users if you have an IBM Z Performance and Capacity Analytics administrator authority. You can choose end-user mode to access reports that you have created or that have been created for you (including public reports).</p> <p>Type <b>1</b> to use end-user mode or <b>2</b> to specify administrator mode. If you leave the field blank, the default is end-user mode.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |               |            |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Dialog language              | 1             |            |
| <p>The language in which IBM Z Performance and Capacity Analytics displays all its windows.</p> <p>IBM Z Performance and Capacity Analytics supports those languages listed in the window. Choose the language your site has installed.</p> <p>If you leave this field blank, IBM Z Performance and Capacity Analytics displays its windows in English.</p> <p>Any changes you make to this field become effective in your next dialog session, when IBM Z Performance and Capacity Analytics allocates its libraries.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |               |            |
| def_db2dspfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Db2 data sets-prefix         | DSN710        |            |
| <p>The prefix to which IBM Z Performance and Capacity Analytics appends Db2 data set names as it performs tasks.</p> <p>This field is required if db2def is SUFFIX. If db2def is DATASET, this field is ignored.</p> <p>This field can be 35 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default is DB2.V810. If the value of this field is something other than DB2.V810, it was changed during installation.</p> <p>Any changes you make to this field become effective in your next session, when IBM Z Performance and Capacity Analytics allocates Db2 libraries and data sets.</p>                                                                                                                                                                                                                                                                                                                                                                                 |                              |               |            |
| Db2 data sets-suffix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | def_db2dssfx                 | blank         |            |
| <p>The suffix that IBM Z Performance and Capacity Analytics appends as the low-level qualifier for Db2 data sets that IBM Z Performance and Capacity Analytics uses. Most sites do not use a Db2 data set suffix, but this depends on your Db2 naming conventions.</p> <p>This field can be used if db2def is SUFFIX. If db2def is DATASET, this field is ignored.</p> <p>This field can be 35 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>Your IBM Z Performance and Capacity Analytics administrator can set a default value for this field if it is in use at your site. If the field is blank, it is very likely not in use.</p> <p>Do not use this field to qualify data sets that you create; this is not its purpose. Use it to identify Db2 modules only.</p> <p>Any changes you make to this field are not effective until your next invocation of the dialog, when IBM Z Performance and Capacity Analytics has a chance to reallocate Db2 libraries and data.</p> |                              |               |            |
| def_qmfdspfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | QMF data sets prefix         | QMF710        |            |

| <b>userid.DRLFPROF variable name</b> | <b>Dialog Parameters field name</b>                       | <b>Default value</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Your value</b> |
|--------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|                                      |                                                           | <p>This field is used only if your installation uses QMF. The prefix to which IBM Z Performance and Capacity Analytics appends all QMF data set names. This includes all QMF libraries allocated by the dialog during invocation. It also includes all QMF queries and forms.</p> <p>If qmfdef is SUFFIX, this field is required. If qmfdef is DATASET, this field is ignored.</p> <p>This field can be up to 35 alphanumeric characters. Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default is DB2.V810. If the value is something other than DB2.V810, it was changed during installation.</p> <p>Do not use this value to identify your personal QMF data sets. IBM Z Performance and Capacity Analytics uses this value for all QMF data sets.</p> <p>Any changes you make to this field become effective in your next session, when IBM Z Performance and Capacity Analytics allocates its libraries.</p>                                                                                                                                                                                                                                                      |                   |
| def_dsnpref                          | IBM Z Performance and Capacity Analytics data sets prefix | DRL310                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |
|                                      |                                                           | <p>The prefix of IBM Z Performance and Capacity Analytics libraries.</p> <p>This required field can be up to 35 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default is DRL310. If the value of this field is something other than DRL310, it was changed during installation.</p> <p>Any changes you make to this field become effective in your next session, when IBM Z Performance and Capacity Analytics allocates its libraries.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |
| No equivalent                        | Temporary data sets prefix                                | user_ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                   |
|                                      |                                                           | <p>The prefix for any temporary data sets you create while using IBM Z Performance and Capacity Analytics.</p> <p>This required field can be up to 35 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default value is your user_ID or the TSO_prefix.user_ID.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |
| def_dsnlocdn                         | Local definitions data set                                | DRL.LOCAL.DEFS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |
|                                      |                                                           | <p>The partitioned data set (PDS) that contains definitions of IBM Z Performance and Capacity Analytics objects you have created. The value of this field depends on naming conventions that apply to IBM Z Performance and Capacity Analytics.</p> <p>The members of this PDS contain definition statements that define new objects to IBM Z Performance and Capacity Analytics. IBM Z Performance and Capacity Analytics uses the value of this field to locate local definition members.</p> <p>This optional field can be 44 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default PDS is DRL.LOCAL.DEFS. Your administrator can set a different default for this field during installation. Do not change the value that your IBM Z Performance and Capacity Analytics administrator sets.</p> <p>Any changes you make to this field are not effective until you start the dialog again, when IBM Z Performance and Capacity Analytics reallocates local definition data sets.</p>                                                                                                                                                |                   |
| def_usrlocdn                         | Local User alter/definitions data set                     | DRL.LOCAL.USER.DEFS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |
|                                      |                                                           | <p>The partitioned data set (PDS) that contains definitions of IBM Z Performance and Capacity Analytics objects you have modified. The value of this field depends on naming conventions that apply to IBM Z Performance and Capacity Analytics.</p> <p>The members of this PDS contain definition statements that define user modified objects to IBM Z Performance and Capacity Analytics. This PDS also contains members with alter statements built by the update processor on the definitions contained in the same PDS. IBM Z Performance and Capacity Analytics uses the value of this field to locate local user definition members.</p> <p>This optional field can be 44 alphanumeric characters. Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default PDS is DRL.LOCAL.USER.DEFS. Your administrator can set a different default for this field during installation. Do not change the value that your IBM Z Performance and Capacity Analytics administrator sets.</p> <p>Any changes you make to this field are not effective until you start the dialog again, when IBM Z Performance and Capacity Analytics reallocates local definition data sets.</p> |                   |

## Dialog parameters - variables and fields

| <b>userid.DRLFPROF variable name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Dialog Parameters field name</b>                    | <b>Default value</b>                                                                                   | <b>Your value</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------|
| def_modform                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The local GDDM formats data set                        | DRL.LOCAL.ADMCFORM                                                                                     |                   |
| The data set where you keep your GDDM formats for graphic reports.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                        |                                                                                                        |                   |
| def_drlmsgs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Local messages data set                                | DRL.LOCAL.MESSAGES                                                                                     |                   |
| <p>Use this field to identify a PDS that contains messages generated by users during communication with IBM Z Performance and Capacity Analytics administrators.</p> <p>The value of this field depends on naming conventions that your IBM Z Performance and Capacity Analytics administrator has established.</p> <p>This required field can be up to 44 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>Any changes you make to this field are not effective until you start the dialog again, when IBM Z Performance and Capacity Analytics reallocates the message data set.</p> |                                                        |                                                                                                        |                   |
| def_dsnreprt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Saved reports data set                                 | DRL.LOCAL.REPORTS                                                                                      |                   |
| <p>The PDS where IBM Z Performance and Capacity Analytics saves your tabular reports.</p> <p>This optional field can be up to 44 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default PDS is DRL.LOCAL.REPORTS.</p>                                                                                                                                                                                                                                                                                                                                                            |                                                        |                                                                                                        |                   |
| def_dsnchrts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Saved charts data set                                  | DRL.LOCAL.CHARTS                                                                                       |                   |
| <p>The PDS where IBM Z Performance and Capacity Analytics saves the graphic reports you choose to save.</p> <p>This optional field can be up to 44 alphanumeric characters.</p> <p>Names longer than 8 characters must be in groups of not more than 8 characters, separated by periods. The first character of each group must be alphabetic.</p> <p>The default PDS is DRL.LOCAL.ADMGDF.</p>                                                                                                                                                                                                                                                                                                                                           |                                                        |                                                                                                        |                   |
| def_jclsta1, def_jclsta2,<br>def_jclsta3, def_jclsta4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Job statement information<br>(required for batch jobs) | Sample job card in which IBM Z Performance and Capacity Analytics dynamically substitutes the user ID. |                   |
| <p>The job statement information to be used for batch jobs that the dialogs create for you.</p> <p>You must use correct JCL in the job statement. IBM Z Performance and Capacity Analytics does not validate job statement information.</p> <p>Do not use JCL comments in these JCL statements.</p> <p>You can specify up to four card images in these job statement fields.</p> <p>The first "/" card image should contain the job name. Press Enter to save any job statements for all future sessions.</p>                                                                                                                                                                                                                            |                                                        |                                                                                                        |                   |
| dsnsufx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                    | SDRLDEFS                                                                                               |                   |
| The IBM Z Performance and Capacity Analytics definitions data set suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                        |                                                                                                        |                   |
| execsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                    | SDRLEXEC                                                                                               |                   |
| The IBM Z Performance and Capacity Analytics exec data set suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                        |                                                                                                        |                   |
| loadsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                    | SDRLLOAD                                                                                               |                   |
| The IBM Z Performance and Capacity Analytics load library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                        |                                                                                                        |                   |
| skelsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                    | SDRLSKEL                                                                                               |                   |
| The IBM Z Performance and Capacity Analytics skeleton data set suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                        |                                                                                                        |                   |
| eng_lib_sfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | N/A                                                    | ENU                                                                                                    |                   |
| The English library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                        |                                                                                                        |                   |
| def_nlslang                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | N/A                                                    | eng_lib_sfx                                                                                            |                   |
| The national language library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                        |                                                                                                        |                   |

| <b>userid.DRLFPROF variable name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Dialog Parameters field name</b> | <b>Default value</b> | <b>Your value</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|-------------------|
| repsufx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | "SDRLR"+def_nlslang  |                   |
| The IBM Z Performance and Capacity Analytics report definitions library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |                      |                   |
| plibsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | "SDRLP"+def_nlslang  |                   |
| The IBM Z Performance and Capacity Analytics panel library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                     |                      |                   |
| messsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | "SDRLM"+def_nlslang  |                   |
| The IBM Z Performance and Capacity Analytics message library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                      |                   |
| formsfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | "SDRLF"+def_nlslang  |                   |
| The IBM Z Performance and Capacity Analytics GDDM formats library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |                      |                   |
| eng_qmf_sfx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                                 | E                    |                   |
| The English library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                      |                   |
| def_qmflang                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                                 | eng_qmf_sfx          |                   |
| The national language default library suffix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                      |                   |
| qmfdef                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/A                                 | SUFFIX               |                   |
| <p>The method of describing QMF library names to IBM Z Performance and Capacity Analytics, either SUFFIX or DATASET.</p> <p>If qmfdef is SUFFIX (the default), IBM Z Performance and Capacity Analytics implements the QMF library naming standard, requiring a prefix for QMF data sets (def_qmfdspfx) and a suffix (described below). IBM Z Performance and Capacity Analytics appends each suffix to the QMF prefix to identify QMF libraries, which it then allocates.</p> <p>If qmfdef is DATASET, IBM Z Performance and Capacity Analytics does not use a prefix or suffix and you must specify fully-qualified data set names for the QMF library variables described below.</p> <p>In either case, IBM Z Performance and Capacity Analytics uses the next several variables to allocate QMF libraries.</p> |                                     |                      |                   |
| qmfclib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | SDSQCLST+def_qmflang |                   |
| The QMF CLIST library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                      |                   |
| qmfclibe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | N/A                                 | SDSQCLST+eng_qmf_sfx |                   |
| The English QMF CLIST library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx. IBM Z Performance and Capacity Analytics requires this library even though you might be using another language.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |                      |                   |
| qmfelib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | SDSQEXEC+def_qmflang |                   |
| The QMF EXEC library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                      |                   |
| qmfelibe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | N/A                                 | SDSQEXEC+eng_qmf_sfx |                   |
| The English QMF EXEC library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx. IBM Z Performance and Capacity Analytics requires this library even though you might be using another language.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                      |                   |
| qmfplib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | SDSQPLIB+def_qmflang |                   |
| The QMF panel library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                      |                   |
| qmfmlib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | SDSQMLIB+def_qmflang |                   |
| The QMF message library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |                      |                   |
| qmfslib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                 | SDSQSLIB+def_qmflang |                   |
| The QMF skeleton library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                      |                   |
| qmfmap                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/A                                 | SDSQMAP+def_qmflang  |                   |
| The ADMGGMAP library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                      |                   |

## Dialog parameters - variables and fields

| <b>userid.DRLFPROF variable name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Dialog Parameters field name</b> | <b>Default value</b> | <b>Your value</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|-------------------|
| qmfpl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                 | DSQPNL+def_qmflang   |                   |
| The QMF panel library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                      |                   |
| dsqpl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N/A                                 | DSQPNL+def_qmflang   |                   |
| The ddname of QMF DSQPNLx library. Even if you use fully-qualified data set names to identify QMF data sets, you must specify the ddname of your DSQPNLx library as the value of this variable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                      |                   |
| qmfload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | SDSQLOAD             |                   |
| The QMF load library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |                      |                   |
| qmfchart                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                 | DSQCHART             |                   |
| The ADMCFORM library, which (depending on the value of qmfdef), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_qmfdspfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     |                      |                   |
| qmfdsdum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                 | DUMMY                |                   |
| The fully-qualified name of the data set to be allocated to ddname DSQDUMP, or DUMMY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |                      |                   |
| qmfdebug                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                 | DUMMY                |                   |
| The fully-qualified name of the data set to be allocated to ddname DSQDEBUG, or DUMMY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |                      |                   |
| dsunit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                                 | SYSDA                |                   |
| The disk unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |                      |                   |
| db2ver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                                 | 10                   |                   |
| The version of Db2. Must be a decimal number 1-99.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                      |                   |
| db2rel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                                 | 1                    |                   |
| The release of Db2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |                      |                   |
| db2def                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                                 | SUFFIX               |                   |
| <p>The method of describing Db2 library names to IBM Z Performance and Capacity Analytics, either SUFFIX or DATASET.</p> <p>If db2def is SUFFIX (the default), IBM Z Performance and Capacity Analytics implements the Db2 library naming standard, requiring a prefix for Db2 data sets (def_db2dspfx), a library name, and an optional suffix (def_db2dssfx).</p> <p>If db2def is DATASET, IBM Z Performance and Capacity Analytics does not use a prefix or a suffix and you must specify fully-qualified data set names for the Db2 library variables described below.</p> <p>In either case, IBM Z Performance and Capacity Analytics uses the next several variables to allocate Db2 libraries.</p> |                                     |                      |                   |
| db2llib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | RUNLIB.LOAD          |                   |
| The Db2 runlib load library name, which (depending on the value of db2def), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |                      |                   |
| db2load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | SDSNLOAD             |                   |
| The Db2 load library, which (depending on the value of db2def), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |                      |                   |
| db2clst                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | SDSNCLIST            |                   |
| The Db2 CLIST library, which (depending on the value of db2def), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                      |                   |
| db2mlib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | SDSNSPFM             |                   |
| The Db2 message library, which (depending on the value of db2def), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                      |                   |
| db2plib                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                                 | SDSNSPFP             |                   |
| The Db2 panel library, which (depending on the value of db2def), is the fully-qualified name or is a value that IBM Z Performance and Capacity Analytics appends to def_db2dspfx before appending def_db2dssfx.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                      |                   |
| gddmload                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                 | GDDM.SADMMOD         |                   |



| <i>userid</i> .DRLFPFROF variable name                                                                                                                                                                                                                                                                                                                                                                                                        | Dialog Parameters field name | Default value | Your value |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|------------|
| The GDDM load library.                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |               |            |
| admsymb1                                                                                                                                                                                                                                                                                                                                                                                                                                      | N/A                          | GDDM.SADMSYM  |            |
| The GDDM symbols library.                                                                                                                                                                                                                                                                                                                                                                                                                     |                              |               |            |
| admdefs                                                                                                                                                                                                                                                                                                                                                                                                                                       | N/A                          | SYS1.GDDMNICK |            |
| The GDDM nicknames library.                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |               |            |
| admprntq                                                                                                                                                                                                                                                                                                                                                                                                                                      | N/A                          | None          |            |
| The data set name of the GDDM master print queue, if any. This overrides any value specified for TSOPRNT in the GDDM external defaults file. If you supply a value, IBM Z Performance and Capacity Analytics adds an ADMPRNTQ DD statement to the batch JCL for graphic reports.                                                                                                                                                              |                              |               |            |
| def_geapplid                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                          | zuser         |            |
| The application ID (usually sent as a TSO user ID) that has an assigned Information/Management privilege class. The default is the user ID of the IBM Z Performance and Capacity Analytics user.                                                                                                                                                                                                                                              |                              |               |            |
| def_gesessn                                                                                                                                                                                                                                                                                                                                                                                                                                   | N/A                          | BLGSES00      |            |
| The session member (module) used to start an Information/Management session.                                                                                                                                                                                                                                                                                                                                                                  |                              |               |            |
| def_geprivcl                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                          | MASTER        |            |
| The privilege class specified in an Information/Management group record.                                                                                                                                                                                                                                                                                                                                                                      |                              |               |            |
| VIEWER                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                          | NO            |            |
| Specifies and enables the use of the Viewer. This parameter should be YES, unless you never use the Viewer. If the value here is YES, you can also run your own reports any time in the future in the Viewer application. Any other value than YES or NO causes IBM Z Performance and Capacity Analytics to use YES.                                                                                                                          |                              |               |            |
| qmfuse                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                          | YES           |            |
| Specifies if QMF is used with IBM Z Performance and Capacity Analytics in your installation. Any other value than YES or NO causes IBM Z Performance and Capacity Analytics to use YES.                                                                                                                                                                                                                                                       |                              |               |            |
| gddmuse                                                                                                                                                                                                                                                                                                                                                                                                                                       | N/A                          | YES           |            |
| Specifies if GDDM is used with IBM Z Performance and Capacity Analytics in your installation. (If QMF is used, GDDM must be used.) If GDDM is not used, reports are always shown in tabular format. Any other value than YES or NO causes IBM Z Performance and Capacity Analytics to use YES.                                                                                                                                                |                              |               |            |
| decsep                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                          | PERIOD        |            |
| When generating tabular reports without QMF, IBM Z Performance and Capacity Analytics uses period as decimal separator and comma as thousands separator. You can exchange the decimal and thousands separators by specifying decsep="COMMA". In that case, period is used as thousands separator. Any other value of decsep causes IBM Z Performance and Capacity Analytics to use period as a decimal separator.                             |                              |               |            |
| subhdrv                                                                                                                                                                                                                                                                                                                                                                                                                                       | N/A                          | N             |            |
| This value is used only for QMF (where qmfuse='YES'). Specify Y if you want IBM Z Performance and Capacity Analytics to replace empty variables in the report header with a text string. You specify the text string using F11 on the Data Selection panel, or when you get message DRLA171.<br><b>Note:</b> Replacing empty variables increases the time taken to generate a report.<br>Specify N to leave the empty variable in the report. |                              |               |            |
| def_useaot                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                          | NO            |            |
| Specifies whether Analytics component tables are created as Accelerator Only Tables in IBM Db2 Analytics Accelerator or as tables in Db2.<br><b>"YES"</b> : Tables are created as Accelerator Only Tables.<br><b>"NO"</b> : Tables are created in Db2 and are applicable for use either as Db2 tables or as IDAA_ONLY table.<br>The default value is <b>"NO"</b> .<br>This parameter is only applicable for Analytics components.             |                              |               |            |
| def_accelerator                                                                                                                                                                                                                                                                                                                                                                                                                               | N/A                          |               |            |

## Allocation overview

| <i>userid</i> .DRLFPROF variable name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dialog Parameters field name | Default value | Your value |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|------------|
| <p>The name of the Accelerator where the Analytics components tables reside. Required only if using Accelerator Only Tables, that is, if <i>def_useaot</i> is set to "YES".</p> <p>This parameter is only applicable for Analytics components.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |               |            |
| def_timeint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | N/A                          | T             |            |
| <p>Specifies the time interval granularity for records collected for Analytics components tables.</p> <p>"H": The timestamp for records is rounded to hourly intervals, which is similar to non-Analytics tables with a suffix of "_H" in other components.</p> <p>"S": The timestamp for records is rounded to intervals of a second, which is similar to non-Analytics tables with time field instead of timestamp in other components.</p> <p>"T": The timestamp for tables is the actual timestamp in the SMF log record, which is similar to non-Analytics tables with suffix "_T".</p> <p>The default value is "T".</p> <p>This parameter is only applicable for Analytics components.</p> |                              |               |            |

## Allocation overview

This section describes the data sets allocated by IBM Z Performance and Capacity Analytics .

| Library type or data set ddname                                                                                              | Library or data set                                                                                                                                                  | Allocated by (EPDM exec) |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>IBM Z Performance and Capacity Analytics allocates the following libraries as a user starts a dialog session:</b>         |                                                                                                                                                                      |                          |
| ISPPLIB                                                                                                                      | <ul style="list-style-type: none"> <li>IBM Z Performance and Capacity Analytics panel library</li> <li>QMF panel library</li> <li>Db2 panel library</li> </ul>       | DRLEINI1                 |
| ISPTLIB                                                                                                                      | <ul style="list-style-type: none"> <li>IBM Z Performance and Capacity Analytics tables library</li> <li>QMF tables library</li> </ul>                                | DRLEINI1                 |
| ISPMLIB                                                                                                                      | <ul style="list-style-type: none"> <li>IBM Z Performance and Capacity Analytics message library</li> <li>QMF message library</li> <li>Db2 message library</li> </ul> | DRLEINI1                 |
| ISPLLIB                                                                                                                      | <ul style="list-style-type: none"> <li>IBM Z Performance and Capacity Analytics load library</li> <li>QMF load library</li> </ul>                                    | DRLEINI1                 |
| ISPSLIB                                                                                                                      | <ul style="list-style-type: none"> <li>IBM Z Performance and Capacity Analytics skeleton library</li> <li>QMF skeleton library</li> </ul>                            | DRLEINI1                 |
| <b>IBM Z Performance and Capacity Analytics allocates the following data sets as a user starts a dialog session:</b>         |                                                                                                                                                                      |                          |
| DRLTABL                                                                                                                      | Userprefix.DRLTABL (for values in query variables)                                                                                                                   | DRLEINI1                 |
| ADMGDF                                                                                                                       | Saved charts data set                                                                                                                                                | DRLEINI1                 |
| DRLMSGDD                                                                                                                     | IBM Z Performance and Capacity Analytics user message data set (drlmsgs)                                                                                             | DRLEINI1                 |
| <b>IBM Z Performance and Capacity Analytics allocates the following libraries as a user starts a function that uses QMF:</b> |                                                                                                                                                                      |                          |
| SYSPROC                                                                                                                      | QMF CLIST library (def_qmfdspfx.qmfclib+E)                                                                                                                           | DRLEQMF                  |
| SYSEEXEC                                                                                                                     | QMF exec library (def_qmfdspfx.qmfelib+E)                                                                                                                            | DRLEQMF                  |
| ADMGGMAP                                                                                                                     | SDSQMAP library (def_qmfdspfx.qmfmap)                                                                                                                                | DRLEQMF                  |
| ADMCFORM                                                                                                                     | Saved forms data set + DSQCHART library (dsnpref.formsfx + def_qmfdspfx.qmfchart)                                                                                    | DRLEQMF                  |

| Library type or data set<br>ddname                                                                                                 | Library or data set                    | Allocated by<br>(EPDM exec) |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------|
| DSQUCFRM                                                                                                                           | Saved forms data set                   | DRLEQMF                     |
| DSQPNLE                                                                                                                            | QMF panel library                      | DRLEQMF                     |
| DSQPRINT                                                                                                                           | QMF sysout class (qmfprt)              | DRLEQMF                     |
| DSQSPILL                                                                                                                           | NEW DELETE (temporary file allocation) | DRLEQMF                     |
| DSQEDIT                                                                                                                            | NEW DELETE (temporary file allocation) | DRLEQMF                     |
| DSQDEBUG                                                                                                                           | (qmfdebug)                             | DRLEQMF                     |
| DSQDUMP                                                                                                                            | (qmfdsdum)                             | DRLEQMF                     |
| <b>IBM Z Performance and Capacity Analytics allocates the following library as a user starts a function that uses GDDM:</b>        |                                        |                             |
| ADMSYMBL                                                                                                                           | GDDM symbols data set                  | DRLEINI1                    |
| <b>IBM Z Performance and Capacity Analytics allocates the following libraries when a table or report is displayed without QMF:</b> |                                        |                             |
| DRLTAB                                                                                                                             | Userprefix.DRLTAB (for table display)  | DRLEADIT                    |
| DRLREP                                                                                                                             | Userprefix.DRLREP (for report display) | DRLERDIR                    |
| <b>IBM Z Performance and Capacity Analytics allocates the following library as a user starts Db2 Interactive (DB2I)</b>            |                                        |                             |
| SYSPROC                                                                                                                            | Db2 CLIST library (db2dspfx.db2clst)   | DRLEDB2I                    |

## Overview of IBM Z Performance and Capacity Analytics objects

This section describes how a feature definition member is used to update system tables. It then describes how IBM Z Performance and Capacity Analytics uses the resulting component definitions to install a component's objects. There is also a section on how to create and change definitions in both the dialog and log collector language.

For more information about the log collector language and report definition language statements, see the *Language Guide and Reference*.

This topic uses the Sample component as the basis of most of its examples. For more information, see [“Sample component” on page 243](#).

For information on the naming convention for IBM Z Performance and Capacity Analytics definition members, see [“Naming convention for IBM Z Performance and Capacity Analytics definition members” on page 98](#).

## IBM Z Performance and Capacity Analytics component installation

Component installation starts with the SMP/E installation of the definition members of a feature in the DRL310.SDRLDEFS library. IBM Z Performance and Capacity Analytics features provide definition members that update the system tables with information about the definitions in a feature.

### Defining definition library members with SQL

Before installing IZPCA for z/OS components, you must create or update the system tables. When you do this from the dialog or in batch, the DRLxxxx members, in the DRL310.SDRLDEFS library, contain SQL statements that are executed.

Figure 42 on page 92 shows the DRLxxxx definition member for the Sample component. These members use the SQL log collector language statement to pass an SQL statement to Db2.

```

/*****
/* Sample Component */
/*****
SQL INSERT INTO &SYSPREFIX.DRLCOMPONENTS
  (COMPONENT_NAME, DESCRIPTION, USER_ID)
  VALUES('SAMPLE', 'Sample Component', USER);
/*****
/* Log and record definitions */
/*****
SQL INSERT INTO &SYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
  VALUES('SAMPLE', 'LOG', 'SAMPLE', 'DRLLSAMP');
:
/*****
/* Table space, table, and update definitions */
/*****
SQL INSERT INTO &SYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
  VALUES('SAMPLE', 'TABLESPACE', 'DRLLSAMP', 'DRLLSAMP');
:
/*****
/* Report and report group definitions */
/*****
SQL INSERT INTO &SYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
  VALUES('SAMPLE', 'REPORTGROUP', 'SAMPLE', 'DRLOSAMP');
:

```

Figure 42. Definition member DRLISAMP, setting component definitions

Executing these statements populates the IBM Z Performance and Capacity Analytics system tables with component definitions. These component definitions describe the installable components and the SDRLEDFS members that can be used to install the component.

### How IBM Z Performance and Capacity Analytics controls object replacement

Once the system tables have been updated with the installation members, you must reinstall all affected components in order to replace all objects. Each component installed is controlled by a variable VERSION which is specified in the DEFINE statements and a corresponding column VERSION is included in the IBM Z Performance and Capacity Analytics system tables where objects are defined.

During the installation of the IBM Z Performance and Capacity Analytics components, a preprocessor checks each definition member to see if an object already exists (from the installation of an earlier level of the component).

If the object *does not* already exist, the DEFINE statement for this object is passed to the log collector.

If the object *does* already exist, and providing the variable VERSION is specified in the DEFINE statement for the object, then the values of VERSION in the DEFINE statement and in the system table where the object is defined, are compared. If the values of VERSION are the same, the log collector replaces the DEFINE statement for the object with a comment, saying that the most recent version of the object already exists in the system table. If the values of VERSION are different, the log collector inserts an DROP statement. This DROP statement drops the object so that it can be redefined.

**Note:** IBM Z Performance and Capacity Analytics only checks the VERSION variable when you install using option 2 Components.

All log, record, record procedure, and update objects shipped with the product contain the VERSION variable, which takes the value: IBM.xxx

where xxx corresponds to the product version. For example, IBM.310 indicates objects created or modified by IBM Z Performance and Capacity Analytics V3.1.0. If an object is modified by an APAR, then the APAR number is used as the VERSION variable, for example, VERSION 'PH10636'.

### IBM Z Performance and Capacity Analytics Version variable format

All IBM Z Performance and Capacity Analytics log, record, record procedure, and update objects shipped with the product contain the VERSION variable, which takes the value IBM.xxx, where xxx corresponds to the product version. For example IBM.310 indicates objects created or modified by IBM Z Performance and Capacity Analytics V3.1.0.

If an object is modified by an APAR, then the APAR number is used as the VERSION variable, for example, VERSION 'PH10636'.

IBM Z Performance and Capacity Analytics recognizes the following version variable patterns as being standard objects shipped by the product:

- Version numbers beginning with 'IBM'.
- Version numbers with no text (the empty string or no version clause).
- Version numbers beginning with an APAR number, that is, two letters followed by any number of digits up to an optional decimal point. For example, the version numbers PM123, PX123456.V310, RW987654, and OK123.2014101, are all considered 'standard' version numbers, but PK1234A and MXC1234 are not.

### Custom Version numbers:

When customizing IBM Z Performance and Capacity Analytics objects (see [“Controlling objects that you have modified” on page 143](#)) you must choose a version number which does not conform to the standards above. A version number might be 'ALTERED' or 'MODIFIED', or your own version system such as 'C.V2'.

### How IBM Z Performance and Capacity Analytics determines installation order

After IBM Z Performance and Capacity Analytics stores the names of a feature's component objects and definition members in the system tables, you can use the dialog to install the feature's components. The product queries the system tables to determine the names of definition members in the DRL310.SDRLDEFS, DRL310.SDRLRxxx, and DRL310.SDRLFxxx libraries. (xxx is ENU for the English language version of IBM Z Performance and Capacity Analytics.

IBM Z Performance and Capacity Analytics requires some definitions to exist before it can install others. For example, if a component contains a record procedure, The product must install the record definition that maps the source record for the record procedure before installing the record procedure. Furthermore, it must install the record procedure before installing the record definition that maps the record procedure's output. The definition members that are supplied by the product supplies often combine several definitions in the same member to ensure their order of installation.

Table 5 on page 93 shows the order in which IBM Z Performance and Capacity Analytics installs a feature's definitions.

| Table 5. Order of installation of feature definition members |                          |                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Order                                                        | Member naming convention | Definition types                                                                                                                                                                                                                                                 |
| 1                                                            | DRLxxxx                  | Logs.                                                                                                                                                                                                                                                            |
| 2                                                            | DRLRxxxx                 | Records and record procedures. Record definitions mapping record procedure input must appear before the associated record procedure definition. Record definitions mapping record procedure output must appear after the associated record procedure definition. |
| 3                                                            | DRLSxxxx                 | Table spaces.                                                                                                                                                                                                                                                    |
| 4                                                            | DRLTxxxx                 | Lookup tables, tables, updates, and views. Lookup tables and tables must be defined before update definitions that refer to them. Tables must also be defined before views that refer to them.                                                                   |
| 5                                                            | DRLUxxxx                 | Updates (also found in DRLTxxxx members).                                                                                                                                                                                                                        |
| 6                                                            | DRLVxxxx                 | Views (also found in DRLTxxxx members).                                                                                                                                                                                                                          |
| 7                                                            | DRLOxxxx                 | Report groups and reports. Report groups must be defined before the report definitions that reference them.                                                                                                                                                      |

The order of installation within a definition type is determined by the sort sequence of the definition member names. The examples that follow appear in the same order that IBM Z Performance and Capacity Analytics would install them.

### Defining logs with log collector language

DRLxxxx members of the DRL310.SDRLDEFS library define log types to IBM Z Performance and Capacity Analytics. [Figure 43 on page 94](#) shows the definition member for the SAMPLE log type.

```
DEFINE LOG SAMPLE VERSION 'IBM.110';  
COMMENT ON LOG SAMPLE IS 'Sample log definition';
```

*Figure 43. Definition member DRLLSAMP, defining a log type*

### Defining records with log collector language

DRLRxxxx members of the DRL310.SDRLDEFS library define record types to IBM Z Performance and Capacity Analytics. [Figure 44 on page 94](#) shows the definition for the SAMPLE\_01 record type. (“Record definitions supplied with IBM Z Performance and Capacity Analytics” on page 248 describes IBM Z Performance and Capacity Analytics record definitions.)

```
DEFINE RECORD SAMPLE_01  
  VERSION 'IBM.110'  
  IN LOG SAMPLE  
  IDENTIFIED BY S01TYPE = '01'  
  FIELDS  
    (S01TYPE OFFSET 4 LENGTH 2 CHAR,  
     S01DATE OFFSET 7 DATE(MMDDYY),  
     S01TIME OFFSET 14 TIME(HHMMSS),  
     S01SYST OFFSET 21 LENGTH 4 CHAR,  
     S01USER OFFSET 26 LENGTH 8 CHAR,  
     S01TRNS OFFSET 35 LENGTH 6 EXTERNAL INTEGER,  
     S01RESP OFFSET 42 LENGTH 6 EXTERNAL INTEGER,  
     S01CPU OFFSET 49 LENGTH 6 EXTERNAL INTEGER,  
     S01PRNT OFFSET 56 LENGTH 6 EXTERNAL INTEGER);  
COMMENT ON RECORD SAMPLE_01 IS 'Sample record type 01';
```

*Figure 44. Definition member DRLRSAMP, defining a record type*

### Defining table spaces

DRLSxxxx members of the definition library SDRLDEFS define table spaces to IBM Z Performance and Capacity Analytics.

At least one table space is defined per component to contain the tables in the component.

Table spaces can be defined explicitly using SQL statements. Alternatively, the Log Collector Language statement GENERATE TABLESPACE may be used to create table spaces, which use values in the GENERATE\_PROFILES and GENERATE\_KEYS system tables to determine the partitioning type. Using the GENERATE statement eliminates the need to change the DRLSxxxx members, and allows multiple table spaces to be configured in the same manner.

The following figure shows the definition for the DRLSSAMP table space of the IBM Z Performance and Capacity Analytics Sample component.

```
SQL CREATE TABLESPACE DRLSSAMP  
  IN &DATABASE  
  USING STOGROUP &STOGROUP  
    PRIQTY 60  
    SECQTY 30  
  SEGSIZE 8  
  BUFFERPOOL &TSBUFFERPOOL  
  LOCKSIZE TABLE;
```

*Figure 45. Using SQL to define a table space (see definition member DRLSSAMP)*

The following figure shows the definition for the DRLSKZJ1 table space of the z/OS Key Performance Metrics component.

```
GENERATE TABLESPACE DRLSKZJ1
        PROFILE 'SMF';
```

Figure 46. Using *GENERATE* to define a table space (see definition member DRLSKZJB)

### Defining table spaces and indexes using the *GENERATE* statement

The *GENERATE* statement may be used to create table spaces, partitioning on tables, and indexes on tables. The *GENERATE* statement has a **PROFILE** parameter which is the major key to the *GENERATE\_PROFILES* and *GENERATE\_KEYS* system tables. All customization for creating table spaces, partitioning, and indexes may be performed using these system tables. The definition member DRLTKEYS is used to create and load the default values into the *GENERATE\_PROFILES* and *GENERATE\_KEYS* tables when the system tables are created.

These system tables provide default profiles referenced by *GENERATE* statements in the supplied definition members. The defaults may be changed by updating the data in these system tables without modifying the *GENERATE* statements in the definition members. The profiles may be made more granular by using the *COMPONENT\_ID*, *SUBCOMPONENT\_ID* or *TABLESPACE\_NAME* key fields, with no changes required to the product definition members.

When *RANGE* is specified in the *TABLESPACE\_TYPE* column of the *GENERATE\_PROFILES* table, *GENERATE* statements referring to the profile will create range-partitioned table spaces. In this case, the number of partitions created is determined by the number of entries for the key in the *GENERATE\_KEYS* system table. For example, the supplied profile of IMS has *PART\_NUM* 1-4 which will generate four partitions. This number of key entries can be increased or decreased to generate the required number of partitions. Changing the number of partitions does not require a change to the *GENERATE* statement in the IBM Z Performance and Capacity Analytics definition members.

### Defining tables and updates

DRLTxxxx members of the DRL310.SDRLEDFS library define tables and updates to IBM Z Performance and Capacity Analytics.

These members use the SQL log collector language statement to create tables in the database, populate lookup tables, and grant access to the tables. They also use the *DEFINE UPDATE* log collector language statement to create update definitions in the system tables. The following example shows the definition for tables (that includes the lookup table) and updates of the Sample component, DRLTSAMP. “Definition member DRLTSAMP, defining tables and updates (using SQL)” on page 95 uses the SQL log collector language statement and “Definition member DRLTSAMP, defining tables and updates (using *DEFINE UPDATE*)” on page 96 uses the *DEFINE UPDATE* log collector language statement.

#### Definition member DRLTSAMP, defining tables and updates (using SQL)

```
/******
/* Define table SAMPLE_USER
/******
SQL CREATE TABLE &PREFIX.SAMPLE_USER
  (USER_ID          CHAR(8) NOT NULL,
   DEPARTMENT_NAME  CHAR(8) NOT NULL,

   PRIMARY KEY (USER_ID))
  IN &DATABASE.DRLSSAMP;

SQL CREATE UNIQUE INDEX &PREFIX.SAMPUSER_IX
  ON &PREFIX.SAMPLE_USER
  (USER_ID)
  USING STOGROUP &STOGROUP.
  PRIQTY 12
  SECQTY 4
  CLUSTER
  BUFFERPOOL &IXBUFFERPOOL;
/******
/* Define comments for SAMPLE_USER
/******
SQL COMMENT ON TABLE &PREFIX.SAMPLE_USER
  IS 'This lookup table assigns department names to users.';
```

```

SQL COMMENT ON &PREFIX.SAMPLE_USER
  (USER_ID      IS 'User ID.',
   DEPARTMENT_NAME IS 'Department name.');
```

```

/*****
/* Grant users read access to SAMPLE_USER */
*****/
SQL GRANT SELECT ON &PREFIX.SAMPLE_USER TO &USERS.;
/*****
/* Insert data in SAMPLE_USER */
*****/
SQL INSERT INTO &PREFIX.SAMPLE_USER
  VALUES('ADAMS', 'Appl Dev');
```

```

:
/*****
/* Define table SAMPLE_H */
*****/
SQL CREATE TABLE &PREFIX.SAMPLE_H
  (DATE      DATE      NOT NULL,
   TIME      TIME      NOT NULL,
   SYSTEM_ID  CHAR(4)   NOT NULL,
   DEPARTMENT_NAME CHAR(8) NOT NULL,
   USER_ID   CHAR(8)   NOT NULL,
   TRANSACTIONS INTEGER,
   RESPONSE_SECONDS INTEGER,
   CPU_SECONDS FLOAT,
   PAGES_PRINTED INTEGER,
   PRIMARY KEY (DATE, TIME, SYSTEM_ID, DEPARTMENT_NAME, USER_ID))
  IN &DATABASE.DRLSSAMP;
```

### Definition member DRLTSAMP, defining tables and updates (using DEFINE UPDATE)

```

:
/*****
/* Define update from record SAMPLE_01 */
*****/
DEFINE UPDATE SAMPLE_01_H
  VERSION 'IBM.110'
  FROM SAMPLE_01
  TO &PREFIX.SAMPLE_H
  GROUP BY
    (DATE      = S01DATE,
     TIME      = ROUND(S01TIME,1 HOUR),
     SYSTEM_ID = S01SYST,
     DEPARTMENT_NAME = VALUE(LOOKUP DEPARTMENT_NAME
                           IN &PREFIX.SAMPLE_USER
                           WHERE S01USER = USER_ID,
                           '?'),
     USER_ID   = S01USER)
  SET
    (TRANSACTIONS = SUM(S01TRNS),
     RESPONSE_SECONDS = SUM(S01RESP),
     CPU_SECONDS = SUM(S01CPU/100.0),
     PAGES_PRINTED = SUM(S01PRNT));
:
/*****
/* Define update from SAMPLE_H */
*****/
DEFINE UPDATE SAMPLE_H_M
  VERSION 'IBM.110'
  FROM &PREFIX.SAMPLE_H
  TO &PREFIX.SAMPLE_M
  GROUP BY
    (DATE      = SUBSTR(CHAR(DATE),1,8) || '01',
     SYSTEM_ID = SYSTEM_ID,
     DEPARTMENT_NAME = DEPARTMENT_NAME,
     USER_ID   = USER_ID)
  SET
    (TRANSACTIONS = SUM(TRANSACTIONS),
     RESPONSE_SECONDS = SUM(RESPONSE_SECONDS),
     CPU_SECONDS = SUM(CPU_SECONDS),
     PAGES_PRINTED = SUM(PAGES_PRINTED));
```

### Defining updates and views

DRLUxxxx members of the DRL310.SDRLDEFS library define updates not previously defined in DRLTxxxx definition members. For example, member DRLUMVAV in the DRL310.SDRLDEFS library defines updates from record types SMF\_030 and SMF\_070 to the AVAILABILITY\_T table.



DRLVxxxx members of the DRL310.SDRLDEFS library define views not previously defined in DRLTxxxx definition members. For example, member DRLVC901 in the DRL310.SDRLDEFS library defines views on the CICS\_T\_TRAN\_T table for CICS unit-of-work processing.

## Defining reports

DRLOxxxx members of the DRL310.SDRLRENU library use report definition language to define report groups and reports in IBM Z Performance and Capacity Analytics system tables. Report definition members are contained in national language-specific definition libraries.

[Figure 47 on page 97](#) shows the definition for the reports and report group of the Sample component.

```
DEFINE GROUP SAMPLE
  VERSION 'IBM.110'
  DESC 'Sample Reports';

DEFINE REPORT SAMPLE01
  VERSION 'IBM.110'
  DESC 'Sample Report 1'
  QUERY DRLQSA01
  FORM DRLFSA01
  CHART DRLGSURF
  ATTRIBUTES SAMPLE
  GROUPS SAMPLE;

DEFINE REPORT SAMPLE02
  VERSION 'IBM.110'
  DESC 'Sample Report 2'
  QUERY DRLQSA02
  FORM DRLFSA02
  ATTRIBUTES SAMPLE
  GROUPS SAMPLE;

DEFINE REPORT SAMPLE03
  VERSION 'IBM.110'
  DESC 'Sample Report 3'
  QUERY DRLQSA03
  FORM DRLFSA03
  CHART DRLGHORB
  ATTRIBUTES SAMPLE
  GROUPS SAMPLE;
```

*Figure 47. Definition member DRLOSAMP, defining reports and report groups*

The IBM Z Performance and Capacity Analytics report definition program uses the definitions in DRLOxxxx members to locate these types of members for each report:

### Member type Description

#### **DRLQxxxx**

Report queries in DRL310.SDRLRxxx

#### **DRLFxxxx**

Report forms in DRL310.SDRLRxxx

#### **DRLGxxxx**

Report charts in DRL310.SDRLFxxx

where **xxx** refers to your national-language code (for example, ENU for English).

IBM Z Performance and Capacity Analytics imports members in these data sets to QMF to provide queries and forms for predefined reports. If QMF is not used, the contents of the report queries and forms are stored in IBM Z Performance and Capacity Analytics system tables.

DRLQxxxx members in the DRL310.SDRLRENU library are queries for predefined reports. [Figure 48 on page 98](#) shows the query for Sample Report 1.

```
SELECT TIME, DEPARTMENT_NAME, SUM(CPU_SECONDS)
FROM &PREFIX.SAMPLE_H
WHERE SYSTEM_ID = &SYSTEM_ID.
GROUP BY TIME, DEPARTMENT_NAME
```

Figure 48. IBM Z Performance and Capacity Analytics definition member DRLQSA01, report query

DRLFxxxx members in the DRL310.SDRLRENU library are QMF forms for predefined English reports. For example, DRLFSA01 is the QMF form for Sample Report 1.

DRLGxxxx members in the DRL310.SDRLFENU library are GDDM/ICU formats for predefined English reports. For example, DRLGSURF is the GDDM/ICU format used for Sample Report 1.

## Naming convention for IBM Z Performance and Capacity Analytics definition members

---

This section describes the naming convention for members of the DRL310.SDRLDEFS and DRL310.SDRLRENU libraries. For information on defining these libraries, see [“Overview of IBM Z Performance and Capacity Analytics objects”](#) on page 91.

### Naming convention for members of DRLvrn.SDRLDEFS

The naming convention for the IBM Z Performance and Capacity Analytics definitions library is:

| Naming convention | Description |
|-------------------|-------------|
|-------------------|-------------|

|                 |                                     |
|-----------------|-------------------------------------|
| <b>DRLBxxxx</b> | Log data manager collect statements |
|-----------------|-------------------------------------|

|                 |                                                                                                        |
|-----------------|--------------------------------------------------------------------------------------------------------|
| <b>DRLIxxxx</b> | Component definitions (SQL statements that are executed when the system tables are created or updated) |
|-----------------|--------------------------------------------------------------------------------------------------------|

|                |                 |
|----------------|-----------------|
| <b>DRLxxxx</b> | Log definitions |
|----------------|-----------------|

|                 |                                                                                                                                                          |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DRLRxxxx</b> | Record definitions <a href="#">“Record definitions supplied with IBM Z Performance and Capacity Analytics”</a> on page 248 describes record definitions. |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                         |
|-----------------|-------------------------|
| <b>DRLSxxxx</b> | Table space definitions |
|-----------------|-------------------------|

|                 |                              |
|-----------------|------------------------------|
| <b>DRLTxxxx</b> | Table and update definitions |
|-----------------|------------------------------|

|                 |                                                |
|-----------------|------------------------------------------------|
| <b>DRLUxxxx</b> | Update definitions (when separate from tables) |
|-----------------|------------------------------------------------|

|                 |                  |
|-----------------|------------------|
| <b>DRLVxxxx</b> | View definitions |
|-----------------|------------------|

|                 |                       |
|-----------------|-----------------------|
| <b>DRLWxxxx</b> | Migration definitions |
|-----------------|-----------------------|

### Naming convention for members of DRLvrn.SDRLRENU

The naming convention for the IBM Z Performance and Capacity Analytics (predefined) reports definitions library SDRLRENU is:

| Naming convention | Description |
|-------------------|-------------|
|-------------------|-------------|

|                 |                    |
|-----------------|--------------------|
| <b>DRLOxxxx</b> | Report definitions |
|-----------------|--------------------|

**DRLQxxxx**  
SQL queries

**DRLFxxxx**  
QMF forms



# Chapter 5. Administering IBM Z Performance and Capacity Analytics

## Setting up operating routines

### About this task

This section describes how to develop operating routines for:

- [“Collecting log data” on page 101](#)
- [“Administering the IBM Z Performance and Capacity Analytics database” on page 110](#)
- [“Administering reports” on page 124](#)

The sample jobs described may not be identical to those shipped with IBM Z Performance and Capacity Analytics. Before using these jobs, refer to the samples in the DRL310.SDRLCNTL library.

## Collecting log data

### About this task

One of your primary responsibilities is to establish routines to collect data. To do this, you can use either the IBM Z Performance and Capacity Analytics administration dialog or log collector language statements that you execute through either a job or the dialog. This section describes:

1. How to collect data from the SAMPLE log type. The Sample component contains a log definition, record definitions, and update definitions for collecting SAMPLE log data sets.
2. How to collect data in batch without using the dialog. See [“Collecting data from a log into Db2 tables” on page 151](#) for information about using the dialog to collect data. You can also automate the collection of data using the log data manager option, described in [“Working with the log data manager option” on page 201](#).

### Collecting data through the administration dialog

#### About this task

To collect log data from a SAMPLE log data set:

#### Procedure

1. From the Administration window, select 3, Logs, and press Enter.  
The Logs window is displayed.
2. From the Logs window, select Sample and press F11.  
The Collect window is displayed.
3. Type DRL310.SDRLDEFS(DRLSAMPL) in the Data set field.  
This is the name of the data set that contains log data
4. Press F4 to start an online collect process.  
After the data collection is complete, IBM Z Performance and Capacity Analytics displays statistics about the collect. (See [“Sample collect messages” on page 105](#) for more information about the statistics.)
5. When the collect is complete, press F3.  
The product returns to the Logs window.

6. From the Logs window, press F3.  
The product returns to the Administration window.

### Using log collector language to collect data

#### About this task

To collect log data using the SAMPLE log definition, create and submit the JCL ([Figure 49 on page 102](#)).

```
//jobname JOB parameters
//LC EXEC PGM=DRLPLC,PARM=('SYSPREFIX=DRLSYS SYSTEM=DSN')
//STEPLIB DD DISP=SHR,DSN=DRLxxx.SDRLOAD
//DRLIN DD *
//DRLLOG DD DISP=SHR,DSN=DRLxxx.SDRLEDFS(DRLSAMPL)
//DRLOUT DD SYSOUT=*
//DRLDUMP DD SYSOUT=*
```

Figure 49. Invoking the log collector in batch to collect data

IBM Z Performance and Capacity Analytics uses the log collector program (DRLPLC) to collect the SAMPLE log type, using these ddnames:

#### DD statement name

##### Description

#### DRLIN

Contains the log collector language statements. It can contain fixed-length or varying-length records of any length, but the log collector reads a maximum of 72 bytes from each record.

#### DRLLOG

Identifies the log data set. The data set attributes are determined by the program creating the log.

#### DRLOUT

Identifies where collect messages are routed. It can have fixed-length or varying-length records of any length, but the log collector assumes a length of at least 80 bytes for formatting. Lines that are longer than the specified record length are wrapped to the next line. DRLOUT is allocated as RECFM=F and LRECL=80 if no DCB attributes are specified.

#### DRLDUMP

Identifies where collect diagnostics are routed. It can have fixed-length or varying-length records of any length, but the log collector assumes a length of at least 80 bytes for formatting. Lines that are longer than the specified record length are wrapped to the next line. DRLDUMP is allocated as RECFM=F and LRECL=80 if no DCB attributes are specified.

#### The DRLJCOLL job

The sample job DRLJCOLL is a generic collect job, adaptable for most logs.

[“DRLJCOLL job for collecting data from an SMF data set” on page 102](#) shows sample job DRLJCOLL, used to collect data from an SMF log data set.

**Note:** Ensure that the log data sets that are used as input for the collect (DRLLOG DD statement) are sorted in chronological order.

#### DRLJCOLL job for collecting data from an SMF data set

```
//DRLJCOLL JOB (ACCT#),'COLLECT'
//*****
//* Name: DRLJCOLL *
//* *
//* Function: *
//* IBM Z Performance and Capacity Analytics collect job *
//* *
//* Replace "COLLECT SMF" below with one of the following *
//* statements to collect other logs: *
//* *
//* COLLECT DCOLLECT *
//* WHERE DCUDATE > DATE(LOOKUP_LAST_DCOLLECT_TIME *
//* IN DRL.DFSMS_LAST_RUN *
```

```

/**          WHERE DCUSYSID = MVS_SYSTEM_ID          *
/**          AND DCURCTYP = RECORD_TYPE);            *
/** (replace DRL with the table prefix you use)      *
/** (the lookup table DFSMS_LAST_RUN must be initialized *
/** before the first collect as described in the DFSMS *
/** customization section of the SP Reference manual)  *
/** *
/** COLLECT EREP;                                     *
/** *
/** SET JES_COMPLEX = '          ';                  *
/** COLLECT SYSLOG_JES2;                              *
/** *
/** For operations log (OPERLOG) produced using the System *
/** Logger, use the COLLECT statement above and change the *
/** //DRLLLOG statement as follows:                   *
/** //DRLLLOG DD DSN=SYSPLEX.OPERLOG,DISP=SHR,        *
/**           DCB=(LRECL=32756, BLKSIZE=32760, RECFM=VB), *
/**           SUBSYS=(LOGR,,                          *
/**           'FROM=(2015/152,00:00),TO=(2015/153,23:59)',) *
/** *
/** SET JES_COMPLEX = 'JES3COMP';                    *
/** COLLECT SYSLOG_JES3;                              *
/** (replace JES3COMP with the name of the JES3 complex) *
/** *
/** SET MVS_SYSTEM_ID = 'MVS1';                      *
/** COLLECT NETVIEW;                                  *
/** (replace MVS1 with the name of the MVS system)    *
/** *
/** COLLECT OPC;                                       *
/** *
/** SET VMID = 'VM1';                                 *
/** COLLECT VMACCT;                                   *
/** (replace VM1 with the name of the VM system)      *
/** *
/** COLLECT VMPRF;                                    *
/** COLLECT VMPEFRT;                                  *
/** *
/** COLLECT UNIX;                                     *
/** *
/** COLLECT OS400_JOURNAL;                            *
/** COLLECT OS400_CONFIG;                             *
/** COLLECT OS400_HISTORY;                            *
/** COLLECT OS400_PM_DISK;                            *
/** COLLECT OS400_PM_POOL;                            *
/** COLLECT OS400_PM_SYS;                             *
/** *
/** SET UNLOAD_DATE = 'YYYY-MM-DD';                  *
/** SET SYSTEM_ID = 'MVS1';                          *
/** COLLECT RACFCONF REPROCESS;                      *
/** (Replace YYYY-MM-DD with the date when you run the *
/** RACF Database Unload utility. As default, the current *
/** date is used)                                     *
/** (Replace MVS1 with the name of your system. As default, *
/** $UNK is used)                                     *
/** *
/** COLLECT LINUX;                                    *
/** COLLECT ZLINUX;                                   *
/** *
/** For some logs, special collect jobs are required: *
/** DRLJCOIM IMS log                                  *
/** DRLJCVP Network configuration data                 *
/** DRLJCOIN Tivoli Information Management for z/OS data *
/** *
/** Before you submit the job:                        *
/** - Check the IBM Z Performance and Capacity Analytics *
/**   and Db2 data set names.                          *
/** - Check the Db2 subsystem name (default is DSN)    *
/**   and IBM Z Performance and Capacity Analytics    *
/**   system table prefix (default is DRLSYS).         *
/** - Insert the correct collect statement in DRLIN    *
/**   (as described above).                             *
/** - Specify the name of the log data set in DRLLLOG. *
/** *****
/** COLLECT EXEC PGM=DRLPLC,PARM=('SYSTEM=DSN SYSPREFIX=DRLSYS')
/** STEPLIB DD DISP=SHR,DSN=DRL310.SDRLLLOAD
/**         DD DISP=SHR,DSN=DSN710.DSNLOAD
/** DRLIN DD *

```

COLLECT SMF;

```

//DRLLLOG DD DISP=SHR,DSN=log-data-set

```

```
//DRLOUT DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
//DRLDUMP DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
/*
```

Some logs require special collect procedures, which are supplied by the product. They are:

### **Collect job name**

#### **Description**

#### **DRLJCOIM**

Collects IMS log data.

#### **DRLJCOIN**

Collects Tivoli Information Management for z/OS data.

#### **DRLJCOVP**

Collects network configuration data.

### ***Collecting data from IMS***

#### **About this task**

DRLJCOIM is a sample job for collecting data from the IMS SLDS log. For information about collecting IMS data and generating composite data records that combine various types of IMS log records, refer to the *IMS Performance Feature Guide and Reference*.

### ***Collecting data from Tivoli Information Management for z/OS***

#### **About this task**

The sample job, DRLJCOIN uses DRLJRFT2 to read data from the Tivoli Information Management for z/OS database. DRLJRFT2 is a Tivoli Information Management for z/OS report format table (RFT) in the DRLxxx.SDRLCNTL library. For information about collecting data from the Tivoli Information Management for z/OS database, refer to the *System Performance Feature Reference Volume 1*.

### ***Collecting network configuration data***

#### **About this task**

DRLJCOVP is a sample job for collecting network configuration data (vital product data). For information about collecting network configuration data, refer to the *Network Performance Feature Reference*.

### ***Performing routine data collection***

#### **About this task**

When you set up your collect jobs, consider these guidelines:

- Collect data at off-peak hours.

Log data sets are generally available, online systems have been taken down, and there is less contention for processing resources.

- Collect data daily, at least in the beginning (and especially from SMF and IMS logs).
- If you collect data from several systems, establish a procedure to get all the log data into the system that contains the product database.
- Set up automatic procedures for submitting collect jobs. For example, use Tivoli Workload Scheduler for z/OS (previously known as OPC, Operation Planning and Control) to initiate collect jobs. Refer to the Tivoli Workload Scheduler for z/OS documentation for more information about the product. You can also use the log data manager option to automate and obtain better control of the submitting of collect jobs. This option is described in [“Working with the log data manager option” on page 201](#).



## Monitoring collect activity

### About this task

IBM Z Performance and Capacity Analytics provides statistics about collect activity in messages called *collect messages* and in the DRLSYS.DRLLOGDATASETS system table, described in the following sections.

Review collect activity to identify:

- Tables in high demand during collect processing. These tables are candidates for tuning to improve performance.
- Errors that occur in user-defined IBM Z Performance and Capacity Analytics objects.
- Any other errors that the log collector finds.

### Sample collect messages

Figure 50 on page 105 shows a set of sample messages generated during a collect job.

```

DRL0300I Collect started at 2000-12-04-10.04.15
DRL0302I Processing SMF.DATA.SET on VOL001
DRL0341I The first record timestamp is 2000-06-03-07.00.01.730000.
DRL0308I A database update started after 2608 records due to a buffer-full condition
DRL0342I The last record timestamp is 2000-06-03-11.52.40.220000.
DRL0310I A database update started after 4582 records due to end of log
DRL0313I The collect buffer was filled 1 times. Consider increasing the
collect buffer size.
DRL0003I
DRL0315I Records read from the log or built by log procedure:
DRL0317I Record name      Number
DRL0318I -----
DRL0319I SMF_000           0
DRL0319I SMF_006           6
DRL0319I SMF_007           0
DRL0319I SMF_021           0
DRL0319I SMF_025           0
DRL0319I SMF_026          476
DRL0319I SMF_030         3737
DRL0319I SMF_070           40
DRL0319I SMF_071           40
DRL0319I SMF_072_1        280
DRL0319I SMF_090           0
DRL0320I Unrecognized      3
DRL0318I -----
DRL0321I Total            4582
DRL0003I
DRL0316I Records built by record procedures:
DRL0317I Record name      Number
DRL0318I -----
DRL0319I SMF_030_X          2012
DRL0319I SMF_070_X          200
DRL0318I -----
DRL0321I Total            2212
DRL0003I
DRL0323I
DRL0324I Table name      | -----Buffer----- | -----Database-----
DRL0325I | Inserts  Updates  Inserts  Updates
DRL0326I DRL      .AVAILABILITY_D | 3      23      2      1
DRL0326I DRL      .AVAILABILITY_M | 3      1      2      1
DRL0326I DRL      .AVAILABILITY_T | 9      76      9      0
DRL0326I DRL      .MVS_WORKLOAD_H | 144    336    132    12
DRL0326I DRL      .MVS_WORKLOAD_M | 60     12     48     12
DRL0325I | -----
DRL0327I Total | 2643    99019    2148    495
DRL0003I
DRL0301I Collect ended at 2000-12-04-10.09.43
DRL0356I To update the database, the algorithm SCAN was most selected.

```

Figure 50. Sample collect messages

### Using collect messages

#### About this task

To use collect messages effectively, follow this procedure:

#### Procedure

1. Identify which log was collected and when it started.

The first messages in a set of collect messages show when the collect starts and identify the data set. The product then shows the timestamp of the first identified record in the log, which looks like this:

```
DRL0341I The first record timestamp is
2000-06-03-07.00.01.730000.
```

2. Look for database activity.

The product writes data to the database when:

- The buffer is full. See [“Improving collect performance” on page 109](#) if the buffer fills often. An example message is:

```
DRL0308I A database update started after 2608 records
due to a buffer-full condition
```

- All log data set records have been processed. An example message is:

```
DRL0310I A database update started after 4582 records
due to end of log
```

- A specific number of records have been read. The number is specified in the COMMIT AFTER operand of the COLLECT statement. An example message (where 1000 was specified as the COMMIT AFTER operand) is:

```
DRL0309I A database update started after 1000 records.
```

3. Determine the last record that the product identified in the log.

```
DRL0342I The last record timestamp is
2000-06-03-11.52.40.220000.
```

4. Review record-type statistical messages.

Collection statistics for record-type processing include:

- The type of each record processed
- The number of each record type found in the log data set
- The total number of records processed

IBM Z Performance and Capacity Analytics does not process any log records whose record type is either not defined, or defined but not used by collect. It issues a statistical message that labels the records *unrecognized*:

```
DRL0315I Records read from the log or built by log procedure:
DRL0317I Record name      |      Number
DRL0318I -----|-----
:
DRL0319I SMF_026          |          476
DRL0319I SMF_030          |         3737
:
DRL0320I Unrecognized     |           3
DRL0318I -----|-----
DRL0321I Total            |         4582
```

5. Verify that user-defined log, record, and update definitions are performing as expected. Check that appropriate data is being collected and stored in the appropriate tables.
6. Examine the processing performed by log and record procedures.

When IBM Z Performance and Capacity Analytics finds records that require handling by record procedures, it produces temporary, intermediate records for further IBM Z Performance and Capacity Analytics processing. Messages show the names and numbers of intermediate records built by record procedures while IBM Z Performance and Capacity Analytics was processing the log data set.

The messages appear in a group; for example:

```

DRL0316I Records built by record procedures:
DRL0317I Record name      |      Number
DRL0318I -----|-----
DRL0319I SMF_030_X        |          2012
DRL0319I SMF_070_X        |          200
DRL0318I -----|-----
DRL0321I Total            |          2212

```

7. Examine database activity to identify tables with the most activity during collect processing.

Database inserts and updates show the number of rows inserted or updated in Db2 tables. The number of rows inserted in the database and the number of rows updated in the database equal the number of buffer inserts. Statistical messages of this sort look like these:

```

DRL0323I
DRL0324I Table name      |      Buffer      |      Database
DRL0325I -----|-----|-----
DRL0326I DRL      .AVAILABILITY_D |      3      23      |      2      1
DRL0326I DRL      .MVS_WORKLOAD_M |      60      12      |      48      12
DRL0325I -----|-----|-----
DRL0327I Total            |      2643     99019 |      2148     495

```

8. You can use message DRL0356I to optimize the collect process by selecting the **SCAN** or **DIRECT** parameter. For more details, refer to the *Language Guide and Reference*. Following is an example of message DRL0356I

```
DRL0356I To update the database, the algorithm SCAN was most selected.
```

### Reviewing log statistics

#### About this task

Use the administration dialog to create a log statistics file for any log data set, regardless of whether it has been collected. See [“Displaying log statistics” on page 152](#) for more information.

**Note:** There are no lookup tables in the table name list.

#### Using the DRLLOGDATASETS table

#### About this task

The DRLSYS.DRLLOGDATASETS system table contains one row of information for each log data set IBM Z Performance and Capacity Analytics collects. DRLLOGDATASETS contains collect statistics, such as elapsed time for a collection, record types collected, and numbers of records processed.

The product uses the data set name, log type, and the first 80 bytes from the first recognized record, to warn against attempts to collect a log data set already collected.

Data sets can contain identical records, but with different names. If you want to be notified when the second data set is processed, redefine the DRLLOGDATASETS system table so that it does not use the DATASET\_NAME column as a key. Collection of the second data set fails with ABEND U0016 and an SQL code -803 against the DRLLOGDATASETS system table.

To view collect statistics, select a log definition from the Logs window, press F6 to see the data sets that have been collected for the log, choose a data set, and press Enter. The Collect Statistics window is displayed ([Figure 51 on page 108](#)).

**Note:** *First timestamp* is the first record selected, *Last timestamp* is the last record selected. *Last timestamp* might show an earlier date and time than the first timestamp.

```

DCCOLLECT Collect Statistics

Press Enter to return.

Data set . . . . : IM3.DCOLLECT.SLOG14
Volume . . . . . : TSOL06

Time collected . . : 2000-02-11-12.38.00   Collected by . . . : LASZLOM
Elapsed time . . . : 54                     Return code . . . . : 4
Times collected . . : 3                     Completed . . . . . : Y

First record . . . : 000000700000E540000ID5D9C4F10048D2740092
                          276F00000000D7D9C9F0F0E700000000280010

First timestamp . . : 2000-10-02-13.15.24
Last timestamp . . . : 2000-10-02-13.15.24

Records read . . . : 16458                   Records selected . . : 16458

Database updates : 7                       Inserts : 4954           Deletes : 0

F1=Help          F2=Split          F9=Swap          F12=Cancel

```

Figure 51. Collect Statistics window

IBM Z Performance and Capacity Analytics can produce a report from DRLLOGDATASETS that shows statistics for every collect job in the table.

The product does not update DRLOGDATASETS until a collection results in a successful commit. If it finds an error that terminates processing of a log data set, such as a locking error or an out of space error, it does not update DRLOGDATASETS. If it has already created a row for the log data set (which it does at the first commit), it does not update such indicators of a successful conclusion to processing as the Elapsed seconds column or the Complete column. See [“Recovering from database errors”](#) on page 120 for more information.

Refer to “DRLLLOGDATASETS” on page 221 for a description of its columns.

### Collecting multiple log data sets

### About this task

To collect multiple log data sets, specify the log data set names in the DRLLOG job card of the collect job as follows:

```
//DRLIN DD *
        COLLECT log-name
        ..
//DRLLOG DD DISP=SHR,DSN=log-data-set-1
        DD DISP=SHR,DSN=log-data-set-2
        DD DISP=SHR,DSN=log-data-set-3
//DRLOUT DD SYSOUT=*
```

If the log collecting job stops prematurely, you can start it again. In this case, the log collector does not collect the records of the data sets that were already completely processed and the following messages are issued:

```
DRL0302I Processing log-data-set-1 on EPDM0F
DRL0303W The log data set has already been processed. Data set name: log-data-set-1
```

The COLLECT process completes with a return code of 4.

If a log data set was only partially processed, the log collector does not collect the records that were already collected. In this way, the same data is not summarized twice.

**Note:** If the IMS checkpoint mechanism (DRLICHKI, DRLICHKO) is used, you cannot resubmit the same collect job when using multiple concatenated IMS data sets. If you resubmit the same collect job you could encounter a problem of duplicate key, because the DRLICHKI of the previous job would be used.

## Improving collect performance

### About this task

Correct collect performance problems using these tuning tasks:

### Procedure

#### 1. Optimize the collect buffer size.

Optimizing the size of the collect buffer has the greatest impact on performance

- a) Reduce the number of times IBM Z Performance and Capacity Analytics stops reading a log data set to write data to the database by increasing the buffer size.

Message DRL0313I shows the number of database updates because of a full buffer. Look for cases where the number of updates could be reduced by increasing the size of the buffer.

The optimum is to reduce the number of updates to 0.

- b) The default buffer size is 10 MB. Use the buffer size operand of the COLLECT statement to increase the size to 20 MB to 30 MB, or more.

Refer to the *Language Guide and Reference* for more information about the COLLECT statement.

- c) Do not use the COMMIT AFTER $n$  records operand on the COLLECT statement.

#### 2. Reduce the amount of data committed to the database.

- a) Remove unnecessary tables using the INCLUDE/EXCLUDE clauses of the COLLECT statement.
- b) Examine collect messages to determine the most active tables.
- c) Concentrate on tables with a lot of buffer and database inserts and updates shown in DRL0326I messages.
- d) Modify update definitions to eliminate needless rows in tables.

For example, set a key column to a constant (such as a blank) instead of to a value from a record if the detail is unnecessary.

- e) Reduce the number of columns collected

- 1) Delete unneeded columns from the update definition of the table.
- 2) Remove the columns in the SQL CREATE TABLE statement of the table definition.
- 3) Drop the table.
- 4) Re-create the table.

**Note:** With Db2 multiple insert functionality, when data is collected to data tables, the insert statements are issued in bulk. Multiple rows are inserted with a single Db2 multiple insert statement. This results in significant performance improvements. However, this performance improvement decreases as the number of columns inserted increases.

#### 3. Improve update effectiveness.

- a) Define an index on the primary key but no other indexes for tables you create.
- b) Do not use a LOOKUP expression with the LIKE operand (especially for large lookup tables) in update definitions you create. Use an = operand where possible.
- c) Minimize the number of rows in lookup tables that allow global search characters and in the PERIOD\_PLAN control table.
- d) Run collect when the processing load from other programs is low and when Db2 use is light.
- e) Optionally, choose the appropriate algorithm to update the Db2 database by specifying the **DIRECT** or **SCAN** parameter in the COLLECT statement.

If you do not specify any parameter, the collect process automatically chooses an algorithm among the DIRECT, SCAN, and INSERT algorithms. This automatic selection, however, can be very time consuming. To improve the performance, you can force the collect process to use either the DIRECT or SCAN algorithm only, by specifying the **DIRECT** or **SCAN** parameter in the COLLECT statement.

For details about these parameters, refer to the *Language Guide and Reference* manual.

## Administering the IBM Z Performance and Capacity Analytics database

### About this task

Maintaining the IBM Z Performance and Capacity Analytics database includes purging unneeded data, reorganizing the database, updating Db2 statistics, backing up data, updating views on the Db2 catalog, and protecting the integrity of data by controlling the access.

Regular maintenance tasks are as follows:

Besides regularly scheduled jobs, run the RUNSTATS utility periodically while the database is growing to:

- Provide the Db2 optimizer with information. (After the database stabilizes, RUNSTATS does not make a significant contribution to the Db2 optimizer.)
- Provide table size statistics for IBM Z Performance and Capacity Analytics.

See [“Monitoring the size of the IBM Z Performance and Capacity Analytics database” on page 122](#) for more information.

The remainder of this section introduces the use of Db2 as the product database manager and shows how to use Db2 to maintain the database.

### Understanding Db2 concepts

By default, IBM Z Performance and Capacity Analytics names for Db2-related items are:

#### **DSN**

Names the Db2 subsystem.

#### **DRLDB**

Names the product database.

#### **DRLSSYS1**

Names the product table space that contains log collector system tables.

#### **DRLSSYS2**

Names the product table space that contains other system tables.

#### **DRLSSAMP**

Names the product table space that contains tables for the Sample component

#### **DRLSCOM**

Names the product table space that contains common tables that the product components use.

The names of other product table spaces depend on the components you install. There is at least one table space for each component.

[Figure 52 on page 111](#) shows the data areas in the Db2 subsystem.

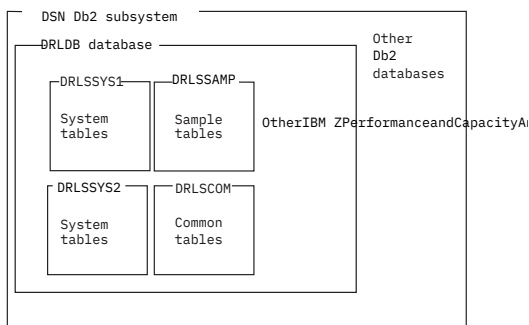


Figure 52. Db2 environment for the IBM Z Performance and Capacity Analytics database

### Understanding how IBM Z Performance and Capacity Analytics uses Db2

Figure 52 on page 111 shows an IBM Z Performance and Capacity Analytics installation that uses one product database. There can be more than one product database in the installation of IBM Z Performance and Capacity Analytics, more than one IBM Z Performance and Capacity Analytics installation in one Db2 subsystem, more than one Db2 subsystem with an installation of the product, and so on.

### Understanding table spaces

Figure 52 on page 111 shows that the product uses several table spaces in the DRLDB database. A table space contains one or more tables and is the logical unit addressed by Db2 utilities such as COPY and REORGAnize.

The DRLSSYS1 and DRLSSYS2 table spaces contain IBM Z Performance and Capacity Analytics system tables and always exist in a functioning product system. When you install an IBM Z Performance and Capacity Analytics component, it creates at least one segmented table space for the component within its database. The exact configuration of table spaces you have depends on the components you have installed.

To list the table spaces belonging to the current database:

1. Select 4, Tables, from the Administration window.
2. Without selecting a table, select the Maintenance pull-down.
3. Select 1, Tablespace, from the options.

Figure 53 on page 111 shows the list of table spaces, with the Utilities pull-down.

|                                   |             |                       |           |
|-----------------------------------|-------------|-----------------------|-----------|
| -----                             |             | -----                 |           |
| Tablespace                        | Utilities   | Other                 | Help      |
| -----                             |             | -----                 |           |
| 1. Run DB2 REORG utility...       |             | Row 1 to 20 of 37     |           |
| 2. Run DB2 RUNSTATS utility..     |             |                       |           |
| 3. Run DB2 REORG/DISCAD utility.. |             | ablespace definition. |           |
| -----                             |             | -----                 |           |
| Select a ta                       |             |                       |           |
| ---                               |             |                       |           |
| --- Quantity ---                  |             |                       |           |
| /                                 | Tablespace  | Primary               | Secondary |
|                                   | DRLSAIX     | 6000                  | 3000      |
|                                   | DRLSCI08    | 100                   | 52        |
|                                   | DRLSCOM     | 20000                 | 10000     |
|                                   | DRLSCP      | 60                    | 32        |
|                                   | DRLSDB2     | 40000                 | 20000     |
|                                   | DRLSDFSM    | 60000                 | 30000     |
|                                   | DRLSDPAM    | 100                   | 52        |
| :                                 |             |                       |           |
|                                   | Storage grp | Type                  | Locksize  |
|                                   | SYSDEFLT    | SEGMENTED             | TABLE     |
|                                   | STOEPDM     | SEGMENTED             | TABLE     |
|                                   | SYSDEFLT    | SEGMENTED             | TABLE     |
|                                   | SYSDEFLT    | SEGMENTED             | TABLE     |
|                                   | SYSDEFLT    | SEGMENTED             | TABLE     |
|                                   | SYSDEFLT    | SEGMENTED             | TABLE     |
|                                   | SYSDEFLT    | SIMPLE                | ANY       |

Figure 53. Tablespace list window

When you change table space or index space parameters, the product uses SQL commands to alter the space directly, and creates a job to unload and load table data as necessary. IBM Z Performance and

Capacity Analytics does not change the **definition** of the table space. To do this, select the Space pull-down on the Components window.

If you create a table in the product database, you must specify the database and table space in which Db2 is to create the table. Once created, a table can be addressed by its table name only. You do not need to specify the table space name.

[“Working with tables and update definitions” on page 180](#) describes how to use the administration dialog to view, change, or create table spaces.

### Calculating and monitoring table space requirements

#### About this task

To make effective use of the available space, you need to monitor the storage required for your data tables. The sample job, DRLJTBSR (in the DRL310.SDRLCNTL library), produces a detailed report about the space required for some or all of the selected component tables, based on the average record size and estimated number of rows.

To customize the job to your requirements, you must change some parameters in DRLJTBSR. For a description of these parameters, see [“Parameters for table space reporting” on page 113](#).

#### DRLJTBSR job that reports table space requirements

```
//DRLJTBSR JOB (ACCT#),'SPACE'
//*****
//* Name:      DRLJTBSR
//*
//* FUNCTION: Print a report of estimated total kilobytes based on
//*            estimated records number and average record length
//*            for each table on component.
//*            Average records length is calculated,if the table is
//*            not created, reading the IBM Z Performance and
//*            Capacity Analytics definition library
//*
//* The exec DRLETBSR accepts the following parameters:
//*
//* LIBRARY=      IZPCA definition library
//* SYSPREFIX=    IZPCA system table prefix
//* DB2SUBSYS=    Db2 subsystem name
//* COMPONENT=    Component name. To have a complete list of
//*               component short name read the DRLCOMPONENTS
//*               system table
//* TABLENAME=   Table name ('*' to select all table)
//* RECNUMBER=    Estimated record numbers
//* PAGESIZE=     Value of pagesize . Can be 4K or 32K.
//*               Optional parameter, default value when
//*               not specified is 4K
//* MAXROWS=      Maximum number of rows per pages. Maximum
//*               value allowed is 255.
//*               Optional parameter, default value when not
//*               specified is 255
//* PCTFREE=      Percentage of free space on each page.
//*               Value allowed from 0 to 99.
//*               Optional parameter, default value when not
//*               specified is 5
//* FREEPAGE=     Number of free space pages. Value allowed
//*               from 0 to 255.
//*               Optional parameter, default value when not
//*               specified is 0
//* COMPRESS=     Compression ratio. Optional parameter.
//*               The value must be in range from 0 to a value
//*               less than 1
//*               Default value when not specified is 0.
//*
//* Notes:
//*   Before you submit the job, do the following:
//*   1. Check that the data set names are correct.
//*   2. Change the parameters to DRLETBSR as required.
//*   3. Change the Db2 load library name according to
//*       the naming convention of your installation.
//*       Default is 'db2loadlibrary'.
//*****
```



```
//SPACE EXEC PGM=IKJEFT01,DYNAMNBR=25
//*
//STEPLIB DD DISP=SHR,DSN=DRLvrm.SDRLLoad <== DATA SET NAME
//SYSPROC DD DISP=SHR,DSN=DRLvrm.SDRLEXEC <== DATA SET NAME
//SYSEXEC DD DISP=SHR,DSN=DRLvrm.SDRLEXEC <== DATA SET NAME
//*****
//* START EXEC DRLETBSR
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
%DRLETBSR LIBRARY= DRLvrm.SDRLDEFS -
          Db2SUBSYS= DSN -
          SYSPREFIX= DRLSYS -
          COMPONENT= xxxx -
          TABLENAME= * -
          RECNUMBER= xxxx -
          PAGESIZE= 4K -
          MAXROWS= 255 -
          PCTFREE= 5 -
          FREEPAGE= 0 -
          COMPRESS= 0
/*
```

Following is sample output for job DRLJTBSR that shows the space required for all tables of the IMS collect component.

### Sample output for DRLJTBSR

Statistics for space required for a component:  
-----:

```
Input library      : DRL310.SDRLDEFS
Db2 subsystem     : DSN7
PR system prefix  : PRM3SYS
Component         : IMSV710C
Table name        : *
Estimated records number : 500000
Page size         : 4096
Maxrows per page  : 255
Percentage of free space : 5
Number of free pages : 0
Compression ratio : 0
```

| Estimated<br>Table name<br>kilobytes | New | Tablespace | Definition<br>member | Avg record<br>length | Record<br>per page | Estimated<br>total pages |        |
|--------------------------------------|-----|------------|----------------------|----------------------|--------------------|--------------------------|--------|
| -----                                | --- | -----      | -----                | -----                | -----              | -----                    | -----  |
| IMS_APPLICATION_H                    | N   | DRLSIA01   | DRLTIMSA             | 651                  | 5                  | 100002                   | 400008 |
| IMS_APPLICATION_W                    | N   | DRLSIA02   | DRLTIMSA             | 648                  | 5                  | 100002                   | 400008 |
| IMS_CHKPT_IOSAM_T                    | N   | DRLSIS01   | DRLTIMSS             | 169                  | 22                 | 22730                    | 90920  |
| IMS_CHKPT_POOLS_T                    | N   | DRLSIS02   | DRLTIMSS             | 99                   | 39                 | 12823                    | 51292  |
| IMS_CHKPT_REGION_T                   | N   | DRLSIS03   | DRLTIMSS             | 101                  | 38                 | 13160                    | 52640  |
| IMS_CHKPT_STATS_T                    | N   | DRLSIS04   | DRLTIMSS             | 518                  | 7                  | 71430                    | 285720 |
| IMS_CHKPT_VSAM_T                     | N   | DRLSIS05   | DRLTIMSS             | 194                  | 19                 | 26318                    | 105272 |
| IMS_SYSTEM_D                         | N   | DRLSIY01   | DRLTIMSY             | 642                  | 6                  | 83335                    | 333340 |
| IMS_SYSTEM_Q                         | N   | DRLSIY02   | DRLTIMSY             | 645                  | 6                  | 83335                    | 333340 |
| IMS_TRANSACTION_D                    | N   | DRLSIT02   | DRLTIMSR             | 646                  | 5                  | 100002                   | 400008 |
| IMS_TRANSACTION_H                    | N   | DRLSIT01   | DRLTIMSR             | 649                  | 5                  | 100002                   | 400008 |
| IMS_TRANSACTION_W                    | N   | DRLSIT03   | DRLTIMSR             | 646                  | 5                  | 100002                   | 400008 |

### Parameters for table space reporting

| Table 6. Parameters for table space reporting |                                                                         |                                                                                                                                                                            |               |            |
|-----------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|
| Parameter                                     | Value to set                                                            | Explanation                                                                                                                                                                | Default value | Your value |
| LIBRARY                                       | IBM Z Performance and Capacity Analytics definition library (UPPERCASE) | The name of the partitioned data set that contains definitions of the product tables. This is a required parameter. It is used for component tables that do not yet exist. |               |            |
| Db2SUBSYS                                     | Db2 subsystems name (UPPERCASE)                                         | The Db2 subsystem where the product resides. This is a required parameter.                                                                                                 |               |            |

| Table 6. Parameters for table space reporting (continued) |                                       |                                                                                                                                                                                                                                                                                                                                        |               |            |
|-----------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|
| Parameter                                                 | Value to set                          | Explanation                                                                                                                                                                                                                                                                                                                            | Default value | Your value |
| SYSPREFIX                                                 | Prefix for system tables (UPPERCASE)  | The prefix of all IBM Z Performance and Capacity Analytics system and control Db2 tables. This is a required parameter. The value of this parameter depends on your naming convention and is determined during installation.                                                                                                           |               |            |
| COMPONENT                                                 | Component name (UPPERCASE)            | The name of an IBM Z Performance and Capacity Analytics component. This is a required parameter.                                                                                                                                                                                                                                       |               |            |
| TABlename                                                 | The name of the table (UPPERCASE)     | The name of the IBM Z Performance and Capacity Analytics table. This is a required parameter. To specify all component tables, type an asterisk, *. To specify all component tables whose names start with a particular string, type the string. For example, type CICS_S for all component tables whose name starts with this string. |               |            |
| RECNUMBER                                                 | Number of rows                        | The estimated number of rows. This is a required parameter and must be numeric.                                                                                                                                                                                                                                                        |               |            |
| PAGESIZE                                                  | Db2 page size                         | The Db2 page size. This is an optional parameter; when specified, it must be either 4K or 32K.                                                                                                                                                                                                                                         | 4096 (4K)     |            |
| MAXROWS                                                   | Maximum number of rows per page       | The maximum number of rows per page. This is an optional parameter; when specified, it must be a numeric value between 1 and 255.                                                                                                                                                                                                      | 255           |            |
| PCTFREE                                                   | Percentage of free space on each page | The percentage of free space per page. This is an optional Db2 parameter; when specified, it must be a numeric value between 1 and 255.                                                                                                                                                                                                | 5             |            |
| FREEPAGE                                                  | Number of free space pages            | The number of free space pages. This is an optional Db2 parameter; when specified, it must be a numeric value between 1 and 255.                                                                                                                                                                                                       | 0             |            |
| COMPRESS                                                  | Compression ratio                     | The compression ratio calculated as PERCSAVE/100 (PERCSAVE is the percentage of kilobytes saved by compression as reported by Db2 utility DSN1COMP). This parameter is optional; when specified, it must be a numeric value.                                                                                                           | 0             |            |

For detailed information about the parameters, refer to the *Db2 for z/OS: SQL Reference*.

For information about Db2, refer to the *Db2 for z/OS: Administration Guide and Reference*.

For information about the algorithm used for calculating table space requirements, refer to the *Db2 for OS/390 Installation Guide*.

### Considerations when running DRLJTBSR

The sample job DRLSJTBSR invokes the DRLETBSR exec. Before you can use DRLETBSR, the IBM Z Performance and Capacity Analytics system tables must have already been created or updated. If a component is already installed, DRLETBSR obtains the average record size of each component table directly from the product system tables.

The column NEW in the report shows the table status (N for a table already created, Y for a table that does not exist). The DRLETBSR exec calculates the average record size for each component table.

If a component is not installed, the DRLETBSR exec reads each partitioned data set member that defines each component table (see the **LIBRARY** parameter). Use this exec only for standard IBM Z Performance and Capacity Analytics libraries. Using it for customized libraries can produce unpredictable results. For variable length fields, the average record size is calculated using the maximum length. The average record size does not include GRAPHIC, VARGRAPHIC and LONG VARGRAPHIC Db2 data-types. When you specify

the estimated number of records, remember that the product collects data from tables according to rules specified in the update definitions. Tables containing the same data may therefore have different numbers of rows. For example, an hourly table may contain a greater number of rows than a daily table.

## Reorganizing the database

It is important to delete obsolete data from the tables as this updates the product database and improves performance during the query activity. Also, it is important to reorganize table space after data deletion to optimize the available space. You can use the utility Reorg/Discard to delete data and reorganize table space.

### Reorg/Discard utility

The Reorg/Discard utility enables you to delete the data included in the tables using the Purge condition included in the DRLPURGECOND table. This table is provided in IBM Z Performance and Capacity Analytics. At the same time, the Reorg/Discard utility automatically reorganizes the table space where data has been deleted.

The records deleted by the Discard function are automatically saved in a specific data set, SYSPUNCH. SYSPUNCH can be used at a later time to reload discarded data in the table, if required.

During the Discard step, the Reorg function reorganizes the table space to improve access performance and reclaim fragmented space. Also, the keyword STATISTICS is automatically selected for the Reorg/Discard, enabling you to collect online statistics during database reorganization.

See the *Db2 for z/OS: Utility Guide and Reference*, for more information about Reorg/Discard utility.

There are two ways to run the Reorg/Discard utility from the Administration window of IBM Z Performance and Capacity Analytics:

From the Tables window, select option 12 from the Utilities pull-down menu.

| Table Maintenance  |  | Utilities            | Edit | View | Other | Help               |
|--------------------|--|----------------------|------|------|-------|--------------------|
| Select one or more |  | 12 1. Display...     |      |      | F11   | Row 1 to 21 of 129 |
|                    |  | 2. Show size...      |      |      |       | definition.        |
|                    |  | 3. *import...        |      |      |       |                    |
|                    |  | 4. *export...        |      |      |       |                    |
| / Tables           |  | 5. Grant...          |      |      |       |                    |
| - CICS_DICTIONARY  |  | 6. Revoke...         |      |      |       |                    |
| - CICS_FIELD       |  | 7. Document...       |      |      |       |                    |
| - DAY_OF_WEEK      |  | 8. Recalculate...    |      |      |       |                    |
| - EXCEPTION_T      |  | 9. Purge...          |      |      |       |                    |
| - IMS_APPLICATION  |  | 10. Unload...        |      |      |       |                    |
| - IMS_APPLICATION  |  | 11. Load...          |      |      |       |                    |
| - IMS_APPLICATION  |  | 12. Reorg/Discard... |      |      |       |                    |
| - IMS_CHKPT_IOSAM  |  | 13. DB2HP Unload...  |      |      |       |                    |
| - IMS_CHKPT_POOLS  |  |                      |      |      |       |                    |

Figure 54. Tables window - Option 12

In this way, the data contained in the table or tables selected from the table list is discarded, and a space reorganization is automatically performed in the table space where the selected tables reside. The Discard operation is only performed on the selected tables, while the Reorg operation is performed on all the tables contained in the table space. You cannot run the Discard utility on Views or Tables that have any discard condition specified in the DRLPURGECOND table.

As an alternative, use option 1 from the Maintenance pull-down menu of the Tables window to open the Tablespace window, then select option 3 from the Utilities pull-down menu.

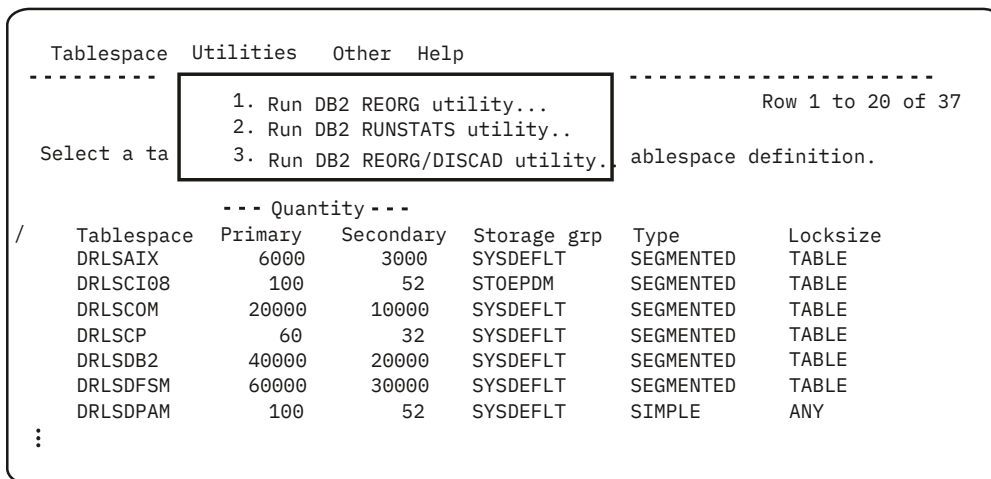


Figure 55. Tablespace list window

In this second scenario, from the Tablespace window, you select the table spaces for the Reorg operation. The Discard operation is automatically run on all the tables contained in the selected table spaces, according to the conditions specified in the DRLPURGECOND table.

All the tables that have the Discard operation specified in the DRLPURGECOND table are included in the processing. All the tables that do not have the Discard operation specified in the DRLPURGECOND table are ignored.

When you run Reorg/Discard, whichever procedure you use, a JCL is created and saved in your library, so that it can be used at a later time, if required. When the JCL is launched, the following data sets are created:

#### **SYSPUNCH**

Used to reload the discarded data, if required, using the Load utility.

#### **SYSDISC**

Contains the records discarded by the utility.

In addition, SYSREC data set is available. It contains all the records in the table, and you can specify whether you want it to be Temporary or Permanent. If you specify Temporary, the data set is automatically erased at the end of the reorganization job. If you specify Permanent, it is permanently allocated on your disk.

When using the Reorg/Discard utility, you can select one or more tables and table spaces at a time. However, in the data sets SYSPUNCH and SYSDISC, data is overwritten, therefore each data set maintains only the information contained in the last table you processed.

The following is an example of how the Reorg/Discard utility works on a table space that contains several tables:

```
//REODIS JOB (ACCOUNT), 'NAME'
//*
//*****
//* Run Db2 Utility
//*
//* WARNING (REORG/DISCARD):
//* If you want, you can specify the SORTKEYES option:
//* a subtask sorts the index keys. For this optional
//* operation you have need of enough space in your
//* default Storage Diskfor this SORT operation.
//*
//*****
//DB2UTIL EXEC DSNUPROC,
// SYSTEM=DSN6,UID=MYUID
//*
//DSNUPROC.STEPLIB DD DISP=SHR,DSN='db2loadlibrary'
//DSNUPROC.SYSREC DD DSN=MYUID.DRLUNLD,UNIT=SYSDA,
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)
//DSNUPROC.SYSUT1 DD DSN=MYUID.DRLWORK,UNIT=SYSDA,
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)
```

```

//DSNUPROC.SORTOUT DD DSN=MYUID.DRLSR0UT,UNIT=SYSDA,
//      SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)
//DSNUPROC.WORK DD DSN=MYUID.WORK1,UNIT=SYSDA,
//      SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)
//DSNUPROC.SYSPUNCH DD DISP=(MOD,CATLG),
//      DSN=MYUID.TAB.SYSPUNCH,
//      SPACE=(4096,(1,1)),UNIT=SYSDA
//DSNUPROC.SYSDISC DD DISP=(MOD,CATLG),
//      DSN=MYUID.TAB.DISCARDS,
//      SPACE=(4096,(5040,504)),UNIT=SYSDA,
//      DCB=(RECFM=FB,LRECL=410,BLKSIZE=27880)
//DSNUPROC.SYSIN DD *
REORG TABLESPACE MYDB.DRLSCOM LOG YES
STATISTICS INDEX(ALL) DISCARD
FROM TABLE MYDB.AVAILABILITY_D
WHEN (
    DATE < CURRENT DATE - 90 DAYS
)
FROM TABLE MYDB.AVAILABILITY_T
WHEN (
    DATE < CURRENT DATE - 14 DAYS
)
FROM TABLE MYDB.AVAILABILITY_M
WHEN (
    DATE < CURRENT DATE - 104 DAYS
)
/*

```

In this example, the Reorg/Discard utility reorganizes the MYUID.DRLSCOM table space and discards data from the MYDB.AVAILABILITY\_D, MYDB.AVAILABILITY\_M, and MYDB.AVAILABILITY\_T tables. This example shows that the DDNAME for the SYSPUNCH data set is SYSPUNCH, the DDNAME for the discard results data set is SYSDISC, and the DDNAME for the sort output data set is defaulted to SORTOUT. The SYSDISC and SYSPUNCH data sets are reused every time the utility is run for all tables.

### **Purge utility**

As an alternative to the Reorg/Discard utility, you can delete data and reorganize table space using the Purge utility.

Each data table in a component has a Purge condition that specifies which data is to be purged from that table. When you use the Purge function, the data specified in the purge condition is deleted.

Purge the contents of your database at least weekly. The sample job, DRLJPURG (in the DRL310.SDRLCNTL library), purges all product database tables with Purge conditions. [Figure 56 on page 118](#) shows part of DRLJPURG.

```
//DRLJPURG JOB (ACCT#),'PURGE'
//*****
//* NAME: DRLJPURG *
//* *
//* FUNCTION: *
//* PURGE DATA FROM ALL IZPCA TABLES *
//* ACCORDING TO THE PURGE CONDITIONS DEFINED FOR THE TABLES) *
//* IF YOU WANT TO PURGE ONLY SOME TABLES, SPECIFY THE *
//* INCLUDE OR EXCLUDE OPTIONS. EXAMPLE: *
//* *
//* PURGE INCLUDE LIKE 'DRL.CICS%' *
//* *
//* NOTES: *
//* 1.CHECK Db2 SUBSYSTEM AND DATA SET NAMES. *
//* 2.Change the Db2 load library name according to *
//* the naming convention of your installation. *
//* Default is 'db2loadlibrary'. *
//* *
//*****
//PURGE EXEC PGM=DRLPLC,PARM=('SYSTEM=DSN SYSPREFIX=DRLSYS')
//STEPLIB DD DISP=SHR,DSN=DRLvrm.SDRLLOAD
// DD DISP=SHR,DSN=db2loadlibrary
//DRLIN DD *

PURGE;

//DRLOUT DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
//DRLDUMP DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
/*
```

Figure 56. DRLJPURG job that uses all purge conditions

The Purge utility generates messages that show if the job ran as expected:

```
DRL0300I Purge started at 2000-05-24-15.12.30.
DRL0404I Table name | Deletes
DRL0405I -----|-----
DRL0406I DRL .RACF_RESOURCE_T | 12376
DRL0406I DRL .RACF_LOGON_T | 98
DRL0406I DRL .RACF_OPERATION_T | 457
DRL0406I DRL .RACF_COMMAND_T | 17
DRL0301I Purge ended at 2000-05-24-15.12.44.
```

After purging the database, use the Db2 REORG utility to free the purged space for future use. There are three methods of reorganizing your database:

1. Use option 1, Run Db2 REORG utility, from the Utilities menu on the Tablespace list window, shown in [Figure 53 on page 111](#). This reorganizes a whole table space.
2. Use option 10, Unload, from the Utilities menu on the Tables window, after having selected one or more tables. When you Unload and then Load a table, it reorganizes it without affecting the other tables in the table space.

[Figure 57 on page 119](#) shows the list of tables, with the Utilities pull-down.

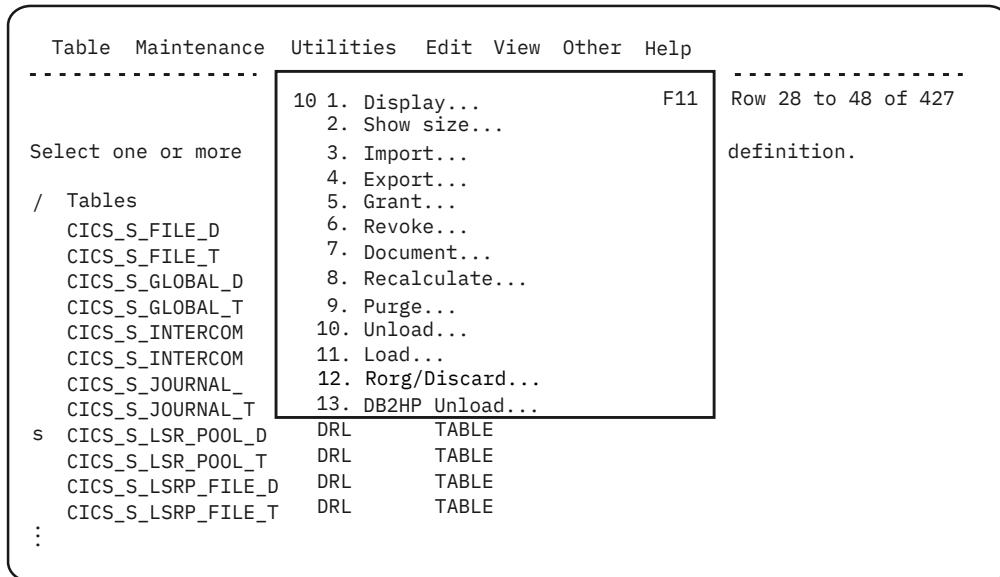


Figure 57. Tables window -Option 10

3. Use the sample job DRLJREOR (in the DRL310.SDRLCNTL library) to build your own job.

Refer to the description of the REORG utility in the *Db2 for z/OS: Administration Guide and Reference* for more information.

### Backing up the IBM Z Performance and Capacity Analytics database

Back up the IBM Z Performance and Capacity Analytics database regularly.

#### About this task

Ask your Db2 administrator to add your requirements to their site Db2 procedures for backing up the data. If you cannot do this, copy and modify the sample job DRLJCOPY (in the DRL310.SDRLCNTL library), to back up all product tables.

Determine:

- How often to back up the product database
- Whether to back up all data or just changed data
- The names of table spaces in the database

Figure 58 on page 120 shows job DRLJCOPY, used to back up the DRLSSYS1 and DRLSSYS2 table spaces.

```
//DRLJCOPY JOB (ACCT#),'IMAGE COPY'
//*****
//* NAME: DRLJCOPY *
//* *
//* FUNCTION: *
//* RUN THE DB2 IMAGE COPY UTILITY TO MAKE BACKUP COPIES *
//* OF IZPCA TABLE SPACES. THIS JOB COPIES *
//* TABLE SPACES DRLSSYS1 AND DRLSSYS2. YOU MUST ADD A COPY *
//* STATEMENT AND DATA SET FOR EACH TABLE SPACE THAT YOU *
//* WANT TO BACK UP. *
//* *
//* NOTES: *
//* CHECK THE FOLLOWING: *
//* LIB='db2loadlibrary' DB2 LOAD LIBRARY *
//* SYSTEM=DSN DB2 SUBSYSTEM NAME *
//* DSN=COPYDSN NAME OF BACKUP DATASET *
//* SPACE= SPACE REQUIRED *
//* COPY TABLESPACE DB.TS DATABASE.TABLESPACE NAME *
//* FULL YES/NO FULL OR INCREMENTAL COPY *
//*****
//UTIL EXEC DSNUPROC,LIB='db2loadlibrary',
// SYSTEM=DSN,UID='TEMP',UTPROC=''
// *
//COPY01 DD DSN=COPYDSN1,
// DISP=(MOD,CATLG,CATLG),
// SPACE=(16384,(50,50),,,ROUND),
// UNIT=SYSDA
//COPY02 DD DSN=COPYDSN2,
// DISP=(MOD,CATLG,CATLG),
// SPACE=(16384,(50,50),,,ROUND),
// UNIT=SYSDA
//SYSIN DD *
COPY TABLESPACE DRLDB.DRLSSYS1
COPYDDN COPY01
FULL YES
COPY TABLESPACE DRLDB.DRLSSYS2
COPYDDN COPY02
FULL YES
/*
```

Figure 58. DRLJCOPY job for backing up IBM Z Performance and Capacity Analytics table spaces

### Determining when to back up the IBM Z Performance and Capacity Analytics database

#### About this task

Back up the database at least weekly to make it easier to recover from errors.

#### Determining a level of backup

#### About this task

Db2 provides two methods for backing up data, full-image copy (copy all data), and incremental-image copy (copy only changed data). You can combine the two copies.

#### Determining which table spaces to back up

#### About this task

The Db2 COPY utility operates on table spaces. Ensure that all table spaces are part of the backup procedures. For more information about backing up a Db2 database, refer to the discussion of backing up and recovering databases in the *Db2 for z/OS: Administration Guide and Reference*.

### Recovering from database errors

#### About this task

These errors might occur in an IBM Z Performance and Capacity Analytics database that sees significant activity:



- Out of space in one of the table spaces or index spaces
- Corrupted data in the database

The following sections contain descriptions of each condition, how it might occur, and how to correct it.

A description of how to restore Db2 database backups appears in [“Correcting corrupted data in the IBM Z Performance and Capacity Analytics database”](#) on page 121.

### ***Correcting out-of-space condition in an IBM Z Performance and Capacity Analytics table space or index space***

#### **About this task**

A table space or index space can be out of space if:

- Volumes in the IBM Z Performance and Capacity Analytics storage group are full.

If DASD is not constrained, the database continues to grow and performance can be an issue. If performance is not an issue, ask the Db2 administrator to add volumes to the IBM Z Performance and Capacity Analytics storage group.

If you cannot add more volumes to your storage group, purge the database before continuing. After purging data, reorganize the affected table spaces. See [“Purge utility”](#) on page 117 for more information.

- The table space or index space uses its maximum number of extents.

This scenario can occur if the primary quantity and all secondary quantity (PRIQTY and SECQTY) extents have been exhausted. IBM Z Performance and Capacity Analytics table spaces and index spaces have a default size specification based on an estimated number of rows in tables in the table space. These default values may be too small for a very large site.

To recover from an out-of-space condition:

#### **Procedure**

1. Increase the primary and secondary quantities using the IBM Z Performance and Capacity Analytics administration dialog ([Figure 110 on page 194](#)), or by using the Db2 SQL statements, ALTER TABLESPACE or ALTER INDEX.
2. Reorganize the table space using the Db2 REORG utility as described in [“Purge utility”](#) on page 117 or drop the index and recreate it as described in [“Displaying and adding a table index”](#) on page 182.

```
DSNT408I  SQLCODE = -904, ERROR:  UNSUCCESSFUL EXECUTION
        CAUSED BY AN UNAVAILABLE RESOURCE. REASON
        00D70025, TYPE OF RESOURCE 00000220 AND RESOURCE
        NAME DB2A.DSNDBC.DRLDB.A.I0001.A001
```

### ***Correcting corrupted data in the IBM Z Performance and Capacity Analytics database***

#### **About this task**

Corrupted data can occur because of:

- Db2 errors
- Erroneously collecting the same log data set more than once

If the database has been incorrectly updated (for example, accidentally collecting the same log data set twice or deleting required data), restore a previous backup copy with the Db2 RECOVER utility. For information about backing up and recovering Db2 databases, refer to the *Db2 for z/OS: Administration Guide and Reference*.

You need not restore product data after a collect job terminates from locking or out of space. After correcting the error, run the job again. If the database has been updated, the collect resumes from the last checkpoint recorded in the DRLSYS.DRLLOGDATASETS system table. If it had not committed data to

the database before the error, IBM Z Performance and Capacity Analytics recovers the data by collecting from the first record in the log.

### Monitoring the size of the IBM Z Performance and Capacity Analytics database

Monitor the size of the database regularly.

#### About this task

Use the Db2 RUNSTATS utility to generate current statistics in the Db2 catalog about any Db2 table space, including those in the IBM Z Performance and Capacity Analytics database.

The sample job, DRLJRUNS (in the DRL310.SDRLCNTL library), calls the Db2 RUNSTATS utility. Figure 59 on page 122 shows the RUNSTATS statements used to generate statistics for table spaces DRLSSYS1 and DRLSSYS2.

```
//DRLJRUNS JOB (ACCT#),'RUNSTATS'
//*****
//* Name: DRLJRUNS *
//* *
//* Function: *
//* Run the Db2 RUNSTATS utility to update the Db2 catalog *
//* information about Performance Reporter tables. *
//* This job only runs RUNSTATS for the table spaces *
//* DRLSSYS1 and DRLSSYS2. You must add a statement for *
//* each Performance Reporter table space. *
//* *
//* Notes: *
//* Check the following: *
//* LIB='db2loadlibrary' Db2 load library *
//* SYSTEM=DSN Db2 subsystem name *
//* *
//*****
//UTIL EXEC DSNUPROC,LIB='db2loadlibrary',
// SYSTEM=DSN,UID='TEMP',UTPROC=''
//*
//DSNUPROC.SYSIN DD *
RUNSTATS TABLESPACE DRLDB.DRLSSYS1 TABLE INDEX
RUNSTATS TABLESPACE DRLDB.DRLSSYS2 TABLE INDEX
/*
```

Figure 59. DRLJRUNS job for generating Db2 statistics

Learn more about the Db2 RUNSTATS utility from the description of its use in the *Db2 for z/OS: Administration Guide and Reference*.

Start the RUNSTATS utility from the administration dialog by choosing it from the Utilities menu in the Tables window. After using the RUNSTATS utility, use the administration dialog to see the number of bytes used for data in the product database (described in [“Showing the size of a table”](#) on page 171).

### Understanding how IBM Z Performance and Capacity Analytics uses Db2 locking and concurrency

Db2 provides locking and dynamic recovery for the databases it controls. The IBM Z Performance and Capacity Analytics database is under Db2 control and uses these Db2 mechanisms.

More than one IBM Z Performance and Capacity Analytics user or function can request access to the data at the same time. The way Db2 maintains data integrity during such times is by locking out data to all processes but one.

Learn more about Db2 locking and how it allows more than one process to work with data concurrently from the discussion of improving concurrency in the *Guide to Reporting*.

Deadlock or timeout conditions can occur when more than one user works with IBM Z Performance and Capacity Analytics tables, which causes Db2 to generate messages; for example:

```
DSNT408I SQLCODE = -911, ERROR: THE CURRENT UNIT OF WORK HAS BEEN
ROLLED BACK DUE TO DEADLOCK OR TIMEOUT. REASON 00C90088,
TYPE OF RESOURCE 00000100, AND RESOURCE NAME DRLDB
```

Consider the following potential locking scenarios:

- If running more than one collect job at a time, ensure the jobs do not update the same tables.

Although concurrent collects might not update the same data tables, locking can occur for the DRLSYS.DRLLOGDATASETS system table, updated by all collect runs.

- Generating reports while a collect job runs does not usually cause lockouts.

Report queries do not update table information; their access is read-only. However, QMF can hold locks while you display large reports.

- You cannot collect while Db2 utilities such as COPY and REORG are running. Also, you cannot collect and purge simultaneously.

COPY and REORG lock all tables in the table space on which they operate. Purge locks the table on which it operates.

- Creating tables (or installing components) locks the entire database.

If some users create many tables, give them a private database. See [“Installing multiple IBM Z Performance and Capacity Analytics systems”](#) on page 29 for more information.

To find out who is locking a resource, use the DB2 COMMANDS option in Db2 to issue this command:

```
-DISPLAY DATABASE(DRLDB) LOCKS LIMIT(100)
```

For more information, refer to the description of monitoring Db2 locking in the *Db2 for z/OS: Administration Guide and Reference*.

## Maintaining database security

### About this task

You control user access to database tables. Although IBM Z Performance and Capacity Analytics grants read access to the DRLUSER group ID for any components you install, you can grant or revoke authority to tables in the IBM Z Performance and Capacity Analytics database. See [“Administering user access to tables”](#) on page 200 for more information.

## Monitoring database access

### About this task

To see which end users access which database tables (for example, if you are considering removing tables), use the Db2 trace facility for tracing table accesses. Analyze the trace outside Db2 with another product. IBM Db2 Performance Monitor (DB2PM) can format, print, and interpret Db2 trace data.

Tracing involves a significant amount of overhead and is not something you should do regularly.

For information about Db2 trace facilities, refer to the description of using tools to monitor performance in the *Db2 for z/OS: Administration Guide and Reference*.

For information about DB2PM, refer to the *Db2 for z/OS: Administration Guide and Reference* and to the *IBM Db2 Performance Monitor: User's Guide*.

## Using available tools to work with the IBM Z Performance and Capacity Analytics database

### About this task

IBM and other software suppliers provide a variety of database maintenance tools. Because you have database administrator authority for the IBM Z Performance and Capacity Analytics database, you can use tools such as DB2I, a part of Db2. With DB2I you can:

- Run SQL statements
- Issue authorized Db2 commands
- Run Db2 utilities
- Work with Db2 objects in your database

## Administering lookup and control tables

Select DB2I from the Other menu of any IBM Z Performance and Capacity Analytics primary window. You can also type DB2I on the command line of a window.

Figure 60 on page 124 shows the DB2I Primary Option Menu.

```
COMMAND ===>                                DB2I PRIMARY OPTION MENU

Select one of the following Db2 functions and press ENTER.

 1 SPUFI                (Process SQL statements)
 2 DCLGEN               (Generate SQL and source language declarations)
 3 PROGRAM PREPARATION  (Prepare a Db2 application program to run)
 4 PRECOMPILE           (Invoke Db2 precompiler)
 5 BIND/REBIND/FREE     (BIND, REBIND, or FREE plans or packages)
 6 RUN                  (RUN an SQL program)
 7 DB2 COMMANDS         (Issue Db2 commands)
 8 UTILITIES            (Invoke Db2 utilities)
 9 CATALOG VISIBILITY   (Invoke catalog dialogs)
 D  DB2I DEFAULTS       (Set global parameters)
 X  EXIT                (Leave DB2I)

F13=HELP   F14=SPLIT   F15=END     F16=RETURN   F17=RFIND   F18=RCHANGE
F19=UP      F20=DOWN    F21=SWAP    F22=LEFT     F23=RIGHT   F24=RETRIEVE
```

Figure 60. DB2I Primary Option Menu

For more information about DB2I, refer to the description of utility jobs in the *Db2 for z/OS: Administration Guide and Reference*.

## Administering lookup and control tables

Periodically review the contents of IBM Z Performance and Capacity Analytics lookup and control tables. See [“Control tables and common tables”](#) on page 236 for a description of the columns in lookup and control tables that many product feature components use. Lookup tables used exclusively by an IBM Z Performance and Capacity Analytics feature are described in the documentation for each feature.

Edit each lookup table and control table to implement standards and definitions at your site. [“Working with data in tables”](#) on page 168 describes how to edit tables.

Lookup and control tables are particularly important for reporting availability of resources. Discuss availability reporting with your users to determine necessary changes to these tables.

## Administering reports

### About this task

As an IBM Z Performance and Capacity Analytics administrator, you have authority to run all frequently requested reports in batch mode and distribute them regularly. You can also create report groups that suit your organization.

### Running reports in batch

### About this task

You can generate reports using the reporting dialog. For more information, refer to the *Guide to Reporting*. However, for frequently requested reports, you should set up jobs that produce the reports regularly.

The steps to do this are as follows:

## Procedure

1. Specify batch settings for the reports.
2. Define queries and forms suitable for batch reports.
3. Print reports or save them in data sets, using a batch job or the reporting dialog.
4. >Optionally, save the reports for reporting dialog users and regularly replace the saved report data with new data.
5. Optionally, include saved charts in BookMaster® documents.

### ***Specifying batch settings***

Use the Set batch option in the Batch pull-down in the reporting dialog to specify the batch settings for a report. Batch settings include output options and other options.

#### *Understanding output options for batch reports*

There are two output options for batch reports:

- Print the report:
  - If your installation uses QMF, tabular reports are printed to the DSQPRINT file. Otherwise they are printed to the DRLPRINT file.
  - Graphic reports are printed to the printer specified in the job (or to the default printer defined in the QMF profile, if no printer is specified).

The printer name must be defined in the GDDM nicknames file, allocated to the ADMDEFS ddname. Refer to the *QMF: Planning and Administration Guide for MVS* and the *GDDM User's Guide* for more information about defining GDDM nicknames.

If you do not use QMF, all reports are printed in tabular format. If you require graphic reports, you can print a saved report with GDDM-PGF or other tools.

- Save the report in a data set:
  - Tabular reports are saved in the data set defined by the DRLREP ddname, usually DRL.LOCAL.REPORTS.
  - Graphic reports are saved in the data set defined by the ADMGDF ddname, usually DRL.LOCAL.CHARTS. idd:page>

Saved reports serve different purposes:

- Set up the reporting dialog to use it to look at saved reports.
- Display the reports in other ways, such as from user-written applications.
- Include the reports in BookMaster documents.

### ***Defining report queries and forms for batch execution***

Although all IBM Z Performance and Capacity Analytics reports can be run in batch, most of them are not suited for batch because you must supply values for all the variables 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 displayed from the dialog, IBM Z Performance and Capacity Analytics prompts you for values for FROM\_DATE, TO\_DATE, and SYSTEM\_ID. To run the report in batch, you must supply the values in the job and you must change them when you want the reports to cover a different period.

You can change the query to require no variables and always cover the last week:

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

Refer to the *Guide to Reporting* for a description of how to create a query.

If the form used contains variables other than the standard variables REPORT\_TITLE, PRODUCT\_NAME, and REPORT\_ID, you must make sure that these variables are set in the batch reporting job, or modify the form. Refer to the *Guide to Reporting* for a description of how to create and modify forms.

### Using job DRLJBATR to run reports in batch

The sample job DRLJBATR in the SDRLCNTL library produces all, or a subset, of the reports that have batch settings specified.

“DRLJBATR job for printing or saving reports in batch” on page 126 shows DRLJBATR.

You need to change some parameters in DRLJBATR to your requirements. For a description of those parameters, see Table 7 on page 129.

### DRLJBATR job for printing or saving reports in batch

```
//DRLJBATR JOB (ACCT#),'REPORTS'
//*
//* Function:
//* Batch reporting sample job.
//*
//* This job is used to print and/or save all (or a selected
//* subset of) the batch reports.
//*
//* Reports printed to : DSQPRINT with QMF (tables)
//*                   DRLPRINT w/o QMF (tables)
//*                   printer specified (charts)
//* Reports saved in : DRLREP (tables)
//*                  ADMGDF (charts)
//* Messages written to: DRLOUT
//*
//* The exec DRLEBATR accepts the following parameters:
//*
//* SYSTEM=DB2_system Db2 subsystem name. The default is DSN
//* SYSPREFIX=sysprefix Prefix for IZPCA system
//*                   tables. The default is DRLSYS.
//* PREFIX=prefix Prefix for all other tables. The default
//* is DRL.
//* SHOWSQL=YES/NO Show SQL statements (for debugging).
//* YES or NO. The default is NO.
//* CYCLE=run_cycle Run cycle: DAILY, WEEKLY or MONTHLY.
//* If not specified, all reports are printed.
//* GROUP=report_group Report group. If not specified, all
//* reports are printed.
//* REPORT=rpt1,rpt2.. Lists the reports to print. If not speci-
//* fied, all reports are printed.
//* PRINTER=prt_name Printer to be used for graphic reports.
//* The default printer is defined in the QMF
//* profile.
//* DIALLANG=n Define the application language.
//* n=1 for English (default)
//* QMF=YES/NO Report generation with or
//* w/o QMF. YES or NO. Default is YES.
//* GDDM=YES/NO GDDM available for graphic
//* reports. YES or NO. Default is YES.
//* DRLMAX=nnnn Max number of result rows from
//* a query w/o QMF. Default is 5000.
//* PAGELEN=nn Page length used when printing
//* tabular reports w/o QMF. Default is 60.
//* PAGE=PAGE This word is used in the report
//* footing for page numbering tabular
//* reports w/o QMF. Default is PAGE
//* TOTAL=TOTAL This word is used for an across
//* summary column header in tabular
//* reports w/o QMF. Default is TOTAL
//* DECSEP=PERIOD PERIOD/COMMA. Decimal separator
//* setting for tabular reports without QMF.
//* DUALSAVE=xxx Allow graphic reports to be saved
//* as tabular reports simultaneously.
//* YES/NO (default=NO)
```

```

/**      &variable=value      Give a value to a variable used in a      *
/**      query or a form. All variables used in      *
/**      queries or forms MUST be given a value.      *
/**      ' ' = all values for that variable      *
/**      '' means the null value.      *
/**      NB: for variables used with IN operator      *
/**      '('x') OR (1=1)' = all values      *
/**      PRODDNAME=IBM Z Performance an      *
/**      This text is used in the report footing.      *
/**      The default is      IZPCA      *
/**      Note: If specified, PRODDNAME must be the      *
/**      last parameter.      *
/**      *
/**      Notes:      *
/**      Before you submit the job, do the following:      *
/**      1. Check that the data set names are correct. Update 'DRLvrn'      *
/**      to match your HLQ for IZPCA data sets.      *
/**      2. Change the parameters to DRLEBATR as required.      *
/**      3. Remove QMF DD-statements if you are not using QMF.      *
/**      Search on 'DSQ' to find such occurrences.      *
/**      The exception is DSQUCFRM, which should be changed      *
/**      to DRLUFORM. The data set name should point to the      *
/**      user defined forms library.      *
/**      4. Change the Db2 load library name according to      *
/**      the naming convention of your installation.      *
/**      Default is 'db2loadlibrary'.      *
/**      *
/**      *****
/**      REPORT EXEC PGM=IKJEFT01
/**      *
/**      STEPLIB DD DISP=SHR,DSN=DRLvrn.SDRLOAD
/**      DD DISP=SHR,DSN=qmfloadlibrary
/**      DD DISP=SHR,DSN=db2loadlibrary
/**      SYSPROC DD DISP=SHR,DSN=DRLvrn.SDRLEXEC
/**      DD DISP=SHR,DSN=qmfclistlibrary
/**      SYSEXEC DD DISP=SHR,DSN=DRLvrn.SDRLEXEC
/**      DD DISP=SHR,DSN=qmfexclibrary
/**      *****
/**      *
/**      *
/**      DRLOUT DD SYSOUT=*
/**      *****
/**      *
/**      PRINT REPORTS TO EITHER DSQPRINT OR DRLPRINT
/**      *
/**      DSQPRINT DD SYSOUT=*,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330)
/**      DRLPRINT DD SYSOUT=*,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330)
/**      *****
/**      *
/**      SAVE REPORTS IN
/**      *
/**      DRLREP DD DISP=SHR,DSN=DRL.LOCAL.REPORTS
/**      ADMGDF DD DISP=SHR,DSN=DRL.LOCAL.CHARTS
/**      *****
/**      *
/**      GDDM LIBRARIES
/**      *
/**      ADMGMAP DD DISP=SHR,DSN=ADMGGMAPlibrary
/**      ADMCFORM DD DISP=SHR,DSN=ADMCFORMlibrary
/**      DD DISP=SHR,DSN=DRLvrn.SDRLFENU
/**      ADMSYMBL DD DISP=SHR,DSN=SYS1.GDDMSYM
/**      ADMDEFS DD DISP=SHR,DSN=SYS1.GDDMNICK
/**      ADMPRNTQ DD DISP=SHR,DSN=ADMPRINT.REQUEST.QUEUE
/**      DSQUCFRM DD DISP=SHR,DSN=DRLvrn.SDRLFENU
/**      *****
/**      *
/**      QMF LIBRARIES
/**      *
/**      DSQDEBUG DD DUMMY
/**      DSQDUMP DD DUMMY
/**      DSQPNL DD DISP=SHR,DSN=QMFDSQPNLxlibrary
/**      DSQSPILL DD DSN=&&SPILL,DISP=(NEW,DELETE),UNIT=SYSDA,
/**      SPACE=(CYL,(1,1),RLSE),DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
/**      DSQEDIT DD DSN=&&EDIT,UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE),
/**      DCB=(RECFM=FBA,LRECL=79,BLKSIZE=4029)
/**      DRLFORM DD DSN=&&FORMDS,UNIT=SYSDA,SPACE=(TRK,(5,5),RLSE),
/**      DCB=(RECFM=VB,LRECL=255,BLKSIZE=2600),DISP=(NEW,DELETE)
/**      *****
/**      *
/**      START EXEC DRLEBATR
/**      *
/**      SYSPRINT DD SYSOUT=*
/**      SYSTSPRT DD SYSOUT=*
/**      SYSTSIN DD *
%DRLEBATR SYSTEM=DSN SYSPREFIX=DRLSYS PREFIX=DRL -
PRINTER=XXX -
REPORT=XXXXXXXXX,YYYYYYYY -

```

```

&SYSTEM_ID='SYS1' -
&FROM_DATE='1993-01-01' -
&TO_DATE='1993-04-01' -
DIALLANG=1 -
PRODNAME=IBM Z Performance an
/*
//*****
//* GDDM LIBRARIES
//*
//ADMGGMAP DD DISP=SHR,DSN=ADMGGMAPlibrary
//ADMCFORM DD DISP=SHR,DSN=ADMCFORMlibrary
// DD DISP=SHR,DSN=DRLvrm.SDRLFENU
//ADMSYMBL DD DISP=SHR,DSN=SYS1.GDDMSYM
//ADMDEFS DD DISP=SHR,DSN=SYS1.GDDMNICK
//*ADMPRINT DD DISP=SHR,DSN=ADMPRINT.REQUEST.QUEUE
//DSQUCFRM DD DISP=SHR,DSN=DRLvrm.SDRLFENU
//*****
//* QMF LIBRARIES
//*
//DSQDEBUG DD DUMMY
//DSQDUMP DD DUMMY
//DSQPNL DD DISP=SHR,DSN=QMFDSQPNLlibrary
//DSQSPILL DD DSN=&&SPILL,DISP=(NEW,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(1,1),RLSE),DCB=(RECFM=F,LRECL=4096,BLKSIZE=4096)
//DSQEDIT DD DSN=&&EDIT,UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE),
// DCB=(RECFM=FBA,LRECL=79,BLKSIZE=4029)
//DRLFORM DD DSN=&&FORMDS,UNIT=SYSDA,SPACE=(TRK,(5,5),RLSE),
// DCB=(RECFM=VB,LRECL=255,BLKSIZE=2600),DISP=(NEW,DELETE)
//*****
//* START EXEC DRLEBATR
//*
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
%DRLEBATR SYSTEM=DSN SYSPREFIX=DRLSYS PREFIX=DRL -
PRINTER=XXX -
REPORT=XXXXXXXX,YYYYYYYY -
&SYSTEM_ID='SYS1' -
&FROM_DATE='1993-01-01' -
&TO_DATE='1993-04-01' -
DIALLANG=1 -
PRODNAME=IBM Z Performance an
/*

```

### Using the reporting dialog to run reports in batch

To create reports in batch from the reporting dialog:

1. From the IBM Z Performance and Capacity Analytics Administration window, select 5, Reports, and press Enter to display the Reports window.
2. Without selecting any reports in the IBM Z Performance and Capacity Analytics Reports window, select the Invoke batch option from the Batch pull-down. The Batch Reports Selection window is displayed.
3. Type required information, such as whether to run daily, weekly, or monthly reports, and press Enter. If any of the reports contain variables, the Batch Reports Data Selection window is displayed.
4. Specify values to select the data to be reported, and press Enter to display the job.
5. Edit the job, specifying the parameters described in “Parameters for batch reporting” on page 129. Then type SUBMIT on the command line, and press Enter.

IBM Z Performance and Capacity Analytics submits your job to run in background.

6. Press F3 to return to the Reports window.

Refer to the *Guide to Reporting* for more information about running reports in batch.



**Parameters for batch reporting**

| Table 7. Parameters for batch reporting |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |            |
|-----------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------|
| Parameter                               | Value to set                            | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Default value                 | Your value |
| SYSTEM                                  | Db2 subsystem name (UPPERCASE)          | <p>The Db2 subsystem where IBM Z Performance and Capacity Analytics resides.</p> <p>This required parameter can be 4 alphanumeric characters. The first character must be alphabetic.</p> <p>The default value is DSN. If the value in this field is something other than DSN, it was changed during installation to name the correct Db2 subsystem.</p> <p>Do not change the value to name another Db2 subsystem to which you might have access. IBM Z Performance and Capacity Analytics must use the Db2 subsystem that contains its system, control, and data tables.</p> | DSN                           |            |
| SYSPREFIX                               | Prefix for system tables (UPPERCASE)    | <p>The prefix of all IBM Z Performance and Capacity Analytics system and control Db2 tables. The value of this field depends upon your naming conventions and is determined during installation.</p> <p>This required parameter can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRLSYS. If the value is something other than DRLSYS, it was changed during installation.</p> <p>Do not change the value; IBM Z Performance and Capacity Analytics uses this value to access its system tables.</p>                            | DRLSYS                        |            |
| PREFIX                                  | Prefix for all other tables (UPPERCASE) | <p>The prefix of IBM Z Performance and Capacity Analytics data tables in the Db2 database.</p> <p>Valid values are determined at installation.</p> <p>This required parameter can be 8 alphanumeric characters. The first character must be alphabetic.</p> <p>The default is DRL. If the value is something other than DRL, it was changed during installation.</p>                                                                                                                                                                                                          | DRL                           |            |
| SHOWSQL                                 | YES or NO (UPPERCASE)                   | Here you specify if SQL statements should be shown (for debugging purposes).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NO                            |            |
| CYCLE                                   | DAILY, WEEKLY or MONTHLY (UPPERCASE)    | The run cycle for reports. If you do not specify daily, weekly, or monthly, all reports are printed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | All reports                   |            |
| GROUP                                   | A report group ID (UPPERCASE)           | Here you can specify the ID of a report group. If you do not specify a group, all reports are printed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | All reports                   |            |
| REPORT                                  | One or more report IDs (UPPERCASE)      | Here you can specify one or more reports to be printed. If you do not specify any reports, all reports are printed.                                                                                                                                                                                                                                                                                                                                                                                                                                                           | All reports                   |            |
| PRINTER                                 | Default printer name (UPPERCASE)        | <p>The GDDM nickname of a printer to use for printing graphic reports. The printer should be capable of printing GDDM-based graphics.</p> <p>The printer name must be defined in the GDDM nicknames file, allocated to the ADMDEFS ddname. Refer to the <i>QMF: Reference</i> and <i>GDDM User's Guide</i> for more information about defining GDDM nicknames.</p> <p>This parameter cannot be used if QMF=NO.</p>                                                                                                                                                            | As defined in the QMF profile |            |
| DIALLANG                                | 1. English                              | With this parameter, you specify the language to be used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1=English                     |            |

| Table 7. Parameters for batch reporting (continued) |                                                              |                                                                                                                                                                                                                                  |                                                 |            |
|-----------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|
| Parameter                                           | Value to set                                                 | Explanation                                                                                                                                                                                                                      | Default value                                   | Your value |
| QMF                                                 | YES or NO (UPPERCASE)                                        | With this parameter, you specify whether your installation uses QMF or not.                                                                                                                                                      | YES                                             |            |
| GDDM                                                | YES or NO (UPPERCASE)                                        | With this parameter, you specify if your installation uses GDDM.                                                                                                                                                                 | YES                                             |            |
| DRLMAX                                              | nnnn                                                         | If your installation does not use QMF, you use this parameter to specify the maximum number of result rows from a query.                                                                                                         | 5000                                            |            |
| PAGELEN                                             | nn                                                           | If your installation does not use QMF, you use this parameter to specify the page length when printing tabular reports.                                                                                                          | 60                                              |            |
| PAGE                                                | The word for page (Mixed case)                               | If your installation does not use QMF, the word you specify here is inserted before the page number for tabular reports.<br><br>You can type the word in mixed case, for example, Page.                                          | PAGE                                            |            |
| TOTAL                                               | The word for total (Mixed case)                              | If your installation does not use QMF, the word you specify here is used as column heading for across summary columns in tabular reports.<br><br>You can type the word in mixed case, for example, Total.                        | TOTAL                                           |            |
| DECSEP                                              | Period or comma                                              | If your installation does not use QMF, you use this parameter to specify the decimal separator to be used in tabular reports. If you use a comma as a decimal separator, a period is used as thousands separator, if applicable. | PERIOD                                          |            |
| DUALSAVE                                            | YES or NO (UPPERCASE)                                        | Allow graphic reports to be saved as tabular reports simultaneously.                                                                                                                                                             | NO                                              |            |
| &variable                                           | A value                                                      | This parameter gives a value to a variable used in a query or form. All variables used in queries or forms must be given a value.                                                                                                |                                                 |            |
| PRODNAME                                            | IBM Z Performance and Capacity Analytics Report (Mixed case) | This text is used in the report footer. If specified, PRODNAME must be the last parameter.                                                                                                                                       | IBM Z Performance and Capacity Analytics Report |            |

### ***Saving reports for reporting dialog users***

You can save report data from a reporting job like DRLJBATR. Creating reports for batch preprocessing and then saving them for end users means:

- Users need not access the IBM Z Performance and Capacity Analytics database if they have access to current reports instead.
- Users need not take the time to run reports.
- Users have the data they need to begin analysis immediately.

To preprocess reports for dialog users:

1. Define the batch report as described in [“Specifying batch settings” on page 125](#).
2. Select the batch report and select 4, Save report data, from the Reports pull-down. The Saved Report Definition window is displayed. Refer to the *Guide to Reporting* for information about defining saved reports in the Saved Report Definition window.
3. After completing all fields in the Saved Report Definition window, press Enter.  
The report is run and saved in the specified member.
4. Add the saved report to a report group, such as *Monthly Management Reports*, to let users display relevant reports easily.

Refer to the *Guide to Reporting* for information about adding a report to a report group.

After you complete the steps above, you can run the batch report periodically (using the DRLJBATR job) to replace the saved report member with up-to-date information.

### **QMF batch reporting**

Batch reporting can also be performed with QMF only, without using IBM Z Performance and Capacity Analytics functions. A QMF job can simply execute a QMF procedure that contains QMF commands ([Figure 61 on page 131](#)).

```
RUN QUERY1 (FORM=FORM1
PRINT REPORT
RUN QUERY2 (FORM=FORM2
PRINT REPORT (PRINTER=LOCAL1
```

*Figure 61. Using QMF to report in batch*

These books contain more information about using QMF in this way:

- *QMF Advanced User's Guide*
- *QMF Reference*

## **Creating report groups**

### **About this task**

IBM Z Performance and Capacity Analytics reports are grouped by component within each feature. Placing more commonly requested reports in new report groups can make retrieving them easier. Creating report groups for users with special requirements, such as managers, also makes reporting more effective.

Refer to the *Guide to Reporting* for information about creating report groups.

## **Administering problem records**

### **About this task**

The update definitions of some IBM Z Performance and Capacity Analytics components update the common table, EXCEPTION\_T, with data about system exceptions that require attention. Review this information and use the product interface for adding selected exceptions to the Tivoli Information Management for z/OS database.

You can review exceptions only through the administration dialog. You can generate problem records with either the dialog or a job.

### **Reviewing exceptions and generating problem records**

#### **About this task**

To review exceptions and generate problem records:

#### **Procedure**

1. Select 2, Generate problem records, from the Utilities pull-down of the IBM Z Performance and Capacity Analytics Administration window and press Enter.

The Exception Selection window is displayed.

2. Type 2, No, in the Problems only field to list all exception records.>

**Note:** The default update definitions do not classify exceptions as problems. You can modify them to set the problem flag (column PROBLEM\_FLAG='Y' in the EXCEPTION\_T table).

3. Type 1, Yes, in the Not generated only field to select exception records that have not yet been generated as problem records in the Tivoli Information Management for z/OS database.
4. Select values for other required fields in the window.

Use the fields to restrict the number of exceptions in the list of exceptions.

Use F4 (Prompt) to see a selection list for any field in the Exception Selection window.

5. Press Enter to see the list of exceptions.

The Exception List window is displayed.

6. Select an exception and press Enter

The Generate Record window is displayed, showing the exception record in detail.

7. If the exception record is one you want to add to the Tivoli Information Management for z/OS database, press Enter.

IBM Z Performance and Capacity Analytics generates the problem record.

### Generating problem records in batch

#### About this task

Although the sample job, DRLJEXCE (in the *hlq*.SDRLCNTL library) does not let you review exception records, it generates problem records in the IBM Z Performance and Capacity Analytics database only from EXCEPTION\_T records defined as problems.

**Note:** You must customize the product update definitions that add records to EXCEPTION\_T to set the problem flag column.

#### DRLJEXCE job for generating problem records

```
//DRLJEXCE JOB (ACCT#),'EXCEPTION REPORTING'
//*****
//*
//* FUNCTION: EXCEPTION REPORTING.
//* PROBLEM RECORDS ARE GENERATED BY TIVOLI SERVICE DESK
//* FOR ALL RECORDS IN THE EXCEPTION TABLE (EXCEPTION_T),
//* WHERE
//* A) THE PROBLEM_FLAG COLUMN INDICATES THAT THIS RECORD
//* IS A PROBLEM RECORD (PROBLEM_FLAG='Y')
//* B) AND THE DATE_GENERATED COLUMN INDICATES THAT THE
//* TIVOLI SERVICE DESK DATABASE HAS NOT BEEN UPDATED
//* WITH THIS RECORD (DATE_GENERATED IS NULL).
//*
//* INPUT PARAMETERS:
//* SYSTEM=Db2-SUBSYSTEM      Db2 SUBSYSTEM      (DEFAULT=DSN)
//* PREFIX=PREFIX             TABLE PREFIX      (DEFAULT=DRL)
//* MODE=BATCH                 BATCH/ONLINE       (DEFAULT=BATCH)
//* APPLID=XXXXXXX             APPLICATION ID     (DEFAULT=SYSUID)
//* SESSMBR=XXXXXXX            SESSION MEMBER    (DEFAULT=BLGSES00)
//* PRIVCLASS=XXXXXXX          PRIVILEGE CLASS   (DEFAULT=MASTER)
//*
//* OUTPUT: - PROBLEM RECORD(S) CREATED IN TIVOLI SERVICE DESK.
//*          - TABLE EXCEPTION_T UPDATED WITH PROBLEM NUMBER
//*          AND DATE GENERATED.
//*          - RESULT FILE WRITTEN TO FILE DEFINED BY DRLOUT DD.
//*
//* NOTES: BEFORE YOU SUBMIT THIS JOB, DO THE FOLLOWING:
//* 1. ENSURE THAT YOU (OR THE VALUE SPECIFIED BY APPLID) ARE
//*    REGISTERED AS A VALID APPLICATION ID IN TIVOLI SERVICE DESK.
//* 2. CHECK THAT THE DATASET NAMES ARE CORRECT.
//* 3. CHANGE THE PARAMETERS TO DRLEREGE AS REQUIRED.
//* 4. Change the Db2 load library name according to
//*    the naming convention of your installation.
//*    Default is 'db2loadlibrary'.
//*
//*****
//*
//EPDMEXCE EXEC PGM=IKJEFT01,DYNAMNBR=25
//STEPLIB DD DISP=SHR,DSN=TSDB.SBLMMOD1
// DD DISP=SHR,DSN=DRLvrm.SDRLLLOAD
// DD DISP=SHR,DSN=db2loadlibrary
//SYSPROC DD DISP=SHR,DSN=DRLvrm.SDRLEXEC
```

```

/*-----*
/*  TIVOLI SERVICE DESK LIBRARIES                      *
/*-----*
//BLGSD   DD DISP=SHR,DSN=TSO.SDDS
//BLGSI   DD DISP=SHR,DSN=TSO.SDIDS
//BLGSL   DD DISP=SHR,DSN=TSO.SDLDS
//BLGPNL0 DD DISP=SHR,DSN=TSO.IBMPNLS
//BLGPNL1 DD DISP=SHR,DSN=TSO.RPANEL1
//BLMFMT  DD DISP=SHR,DSN=TSO.BLMFMT
//ISPLLIB DD DISP=SHR,DSN=TSO.SBLMMOD1
/*-----*
//DRLOUT  DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
          %DRLEREGE SYSTEM=DSN PREFIX=DRL MODE=BATCH
/*

```

## Working with components

This section describes how to use the administration dialog to work with components. After reading this section, you should be familiar with these tasks:

- [“Installing a component” on page 134](#)
- [“Uninstalling a component” on page 141](#)
- [“Working with a component definition” on page 143](#)

In IBM Z Performance and Capacity Analytics, a *component* refers to a logical group of objects used to collect log data from a specific source, to update the product database using that data, and to create reports from data in the database. Grouping objects into a component enables you to:

- Install or remove (uninstall) a set of related objects as a package
- View and work with a set of related objects

Each IBM Z Performance and Capacity Analytics component can include:

- Log collector definitions for:
  - Log types
  - Log procedures
  - Record types in log data sets
  - Record procedures
  - Update definitions
- SQL statements that define these Db2 objects for the component:
  - Table spaces
  - Tables
  - Lookup tables
  - Views
- Report definitions for the component:
  - Report groups
  - Reports

Each IBM Z Performance and Capacity Analytics Key Performance Metrics (KPM) component also includes table space profiles. Refer to the following section on working with table space profiles before installing any of the Key Performance Metrics components.

Definition members in product libraries contain component object definitions. You can use the administration dialog to examine statements in these definitions. For an explanation of the statements, see the *Language Guide and Reference*.

Installing and uninstalling a component

You can use the administration dialog to work with components. From the Administration window (see Figure 6 on page 7), select 2, Components, and press Enter.

The Components window is displayed.

Installing and uninstalling a component

The Components window lists the components available for IBM Z Performance and Capacity Analytics installation on your system. When you install a component, IBM Z Performance and Capacity Analytics executes definitions in the component to define all its objects. Then you can use the component to collect, store, and create reports on log data that it supports.

If you no longer need a component, you can use the administration dialog to uninstall it. When you *uninstall* a component, the product deletes from its system tables all objects in that component that are not used by any other installed component. It also deletes all of the component's Db2 objects, including tables and table spaces. The data sets that contain object definition statements are still available, so you can reinstall the component if necessary. The component still appears in the list in the Components window. [“Uninstalling a component” on page 141](#) describes this procedure.

Installing a component

Procedure

- 1. Refer to these books to plan the tasks you must perform to complete the installation:

Feature

Book name

AS/400 Performance

IBM i System Performance Feature Guide and Reference

CICS Performance

CICS Performance Feature Guide and Reference

Distributed Systems Performance

Distributed Systems Performance Feature Guide and Reference

IMS Performance

IMS Performance Feature Guide and Reference

System Performance

System Performance Feature Guide

Resource Accounting

Resource Accounting for z/OS

- 2. If you want to review Db2 parameters before installing a component, select the component in the Components window, and select Space, as shown in Figure 62 on page 134.

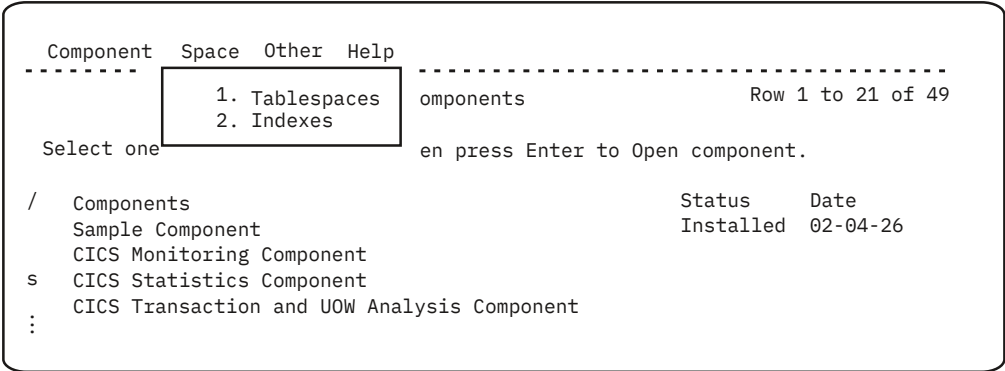


Figure 62. Space pull-down

You can use this pull-down to review and change Db2 space parameters such as:

- Buffer pool

- Compression
- Erase on deletion
- Free space
- Lock size
- Number of partitions, for a partitioned space
- Number of subpages, for an index space
- Primary and secondary space
- Segment size
- Type of space
- VSAM data set password

These parameters can affect the performance of your system. If you are unsure how these parameters affect your system, you are recommended to use the defaults provided with the product. If you are unsure about the meaning of a field, press F1 to get help. You should also refer to the CREATE INDEX and CREATE TABLESPACE command descriptions in the Db2 documentation.

IBM Z Performance and Capacity Analytics saves the changed definitions in your local definitions library. When you save a changed definition, it tells you where it is saving it, and prompts you for a confirmation before overwriting a member with the same name.

3. From the **Components** window, select the component to install and press F6 (Install).

If the component you selected contains subcomponents, the Component Parts window is displayed. Either select the subcomponents to install or press F12 to install only those objects that are not in a subcomponent. (IBM Z Performance and Capacity Analytics might install some common definitions for the component even though you do not select any of the parts to install.)

The **Installation Options** window is displayed.

```

Component      Space      Other      Help

      Installation Options
      TO 30 OF 48

S      Select one of the following. Then press Enter.
/
/      1.  Online
/      2.  Batch
-      F1=Help  F2=Split  F6=Objects  F9=Swap  F12=Cancel
-
/      RACF Component
-      Sample Component
-      Storage Management Component
-      VM Accounting Component
-      VM Performance Component
*****BOTTOM OF DATA*****

Command ==>
F1=Help  F2=Split  F3=Exit  F5=New  F6=Install  F7=Bkwd
F8=Fwd   F9=Swap   F10=Actions  F12=Cancel

```

Figure 63. Installation Options window

4. From the **Installation Options** window, decide whether to install the component online or in batch mode.

From the **Installation Options** window, you can press F6 (Objects) to see a list of objects in the component. This gives you some idea of its size.

Batch installation leaves an audit trail of what it has done in its spooled output.

Installing a component locks write access to the database, whether you choose online or batch installation. While batch installation occurs, you can use IBM Z Performance and Capacity Analytics to

do anything but update a table in the IBM Z Performance and Capacity Analytics database. You can also use your terminal to perform any ISPF or TSO task.

5. Select 1 (online) or 2 (batch) and press Enter.

If installing the component online, see the next section, [“Installing the component online” on page 136](#).

If installing the component in batch mode, see [“Installing the component in batch mode” on page 138](#).

### ***Installing the component online***

#### **About this task**

IBM Z Performance and Capacity Analytics runs the SQL, log collector, and report definition statements to create the objects in the component. The resulting messages are displayed in a browse window:

#### **Procedure**

1. If the return code is greater than 0, investigate the messages. For example, the following message indicates a problem accessing the database. Db2 messages are described in *Db2 for z/OS: Messages*. If you get this message, you must reinstall the component:

```
DSNT408I  SQLCODE = -911, ERROR:  THE CURRENT UNIT OF WORK HAS  
        BEEN ROLLED BACK DUE TO DEADLOCK OR TIMEOUT.  REASON  
        00C9008E, TYPE OF RESOURCE 00000100, AND RESOURCE  
        NAME DRLDB
```

Correct any error conditions that the product discovers, and install the component again. If the return code is 8 or lower, the status of the component status is **Installed**.

If there are no Db2 messages, *userid.DRLOUT* can look like [Figure 64 on page 137](#).



```

Db2 Messages
SQL statements executed successfully
-----
Line      Log Collector Messages
-----
      93
DRL0125I The record SMF_080 is defined.
      96
DRL0130I The comment is stored for the record SMF_080.
     1007
DRL0201I The update RACFCOMMAND_80 is defined.
     1014
DRL0403I The purge condition for DRL      .RACF_COMMAND_T is added.
     1138
DRL0201I The update RACFLOGON_80 is defined.
     1145
DRL0403I The purge condition for DRL      .RACF_LOGON_T is added.
     1293
DRL0201I The update RACFOPERATION_80 is defined.
     1300
DRL0403I The purge condition for DRL      .RACF_OPERATION_T is added.
     1466
DRL0201I The update RACFRESOURCE_80 is defined.
     1473
DRL0403I The purge condition for DRL      .RACF_RESOURCE_T is added.
Line      Report Definition Messages
-----
     1503
DRL3001I The group RACF is defined.
     1511
DRL3001I The report RACF01 is defined.
     1519
DRL3001I The report RACF02 is defined.
     1527
DRL3001I The report RACF03 is defined.
     1535
DRL3001I The report RACF04 is defined.
     1543
DRL3001I The report RACF05 is defined.
     1551
DRL3001I The report RACF06 is defined.
     1559
DRL3001I The report RACF07 is defined.
-----

```

Figure 64. Sample log collector messages

2. When you finish browsing the output data set, press F3 (Exit).

If the component has lookup tables, the **Lookup Tables** window is displayed ([“Installing the component online” on page 136](#)).

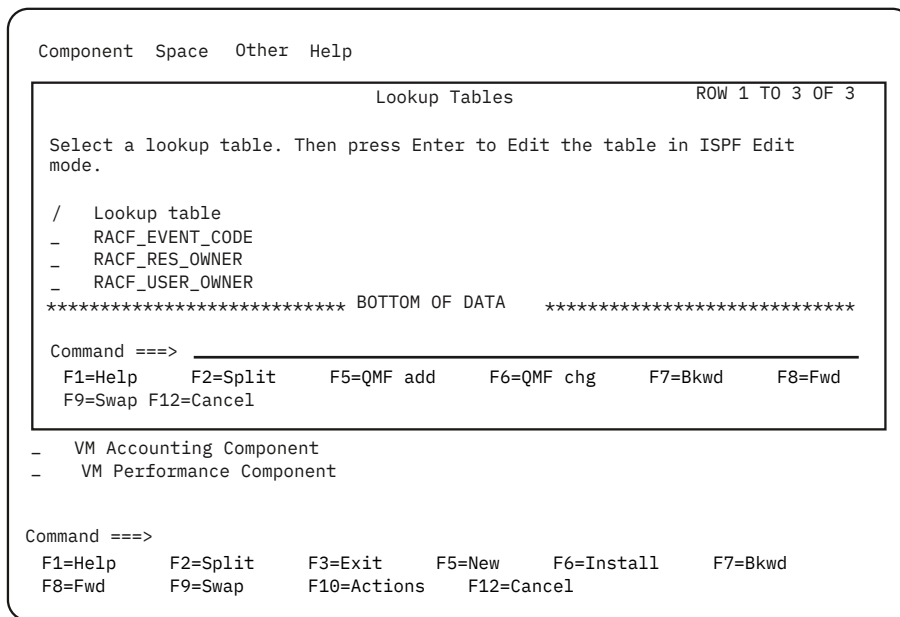


Figure 65. Lookup Tables window

Refer to the appropriate feature book (shown in [“Installing a component”](#) on page 134) for a description of its component lookup tables and how you must edit them.

3. To edit a lookup table using ISPF edit, select a table, and press Enter.

IBM Z Performance and Capacity Analytics accesses the ISPF editor where you can edit the lookup table as described in [“Editing the contents of a table”](#) on page 169.

If you have QMF installed, you can use the QMF table editor to edit tables wider than 255 characters. If the table has more rows than the value you set for the SQLMAX value field in the **Dialog Parameters** window, IBM Z Performance and Capacity Analytics prompts you to temporarily override the default for this edit session. To edit a lookup table using the QMF table editor in add mode, press F5 (QMF add). To edit a lookup table using the QMF table editor in change mode, press F6 (QMF chg). [“Editing the contents of a table”](#) on page 169 also describes using QMF to edit tables.

4. After you make any necessary changes to a lookup table, press F3 (Exit) to save your changes.

IBM Z Performance and Capacity Analytics returns to the **Lookup Tables** window.

5. Edit any other lookup tables that the component requires.

When you finish, the installation is complete.

6. Press F12 (Cancel).

IBM Z Performance and Capacity Analytics returns to the **Components** window.

The product has changed the Status field for the component to read Installed.

7. Press F3 (Exit).

The product returns to the **Administration** window.

### Installing the component in batch mode

#### About this task

IBM Z Performance and Capacity Analytics builds a batch job to run the SQL, log collector, and report definition statements to create the objects in the component. It then initiates an ISPF edit session. You may have to edit the JCL, for example, to change the job card. [Figure 66 on page 139](#) shows a job in an ISPF edit session.

```

EDIT ---- XLLOYDA.SPFTEMP2.CNTL -----COLUMNS 001 072

***** TOP OF DATA *****
//XLLOYDAA JOB (ACCOUNT),'NAME'
//*
//*
//RUNLOG EXEC PGM=DRLPLC,
// PARM=('SYSTEM=DSN SYSPREFIX=DRLSYS &PREFIX=DRL',
// '&DATABASE=DRLDB &STOGROUP=DRLSG')
//STEPLIB DD DISP=SHR,DSN=DRLxxx.SDRLLLOAD
// DD DISP=SHR,DSN=DSNxxx.SDSNLOAD
//DRLLOG DD DUMMY
//DRLOUT DD DSNNAME=&TEMP,UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160),
// SPACE=(CYL,(10,2)),DISP=(NEW,PASS)
//DRLDUMP DD SYSOUT=*,DCB=BLKSIZE=6160
//DRLIN DD *
// SQL SET CURRENT SQLID='DRL';
// SET USERS='DRLUSER';
// DD DSN=DRLxxx.SDRLDEFS(DRLRS080),DISP=SHR
COMMAND ==> submit
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 66. Editing an installation job

After editing the job:

#### Procedure

1. Type SUBMIT on the command line and press Enter.
2. Press F3 after submitting the job.

IBM Z Performance and Capacity Analytics returns to the **Components** window. The Status field shows Batch which does not mean that the job completed, or that it completed successfully. The installation job changes the value to Installed at its successful completion.

3. When the job completes, use a tool such as the Spool Display and Search Facility (SDSF) to look at the job spool.
4. Review messages for errors as described in step “1” on page 136.
5. Exit SDSF (or whatever tool you are using to review the job spool).
6. Exit the Components window.
7. Refer to the book for the appropriate feature for a description of the component lookup tables you must edit.
8. Select 4, Tables, from the Administration window.

The Tables window is displayed.

9. Select 2, Some, from the View pull-down.

The Select Table window is displayed ([Figure 67 on page 140](#)).

```

Table Maintenance Utilities Edit View Other Help
-----
Tables ROW 1 TO 13 OF 393

S Select Table
/ Type in the selection criteria. Then press Enter to display.
-
-
- Component • RACF Component_____ +
*
Name . . . . _____
Prefix . . . . _____
Type . . . . 2 1. Table
                2. Lookup
                3. View

F1=Help F2=Split F4=Prompt F9=Swap F12=Cancel

Command ==> _____
F1=Help F2=Split F3=Exit F5=Updates F6=PurCond F7=Bkwd
F8=Fwd F9=Swap F10=Actions F11=Display F12=Cancel

```

Figure 67. Select Table window

10. Type the values as shown in [Figure 67 on page 140](#), and press Enter.

The Tables window is displayed ([Figure 68 on page 140](#)), showing the component's lookup tables only.

```

Table Maintenance Utilities Edit View Other Help
-----
Tables ROW 1 TO 3 OF 3

Select one or more tables. Then press Enter to Open table definition.

/ Tables Prefix Type
- RACF_EVENT_CODE DRL TABLE
- RACF_RES_OWNER DRL TABLE
/ RACF_USER_OWNER DRL TABLE
***** BOTTOM OF DATA *****

Objects of type Tables meeting the selection criteria are listed.
Command ==> _____
F1=Help F2=Split F3=Exit F5=Updates F6=PurCond F7=Bkwd
F8=Fwd F9=Swap F10=Actions F11=Display F12=Cancel

```

Figure 68. Tables window - showing component's lookup tables

11. Select a table to edit, but do not press Enter.
12. Select an edit option from the Edit pull-down and press Enter.

If you have QMF installed, you can use the QMF table editor to edit tables wider than 255 characters. See [“Editing the contents of a table” on page 169](#).

13. Press F3 (Exit) when you finish selecting and editing lookup tables.

IBM Z Performance and Capacity Analytics returns to the Administration window.

When the installation of a component ends with an error or warning, and RC=4 or RC=8, this does not necessarily indicate a problem. The following table shows when you can ignore these messages and return codes.

| Message                                                                                                                              | Return Code | Explanation                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQLCODE=-204 name IS AN UNDEFINED NAME                                                                                               | RC=8        | You can ignore this message and return code only if it is caused by an SQL ALTER statement that attempts to add a column to a table that has not yet been created. |
| SQLCODE=+562 A GRANT OF A PRIVILEGE WAS IGNORED BECAUSE THE GRANTEE ALREADY HAS THE PRIVILEGE FROM THE GRANTOR                       | RC=4        | You can always ignore this message and return code.                                                                                                                |
| SQLCODE=-601 THE NAME OF THE OBJECT TO BE CREATED IS IDENTICAL TO THE EXISTING NAME <i>name</i> OF THE OBJECT TYPE <i>objecttype</i> | RC=8        | You can always ignore this message and return code.                                                                                                                |
| SQLCODE=-612 <i>column name</i> IS A DUPLICATE COLUMN NAME                                                                           | RC=8        | You can always ignore this message and return code.                                                                                                                |

### Testing the component to verify its proper installation

#### Procedure

1. Collect data from a log data set and review any messages, as described in [“Using collect messages”](#) on page 106.

**Note:** Depending on the component you installed, you might not be able to collect its log data in an online collect. Refer to [“Collecting data from a log into Db2 tables”](#) on page 151 for more information.

2. Display a table to ensure that it exists and that it contains the correct information as described in the book for the appropriate feature:

#### Feature name

##### Book name

#### AS/400 Performance

*IBM i System Performance Feature Guide and Reference*

#### CICS Performance

*CICS Performance Feature Guide and Reference*

#### Distributed Systems Performance

*Distributed Systems Performance Feature Guide and Reference*

#### IMS Performance

*IMS Performance Feature Guide and Reference*

#### Network Performance

*Network Performance Feature Reference*

#### System Performance

*System Performance Feature Reference*

For Resource Accounting, see the *Resource Accounting for z/OS* book.

3. Display a report to ensure it is correctly installed.

### Uninstalling a component

#### About this task

To uninstall a component:

### Procedure

1. From the Components window, select the component you want to uninstall. From the Component pull-down, select the Uninstall option.

If the component you selected contains subcomponents, the Component Parts window is displayed. Either select the parts to uninstall or press F12 to cancel.

A confirmation window is displayed.

2. Press Enter to confirm the uninstallation.

IBM Z Performance and Capacity Analytics deletes from its system tables any component definitions not used by other components. It also deletes all Db2 objects of the component or selected subcomponents, including any tables and table spaces. The component remains in the list of components, but with its Status field cleared. If the component contains subcomponents, they remain in the list of subcomponents but with their Status field cleared.

**Note:** If a component (or subcomponent) including a common object is uninstalled, the common object is not dropped, unless it is the only installed component (or subcomponent) that includes the common object. When a component or subcomponent is uninstalled, all its data tables are dropped and their contents lost.

## Working with table space profiles

IBM Z Performance and Capacity Analytics provides functionality to allow you to easily create table spaces, partitioning on tables, and indexes on tables through the use of table space profiles.

These profiles are defined in the DRLTKEYS member in your SDRLDEFS library. Two system tables named GENERATE\_PROFILES and GENERATE\_KEYS are created and loaded from the DRLTKEYS definition file during system table creation.

Default profiles are provided that set default values for all table spaces, tables, and indexes associated with the profile. Parameters that can be customized in a profile include the partitioning method (partition by growth, partition by range, or non-partitioned), primary, and secondary quantities, storage group names, lock sizes, maximum number of partitions, and most other Db2 table space parameters. You can use the same parameters for the creation of a set of table spaces, tables, and indexes by using a single shared profile.

For more detailed information on the GENERATE\_PROFILES and GENERATE\_KEYS system tables, refer to [“System tables and views” on page 219](#)

## Reviewing table space profiles prior to installation

When you have created your system tables, review the parameter values in the GENERATE\_PROFILES and GENERATE\_KEYS system tables using the IBM Z Performance and Capacity Analytics table edit facility.

Modify parameters such as **PRIQTY** and **SECQTY** accordingly. Note that the GENERATE\_KEYS system table only needs to be modified if you are using the partition by range partitioning method.

Refer to [“System tables and views” on page 219](#) for information on each column within the GENERATE\_PROFILES and GENERATE\_KEYS system tables.

### Creating storage groups when partitioning by range

If you modify your table space profile to partition by range, you need to run the DRLJDBIP job. The DRLJDBIP job creates additional storage groups that are used in the partitioned table spaces of the components where partition by range was set. Be sure to create one storage group per partition that you identified in the GENERATE\_KEYS table.

To run DRLJDBIP:

1. Copy member DRLJDBIP in the DRL310.SDRLCNTL library to the &HLQ.CNTL library.
2. Modify the job statement to run your job.

3. Customize the job for your site. Follow the instructions in the job prolog.
4. Submit the job.

**Note:** A person with Db2 SYSADMIN authority (or someone who has access to the Db2 catalog) must submit the job.

## Reviewing the **GENERATE** statements for table spaces, tables, and indexes

Components can make use of table space profiling by using **GENERATE** statements when creating table spaces, tables, and indexes.

Each **GENERATE** statement will refer to a profile name in the **GENERATE\_PROFILES** and **GENERATE\_KEYS** system tables. Default profiles are provided for use by the supplied components. For example, the following **GENERATE** statement refers to the SMF table space profile:

```
GENERATE TABLESPACE DRLSKD01
        PROFILE 'SMF';
```

If you install components that use these profiles, no customizations are required in the **GENERATE** statements which create the table spaces, tables, and indexes for the components.

If you want to use a different profile name, you will need to customize all the **GENERATE** statements by copying the definitions members into your **LOCAL.DEFS** data set, and modifying the profile names accordingly.

If you want to use the default profile names but with a different set of table space parameters, you will need to update the **GENERATE\_PROFILES** and **GENERATE\_KEYS** system tables with your new table space settings for the default profiles.

Refer to the *IBM Z Performance and Capacity Analytics Language Guide and Reference* for the syntax and additional information on using the **GENERATE** statements.

## Working with a component definition

### About this task

This section describes these tasks:

- Controlling objects that you have modified
- Viewing objects in a component
- Viewing or editing an object definition
- Adding an object to a component
- Deleting an object from a component
- Excluding an object from a component installation
- Including an object in a component installation
- Deleting a component
- Creating a component

### Controlling objects that you have modified

#### About this task

The variable *VERSION*, together with the **VERSION** column in the system tables, is used to:

- Ensure that unchanged IBM Z Performance and Capacity Analytics objects are not replaced when a component is migrated
- Provide for the control of IBM Z Performance and Capacity Analytics objects that you have changed

The variable *VERSION* has the value *IBM.nnnAPAR\_number*, where *nnn* is the version, release, and modification level. For example, *IBM.310* is an object supplied with IBM Z Performance and Capacity

Analytics version 3 release 1 modification level 0. The value of *VERSION* is set for all objects when the object is installed (see [“How IBM Z Performance and Capacity Analytics controls object replacement”](#) on page 92 for details).

### Important:

If you change an object supplied by IBM Z Performance and Capacity Analytics, you *must* set the variable *VERSION* to a custom version number as defined in [“IBM Z Performance and Capacity Analytics Version variable format”](#) on page 92. During component installation, the product can then recognize an object as having been modified by you. When you select the component you wish to install (from the **Components** window) and press F6=Install, the **User Modified Objects** window is *automatically* displayed, listing the supplied objects that you have later modified.

## Viewing objects in a component

### About this task

You can use the administration dialog to view a list of objects in a component. To view objects in a component:

### Procedure

1. From the Components window, select the component, and press Enter.

The Component window is displayed (Figure 69 on page 144) for the component. All IBM Z Performance and Capacity Analytics objects in the component are listed..

```

                                SAMPLE Component                                ROW 1 TO 11 OF 12

Select an object. Then press Enter to Edit definition.

Description . . . . . Sample Component
Installation time . :
Installed by . . . . .

/   Object Name           Object Type   Member           Part
-   DRLSSAMP              TABSPACE    DRLSSAMP
-   SAMPLE                LOG          DRLSAMP
-   SAMPLE                REPGROUP    DRLOSAMP
-   SAMPLE_H              TABLE      DRLTSAMP
-   SAMPLE_H_M            UPDATE      DRLTSAMP
-   SAMPLE_M              TABLE      DRLTSAMP
-   SAMPLE_USER            LOOKUP      DRLTSAMP
-   SAMPLE_01             RECORD      DRLRSAMP
-   SAMPLE_01_H           UPDATE      DRLTSAMP
-   SAMPLE01              REPORT      DRLOSAMP
-   SAMPLE02              REPORT      DRLOSAMP

Command ==>
F1=Help    F2=Split    F3=Exit    F4=Exclude    F5=Add obj    F7=Bkwd
F8=Fwd     F9=Swap    F10=View   F11=Delete    F12=Cancel

```

Figure 69. Component window

2. Press F10 to limit the list of objects displayed in the window.

The View Objects window is displayed.

3. Type selection criteria in fields in the View Objects window and press Enter.

IBM Z Performance and Capacity Analytics returns to the Component window and shows only those objects that meet the criteria.

4. You can choose to edit objects, add objects, or delete objects. When you finish, press F3.

IBM Z Performance and Capacity Analytics returns to the Components window.



## Viewing or editing an object definition

### About this task

Before you modify any data set that contains IBM Z Performance and Capacity Analytics definitions, copy the member to avoid changing the shipped version. Copy any member you plan to change from the product definitions or reports library to your local definitions library, DRL.LOCAL.DEFS. (The default names of the product definitions and reports libraries are DRL310.SDRLDEFS and DRL310.SDRLRENU.)

You can use the administration dialog to view and edit an object definition. To edit an object in a component:

### Procedure

1. From the Component window, select an object to work with, and press Enter.

IBM Z Performance and Capacity Analytics accesses the ISPF editor, where you can edit (or view) the object definition.

2. When you finish editing the object definition, press F3 to exit the ISPF edit session.

IBM Z Performance and Capacity Analytics returns to the Component window.

## Adding an object to a component

### About this task

Components include object definitions necessary to collect log data, store it in the product database, and generate reports. However, if you create customized objects, you can add the object definition to an existing component.

Before using the administration dialog to add an object to a component, create the definition member that defines the object. See [“Overview of IBM Z Performance and Capacity Analytics objects” on page 91](#) for more information about definition members.

To add an object to a component:

### Procedure

1. From the Component window, press F5.

The Add Object window is displayed.

2. Type information about the new object, and press Enter.

You must use the same name in the Object name field as the one that appears in the definition member for the object. For example, if there is a definition member, DRLLSAMP, that contains the log collector language statement `DEFINE LOG SAMPLE ;`, you must specify SAMPLE as the name of the log definition object.

IBM Z Performance and Capacity Analytics saves the object specification (that includes the name of the member that defines it) and returns to the Component window.

3. Repeat this procedure to add additional objects.

## Deleting an object from a component

### About this task

Components include object definitions necessary to collect log data, store it in the IBM Z Performance and Capacity Analytics database, and generate reports. If you do not need to collect, store, or report on certain types of data, you can delete object definitions for those data types.

**Note:** When you delete an object using the dialog, IBM Z Performance and Capacity Analytics deletes references to the object from the component. It does not delete the definition member that contains log collector language statements that define the object. You can add the object again at a later time.

To delete an object from a component:

### Procedure

1. From the Component window, select the object to delete, and press F11.  
A Confirmation window is displayed.
2. From the Confirmation window, press Enter to confirm the deletion.  
IBM Z Performance and Capacity Analytics deletes from its system tables all references from the component to the object and returns to the Component window.

## Excluding an object from a component installation

### About this task

This window User Modified Objects allows you to exclude product objects that have been modified by you, from the installation of the component.

Objects that are listed here were previously included by you in the component installation, although they contain your modifications to the IBM-supplied object.

For an explanation of the use of *VERSION* variable in controlling the excluding of user-modified objects from component installation, see [“How IBM Z Performance and Capacity Analytics controls object replacement” on page 92](#).

To exclude an object from a component installation:>

### Procedure

1. From the Components window, select the component. Then select the Show user objects option in the Component pull-down.
2. From the User Modified Objects window, select the object to exclude, and press F4.  
A Confirmation window is displayed.
3. From the Confirmation window, press Enter to confirm that the object should be excluded from the installation.

## Including an object in a component installation

### About this task

After you have excluded an object from the installation of a component (see [“Excluding an object from a component installation” on page 146](#) for details), you have the option to re-include the object.

To include an object in a component installation:

### Procedure

1. From the Components window, select the component. Then select the Show excluded option in the Component pull-down.
2. From the Objects Excluded window, select the object to include, and press F4.  
A Confirmation window is displayed.
3. From the Confirmation window, press Enter to confirm that the object should be included in the installation.

## Deleting a component

### About this task

To remove all references to a component from IBM Z Performance and Capacity Analytics, you can use the administration dialog to delete the component. Do not delete components shipped with the product unless you are sure you are not going to use them.

To delete a component:

### Procedure

1. Uninstall the component that you plan to delete. See [“Uninstalling a component” on page 141](#) for more information.

You must uninstall a component before deleting it. Uninstalling deletes all objects of the component.

2. From the Components window, select the component. Then select the Delete option in the Component pull-down.

A confirmation window is displayed.

3. Press Enter to confirm the deletion.

IBM Z Performance and Capacity Analytics deletes from its system tables all references to the component. The component no longer appears in the list of components in the Components window. The feature definition member (see [“Overview of IBM Z Performance and Capacity Analytics objects” on page 91](#)) still exists, however, and you can reinstall it at a later time. Before reinstalling deleted components, you must update the system tables to refresh the list of components available for installation.

## Creating a component

### About this task

If you have created a set of definitions (for example, for records or tables) using log collector language or report definition language, you can package them as a component. Creating a component can also be useful when designing a component to use at other sites. You must also transfer members that define the objects to the system at the other site.

You can define a component with SQL statements that directly update these system tables: DRLCOMPONENTS, DRLCOMP\_PARTS, and DRLCOMP\_OBJECTS, described in [“Dialog system tables” on page 227](#). IBM Z Performance and Capacity Analytics features define entries in these tables as you create or update the system tables, using SQL statements in definition members. For examples of component definition members, see [“Overview of IBM Z Performance and Capacity Analytics objects” on page 91](#).

**Note:** As you create your component, remember that the product requires that some definitions exist before you can install others. For example, if your component contains record procedures, you must install the record definition that maps the source record for the record procedure before installing the record procedure. Furthermore, you must install the record procedure before installing the record definition that maps the output of the record procedure. To do this, put both definitions in the same member.

IBM Z Performance and Capacity Analytics installs component definitions in the following order:

1. Log
2. Record
3. Record procedure
4. Table space
5. Lookup table
6. Table
7. Update

8. View
9. Report group
10. Report

The order of installation within a definition type is determined by the sorting sequence of the definition member names.

If you plan to use a component on the same IBM Z Performance and Capacity Analytics system on which you are creating it, you can use the administration dialog to create the component.

### Procedure

1. Optionally, you can select an existing component for IBM Z Performance and Capacity Analytics to use as a template for the new component before performing the next step.

2. From the Components window, press F5.

The New Component window is displayed.

3. Type information about the new component in the fields.

4. Press F5 to add an object to the component.

The Add Object window is displayed. See [“Adding an object to a component” on page 145](#) for more information.

5. Select an object, and press Enter to edit its definition.

IBM Z Performance and Capacity Analytics accesses the ISPF editor, where you can edit the object definition. See [“Viewing or editing an object definition” on page 145](#) for more information.

6. To delete an object that currently exists (either it existed in the template or you decided not to use an object you added), select the object, and press F11.

A Confirmation window is displayed for you to confirm the deletion. See [“Deleting an object from a component” on page 145](#) for more information.

7. When you finish adding, editing, or deleting objects, press F3.

IBM Z Performance and Capacity Analytics returns to the Components window and lists the new component.

## Working with log and record definitions

---

IBM Z Performance and Capacity Analytics uses log definitions to associate a series of processing definitions with a certain type of log data set. An example is the SMF log definition that the product uses to process SMF log data sets created by MVS. IBM Z Performance and Capacity Analytics associates log, record, and update definitions with the SMF log and uses these definitions to collect the data, manipulate it, and store it in appropriate tables.

This section describes how to use the administration dialog to work with log and record definitions. It describes how to:

- Work with the contents of logs (page [“Working with the contents of logs” on page 149](#)):
  - View a list of log data sets that IBM Z Performance and Capacity Analytics has collected (page [“Viewing a list of log data sets collected” on page 149](#))
  - Collect data from a log into Db2 tables (page [“Collecting data from a log into Db2 tables” on page 151](#))
  - Display statistics of log data sets (page [“Displaying log statistics” on page 152](#))
  - Display the contents of a log data set (page [“Displaying the contents of a log” on page 153](#))
  - Generate a report on a record in a log data set (page [“Creating a report on a record” on page 154](#))
- Work with log definitions (page [“Working with log definitions” on page 156](#)):

- View and modify a log definition and its header fields (page [“Viewing and modifying a log definition” on page 156](#))
- Create a log definition (page [“Creating a log definition” on page 158](#))
- Delete a log definition (page [“Deleting a log definition” on page 158](#))
- Work with record definitions (page [“Working with record definitions in a log” on page 158](#)):
  - View and modify a record definition (page [“Viewing and modifying a record definition” on page 159](#)):
    - Work with fields in a record definition (page [“Working with fields in a record definition” on page 161](#))
    - Work with sections in a record definition (page [“Working with sections in a record definition” on page 162](#))
  - Create a record definition (page [“Creating a record definition” on page 163](#))
  - Display update definitions associated with a record (page [“Displaying update definitions associated with a record” on page 163](#))
  - Delete a record definition (page [“Deleting a record definition” on page 164](#))
  - View and modify a record procedure definition (page [“Viewing and modifying a record procedure definition” on page 164](#))
  - Create a record procedure definition (page [“Creating a record procedure definition” on page 165](#))
  - Delete a record procedure definition (page [“Deleting a record procedure definition” on page 166](#))

## Working with the contents of logs

### About this task

To work with logs, first display a list of log definitions stored in the product system tables.

### Procedure

1. From the IBM Z Performance and Capacity Analytics Administration window, select 3, Logs.
2. Press Enter.

IBM Z Performance and Capacity Analytics displays the Logs window.

### Viewing a list of log data sets collected

#### About this task

The product Data Sets window shows you a list of data sets that have been collected. The window (Figure 70 on page 150) shows the name of each data set, when it was collected, and the status of the collect job.

The Status column reads **OK** if the collect job ran uninterrupted and without error. It shows **Incomplete** if the job was interrupted before the entire log had been processed. For example, due to a locking or out of space problem. **Warning** in the Status column means that the collect issued warning messages but the job completed successfully.

You can display detailed collection statistics for each collected data set. This is the default action for the window; you perform it by pressing Enter after selecting a data set.

You can also display the data in a log data set, record by record.

To view a list of collected log data sets:

### Procedure

1. From the Logs window, select a log definition and press F6.

IBM Z Performance and Capacity Analytics displays the Data Sets window for the log type you selected (see Figure 70 on page 150). You can then display collect statistics for each data set.

| SMF Data Sets                                             |                      |                     | ROW 1 TO 15 OF 169        |
|-----------------------------------------------------------|----------------------|---------------------|---------------------------|
| Select one data set. Then press Enter to view statistics. |                      |                     |                           |
| /                                                         | Data Sets            | Time collected      | Status                    |
| -                                                         | SYST.SMFSYSA.D930131 | 2000-02-01-04.26.57 | OK                        |
| -                                                         | SYST.SMFSYSA.D930130 | 2000-01-31-05.22.15 | OK                        |
| -                                                         | SYST.SMFSYSB.D930129 | 2000-01-30-04.14.36 | OK                        |
| -                                                         | SYST.SMFSYSA.D930129 | 2000-01-30-02.22.14 | Incomplete                |
| -                                                         | SYST.SMFSYSB.D930128 | 2000-01-29-02.59.20 | OK                        |
| -                                                         | SYST.SMFSYSA.D930128 | 2000-01-29-01.38.50 | OK                        |
| /                                                         | SYST.SMFSYSB.D930127 | 2000-01-28-08.30.02 | Warning                   |
| -                                                         | SYST.SMFSYSA.D930127 | 2000-01-28-03.56.24 | Warning                   |
| -                                                         | SYST.SMFSYSB.D930126 | 2000-01-27-03.23.27 | OK                        |
| -                                                         | SYST.SMFSYSA.D930126 | 2000-01-27-03.26.17 | OK                        |
| -                                                         | IVT.SMFCICS.TEST1    | 2000-01-26-14.23.23 | OK                        |
| -                                                         | IVT.SMFCICS.DELTA    | 2000-01-26-10.42.26 | OK                        |
| -                                                         | SYST.SMFSYSB.D930125 | 2000-01-26-04.18.48 | OK                        |
| -                                                         | SYST.SMFSYSA.D930125 | 2000-01-26-02.56.26 | OK                        |
| -                                                         | SYST.SMFSYSB.D930124 | 2000-01-26-04.18.48 | OK                        |
| Command ===> -----                                        |                      |                     |                           |
| F1=Help                                                   | F2=Split             | F3=Exit             | F5=Display F7=Bkwd F8=Fwd |
| F9=Swap                                                   | F11=Delete           | F12=Cancel          |                           |

Figure 70. Data Sets window

- From the Data Sets window, select a data set and press Enter.

The product displays the Collect Statistics window for the data set (Figure 71 on page 150).

| SMF Collect Statistics     |                                          |
|----------------------------|------------------------------------------|
| Press Enter to return.     |                                          |
| Dataset . . . . .          | SYST.SMFSYSB.D930127                     |
| Volume . . . . .           | TS0007                                   |
| Time collected . . . . .   | 2000-01-28-08.30.02                      |
| Elapsed time . . . . .     | 462                                      |
| Times collected . . . . .  | 1                                        |
| Collected by . . . . .     | STROMBK                                  |
| Return code . . . . .      | 4                                        |
| Completed . . . . .        | Y                                        |
| Firstrecord . . . . .      | 00001E2900006EB60093104FD3C4C7F140404040 |
|                            | 0003000500000000004400180001000000000000 |
| Firsttimestamp . . . . .   | 2000-01-27-00.04.43                      |
| Last timestamp . . . . .   | 2000-01-27-22.17.23                      |
| Records read . . . . .     | 187714                                   |
| Records selected . . . . . | 17701                                    |
| Database updates : 0       | Inserts: 13610 Deletes : 0               |
| F1=Help                    | F2=Split F9=Swap F12=Cancel              |

Figure 71. Collect Statistics window

- Press Enter to return to the Data Sets window after you finish viewing statistics.

## What to do next

To display the contents of a data set record by record, select the data set and press F5.

IBM Z Performance and Capacity Analytics displays the Record Selection window. Refer to [“Displaying the contents of a log”](#) on page 153 for more information.

## Deleting a log data set

### About this task

To delete data set statistics from the product system tables:

## Procedure

1. From the Data Sets window, select the data set and press F11.

IBM Z Performance and Capacity Analytics displays a confirmation window.

2. Press Enter to confirm the deletion.

The product deletes any references it has to the data set, which no longer appears in the list of collected data sets.

## Collecting data from a log into Db2 tables

### About this task

IBM Z Performance and Capacity Analytics stores data it collects in Db2 tables in the product database, following the instructions in update definitions associated with records in the log.

Usually, you use a batch job to collect log data. (See [“Collecting log data” on page 101](#) for more information about sample collect jobs.) However, you can use the administration dialog to perform online collection. For example, to correct problems or to test new log, record, or update definitions.

**Note:** Some logs require special processing or contain collect statements that can be initiated only from batch jobs. Such logs include those for DCOLLECT, VMACT, SMF\_VPD, and IMS.

To collect data from a log into Db2 tables:

## Procedure

1. From the Logs window, select a log and press F11.

The Collect window is displayed (see [Figure 72 on page 151](#)).

```

Log  Utilities  View  Other  Help

                                Collect

Type information. Then press Enter to edit the collect JCL.

Data set, DRLxxx.SDRLEFS(DRLSAMPL)                                (reqd)
Volume . . . . . (If not cataloged)
Unit . . . . . (Required for batch if Volume defined)

Reprocess . . . . . 2  1. Yes
                               2. No
Commit after . . . . . 1  1. Buffer full
                               2. End of file
                               3. Specify number of records
Number of records . . . . .
Buffer size . . . . . 10
Extention . . . . . 2      1.K
Condition . . . . .      2.M >

F1=Help   F2=Split   F4=Online   F5=Include   F6=Exclude
F9=Swap   F10=Show fld F11=Save def F12=Cancel

F8=Fwd    F9=Swap    F4=Action   F11=Collect  F12=Cancel
  
```

Figure 72. Collect window

2. Type the name of the log data set in the Data set field.

**Note:** The log data sets used as input for the collect (DRLLOG DD statement) are expected to be sorted in chronological order).

3. Optionally, specify other collect options in fields in the window.

**Note:** Entry fields followed by a greater than (>) sign respond to the F10 (Show fld) function key, which displays all of the data in the field or lets you type more data in the Show Field window.

4. Press F5 to include only specific Db2 tables in the collect process.

The Include Tables window is displayed.

5. Select those tables to include in the collect process and press Enter.

You are returned to the Collect window.

You can exclude tables as well. You need exclude only tables that the product would normally update during the collection.

6. Press F6 to exclude tables from the collect process.

The Exclude Tables window is displayed. Select tables to exclude from the collect process and press Enter. You are returned to the Collect window.

7. Run the collect either in batch or online:

- a) Press Enter to run the collect in batch mode.

IBM Z Performance and Capacity Analytics builds a JCL job stream for the collect job and accesses the ISPF editor where you can edit and submit the JCL.

- b) Press F4 to perform an online collection.

IBM Z Performance and Capacity Analytics starts the collect process online. When the collection is complete, collect messages are displayed in an ISPF browse window.

8. Press F3 to return to the Logs window.

### Displaying log statistics

#### About this task

You can create log statistics for any log data set, regardless of whether it has been collected. A log statistics file shows the number of records of each type in a log data set. It also shows records built by log and record procedures.

To view statistics for a log data set:

#### Procedure

1. From the Logs window, select a log definition.
2. Select 3, Show log statistics, from the Log pull-down.

You are prompted for the name of a log data set.

3. Type the name of the data set and press Enter.

The product displays statistics for the log (see [Figure 12 on page 27](#)).



```

DRLnnnnI Logstat started at 2000-12-04-10.04.15
DRL0302I Processing SMF.DATA.SET on VOL001
DRL0341I The first record timestamp is 2000-06-03-07.00.01.730000.
DRL0342I The last record timestamp is 2000-06-03-11.52.40.220000.
DRL0003I
DRL0315I Records read from the log or built by log procedure:
DRL0317I Record name      Number
DRL0318I -----
DRL0319I SMF_000          0
DRL0319I SMF_006          6
DRL0319I SMF_007          0
DRL0319I SMF_021          0
DRL0319I SMF_025          0
DRL0319I SMF_026         476
DRL0319I SMF_030        3737
DRL0319I SMF_070         40
DRL0319I SMF_071         40
DRL0319I SMF_072_1       280
DRL0319I SMF_090          0
DRL0320I Unrecognized      3
DRL0318I -----
DRL0321I Total            4582
DRL0003I
DRL0316I Records built by record procedures:
DRL0317I Record name      Number
DRL0318I -----
DRL0319I SMF_030_X        2012
DRL0319I SMF_070_X        200
DRL0318I -----
DRL0321I Total            2212
DRLnnnnI Logstat ended at 2000-12-04-10.09.43

```

Figure 73. Sample log statistics output

- When you finish viewing statistics, press F3.

The Logs window is displayed.

## Displaying the contents of a log

### About this task

IBM Z Performance and Capacity Analytics provides a facility for displaying the contents of a log, record by record. The Record Data window describes each field in each record in the log data set you identify.

To view the contents of a log:

### Procedure

- From the Logs window, select the log.
- From the Utilities pull-down, select 2, Display log, and press Enter.

**Note:** You can also display the contents of a log by selecting Display record from the Record Definition window or by pressing F5 from the Data Sets window.

The Record Selection window is displayed.

- Type the log data set name and, optionally, the name of a record type (to display only one record definition), or a record sequence number (to start displaying records at that position in the log). Press Enter.

The Record Data window is displayed.

| Record Data                          |          |         |                   |                 | ROW 1 TO 13 OF 222 |
|--------------------------------------|----------|---------|-------------------|-----------------|--------------------|
| Press Enter to view the next record. |          |         |                   |                 |                    |
| Record name . : SMF_030              |          |         | Record number : 3 |                 |                    |
| Data set . . : LDG.SMFSYSA.W20       |          |         |                   |                 |                    |
| Field Name                           | Type     | Length  | Offset            | Value           |                    |
| SMF30LEN                             | BINARY   | 2       | 0                 | 628             |                    |
| SMF30SEG                             | BINARY   | 2       | 2                 | 0               |                    |
| SMF30FLG                             | BIT      | 1       | 4                 |                 |                    |
| SMF30RTY                             | BINARY   | 1       | 5                 | 30              |                    |
| SMF30TME                             | TIME     | 4       | 6                 | 07.00.03.830000 |                    |
| SMF30DTE                             | DATE     | 4       | 10                | 2000-06-03      |                    |
| SMF30SID                             | CHAR     | 4       | 14                | MVS1            |                    |
| SMF30WID                             | CHAR     | 4       | 18                | JES2            |                    |
| SMF30STP                             | BINARY   | 2       | 22                | 3               |                    |
| -----                                |          |         |                   |                 |                    |
| TRIPLETS                             | SECTION  | 88      | 24                | 1 (1)           |                    |
| -----                                |          |         |                   |                 |                    |
| SMF30SOF                             | BINARY   | 4       | 0                 | 112             |                    |
| Command ==>_____                     |          |         |                   |                 |                    |
| F1=Help                              | F2=Split | F7=Bkwd | F8=Fwd            | F9=Swap         | F12=Cancel         |

Figure 74. Record Data window

4. Press Enter to step through records in the log.

Each time you press Enter, IBM Z Performance and Capacity Analytics displays the next identified record in the log.

5. When you finish viewing record data, press F12.

You are returned to the Logs window.

## Creating a report on a record

### About this task

To produce a report of the data in a record type without performing a collect operation, you can use the IBM Z Performance and Capacity Analytics list function. For example, you may need very detailed data from a record, or you may want to get information from a record one time, without creating product tables for it. The list function creates a report of the data in a record either in QMF format or as a data set that can be browsed.

To create a report of the data in a record:

### Procedure

1. From the Logs window, select the log and press Enter.

The Record Definitions window for the log is displayed (see [Figure 78 on page 159](#)).

2. Select a record and press F11.

The List Record window for the record is displayed (see [Figure 75 on page 155](#)).

SMF\_030 List Record      ROW 61 TO 70 OF 176

Type information, select fields. Then press Enter to define option.

Condition . . . . . >

| / | Fields   | Type     | Sort Seq | Condition |
|---|----------|----------|----------|-----------|
| - | SMF30IOF | BINARY   | ---      | ---       |
| - | SMF30ION | BINARY   | ---      | ---       |
| - | SMF30ISB | BINARY   | ---      | ---       |
| - | SMF30IST | TIME_001 | ---      | ---       |
| - | SMF30IVA | BINARY   | ---      | ---       |
| - | SMF30IVU | BINARY   | ---      | ---       |
| / | SMF30JBN | CHAR     | ---      | ---       |
| - | SMF30JNM | CHAR     | ---      | ---       |
| - | SMF30JPT | BINARY   | ---      | ---       |
| - | SMF30JVA | BINARY   | ---      | ---       |

Command==>

F1=Help      F2=Split      F7=Bkwd      F8=Fwd      F9=Swap  
F10=Show fld      F12=Cancel

Figure 75. List Record window

- From the List Record window, select fields to include in the report. Type information in the fields and press Enter.

If your installation uses QMF, the Report Display Options window is displayed.

- In the Report Display Options window, choose whether to display the report using QMF or as a data set that can be browsed. Specify the name of the log data set from which IBM Z Performance and Capacity Analytics is to produce the report, then press Enter.

If your installation does not use QMF, the report is displayed using ISPF browse. Specify the name of the log data set from which IBM Z Performance and Capacity Analytics is to produce the report in the Input Log Data Set Name window, then press Enter.

The report is displayed.

|                                                          |          |            |          |          |          |
|----------------------------------------------------------|----------|------------|----------|----------|----------|
| ISRBROBF STROMBK.DRLLST1 ----- LINE 00000000 COL 001 080 |          |            |          |          |          |
| ***** TOP OF DATA *****                                  |          |            |          |          |          |
| SMF30CPS                                                 | SMF30CPT | SMF30DTE   | SMF30JBN | SMF30RST | SMF30SIT |
| 0                                                        | 18       | 2000-06-03 | LOGREFL1 | 07.00.00 | 07.00.01 |
| 1                                                        | 19       | 2000-06-03 | LOGREFL2 | 07.00.00 | 07.00.05 |
| 0                                                        | 17       | 2000-06-03 | LOGREES1 | 07.00.01 | 07.00.07 |
| 0                                                        | 13       | 2000-06-03 | LOGREES2 | 07.00.01 | 07.00.09 |
| 2                                                        | 20       | 2000-06-03 | LOGRSP4A | 07.00.02 | 07.00.10 |
| 1                                                        | 19       | 2000-06-03 | LOGSP4B  | 07.00.02 | 07.00.22 |
| 0                                                        | 16       | 2000-06-03 | LOGRXAA  | 07.00.03 | 07.00.23 |
| 0                                                        | 13       | 2000-06-03 | LOGRXAB  | 07.00.03 | 07.00.26 |
| 4                                                        | 73       | 2000-06-03 | EID3D105 | 07.00.12 | 07.00.13 |
| 0                                                        | 7        | 2000-06-03 | EID3D105 | 07.00.12 | 07.01.21 |
| 9                                                        | 79       | 2000-06-03 | EID3D105 | 07.00.12 | 07.01.21 |
| 227                                                      | 1108     | 2000-06-03 | EID4     | 01.14.42 | 01.14.43 |
| 18                                                       | 226      | 2000-06-03 | EID4     | 07.12.42 | 07.12.44 |
| 1                                                        | 12       | 2000-06-03 | XGORANW  | 07.26.33 | 07.26.34 |
| 1                                                        | 12       | 2000-06-03 | XGORANW  | 07.26.50 | 07.26.51 |
| 7                                                        | 215      | 2000-06-03 | NORBACK  | 07.31.52 | 07.31.52 |

The list record action is executed successfully.

COMMAND ==>

F1=Help      F2=      F3=End      F4=      F5=R Find      F6=R Change  
F7=Backward      F8=Forward      F9=      F10=Left      F11=Right      F12=Cursor

SCROLL ==> CSR

Figure 76. Output from List record function

- When you finish viewing the report, press F3 to exit QMF or the ISPF browse window.

You are returned to the List Record window.

- From the List Record window, press F12 to return to the Record Definitions window.

7. From the Record Definitions window, repeat this procedure for more records or press F3 to return to the Logs window.

## Working with log definitions

All the logs that you plan to process must be defined to IBM Z Performance and Capacity Analytics. Log definitions included with each component define the logs that the product uses to collect data.

A log definition can include these elements:

### Header

Lists fields common to all records in the log.

### Timestamp

Describes how to derive the timestamp of a record from fields in the header.

### First record

Describes a condition that should be met for the first record in the log data set.

### Last record

Describes a condition that should be met for the last record in the log data set.

### Log procedure

Identifies a program that is invoked for each record read.

### Log procedure parameters

Identifies the language of the log procedure and other information, such as information the log procedure cannot retrieve from the record.

For more information about log procedures, refer to the *Language Guide and Reference*.

## Viewing and modifying a log definition

### About this task

You can use the administration dialog to view or modify log definitions. To view and modify a log definition:

### Procedure

1. From the Logs window, select the log and press F5.

The Log Definition window is displayed (see [Figure 77 on page 156](#)) for the log you specified.

```
Log  Utilities  View  Other  Help

SMF Log Definition

Type information. Press Enter to save and return.

Description . . . . . MVS Systems Management Facility >
Log procedure . . . . . >
Log procedure parameter . . . >
Log procedure language . . . 1. ASM
                             2. C
Record timestamp . . . . . TIMESTAMP(SMFDTE, SMFTME) >
First record condition . . . SMFRTY= 2 >
Last record condition . . . SMFRTY= 3 >

F1=Help      F2=Split      F5=Header      F9=Swap      F10=Show fld
F12=Cancel

Command==>
F1=Help      F2=Split      F3=Exit      F5=Log def   F6=Datasets  F7=Bkwd
F8=Fwd       F9=Swap      F10=Actions  F11=Collect  F12=Cancel
```

Figure 77. Log Definition window

2. Change the log definition.
3. Press F5 to display header fields for the log definition.

The Header Fields window is displayed for the log. See [“Working with header fields” on page 157](#) for more information.

4. When you finish modifying the log definition, press Enter.

The changes are saved and you are returned to the Logs window.

## Working with header fields

### About this task

To add header fields to a log definition:

#### Procedure

1. From the Header Fields window, press F5 to add a header field.

A blank Header Field Definition window is displayed.

2. Type the required information in the fields and press Enter.

The Header Field Definition window for the next field is displayed. IBM Z Performance and Capacity Analytics carries forward values for the Type and Length fields from the previous field and increments the Offset field by the length of the previous field.

3. Press F12 when you finish adding fields.

You are returned to the Header Fields window.

4. Press F3 to return to the Log Definition window.

### *Modifying header fields for a log definition*

#### About this task

To modify header fields for a log definition:

#### Procedure

1. From the Header Fields window, select the header field and press Enter.

The Header Field Definition window for the header field you specified is displayed.

2. Type changes in the fields and press Enter.

You are returned to the Header Fields window.

3. Press F3 to return to the Log Definition window.

### *Deleting header fields for a log definition*

#### About this task

To delete header fields for a log definition:

#### Procedure

1. To delete a header field, select the field and press F11.

A confirmation window is displayed.

2. Press Enter to confirm the deletion.

The header field is deleted from the list and you are returned to the Header Fields window.

3. Press F3 to return to the Log Definition window.

### Creating a log definition

#### About this task

To collect data from a log that is not defined by an IBM Z Performance and Capacity Analytics component, you must create a log definition. You can use the administration dialog to create log definitions, or you can use the log collector language. Refer to the *Language Guide and Reference* for more information about creating log definitions with log collector language.

To create a log definition:

#### Procedure

1. To use an existing log definition as a template, select a log definition from the Logs window. Otherwise, do not select a log definition before the next step.
2. Select 1, New, from the Log pull-down and press Enter.

The New Log Definition window is displayed.

3. Type information for the new log definition in the fields.
4. Press F5 to add header fields to the log definition.

The Header Fields window is displayed. See [“Working with header fields” on page 157](#) for more information on adding header fields.

5. After you add all the information, press Enter.

The new log definition is saved and you are returned to the Logs window.

### Deleting a log definition

#### About this task

If you no longer need to collect data from a log, you can use the administration dialog to delete the log definition. When you delete this log definition, you delete references to the log definition from IBM Z Performance and Capacity Analytics system tables, but you do not delete the member that defines the log type.

To delete a log definition:

#### Procedure

1. From the Logs window, select a log and then select the Delete option from the Log pull-down.

A confirmation window is displayed.

2. Press Enter to confirm the deletion.

The log definition is deleted and you are returned to the Logs window.

## Working with record definitions in a log

#### About this task

Each record in a log belongs to a record type that must be defined to IBM Z Performance and Capacity Analytics to be collected. Otherwise, the product designates it as an unrecognized type of record and does not process it. Record definitions are included with each predefined component.

To view a list of record definitions:

#### Procedure

1. From the product Administration window, select 3, Logs, and press Enter.

The Logs window is displayed.

- From the Logs window, select the log that contains the record and press Enter.

The Record Definitions window for the log is displayed (see [Figure 78 on page 159](#)).

```

Record  Utilities  Other  Help
-----
                          SMF Record Definitions                          ROW 8 TO 20 OF 124

Select a record definition.  Then press Enter to Open record definition.

/  Record Definitions  Description
-  SMF_000              IPL
-  SMF_002              Dump header
-  SMF_003              Dump trailer
-  SMF_004              Step termination
-  SMF_005              Job termination
-  SMF_006              JES2/JES3/PSF/External writer
-  SMF_007              Data lost
-  SMF_008              I/O configuration
-  SMF_009              VARY device ONLINE
-  SMF_010              Allocation recovery
-  SMF_011              VARY device OFFLINE
-  SMF_014              INPUT or RDBACK data set activity
-  SMF_015              OUTPUT, UPDAT, INOUT, or OUTIN data set

Command ==>
F1=Help    F2=Split    F3=Exit    F5=Procs    F6=Updates    F7=Bkwd
F8=Fwd     F9=Swap     F10=Actions F11=List rec F12=Cancel

```

Figure 78. Record Definitions window

## Viewing and modifying a record definition

### About this task

Most of a record definition describes the layout of the record. Records are divided into fields and, optionally, sections. A field is a named sequence of adjacent bytes. A section is a larger structure that contains fields or other sections. For more information about defining records, sections, and fields, refer to the *Language Guide and Reference*.

You can use the administration dialog to modify record definitions. To view and modify a record definition:

### Procedure

- From the **Record Definitions** window, select the record definition and press Enter.

The **Record Definition** window for the record definition is displayed (see [Figure 79 on page 160](#)).

| SMF_030 Record Definition                                                   |          |          |              | ROW 1 TO 9 OF 188 |            |
|-----------------------------------------------------------------------------|----------|----------|--------------|-------------------|------------|
| Type information. Select a field or a section. Then press Enter to display. |          |          |              |                   |            |
| Log name . . . SMF                                                          |          |          |              |                   |            |
| Identified by . SMF30RTY= 30                                                |          |          |              | > (condition)     |            |
| Built by . . . + (program name)                                             |          |          |              |                   |            |
| Description . . Common address space work                                   |          |          |              | >                 |            |
| /                                                                           | Field    | Type     | Length       | Offset            | Section    |
| -                                                                           | SMF30LEN | BINARY   | 2            | 0                 |            |
| -                                                                           | SMF30SEG | BINARY   | 2            | 2                 |            |
| -                                                                           | SMF30FLG | BIT      | 1            | 4                 |            |
| -                                                                           | SMF30RTY | BINARY   | 1            | 5                 |            |
| -                                                                           | SMF30TME | TIME_001 | 4            | 6                 |            |
| -                                                                           | SMF30DTE | DATE_001 | 4            | 10                |            |
| -                                                                           | SMF30SID | CHAR     | 4            | 14                |            |
| -                                                                           | SMF30WID | CHAR     | 4            | 18                |            |
| -                                                                           | SMF30STP | BINARY   | 2            | 22                |            |
| Command ==>                                                                 |          |          |              |                   |            |
| F1=Help                                                                     | F2=Split | F3=Exit  | F4=Prompt    | F5=Add fld        | F6=Add sec |
| F7=Bkwd                                                                     | F8=Fwd   | F9=Swap  | F10=Show fld | F11=Delete        | F12=Cancel |

Figure 79. Record Definition window

2. Type any changes to the record definition.

**Note:** By changing the value in the Log name field, you can move the record to another log definition.

3. To modify the definition of a field, select the field and press Enter.

The **Field Definition** window is displayed. See [“Working with fields in a record definition” on page 161](#) for more information.

4. To modify a section, select the section and press Enter.

The **Section Definition** window is displayed. See [“Working with sections in a record definition” on page 162](#) for more information.

5. Press F5 to add fields to the record definition.

The **Field Definition** window is displayed. See [“Working with fields in a record definition” on page 161](#) for more information.

6. Press F6 to add sections to the record definition.

The **Section Definition** window is displayed. See [“Working with sections in a record definition” on page 162](#) for more information.

7. To delete a section or field from the record definition, select the section or field and press F11.

If the section or field definition already existed in the record definition, a confirmation window is displayed. Otherwise, you are deleting something you just added. IBM Z Performance and Capacity Analytics does not ask you to confirm this type of deletion and you can skip step 8.

8. Press Enter to confirm the deletion.

The section or field is deleted and you are returned to the Record Definition window.

9. Press F3 when you finish modifying the record definition.

Your changes are saved and you are returned to the Record Definitions window.

**Note:** If you have incorrectly modified the record definition, IBM Z Performance and Capacity Analytics displays error messages in an ISPF browse window. Examine the messages and press F3 to return to the Record Definition window where you can correct the errors.



## Working with fields in a record definition

### About this task

You can use the administration dialog to modify existing field definitions or to add field definitions. You can also use log collector language statements. Refer to the *Language Guide and Reference* for more information about defining fields in a record.

To add a field definition to a record definition:

## Procedure

1. From the Record Definition window, press F5.

A blank Field Definition window is displayed.

2. Type the required information in the fields and press Enter.

Another Field Definition window is displayed (see Figure 80 on page 161).

```

T
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-
-
-
-
/
-
-
SMF30STP          BINARY      2          22

Command===>
F1=Help           F2=Split      F3=Exit      F4=Prompt     F5=Add fld      F6=Add sec
F7=Bkwd           F8=Fwd       F9=Swap     F10=Show fld  F11=Delete     F12=Cancel

```

Figure 80. Field Definition window

3. Press F12 when you finish adding fields.

You are returned to the Record Definition window.

### Modifying a field definition

### About this task

To modify a field definition:

## Procedure

1. From the Record Definition window, select the field and press Enter.

The Field Definition window is displayed.

2. Type changes in the fields and press Enter.

Your changes are saved and you are returned to the Record Definition window.

## Working with sections in a record definition

### About this task

You can use the administration dialog to modify existing section definitions or to add section definitions. You can also use log collector language statements. Refer to the *Language Guide and Reference* for more information about defining sections and repeated sections.

To modify a section definition:

### Procedure

1. From the Record Definition window, select the section and press Enter.

The Section Definition window is displayed (see [Figure 81 on page 162](#)).

Figure 81. Section Definition window

2. Type changes in the fields and press Enter.

Your changes are saved and you are returned to the Record Definition window.

## Adding a section definition to a record definition

### About this task

To add a section definition to a record definition:

### Procedure

1. From the Record Definition window, press F5.  
A blank Section Definition window is displayed.
2. Type the required information in the fields and press Enter.  
Another Section Definition window is displayed.
3. Press F12 when you finish adding sections.

You are returned to the Record Definition window.

## Creating a record definition

### About this task

You can create record definitions by using:

- The administration dialog; or
- Log collector language statements.

For more information about defining records with the log collector language, refer to the *Language Guide and Reference*.

To create a record definition:

### Procedure

1. To use an existing record definition as a template, select a record definition from the Record Definitions window. Otherwise, do not select a record definition.
2. From the Record Definitions window, select 1, New, from the Record pull-down.

The New Record Definition window is displayed.

3. Type information for the new record definition in fields of the window.
4. Press F5 to add fields to the record definition.

The Field Definition window is displayed. See [“Working with fields in a record definition” on page 161](#) for more information.

5. Press F6 to add sections to the record definition.

The Section Definition window is displayed. See [“Working with sections in a record definition” on page 162](#) for more information.

6. Press F3 when you finish adding fields and sections.

The new record definition is saved and you are returned to the Record Definitions window.

## Displaying update definitions associated with a record

### About this task

Update definitions contain instructions for summarizing log data into Db2 tables. The Record Definitions window lets you view which update definitions IBM Z Performance and Capacity Analytics uses to process data that a record definition maps.

Each record is associated with one or more update definitions. To display update definitions associated with a record:

### Procedure

1. From the Record Definitions window, select the record with associated update definitions you plan to view and press F6.

The Update Definitions window lists all the update definitions that use the selected record definition as input. From this window, you can view, modify, or add update definitions. See [“Displaying and modifying update definitions of a table” on page 184](#) or [“Creating an update definition” on page 199](#) for more information.

2. Press F3 when you finish viewing update definitions.

You are returned to the Record Definitions window.

### Deleting a record definition

#### About this task

If you no longer require data from a certain record, you can use the administration dialog to delete the record definition.

**Note:** IBM Z Performance and Capacity Analytics prevents you from deleting record definitions that affect, or are affected by, other IBM Z Performance and Capacity Analytics objects. To delete a record definition, remove links from it to other IBM Z Performance and Capacity Analytics objects.

To delete a record definition:

#### Procedure

1. From the Record Definitions window, select the record definition to delete. Then select 5, Delete, from the Record pull-down.

A confirmation window is displayed.

2. Press Enter to confirm the deletion.

The record definition is deleted and you are returned to the Record Definitions window.

### Viewing and modifying a record procedure definition

#### About this task

Record procedures are programs that can modify, split, combine, sort, delete, or perform any function to records during collection. Record procedures use existing records as input and produce other records, which must be defined to IBM Z Performance and Capacity Analytics. Some product components include record procedures and their definitions.

Each record procedure definition defines record types that the procedure processes, identifies the language of the procedure, and passes parameters to the procedure. For more information, refer to the *Language Guide and Reference*.

You can use the administration dialog to modify record procedure definitions.

To view and modify a record procedure definition:

#### Procedure

1. From the Record Definitions window, select the record definition that is input to the record procedure you plan to modify and press F5.

The Record Procedures window for the record definition is displayed. This window lists all record procedure names that use the record as input.

2. From the Record Procedures window, select the record procedure whose definition you plan to modify and press Enter.

The Record Procedure Definition window for the record procedure is displayed (see [Figure 82 on page 165](#)).

SMF\_030 Record Procedures ROW 1 TO 1 OF 1

DRL2S030 Record Procedure Definition

Type in information. Then press Enter to save and return.

Description . . . . . \_\_\_\_\_ >

Language . . . . . 1 1. ASM  
2. C

Procedure parameter . . \_\_\_\_\_ >

F1=Help F2=Split F5=Linkrec F9=Swap F10=Show fld  
F12=Cancel

Command===> \_\_\_\_\_

F1=Help F2=Split F3=Exit F5=New F6=Delete F7=Bkwd  
F8=Fwd F9=Swap F11=Save def F12=Cancel

Figure 82. Record Procedure Definition window

3. Type your changes in the fields.
4. Press F5 to link record definitions to the record procedure (to define them as input to the record procedure).

The Record Definitions window is displayed.

5. From the Record Definitions window, select record definitions to link to the record procedure and press Enter.

The record procedure is linked to the record definitions you selected and you are returned to the Record Procedure Definition window.

6. When you finish modifying the record procedure definition, press Enter.

Your changes are saved and you are returned to the Record Procedures window.

7. Repeat this procedure for other record procedures or press F3 to return to the Record Definitions window.

## Creating a record procedure definition

### About this task

If you must add a record procedure, you must first write a program according to the instructions in the *Language Guide and Reference*. You can then use the administration dialog to define the record procedure to IBM Z Performance and Capacity Analytics.

To create a record procedure definition:

### Procedure

1. From the Record Definitions window, select the record definition from which the new record procedure derives its input and press F5.

The Record Procedures window for the record definition is displayed.

2. From the Record Procedures window, press F5.

The New Record Procedure Definition window is displayed.

3. Type information for the new record procedure in the fields.

4. Press F5 if you want to link the record procedure to additional record definitions that describe record types on which the record procedure acts. The record procedure is automatically linked to the record type selected in step 1 above.

The Record Definitions window is displayed.

5. From the Record Definitions window, select record definitions to link to the record procedure and press Enter.

The record procedure is linked to the record definitions you selected and you are returned to the Record Procedure Definition window.

6. When you finish entering information, press Enter.

The new record procedure is saved and returns to the Record Procedures window.

7. Repeat this procedure to add more record procedures or press F3 to return to the Record Definitions window.

### What to do next

In addition, you must define a record type as the record procedure's output. Do this in the Record Definition window (Figure 79 on page 160). Type the record procedure name in the Built by field, to identify a record type as one that is created by the record procedure.

### Deleting a record procedure definition

#### About this task

If you no longer require a record procedure, you can use the administration dialog to delete the record procedure definition.

**Note:** IBM Z Performance and Capacity Analytics prevents you from deleting record procedure definitions that affect, or are affected by, other product objects. To delete a record procedure definition, remove links from the record procedure to other product objects.

To delete a record procedure definition:

#### Procedure

1. From the Record Definitions window, select the record definition that is associated with the record procedure to delete and press F5.

The Record Procedures window for the record definition is displayed.

2. From the Record Procedures window, select the record procedure to delete and press F6.

A confirmation window is displayed.

3. Press Enter to confirm the deletion.

You are returned to the Record Procedures window.

4. Repeat this procedure to delete more record procedures or press F3 to return to the Record Definitions window.

#### Results

The record procedure is deleted.

## Working with tables and update definitions

---

This section describes how to use the administration dialog to work with tables, update definitions, and other table-related objects such as purge conditions, indexes, views, and table spaces. After reading this section, you should be familiar with these tasks:

- [“Working with data in tables” on page 168](#)

- “Displaying the contents of a table” on page 168
- “Editing the contents of a table” on page 169
- “Showing the size of a table” on page 171
- “Recalculating the contents of a table” on page 172
- “Importing the contents of an IXF file to a table” on page 174. (This option is available only if your installation uses QMF with IBM Z Performance and Capacity Analytics.)
- “Exporting table data to an IXF file” on page 174. (This option is available only if your installation uses QMF with IBM Z Performance and Capacity Analytics.)
- “Purging a table” on page 175
- “Unloading and loading tables” on page 175
- “Working with tables and update definitions” on page 180
  - “Opening a table to display columns” on page 180
  - “Displaying and modifying update definitions of a table” on page 184
  - “Displaying and editing the purge condition of a table” on page 189
  - “Displaying and modifying a table or index space” on page 191
  - “Displaying a view definition” on page 194
  - “Printing a list of IBM Z Performance and Capacity Analytics tables” on page 195
  - “Saving a table definition in a data set” on page 195
  - “Listing a subset of tables in the Tables window” on page 196
  - “Creating a table” on page 196
  - “Deleting a table or view” on page 198
  - “Creating a table space” on page 198
  - “Creating an update definition” on page 199
  - “Deleting an update definition” on page 199
  - “Administering user access to tables” on page 200

When you use IBM Z Performance and Capacity Analytics to collect log data, the product stores the data in Db2 tables in its database. To view a list of the tables that are used to store collected data, from the **Administration** window, select 4, Tables. The **Tables** window is displayed. The list in this window includes all the product data tables, lookup tables, and control tables.

```

Table Maintenance Utilities Edit View Other Help
-----
                                Tables                                ROW 1 TO 13 OF 212

Select one or more tables.  Then press Enter to Open table definition.

/   Tables                Prefix   Type
-   AVAILABILITY_D        DRL      TABLE
-   AVAILABILITY_M        DRL      TABLE
-   AVAILABILITY_PARM     DRL      TABLE
-   AVAILABILITY_T        DRL      TABLE
-   AVAILABILITY_W        DRL      TABLE
-   CICS_A_BASIC_H        DRL      TABLE
-   CICS_A_BASIC_W        DRL      TABLE
-   CICS_A_DBCTL_H        DRL      TABLE
-   CICS_A_DBCTL_USR_H    DRL      TABLE
-   CICS_A_DBCTL_USR_W    DRL      TABLE
-   CICS_A_DBCTL_W        DRL      TABLE
-   CICS_A_DLI_H          DRL      TABLE
-   CICS_A_DLI_USR_H      DRL      TABLE

Command ===> -----
F1=Help      F2=Split    F3=Exit      F5=Updates   F6=PurCond   F7=Bkwd
F8=Fwd       F9=Swap     F10=Actions  F11=Display  F12=Cancel

```

Figure 83. Tables window

The name of each table is shown in the **Tables** column.

The prefix of each table is shown in the **Prefix** column. Data tables and lookup tables have a prefix of DRL, the default value of the Prefix for all other tables field in the **Dialog Parameters** window. Control tables have a prefix of DRLSYS, the default value of the Prefix for system tables field in the **Dialog Parameters** window.

The **Type** column shows whether an object is a Db2 table or a view.

## Working with data in tables

This section describes these tasks:

- Displaying the contents of a table
- Editing the contents of a table
- Showing the size of a table
- Recalculating the contents of a table
- Importing the contents of an IXF file to a table (This option is available only if your installation uses QMF with IBM Z Performance and Capacity Analytics.)
- Exporting table data to an IXF file (This option is available only if your installation uses QMF with IBM Z Performance and Capacity Analytics.)
- Purging a table
- Unloading and loading a table

### Displaying the contents of a table

#### About this task

You can use the administration dialog to display the contents of a table.

**Note:** If QMF is not used with IBM Z Performance and Capacity Analytics on your system, the following applies:

- Tables are displayed with ISPF browse.
- The Add rows and Change rows options on the Edit pull-down are not selectable.
- If you display a very large table, data table, or system table, you might run out of REXX storage. If this happens, there are some actions you can take that enable you to display the table, or the part of the table you want to see.
  - Increase the region size.
  - If you need to see only the first part of the table, you can decrease the SQLMAX parameter on the Dialog Parameters window.
  - Use F4 (Run) on the SQL Query pop-up in the reporting dialog. Write an SQL SELECT statement that restricts the retrieved table information to the columns and rows you are interested in. This is a way to create and run a query without having to save it.

To display the contents of a table:

#### Procedure

1. From the Tables window, select the name of the table that you plan to display.
2. Press F11, or select 1, Display, from the Utilities pull-down.

The product displays the contents of the table in rows and columns.

**Note:** The table is not necessarily sorted in key sequence.



| REPORT                         |          | DRL.SAMPLE_H |                 |          | LINE 1       | POS 1            | 79              |
|--------------------------------|----------|--------------|-----------------|----------|--------------|------------------|-----------------|
| DATE                           | TIME     | SYSTEM ID    | DEPARTMENT NAME | USER ID  | TRANSACTIONS | RESPONSE SECONDS |                 |
| 2000-01-01                     | 13.00.00 | SYS1         | Sys Supp        | PIANKA   | 40           | 267              |                 |
| 2000-01-01                     | 15.00.00 | SYS1         | Appl Dev        | ADAMS    | 72           | 198              |                 |
| 2000-01-02                     | 08.00.00 | SYS1         | Appl Dev        | JONES    | 28           | 131              |                 |
| 2000-01-02                     | 11.00.00 | SYS1         | Retail          | PEREZ    | 21           | 171              |                 |
| 2000-01-03                     | 10.00.00 | SYS1         | Marketng        | KWAN     | 74           | 220              |                 |
| 2000-01-03                     | 11.00.00 | SYS1         | Manufact        | LEE      | 22           | 234              |                 |
| 2000-01-03                     | 11.00.00 | SYS1         | Manufact        | LUTZ     | 2            | 95               |                 |
| 2000-01-04                     | 07.00.00 | SYS1         | Finance         | HAAS     | 26           | 109              |                 |
| 2000-01-04                     | 07.00.00 | SYS1         | Sys Supp        | THOMPSON | 84           | 64               |                 |
| 2000-01-04                     | 08.00.00 | SYS1         | Marketng        | KWAN     | 63           | 290              |                 |
| 2000-01-04                     | 08.00.00 | SYS1         | Finance         | GEYER    | 94           | 131              |                 |
| 2000-01-04                     | 08.00.00 | SYS1         | Finance         | GEYER    | 94           | 131              |                 |
| 2000-01-04                     | 09.00.00 | SYS1         | Marketng        | STERN    | 51           | 162              |                 |
| 2000-01-04                     | 09.00.00 | SYS1         | Manufact        | PULASKI  | 69           | 76               |                 |
| 1=Help                         |          | 2=           | 3=End           | 4=Print  | 5=Chart      | 6=Query          |                 |
| 7=Backward                     |          | 8=Forward    | 9=Form          | 10=Left  | 11=Right     | 12=              |                 |
| OK, DRL.SAMPLE_H is displayed. |          |              |                 |          |              |                  |                 |
| COMMAND ==>                    |          |              |                 |          |              |                  | SCROLL ==> PAGE |

Figure 84. Using QMF to display an IBM Z Performance and Capacity Analytics table

- Press F3 when you finish viewing the contents of the table,

You are returned to the Tables window.

## Editing the contents of a table

### About this task

You can use the administration dialog to edit the contents of a table, using either the QMF table editor (if QMF is used with IBM Z Performance and Capacity Analytics) or the ISPF editor.

The QMF table editor can be used in two modes, add and change. For a complete description, refer to the *Query Management Facility: Learner's Guide*

To add rows to a table using the QMF table editor:

### Procedure

- From the **Tables** window (Figure 83 on page 167), select the table to edit.
- Select 1, Add rows, from the Edit pull-down.

The product calls the QMF table editor in add mode.

- Enter values for columns, and press F2.
- Press F3 when you finish adding rows.

QMF prompts you for confirmation.

- Press Enter.

You are returned to the **Tables** window.

### Using the QMF table editor to change or delete rows

### About this task

To change or delete rows using the QMF table editor:

### Procedure

- From the Tables window (Figure 83 on page 167), select the table to edit
- Select 2, Change rows, from the Edit pull-down.

IBM Z Performance and Capacity Analytics calls the QMF table editor in change mode.

3. To search for rows to change or delete, type values to search for, and press F2.

QMF displays the first row that matches the search criteria.

4. To change the row, type values for columns, and press F2.
5. To delete the row, press F11.
6. Press F3 when you finish changing or deleting rows.

QMF prompts you for confirmation.

**Note:** The ISPF edit function in the product administration dialog works according to ISPF rules. If no value is entered or if the value is removed, the character-type fields are filled with blanks. The ISPF Editor works the same way outside the dialog: that is, you can enter NULL values in Edit mode by typing HEX on the command line and X'00' in the field.

7. Press Enter.

You are returned to the Tables window.

### What to do next

If all columns in a table row can be displayed in 32 760 characters (if you are using ISPF version 4 or later, otherwise 255 characters), you can use the ISPF editor to edit the table. If the table has more rows than the value you set for the SQLMAX value field in the Dialog Parameters window, IZPCA prompts you to temporarily override the default for this edit session.

IBM Z Performance and Capacity Analytics deletes all rows from the table and then reinserts them when you use this function. Because of this, the ISPF editor is not recommended for large tables.

### *Using the ISPF editor to edit a table*

#### About this task

To edit a table using the ISPF editor:

#### Procedure

1. From the **Tables** window ([Figure 83 on page 167](#)), select the table to edit
2. Select 3, ISPF editor, from the Edit pull-down.
3. IBM Z Performance and Capacity Analytics copies table rows to a sequential file and accesses the ISPF editor.

```

ISREDDE - STROMBK.DRLTAB ----- COLUMNS 001 017
***** ***** TOP OF DATA *****
==MSG> Use Tab Key to position to the next column
===== USER_ID |DEPARTME
=====          |NT_NAME
=====          -----
000001 ADAMS      Appl Dev
000002 GEYER      Finance
000003 GOUNOT     Retail
000004 HAAS       Finance
000005 JONES      Appl Dev
000006 KWAN       Marketng
000007 LEE        Manufact
000008 LUTZ       Manufact
000009 MARINO     Retail
000010 MEHTA      Manufact
000011 PARKER     Finance
000012 PEREZ      Retail
000013 PIANKA     Sys Supp
000014 PULASKI    Manufact
000015 SMITH      Appl Dev
COMMAND ==>
F1=Help      F2=      F3=End      F4=      F5=R Find      F6=R Change
F7=Backward  F8=Forward F9=      F10=Left   F11=Right   F12=Cursor

```

Figure 85. Editing a table in ISPF

4. Make any modifications to the table rows. You can add, delete, and change rows.
5. To cancel the changes, type CANCEL on the command line, and press Enter.

You are returned to the **Tables** window without changing the table.

6. Press F3 when you finish editing the table.

The rows are reinserted into the Db2 table and you are returned to the Tables window.

## Showing the size of a table

### About this task

Monitor the size of tables periodically to ensure that they are not getting too large.

Use the Db2 RUNSTATS utility to get information about tables and store it in the Db2 catalog each time you need current information about any Db2 database, including the IBM Z Performance and Capacity Analytics database. As described in “Monitoring the size of the IBM Z Performance and Capacity Analytics database” on page 122, IBM Z Performance and Capacity Analytics provides a sample job, DRLJRUNS, as an example of how to run the RUNSTATS utility. You can also run the RUNSTATS utility using these steps:

### Procedure

1. From the list of tables, select the Maintenance pull-down *without selecting a table*.
2. Select option 1, Tablespace.
3. From the list of table spaces, select one or more table spaces (or make no selection to process all the table spaces) and select the Utilities pull-down, as shown in [Figure 53 on page 111](#).
4. Select option 2, Run Db2 RUNSTATS.

### What to do next

To learn more about the Db2 RUNSTATS utility, refer to the *Db2 for z/OS: Administration Guide and Reference*.

Use the administration dialog to check the size of tables in the product database:

1. From the Tables window ([Figure 83 on page 167](#)), select tables to display their sizes.

**Note:** If you do not select any tables, IBM Z Performance and Capacity Analytics displays the size of all tables in the product database.

2. Select 2, Show size, from the Utilities pull-down.

The Table Size window is displayed (Figure 86 on page 172).

|                                                  |          |             |                    |            |
|--------------------------------------------------|----------|-------------|--------------------|------------|
| Table Maintenance Utilities Edit View Other Help |          |             |                    |            |
| Tables                                           |          |             | ROW 1 TO 13 OF 212 |            |
| Table Size                                       |          |             | ROW 1 TO 10 OF 212 |            |
| Press Enter to return                            |          |             |                    |            |
| Name                                             | Prefix   | Row         | Row length         | Kbytes     |
| MVSPM_DEVICE_H                                   | DRL      | 80927       | 240                | 18967      |
| MVSPM_DEVICE_AP_H                                | DRL      | 34821       | 102                | 3468       |
| MVSPM_CHANNEL_H                                  | DRL      | 9338        | 140                | 1276       |
| MVSPM_APPL_H                                     | DRL      | 2388        | 491                | 1145       |
| MVSPM_WORKLOAD_H                                 | DRL      | 2727        | 308                | 820        |
| MVSPM_STORAGE_H                                  | DRL      | 2567        | 199                | 498        |
| MVSPM_PAGE_DS_H                                  | DRL      | 966         | 229                | 216        |
| MVSPM_XCF_PATH_H                                 | DRL      | 1296        | 171                | 216        |
| MVSPM_SWAP_H                                     | DRL      | 1771        | 114                | 197        |
| MVSPM_ENQUEUE_H                                  | DRL      | 1642        | 100                | 160        |
| Command==>                                       |          |             |                    |            |
| F1=Help                                          | F2=Split | F7=Bkwd     | F8=Fwd             | F9=Swap    |
| F12=Cancel                                       |          |             |                    |            |
| F8=Fwd                                           | F9=Swap  | F10=Actions | F11=Display        | F12=Cancel |

Figure 86. Table Size window

**Note:**

- You can use the SORT command (for example, SORT KBYTES DESC) to find the largest tables.
  - If the information shown in the Table Size window is incomplete, run the Db2 RUNSTATS utility and restart this procedure.
3. After you finish viewing this window, press Enter.
- You are returned to the Tables window.

## Recalculating the contents of a table

### About this task

Sometimes tables get filled with incorrect data during the collect process. (This can be caused by a situation such as a bad record in a log.) For a single, independent table, you can correct these problems using one of the options on the Edit pull-down. IBM Z Performance and Capacity Analytics provides a recalculate function for the following special conditions:

- When tables are updated from other tables and corrections must be propagated to all dependent tables.
- When a key column is changed to a new value, and data already exists for the new key.

You can also use the recalculate function to populate a new table from another table, for example a monthly table from a daily table.

You can use the administration dialog to recalculate the contents of tables. For more information about the RECALCULATE log collector language statement, refer to the *Language Guide and Reference*.

To recalculate the contents of tables:

### Procedure

- From the Tables window (Figure 83 on page 167), select the source table (the table you plan to modify)
- Select 8, Recalculate, from the Utilities pull-down.

The Recalculate window is displayed (Figure 87 on page 173).

```

Table Maintenance Utilities Edit View Other Help
-
D
Recalculate 12
S
Select function. Then press Enter.
/
S
Source table . . . : DRL.SAMPLE_H
-
Function . . . . . 1 1. Update and recalculate
-                    2. Delete and recalculate
-                    3. Insert and recalculate
-                    4. Recalculate
-
-
-
F1=Help      F2=Split      F4=Target      F9=Swap      F11=Save def
F12=Cancel
-
-
VMACCT_SESSION_D   DRL      TABLE
VMACCT_SESSION_M   DRL      TABLE
-
Command===>
F1=Help      F2=Split      F3=Exit      F5=Updates      F6=PurCond      F7=Bkwd
F8=Fwd       F9=Swap       F10=Actions   F11=Display     F12=Cancel

```

Figure 87. Recalculate window

3. Optionally, press F4 to specify target tables (the tables that changes in the source table should be propagated to). If you do not specify target tables, changes are propagated to all affected tables.

The Target Tables window is displayed.

4. Select one or more target tables from the list and press Enter.

You are returned to the Recalculate window.

5. Select the desired function from the list and press Enter. Options 1, 2, and 3 are used to modify the source table. Option 4 propagates selected source table rows without changing the source table.

If you did not choose to insert and recalculate (option 3), the Condition window is displayed ([Figure 88 on page 173](#)).

```

Table Utilities Edit View Other Help
-
D
Recalculate 12
S
S
Condition
/
S
Type a select condition. Then press Enter to save and return.
-
F
DATE = '2000-06-06' AND TIME = '13.00.00' AND
-
USER_ID = 'ADAMS'
-
-
-
F
F1=Help      F2=Split      F9=Swap      F12=Cancel
-
V
V
Command ===>
F1=Help      F2=Split      F3=Exit      F5=Updates      F6=PurCond      F7=Bkwd
F8=Fwd       F9=Swap       F10=Actions   F11=Display     F12=Cancel

```

Figure 88. Condition window

6. Specify a condition to restrict rows affected in the source table and press Enter.

If you choose to update and recalculate (option 1) or insert and recalculate (option 3), the Column Values window is displayed ([Figure 89 on page 174](#)).

Table Utilities Edit View Other Help

Recalculate 12

Condition

Column Values ROW 2 TO 8 OF 9

Type column values. Then press Enter.

| Column           | Value |
|------------------|-------|
| TIME             |       |
| SYSTEM_ID        |       |
| DEPARTMENT_NAME  |       |
| USER_ID          |       |
| TRANSACTIONS     |       |
| RESPONSE_SECONDS |       |
| CPU_SECONDS      | 2.0   |

Command ==>

F1=Help F2=Split F7=Bwd F8=Fwd F9=Swap F12=Cancel

F1=Help F2=Split F3=Exit F5=Updates F6=PurCond F7=Bkwd  
F8=Fwd F9=Swap F10=Actions F11=Display F12=Cancel

Figure 89. Column Values window

7. Type column values in the fields, and press Enter.

The recalculate function is performed and you are returned to the Recalculate window.

8. Press F12 to return to the Tables window.

## Importing the contents of an IXF file to a table

### About this task

You might want to import data from another source into an IBM Z Performance and Capacity Analytics table. If QMF is used with IBM Z Performance and Capacity Analytics, you can use the administration dialog to import data in the Integration Exchange Format (IXF). Refer to the *QMF Application Development Guide* for a description of the IXF format.

**Note:** When you import the file, IBM Z Performance and Capacity Analytics replaces the contents of the table.

To import data into a table:

### Procedure

1. From the Tables window (Figure 83 on page 167), select the table.
2. Select 3, Import, from the Utilities pull-down.

The Import Data Set window is displayed.

3. Type the name of the data set that contains the data you want to import and press Enter.

The data is imported into the table and you are returned to the Tables window.

## Exporting table data to an IXF file

### About this task

You might want to export data from an IBM Z Performance and Capacity Analytics table to an IXF data set. If QMF is used with the product, you can use the administration dialog to do this.

To export data from a table:

**Procedure**

1. From the Tables window ([Figure 83 on page 167](#)), select the table.
2. Select 4, Export, from the Utilities pull-down

The Export Data Set window is displayed.

3. Type the name of the data set to export data into, and press Enter.

The data is exported into the data set you specified and you are returned to the Tables window.

**Purging a table****About this task**

Each table in the product database is associated with a purge condition that determines how long the data in the table is kept. See [“Displaying and editing the purge condition of a table” on page 189](#) for a description of how to define the purge condition for a table.

Purging the database is normally a batch process. See [“Purge utility” on page 117](#) for a description of how to run purge in batch.

You can also use the administration dialog to delete the data specified by the purge condition:

**Procedure**

1. From the Tables window ([Figure 83 on page 167](#)), select tables to purge.

**Note:** If you do not select any tables, IBM Z Performance and Capacity Analytics purges the contents of all data tables with purge conditions.

2. Select 9, Purge, from the Utilities pull-down.

The Purge Confirmation window is displayed.

3. Press Enter to confirm the purge.

The purge conditions associated with the tables are run and the statistics on the number of rows deleted from each table are displayed.

**Unloading and loading tables****About this task**

When you need to change a Db2 table, for example by adding a column, you can save the existing data by using the Db2 Unload utility. After the change to the table, you then reload the table using the Load utility. Using Unload and Load with no change reorganizes the data.

Moreover, the possibility of reading and writing a data set of data directly on tape improves possible recovery and backup operations.

The Load utility is used to load data into a table of a table space. It enables you to load records into the tables and builds or extends any indexes defined on them. If the table space already contains data, you can either add the new data, or replace the existing data with the new data. Because the Load utility operates at a table space level, to run it you must have the required authority for all the tables of the table space. The data set used for the Load utility can be read from both disk and tape. The Unload utility is used to unload data from a table to a sequential data set. To use the Unload utility, the definitions of the table space and tables must be available on the system. The data set used for the unload operation can be saved both on disk and tape.

**Note:** Load and Unload work only with tables, and cannot be used with views.

To unload the contents of a table:

**Procedure**

1. From the Tables window (Figure 83 on page 167), select the tables to unload, as shown in Figure 90 on page 176.

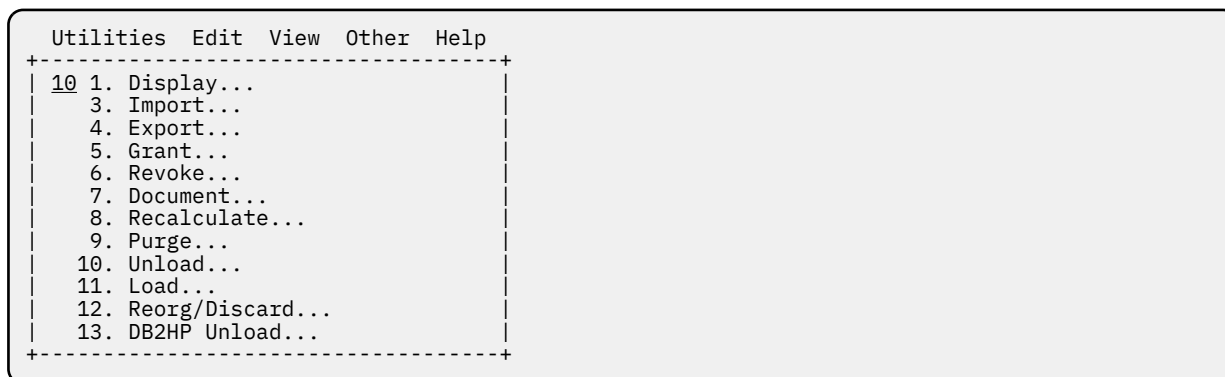


Figure 90. Selecting tables to unload

2. Select option 10 **Unload**, from the Utilities pull-down menu.

The Unload Utility window opens, as shown in the following figure:

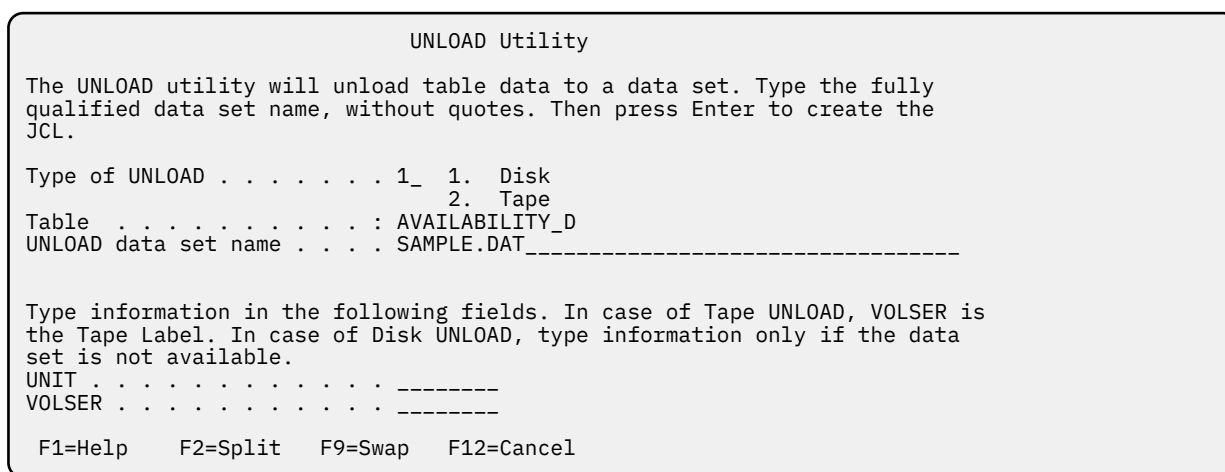


Figure 91. Unload Utility window

3. From the Unload Utility window, specify the unload type by inserting **1** for disk unload or **2** for tape unload. The default is Disk Unload.
4. Specify the name of the table and data set you want to unload.
5. If you selected Disk Unload:

| Option                                | Description                                                                                                                      |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>If the data set already exists</b> | Leave the fields UNIT and VOLSER blank. If you need to create a new data set, enter the required information in both the fields. |
| <b>If you selected Tape Unload</b>    | Specify the tape unit in the UNIT field, and the tape label in the VOLSER field.                                                 |

6. When you are finished, press Enter.

A JCL is created and saved in your library, so that it can be used later. When the JCL is launched two data sets are automatically created. One is used to reload data (SYSPUNCH) and the other contains the data unloaded by the utility.

**Note:** When using Load on a multiple table space, you must be careful because Load works on a complete table space at a time (for information about replacing data with Load, refer to the *Db2 for*



*OS/390 V5 Utility Guide and Reference*). This applies especially when tables are dropped and recreated.

For this reason, when you apply PTFs involving tables that need to be dropped and recreated, you should follow these steps:

- a. Unload the tables, if you want to keep the previously collected data.
- b. Use SMP/E to apply the PTF.
- c. Execute the SQL drop table statement of the above tables using either of the following:
  - Db2 SPUFI
  - Option 5, Process IBM Z Performance and Capacity Analytics statements, from the Other pull-down on any primary window of the IBM Z Performance and Capacity Analytics administration dialogs.
- d. Execute the SQL create table statements for the same tables using either of the following methods:
  - Reinstall the component.
  - Select Option 5, Process IBM Z Performance and Capacity Analytics statements, from the Other pull-down on any primary window of the IBM Z Performance and Capacity Analytics administration dialogs. Execute the definition members of the local or the standard definition library, depending on whether or not the definitions have been user-modified. Ignore the error messages issued for the existing objects and make sure that the changed tables are correctly created.
- e. Load your previously unloaded data.

### What to do next

To generate a job that reloads the data, from the Tables window, select option 11, Load. Then enter the required information, as explained above.

The following example shows control statements for the Unload utility. Data is unloaded from the AVAILABILITY\_D table onto tape. The DDNAME for SYSPUNCH data set is completed with the UNIT and VOLSER information about the Tape Unit used. The data set input from panel is SYSREC00.

```
//UNLOAD JOB (ACCOUNT), 'NAME'
//*
//* THIS JCL HAS BEEN REWRITTEN IN ORDER
//* TO PROPERLY UNLOAD THE DATA FROM Db2 TABLES.
//* DSN TIAUL IS USED FOR UNLOAD INSTEAD OF DSNUPROC
//* UTILITY.
//* THEREFORE, PLEASE, NOTE THAT THIS IS ONLY
//* A SAMPLE THAT NEEDS TO BE PROPERLY CUSTOMIZED.
//* WARNINGS :
//* PLEASE CHECK PLAN NAME (NORMALLY DSN TIBVR),
//* V=Db2 VERSION, AND R=Db2 RELEASE;
//* TWO NEW DATASETS ARE DEFINED (SYSREC00 AND SYSPUNCH).
//* SYSPUNCH DATASET, IS CREATED AT UNLOAD STEP,
//* as USERID.SYSPUNCH (USERID.SYSPUNCH).
//* SYSREC00 DATASET IS SELECTED FROM the PREVIOUS PANEL.
//*
//* I M P O R T A N T :
//* CHECK THE DATA SET PARAMETER IF YOU HAVE CHOSEN
//* THE UNLOAD ON TAPE.
//*
//UNLOAD EXEC PGM=IKJEFT01,DYNAMNBR=20
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
DSN SYSTEM(DSN6)
RUN PROGRAM(DSN TIAUL) PLAN(DSN TIB71) -
PARMS('SQL') LIB('DSN710.RUNLIB.LOAD')
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSREC00 DD DSN=USERID.DAT.UNLOAD,
// UNIT=TAPE_UNIT,
// SPACE=(4096,(5040,504)),
// DISP=(,PASS),
// LABEL=(1,SL),
// DCB=(RECFM=FB,LRECL=410,BLKSIZE=27880),
// VOL=SER=TAPE_LABEL
```

```
//SYSPUNCH DD DSN=USERID.SYSPUNCH,
//          UNIT=xxxx,
//          VOL=SER=xxxxxx,
//          SPACE=(4096,(5040,504)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920),
//          DISP=(NEW,CATLG,CATLG)
//SYSIN DD *
SELECT * FROM USERDB.AVAILABILITY_D;
```

The following example shows control statements for the Load utility. Data is loaded from tape into the AVAILABILITY\_D table. The DDNAME for the SYSPUNCH data set is completed with the UNIT and VOLSER information about the Tape Unit used. The data set input from panel is SYSREC00.

```
//LOAD JOB (ACCOUNT),'NAME'
//*
/* THIS JCL HAS BEEN REWRITTEN IN ORDER
/* TO PROPERLY LOAD THE DATA FROM Db2 TABLES.
/* DSNIAUL IS PREVIOUSLY USED FOR UNLOAD
/* INSTEAD OF DSNUPROC UTILITY.
/* THEREFORE, PLEASE, NOTE THAT THIS IS ONLY
/* A SAMPLE THAT NEEDS TO BE PROPERLY CUSTOMIZED.
/* WARNINGS :
/* PLEASE CHECK PLAN NAME (NORMALLY DSNIBVR),
/* V=Db2 VERSION, AND R=Db2 RELEASE;
/* TWO NEW DATASETS ARE DEFINED (SYSREC00 AND SYSPUNCH).
/* as USERID.SYSPUNCH (USERID.SYSPUNCH).
/* SYSREC00 DATASET IS SELECTED FROM the PREVIOUS PANEL
/*
/*
/* I M P O R T A N T :
/* SYSPUNCH DATASET NEEDS TO BE EDITED FROM USER
/* BEFORE EXECUTING LOAD,
/* INSERTING "RESUME YES LOG YES" OPTIONS,
/* IN ORDER TO CONTAIN COMMAND :
/* "LOAD DATA RESUME YES LOG YES INDDN
/* SYSREC00 INTO TABLE tablename"
/* CHECK THE DATA SET PARAMETER IF YOU HAVE CHOSEN
/* THE LOAD FROM TAPE.
/*
//LOAD EXEC DSNUPROC,PARM='DSN6,MYUID'
//DSNTRACE DD SYSOUT=*
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTWK02 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTWK03 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTWK04 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SORTOUT DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SYSREC00 DD DSN=USERID.DAT.UNLOAD,
//            UNIT=TAPE_UNIT,VOL=SER=TAPE_LABEL,
//            LABEL=(1,SL),
//            DISP=SHR
//SYSUT1 DD UNIT=SYSDA,SPACE=(4000,(20,20),,,ROUND)
//SYSIN DD DSN=USERID.SYSPUNCH,DISP=SHR
```

### Integration with Db2 High Performance Unload

The Db2 High Performance Unload is a high-speed utility for unloading Db2 tables from either a table space or an image copy. Tables are unloaded to one or more files based on a specified format. You can use it to extract data for movement across enterprise systems or for reorganization in-place. Db2 HP Unload can do the following:

- Rapidly unload table spaces
- Run parallel unloads accessing the same table space
- Unload against any image copy to eliminate interference with Db2 production databases
- Unload selected rows and columns
- Unload a maximum number of rows, unloading one row out of every n rows
- Generate load control statements for a subsequent reload.

The Db2 High Performance Unload can manage an UNLOAD command and an optional SELECT statement. The syntax of the SELECT statement is compatible with the syntax of the Db2 SELECT statement. The SELECT statement is used to define which table data must be extracted onto data set or tape (for



## Working with tables and update definitions

```
//DB2HPU JOB (ACCOUNT),'NAME'
//*
//* THIS JCL HAS BEEN REWRITTEN IN ORDER
//* TO PROPERLY UNLOAD THE DATA FROM Db2 TABLES.
//* THE Db2 High Performance Unload (INZUTILB)
//* IS USED FOR UNLOAD DATA IN BATCH MODE.
//* THEREFORE, PLEASE, NOTE THAT THIS IS ONLY
//* A SAMPLE THAT NEEDS TO BE PROPERLY CUSTOMIZED.
//* WARNINGS :
//* V=Db2 VERSION, AND R=Db2 RELEASE;
//* TWO NEW DATASETS ARE DEFINED (SYSREC00 AND SYSPUNCH).
//* SYSPUNCH DATASET, IS CREATED AT UNLOAD STEP,
//* as USERID.SYSPUNCH (USERID.SYSPUNCH).
//* SYSREC00 DATASET IS SELECTED FROM the PREVIOUS PANEL.
//*
//* I M P O R T A N T :
//* CHECK THE DATA SET PARAMETER IF YOU HAVE CHOSEN
//* THE UNLOAD ON TAPE.
//*
//STEP1 EXEC PGM=INZUTILB,REGION=0M,DYNAMNBR=99,
// PARM='DSN6,DB2UNLOAD'
//STEPLIB DD DSN=DSN710.SINZLINK,DISP=SHR
//*
//SYSIN DD *
        UNLOAD TABLESPACE PRM1DB.DRLSCOM
        DB2 YES
        QUIESCE YES QUIESCECAT YES
        OPTIONS DATE DATE_A
        SELECT * FROM PRM1.AVAILABILITY_D
        OUTDDN (SYSREC00)
        FORMAT DSNTIAUL
        LOADDDN SYSPUNCH LOADOPT (RESUME NO REPLACE)
/*
//SYSPRINT DD SYSOUT=*
/*
//***** DDNAMES USED BY THE SELECT STATEMENTS *****
/*
//SYSREC00 DD DSN=SAMPLE.DAT,
//          UNIT=3390,
//          SPACE=(4096,(1,1)),
//          DISP=(NEW,CATLG,CATLG),
//          DCB=(RECFM=FB,LRECL=410,BLKSIZE=27880),
//          VOL=SER=MYVOL
//SYSPUNCH DD DSN=USERID.SYSPUNCH,
//          UNIT=xxxx,
//          VOL=SER=xxxxxx,
//          SPACE=(4096,(1,1)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920),
//          DISP=(NEW,CATLG,CATLG)
```

## Working with tables and update definitions

The rest of this chapter describes working with tables and update definitions.

### Opening a table to display columns

#### About this task

You can use the administration dialog to view a table definition.

To open a table:

#### Procedure

1. From the Tables window ([Figure 83 on page 167](#)), select the table definition you plan to view.
2. Press Enter.

The table definition is opened. [Figure 93 on page 181](#) shows an example of an opened table definition.

```

Table SAMPLE_H                                ROW 1 TO 9 OF 9

Select a column.  Then press Enter to display the definition.

Database . . . : DRLDB                        Tablespace . . . : DRLSSAMP
Comments . . . : This table provides hourly sample data.  >
/  Column                Type                Length  Nulls  Primary Key
-  DATE                  DATE                4       No    Yes
-  TIME                  TIME                3       No    Yes
-  SYSTEM_ID             CHAR                4       No    Yes
-  DEPARTMENT_NAME       CHAR                8       No    Yes
-  USER_ID               CHAR                8       No    Yes
-  TRANSACTIONS          INTEGER            4       Yes   No
-  RESPONSE_SECONDS      INTEGER            4       Yes   No
-  CPU_SECONDS           FLOAT               8       Yes   No
-  PAGES_PRINTED         INTEGER            4       Yes   No
***** BOTTOM OF DATA *****

Command ==>
F1=Help      F2=Split    F3=Exit      F5=Add col   F6=Indexes   F7=Bkwd
F8=Fwd       F9=Swap      F10=Show fld F12=Cancel

```

Figure 93. Table window

- Type changes to comments in the Comments field and press Enter.

**Note:** Press F10 to see the entire Comments field.

The changes to the comments are saved.

### Displaying and modifying a column definition

#### About this task

To display and modify a column definition:

#### Procedure

- From the Table window, select the column, and press Enter.

The Column Definition window for the column is displayed ([Figure 94 on page 181](#)).

| Table SAMPLE_H |                                                                   |                                             |              |              | ROW 1 TO 9 OF 9 |
|----------------|-------------------------------------------------------------------|---------------------------------------------|--------------|--------------|-----------------|
| S              | Column Definition                                                 |                                             |              |              |                 |
| D              | Modify comments if required. Then press Enter to save and return. |                                             |              |              |                 |
| C              |                                                                   |                                             |              |              |                 |
| /              | Name....                                                          | : CPU_SECONDS                               |              |              |                 |
| -              | Comments..                                                        | : Total CPU time, in seconds. This is the > |              |              |                 |
| -              | Length...                                                         | : 8                                         |              |              |                 |
| -              | Type....                                                          | : FLOAT                                     |              |              |                 |
| -              | Primary key:                                                      | No                                          |              |              |                 |
| -              | Nulls...                                                          | : Yes                                       |              |              |                 |
| -              |                                                                   |                                             |              |              |                 |
| -              |                                                                   |                                             |              |              |                 |
| S              |                                                                   |                                             |              |              |                 |
| -              |                                                                   |                                             |              |              |                 |
| *              |                                                                   |                                             |              |              |                 |
|                | F1=Help                                                           | F2=Split                                    | F9=Swap      | F10=Show fld | F12=Cancel      |
| Command ==>    |                                                                   |                                             |              |              |                 |
|                | F1=Help                                                           | F2=Split                                    | F3=Exit      | F5=Add col   | F6=Indexes      |
|                | F8=Fwd                                                            | F9=Swap                                     | F10=Show fld | F12=Cancel   | F7=Bkwd         |

Figure 94. Column Definition window

- Type changes to comments in the Comments field, and press Enter.

**Note:** Press F10 to see the entire Comments field.

The changes are saved and you are returned to the Tables window.

**Adding a column to a table**

**About this task**

You can add columns to a table, but you cannot delete columns.

To add a column to a table:

**Procedure**

- 1. From the Table window, press F5.

The Add Column window is displayed([Figure 95 on page 182](#)).

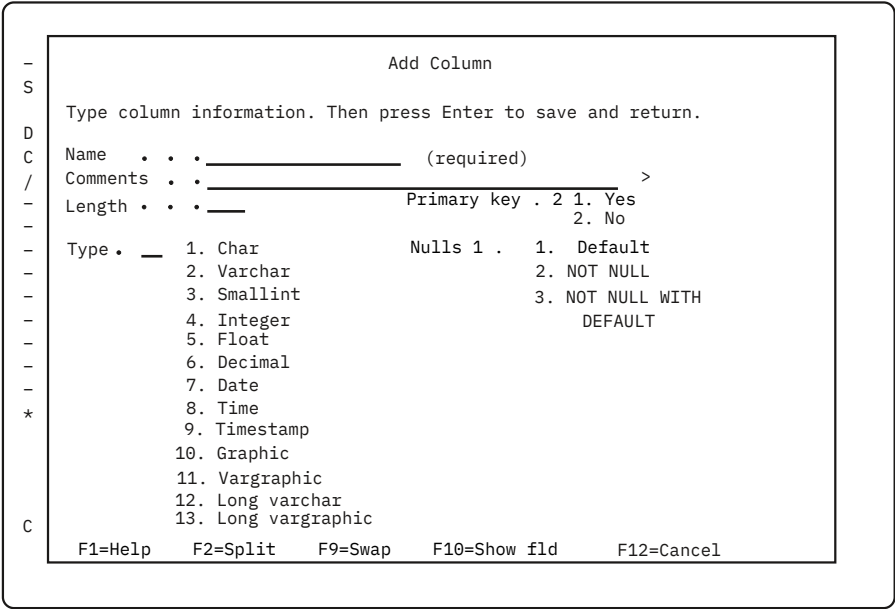


Figure 95. Add Column window

- 2. Type information for the new column in the window, and press Enter.

The new column is added to the table and you are returned to the Add Column window.

- 3. When you finish adding columns to the table, press F12.

You are returned to the Tables window.

**Displaying and adding a table index**

**About this task**

If a table has a primary key, it must have an index on that key (the primary index). Some queries access tables using the primary index.

A table can have more than one index. Secondary indexes can give you faster data retrieval, but increase the amount of time that collect requires to update those tables.

**Note:** If you want to work with index **spaces**, see [“Displaying and modifying a table or index space” on page 191](#).

To view or add indexes to a table:

**Procedure**

1. From the Tables window, select a table and press Enter.
2. From the Table window, press F6.

The Indexes window is displayed (Figure 96 on page 183).

| Indexes                                       |            |            |            | ROW 1 FROM 1 |        |
|-----------------------------------------------|------------|------------|------------|--------------|--------|
| Select an index. Then press Enter to display. |            |            |            |              |        |
| /                                             | Indexes    | Table      | Unique     | Cluster      |        |
| -                                             | SAMPH_IX   | SAMPLE_H   | Yes        | Yes          |        |
| ***** BOTTOM OF DATA *****                    |            |            |            |              |        |
| Command ==>                                   |            |            |            |              |        |
| F1=Help                                       | F2=Split   | F3=Exit    | F5=Add ind | F7=Bkwd      | F8=Fwd |
| F9=Swap                                       | F11=Delete | F12=Cancel |            |              |        |

Figure 96. Indexes window

3. To view an index definition, select the index and press Enter.

The Index window is displayed (Figure 97 on page 183). The index on the primary key should be a unique, clustering index. Refer to the Db2 documentation for a description of the other index options.

| Index SAMPH_IX |                                 |             | ROW 1 TO 7 OF 9 |        |
|----------------|---------------------------------|-------------|-----------------|--------|
| S              | Press Enter to return.          |             |                 |        |
| /              |                                 |             |                 |        |
| /              | Table name . . . . . : SAMPLE_H |             |                 |        |
| *              |                                 |             |                 |        |
|                | Storage group . . . . .         | SYSDEFLT    | Subpages. . .   | :4     |
|                | Primary quantity. . . . .       | 6           | Unique . . .    | :YES   |
|                | Secondary quantity. . . . .     | 3           | Cluster . . .   | :YES   |
|                | Erase . . . . .                 | NO          | Buffer pool .   | :BPO   |
|                | Column name                     | Column type | Seq Order       |        |
|                | DATE                            | DATE        | 1               | ASC    |
|                | TIME                            | TIME        | 2               | ASC    |
|                | SYSTEM_ID                       | CHAR        | 3               | ASC    |
|                | DEPARTMENT_NAME                 | CHAR        | 4               | ASC    |
|                | USER_ID                         | CHAR        | 5               | ASC    |
|                | TRANSACTIONS                    | INTEGER     |                 |        |
|                | RESPONSE_SECONDS                | INTEGER     |                 |        |
| C              | Command ==>                     |             |                 |        |
|                | F1=Help                         | F2=Split    | F7=Bkwd         | F8=Fwd |
|                |                                 | F9=Swap     | F12=Cancel      |        |

Figure 97. Index window

4. Press Enter to return to the Indexes window.
5. From the Indexes window, press F5 to add an index to the table.

The Add Index window is displayed (Figure 98 on page 184).

Add Index ROW 1 TO 5 OF 9

Type information. Then press Enter to save and return.

Index name . . . . . \_\_\_\_\_ (required)

Table Name . . . . . : SAMPLE\_H

Storage group . . . . . \_\_\_\_\_ Subpages . . . . . \_\_\_\_\_

Primary quantity . . . . . \_\_\_\_\_ Unique . . . . . 2 1. Yes

Secondary quantity . . . . . \_\_\_\_\_ 2. No

Erase . . . . . 1 1. No Cluster . . . . . 2 1. Yes

2. Yes 2. No

Bufferpool . . . . . BP0

| Column name     | Column type | Seq   | Order |
|-----------------|-------------|-------|-------|
| DATE            | DATE        | _____ | _____ |
| TIME            | TIME        | _____ | _____ |
| SYSTEM_ID       | CHAR        | _____ | _____ |
| DEPARTMENT_NAME | CHAR        | _____ | _____ |
| USER_ID         | CHAR        | _____ | _____ |

Command ===> \_\_\_\_\_

F1=Help F2=Split F7=Bkwd F8=Fwd F9=Swap F12=Cancel

Figure 98. Add Index window

6. Type the information for the new index and press Enter.

The index is added to the table and you are returned to the Indexes window.

## What to do next

**Note:** To modify an index, delete and recreate it.

## Deleting a table index

### About this task

To delete a table index:

### Procedure

1. From the Indexes window, select the index and press F11.

A confirmation window is displayed.

2. Press Enter to confirm the deletion.

You are returned to the Indexes window.

## Displaying and modifying update definitions of a table

### About this task

The instructions for entering data from logs into Db2 tables in the product database are provided by update definitions. An *update definition* describes how the data in a source (a record or a table) is summarized into a target table during the collect process. Refer to the *Language Guide and Reference* for information about how to define update definitions using the log collector language.

Update definitions are supplied for all data tables. You can use the administration dialog to modify these update definitions.

To display and edit the update definitions of a table:

### Procedure

1. From the Tables window (Figure 83 on page 167), select the table and press F5.



The Update Definitions window for the table is displayed (Figure 99 on page 185). All update definitions where the selected table is either the source or the target are included.

| Update Definitions                                                   |             |              | ROW 1 TO 2 OF 2 |
|----------------------------------------------------------------------|-------------|--------------|-----------------|
| Select an update definition. Then press Enter to display definition. |             |              |                 |
| /                                                                    | Updates     | Source       | Target          |
| -                                                                    | SAMPLE_H_M  | SAMPLE_H     | SAMPLE_M        |
| -                                                                    | SAMPLE_01_H | SAMPLE_01    | SAMPLE_H        |
| ***** BOTTOM OF DATA *****                                           |             |              |                 |
| Command ==>                                                          |             |              |                 |
| F1=Help                                                              | F2=Split    | F3=Exit      | F5=New          |
| F8=Fwd                                                               | F9=Swap     | F10=Save def | F11=Delete      |
|                                                                      |             | F6=Prt list  | F7=Bkwd         |
|                                                                      |             | F12=Cancel   |                 |

Figure 99. Update Definitions window

2. Select the update definition to modify and press Enter.

The Update Definition window for the update definition is displayed (Figure 100 on page 185).

| SAMPLE_01_H Update Definition       |           |                                     | ROW 1 TO 9 OF 9    |
|-------------------------------------|-----------|-------------------------------------|--------------------|
| Type information. Press F3 to save. |           |                                     |                    |
| Source . . .                        | SAMPLE_01 | Prefix :                            | (blank for record) |
| Target . . .                        | SAMPLE_H  | Prefix :                            | DRL                |
| Section . . .                       | -----     | +                                   |                    |
| Condition . .                       | -----     |                                     | >                  |
| Comments . .                        | -----     |                                     | >                  |
| Column                              | Function  | Expression                          |                    |
| DATE                                | -----     | S01DATE                             | >                  |
| TIME                                | -----     | ROUND(S01TIME,1 HOUR)               | >                  |
| SYSTEM_ID                           | -----     | S01SYST                             | >                  |
| DEPARTMENT_NAME                     | -----     | VALUE(LOOKUP DEPARTMENT_NAME IN DRL | >                  |
| USER_ID                             | -----     | S01USER                             | >                  |
| TRANSACTIONS                        | SUM       | S01TRNS                             | >                  |
| RESPONSE_SECONDS                    | SUM       | S01RESP                             | >                  |
| CPU_SECONDS                         | SUM       | S01CPU/100.0                        | >                  |
| PAGES_PRINTED                       | SUM       | S01PRNT                             | >                  |
| Command ==>                         |           |                                     |                    |
| F1=Help                             | F2=Split  | F3=Exit                             | F4=Prompt          |
| F7=Bkwd                             | F8=Fwd    | F9=Swap                             | F10=Show fld       |
|                                     |           | F5=Abbrev                           | F6=Distrib         |
|                                     |           | F11=Schedule                        | F12=Cancel         |

Figure 100. Update Definition window

Complete these fields in the window:

### Section

The name of a repeated section in a source record.

If the source is a record, you can type the name of a repeated section in this field. IBM Z Performance and Capacity Analytics uses the update during collection to process each repeated section.

### Condition

A condition that is applied to source fields or columns.

Type an expression that evaluates as either true or false in this field. IBM Z Performance and Capacity Analytics evaluates the expression to determine if it is true before processing the source with the update.

**Comments**

A description of the update definition.

**Column**

All columns of the target table.

**Function**

Describes the accumulation function to use. Blank means that the column is a key (a GROUP BY column). For data columns, the value of this field can be SUM, MIN, MAX, COUNT, FIRST, LAST, AVG, and PERCENT.

To use the MERGE function, identify input to the function by designating a column for each of these functions: INTTYPE, START, END, and QUIET.

**Expression**

Describes how the value in the column should be derived from source fields, columns, or abbreviated names of expressions. (See [“Working with abbreviations”](#) on page 186 for more information.) If the update does not affect the value of the column, there is no entry in the expression field.

For an AVG column, type the expression, followed by a comma, and a column name. For a PERCENT column, type the expression, followed by a comma, a column name, a comma, and a percentile value (without the percent sign).

Refer to the *Language Guide and Reference* for more information about using log collector language:

- Functions
- Accumulation functions
- Expressions
- Statements
- Averages
- Percentiles

3. Type any modifications to the update definition in the fields.

4. Press F5 to modify abbreviations in this update definition.

The Abbreviations window is displayed. See [“Working with abbreviations”](#) on page 186, for more information.

5. Press F6 to modify the distribution clause associated with the update definition.

The Distribution window is displayed. See [“Modifying a distribution clause”](#) on page 188 for more information.

6. Press F11 to modify the apply schedule clause associated with an update definition.

The Apply Schedule window is displayed. See [“Modifying an apply schedule clause”](#) on page 188 for more information.

7. Press F3 when you finish modifying the update definition.

The changes are saved and you are returned to the Update Definitions window.

8. Repeat this procedure to modify other update definitions or press F3 again to return to the Tables window.

### ***Working with abbreviations***

**About this task**

You can use abbreviations to give names to long expressions that are used several times. Using abbreviations improves product performance because expressions are evaluated only once.

Defining abbreviations with the administration dialog is equivalent to using the LET clause in a log collector DEFINE UPDATE statement to assign an expression to a variable name. (Refer to the description of the DEFINE UPDATE statement in the *Language Guide and Reference* for more information.)

To modify an abbreviation:

### Procedure

1. From the Update Definition window (Figure 100 on page 185), press F5.

The Abbreviations window is displayed (Figure 101 on page 187).

The screenshot shows a window titled "Abbreviations" with "ROW 1 TO 3 OF 3" in the top right. Below the title bar, it says "Modify expressions if required. Press F3 to save and return." There is a table with two columns: "Abbreviation" and "Expression". The table contains three rows: TS1 with expression "TIMESTAMP(SMF70DAT,SMF70IST)+(SMF70INT", D1 with expression "DATE(TS1)", and T1 with expression "TIME(TS1)". To the right of the expressions are three greater-than symbols (>). Below the table, it says "\*\*\*\*\* BOTTOM OF DATA \*\*\*\*\*". At the bottom, there is a "Command ==>" prompt and a list of function keys: F1=Help, F2=Split, F3=Exit, F5=Add abbr, F7=Bkwd, F8=Fwd, F9=Swap, F10=Show fld, F11=Delete, and F12=Cancel.

| Abbreviation | Expression                             |
|--------------|----------------------------------------|
| TS1          | TIMESTAMP(SMF70DAT,SMF70IST)+(SMF70INT |
| D1           | DATE(TS1)                              |
| T1           | TIME(TS1)                              |

\*\*\*\*\* BOTTOM OF DATA \*\*\*\*\*

Command ==>

F1=Help F2=Split F3=Exit F5=Add abbr F7=Bkwd  
F8=Fwd F9=Swap F10=Show fld F11=Delete F12=Cancel

Figure 101. Abbreviations window

2. Type modifications in the fields and press Enter.

The changes are saved and you are returned to the Update Definition window.

### Adding an abbreviation to an update definition

#### About this task

To add an abbreviation to an update definition:

### Procedure

1. From the Abbreviations window, press F5.

The Abbreviation window is displayed.

2. Type the abbreviation and the expression in the fields and press Enter.

The abbreviation is added and you are returned to the Abbreviations window.

### Deleting an abbreviation from an update definition

#### About this task

To delete an abbreviation from an update definition:

### Procedure

From the Abbreviations window, select the abbreviation to delete, and press F11.

The abbreviation is deleted from the list.

### Modifying a distribution clause

#### About this task

The distribution clause of an update definition specifies that source fields or columns are distributed over a time period. It can be used when you have a record that contains data for a long time period and you do not want all values to be summarized at the start or end time.

To modify the distribution clause associated with an update definition:

#### Procedure

1. From the Update Definition window (Figure 100 on page 185), press F6.

The Distribution window is displayed (Figure 102 on page 188).

Distribution ROW 1 TO 7 OF 65

Type information.      Then press Enter to save and return.

By period . . . . . 60\*VALUE(LOOKUP TIME\_RESOLUTION IN DRL.M > (seconds)

Start timestamp . . . . . TIMESTAMP(SMF33TSD,SMF33TST) >

End timestamp . . . . . TIMESTAMP(SMF33TED,SMF33TET) >

Timestamp . . . . . INTERVAL\_START (any ID)

Interval . . . . . INTERVAL\_LENGTH(any ID)

/    Column/Field

- SMF33ACL
- SMF33ACT
- SMF33ALN
- SMF33AOF
- SMF33AON
- /    SMF33CN
- /    SMF33CNA

Command ==> \_\_\_\_\_

|              |            |            |        |         |
|--------------|------------|------------|--------|---------|
| F1=Help      | F2=Split   | F7=Bkwd    | F8=Fwd | F9=Swap |
| F10=Show fld | F11=Delete | F12=Cancel |        |         |

Figure 102. Distribution window

2. Type modifications in the fields and press Enter.

The changes are saved and you are returned to the Update Definition window.

### Modifying an apply schedule clause

#### About this task

IBM Z Performance and Capacity Analytics uses the apply schedule clause of an update definition in calculating availability. The clause specifies how the product should merge schedule information in control tables (see “Control tables” on page 236) with detailed availability information.

To modify the apply schedule clause associated with an update definition:

#### Procedure

1. From the Update Definition window (Figure 100 on page 185), press F11.

The Apply Schedule window is displayed (Figure 103 on page 189).

AVAIL\_T\_D Update Definition ROW 1 TO 9 OF 15

---

Apply Schedule

Type information. Then press Enter to save and return.

Name . . . . . LOOKUP SCHEDULE\_NAME IN DRL.AVAILABILITY > (expression)

Interval type . . INTERVAL\_TYPE + (column)

Start time . . . . START\_TIME + (column)

Stop time . . . . . END\_TIME + (column)

Status . . . . . SCHED\_STAT Any ID

F1=Help F2=Split F4=Prompt F9=Swap F10=Show fld  
F11=Delete F12=Cancel

---

MEASURED\_HOURS SUM INT\_TIME >

UP\_IN\_SCHEDULE SUM CASE WHEN INT\_TYPE = '=' AND SCHED\_ >

Command ==>

F1=Help F2=Split F3=Exit F4=Prompt F5=Abbrev F6=Distrib  
F7=Bkwd F8=Fwd F9=Swap F10=Show fld F11=Schedule F12=Cancel

Figure 103. Apply Schedule window

2. Type modifications in the fields and press Enter.

The changes are saved and you are returned to the Update Definition window.

### What to do next

Refer to the *Language Guide and Reference* for more information about using the log collector language to:

- Determine resource availability
- Calculate the actual availability of a resource
- Compare actual availability to scheduled availability

### Displaying and editing the purge condition of a table

#### About this task

IBM Z Performance and Capacity Analytics uses purge conditions to specify when old data should be purged from tables. A table can have only one purge condition. Purge conditions are supplied for all data tables. You can use the administration dialog to modify the purge condition of a table.

The administrative report PRA003 produces a complete list of all current product purge definitions. For more information about this report, see [“PRA003 - Table purge condition” on page 270](#).

To display and edit the purge condition of a table:

#### Procedure

1. From the Tables window ([Figure 83 on page 167](#)), select the table to update and press F6.

The Retention Period window is displayed ([Figure 104 on page 190](#)) if the purge condition is blank or has the standard format (column\_name < CURRENT DATE - n DAYS), and if the column name, which can be an expression (for example, DATE (START\_TIMESTAMP)), is less than 18 characters.

```

Table Maintenance Utilities Edit View Other Help
D      Retention Period for MVS_ADDRSPACE_D
S      Type information. Then press Enter to save and return.
/      Retention period . . 30 Days
      Column . . . . . DATE          + Date/Timestamp
      F1=Help      F2=Split      F4=Prompt      F5=Conditio      F9=Swap
      F11=Save def  F12=Cancel
      MVS_WORKLOAD_HV2  DRL      VIEW
Command ====
F1=Help      F2=Split      F3=Exit      F5=Updates      F6=PurCond      F7=Bkwd
F8=Fwd      F9=Swap      F10=Actions      F11=Display      F12=Cancel

```

Figure 104. Retention Period window

2. Modify information in the fields. The column is the date or timestamp column in the table that IBM Z Performance and Capacity Analytics uses to determine the age of the rows.
3. Press Enter.

The changes are saved and you are returned to the Tables window.

4. If the purge condition does not have the standard format, the Purge Condition window is displayed (Figure 105 on page 190) instead of the Retention Period window.

This window is displayed also if you press F5 from the Retention Period window.

```

-   Table Maintenance Utilities Edit View Other Help
D       MVS_ADDRSPACE_T Purge Condition
S       Modify as required. Then press Enter to save and return.
/       SQL condition . .
-
-       ( JOB_TIMESTAMP < CURRENT_TIMESTAMP - 7 DAYS AND SYSTEM_ABEN
-       D_CODE IS NULL AND USER_ABEND_CODE IS NULL ) OR ( JOB_TIMEST
-       AMP < CURRENT_TIMESTAMP - 45 DAYS AND ( SYSTEM_ABEND_CODE IS
-       NOT NULL OR USER_ABEND_CODE IS NOT NULL ) )_____
S       _____
-       _____
-       _____
-       _____
-       _____
F1=Help      F2=Split      F9=Swap      F11=Save def    F12=Cancel

```

Command ===>\_\_\_\_\_

|         |          |             |             |            |         |
|---------|----------|-------------|-------------|------------|---------|
| F1=Help | F2=Split | F3=Exit     | F5=Updates  | F6=PurCond | F7=Bkwd |
| F8=Fwd  | F9=Swap  | F10=Actions | F11=Display | F12=Cancel |         |

Figure 105. Purge Condition window

5. Modify the SQL condition, and press Enter.

The changes are saved and the previous window is displayed.

## Displaying and modifying a table or index space

### About this task

Each table in the product database is in a table space, and each index is in an index space. IBM Z Performance and Capacity Analytics usually uses one table space for each component. You can use the administration dialog to work with table and index spaces.

**Note:** The method described here makes changes directly to your Db2 database, and does not affect the component definition. You lose such direct changes if you delete and reinstall a component. To change the component definition to keep it in line with the database, use the **Space** pull-down in the **Components** window, in addition to making the direct change as described in the following steps.

To make a change to a table space:

### Procedure

1. From the **Tables window**, select the **Maintenance** pull-down. Do not select a table first.
2. The pull-down has these options:

1. Tablespace...
2. Index and index space...

To change table space parameters, select 1. The **Tablespace** window is displayed (with the Tablespace pull-down illustrating the options available: you can use the Utilities pull-down to reorganize or get statistics on a table space).

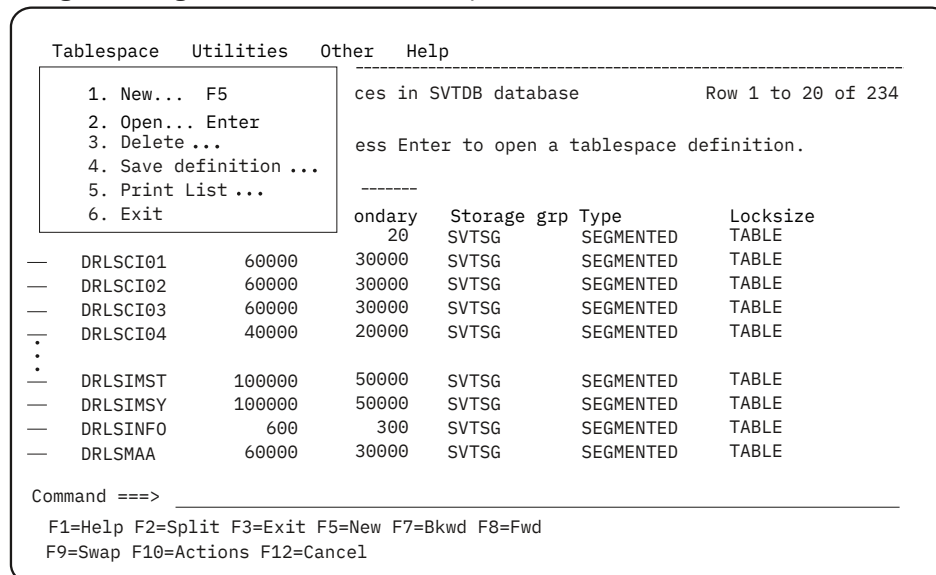


Figure 106. Tablespaces window

You can use the **Save definition** option to create SQL commands that can recreate the selected table space. Note that this does not update the component definition: only the definition of the selected table space is saved.

3. Select a table space and press Enter. The **Tablespace** window is displayed, which you can use to change the table space parameters. Change the parameters and press Enter.

| Tablespace DRLSCI06                                    |            |                                                |          |                          |        |                 |  |  |  |
|--------------------------------------------------------|------------|------------------------------------------------|----------|--------------------------|--------|-----------------|--|--|--|
| Type information. Then press Enter to save and return. |            |                                                |          |                          |        |                 |  |  |  |
| Type . . . . .                                         | 2          | 1.Simple<br>2.Segmented<br>3.Partitioned       |          |                          |        |                 |  |  |  |
| Storage group . . . . .                                | SVTSG      | VCAT . . . . .                                 |          |                          |        |                 |  |  |  |
| Primary quantity . . .                                 | 20000      |                                                |          |                          |        |                 |  |  |  |
| Secondary quantity . .                                 | 10000      |                                                |          |                          |        |                 |  |  |  |
| Erase . . . . .                                        | 2          | 1. Yes<br>2. No                                |          |                          |        |                 |  |  |  |
| Locksize . . . . .                                     | 4          | 1. Any<br>2. Tablespace<br>3. Page<br>4. Table |          |                          |        |                 |  |  |  |
| Close . . . . .                                        | 1          | 1. Yes<br>2. No                                |          | Compress --              |        | 1. Yes<br>2. No |  |  |  |
| Bufferpool . . . . .                                   | BP0        |                                                |          | Dsetpass . . . . .       |        |                 |  |  |  |
| Freepage . . . . .                                     | 0          |                                                |          | Segment size . . . . .   |        | 8               |  |  |  |
| Pctfree . . . . .                                      | 5          |                                                |          | Number of partitions . . |        | 0               |  |  |  |
| F1=Help                                                | F2=Split   | F5=Tables                                      | F6=Parts | F7=Bkwd                  | F8=Fwd |                 |  |  |  |
| F9=Swap                                                | F12=Cancel |                                                |          |                          |        |                 |  |  |  |

Figure 107. Tablespace DRLxxx

IBM Z Performance and Capacity Analytics takes action depending on the parameters to be changed:

#### Where reorganization is needed

Some parameter changes need a database reorganization before they take effect. In this case the product :

- Makes the change, using the ALTER TABLESPACE command.
- Creates a batch job to reorganize the database, which you can submit when it is convenient.

#### Where the database needs to be stopped

Some parameter changes need exclusive use of the database. In this case the product creates a batch job that:

- Stops the database.
- Makes the change, using the ALTER TABLESPACE command.
- Starts the database again.

Do not submit the job if some task, for example a collect, is using the table space, because this stops the collect job.

#### In other cases

Some parameter changes can be made immediately. IBM Z Performance and Capacity Analytics issues the ALTER TABLESPACE command online.

Press F1 to get more information about a parameter, or refer to the discussion of designing a database in Db2 for z/OS: Administration Guide and Reference.

### Making changes to an index space

#### About this task

To make a change to an index space:

#### Procedure

- From the **Tables** window ([Figure 83 on page 167](#)), select the **Maintenance** pull-down. Do not select a table first.



2. To change index space parameters, select 2. The **Indexes** window is displayed (with the Index pull-down illustrating the options available; you can use the Utilities pull-down to reorganize an index space).

```

Index  Utilities  Other  Help
-----
1. Open...Enter
2. Delete...
3. Print List...
4. Exit

Indexes in SVTDB database          Row 1 to 21 of 443

Press Enter to display.
Indexspace
Table name      Indexspace  Unique  Cluster
- AVAILD_IX     AVAILABILITY_D  AVAILDRI YES    YES
- AVAILM_IX     AVAILABILITY_M  AVAILMRI YES    YES
- AVAILP_IX     AVAILABILITY_PARM AVAILPRI YES    YES
- AVAILT_IX     AVAILABILITY_T   AVAILTRI YES    YES
- AVAILW_IX     AVAILABILITY_W   AVAILWRI YES    YES
-
- CICS_DLI_TRAN_D CICS_DLI_TRAN_D CICS1TA1 YES    YES
- CICS_DLI_TRAN_W CICS_DLI_TRAN_W CICS1TR4 YES    YES
- CICS_DLI_USR_D  CICS_DLI_USR_D  CICS1SKV YES    YES

Command ==>
F1=Help  F2=Split  F3=Exit  F7 =Bkwd  F8=Fwd   F9=Swap
F10=Actions 12=Cancel

```

Figure 108. Indexes window

3. Select an index space and press Enter. An index window will be displayed, which you can use to change the index space parameters: change the parameters and press Enter.

```

Index CICS_A_DLI_USR_W

Press Enter to save and return.

Table name . . . . . : CICS_A_DLI_USR_W
Indexspace name . . . : CICS1S60

Storage group . . . . . SVTSG          VCAT . . . . . 1
Primary quantity . . 20000             Unique . . . . . 1 1. Yes
Secondary quantity 10000                2. No
Erase . . . . . 2 1. Yes                Cluster . . . . . 1 1. Yes
2. No                                  2. No
Close . . . . . 1 1. Yes                Part . . . . . 2 1. Yes
2. No                                  2. No

Subpages . . . . . 4                  Pctfree . . . . . 10
Bufferpool . . . . . BP0              Dsetpass . . . . .
Freepage . . . . . 0

F1=Help  F2=Split  F5=Columns  F6=Parts  F7=Bkwd  F8=Fwd
F9=Swap  F12=Cancel

```

Figure 109. Index window

IBM Z Performance and Capacity Analytics takes action depending on the parameters to be changed:

#### Where the index must be recreated

In this case the product:

- Asks you to confirm the change.
- Deletes the index, with the DROP command.
- Redefines the index, using the DEFINE command.

#### Where the database needs to be stopped

Some parameter changes need exclusive use of the database. In this case the product creates a batch job that:

- Stops the database.
- Makes the change, using the ALTER command.
- Starts the database again.

Do not submit the job if some task, for example a collect, is using the index space, because this stops the collect job.

### In other cases

Some parameter changes can be made immediately. IBM Z Performance and Capacity Analytics issues the ALTER command online.

Press F1 to get more information about a parameter, or refer to the discussion of designing a database in Db2 for z/OS: Administration Guide and Reference.

### ***Making table space parameter changes that do not require offline or batch action***

### About this task

If you want just to make table space parameter changes that do not require offline or batch action, you can use this alternative method:

## Procedure

1. From the **Tables window** ([Figure 83 on page 167](#)), select a table in the table space to open.
2. Select 5. Open Tablespace, from the Table pull-down.

IBM Z Performance and Capacity Analytics displays the **Tablespace window**.

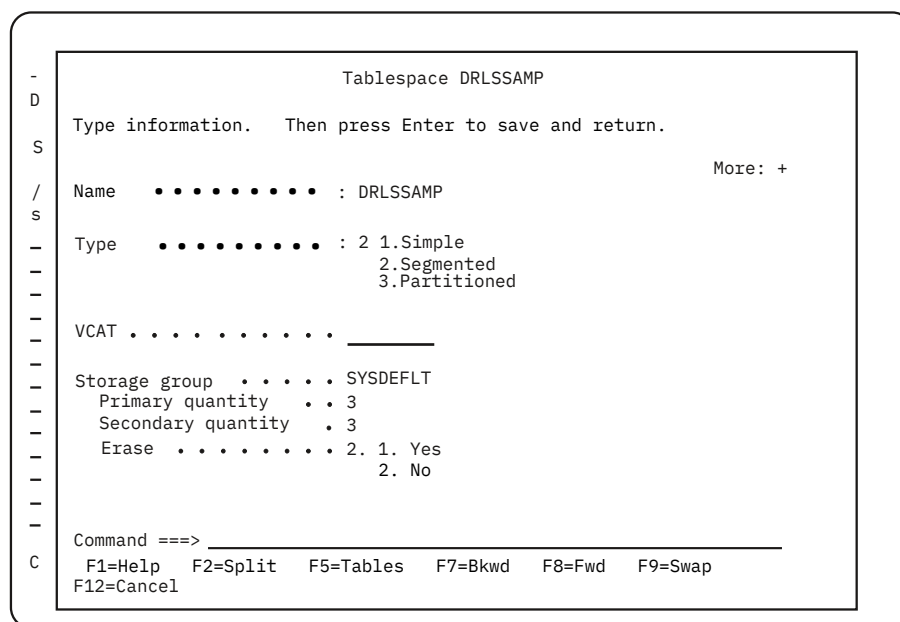


Figure 110. Tablespace window

3. Type any changes in the fields.  
**Note:** You can scroll the window to display more options.
4. Press F5 to see a list of tables in the table space.

The **Tables window** is displayed.

5. Press Enter when you finish viewing this window.

You are returned to the **Tablespace** window.

6. Press Enter.

The changes to the tables page are saved and you are returned to the **Tables window**.

## Displaying a view definition

### About this task

You can use the administration dialog to display a view definition created with SQL statements.

To display the view definition:

### Procedure

1. From the Tables window, select a view to display, and press Enter.

The View window is displayed (Figure 111 on page 195).

The screenshot shows a terminal window titled "View MSG\_SYSLOG\_DV" with "ROW 1 TO 4 OF 4". The window contains a table with two columns: "Column" and "Comments". The table data is as follows:

| Column       | Comments                                  |
|--------------|-------------------------------------------|
| DATE         | Date when the SYSLOG records were written |
| PERIOD_NAME  | Name of the period. This is derived using |
| JES_COMPLEX  | Name of the JES complex. From the SET JE  |
| MESSAGES_TOT | Total number of messages. This is the co  |

Below the table, there is a line of asterisks followed by "BOTTOM OF DATA" and another line of asterisks. At the bottom of the window, there is a "Command ===>" prompt and a set of function keys: F1=Help, F2=Split, F7=Bkwd, F8=Fwd, F9=Swap, F10=Showfld, F12=Cancel. Below the window, there is another set of function keys: F8=Fwd, F9=Swap, F10=Actions, F11=Display, F12=Cancel.

Figure 111. View window

2. You can change any of the comments in a view definition. To change a comment, type the text in the Comments field.
3. Press Enter when you finish displaying the view definition.

The changes are saved and you are returned to the Tables window.

## Printing a list of IBM Z Performance and Capacity Analytics tables

### About this task

IBM Z Performance and Capacity Analytics maintains a list of all tables in the product database. You can use the administration dialog to print a list of these tables.

### Procedure

1. From the Table pull-down in the Tables window (Figure 83 on page 167), select 8, Print list.

The Print Options window is displayed.

2. Type the required information, and press Enter.

The list of IBM Z Performance and Capacity Analytics tables is routed to the destination you specified.

## Saving a table definition in a data set

### About this task

Each table in the IBM Z Performance and Capacity Analytics database is defined using SQL. You can use the administration dialog to save the SQL table definition statement in a data set.

To save a table definition statement in a data set:

### Procedure

1. From the Tables window ([Figure 83 on page 167](#)), select the table definition to save in a data set.
2. Select 7, Save definition, from the Table pull-down.

The Save Data Set window is displayed.

3. Type the data set name in the field, and press Enter.

The table definition in the data set that you specified is saved and you are returned to the Tables window.

### Listing a subset of tables in the Tables window

#### About this task

When you select 4, Tables, from the Administration window, all tables in the IBM Z Performance and Capacity Analytics database are listed in the Tables window. You can use the administration dialog to list only a subset of tables in the IBM Z Performance and Capacity Analytics database in the Tables window.

To specify which tables should appear in the Tables window:

### Procedure

1. From the View pull-down in the Tables window ([Figure 83 on page 167](#)), select 2, Some, and press Enter.

IBM Z Performance and Capacity Analytics displays the Select Table window.

2. Type selection criteria in the fields, and press Enter.

**Note:** You can see a list of components by pressing F4.

The tables that correspond to the criteria you specified are listed.

To list all the tables, from the View pull-down in the Tables window, select 1, All. All the tables in the IBM Z Performance and Capacity Analytics database are listed.

### Creating a table

#### About this task

IBM Z Performance and Capacity Analytics stores data collected from logs in Db2 tables. Each component includes table definitions for tables that it uses. However, you might need to create additional tables.

You can use the administration dialog to create a table. You should have a working knowledge of Db2 databases before attempting to create a table. Refer to the Db2 documentation for more information.

**Note:** Views cannot be created from the administration dialog. Refer to the Db2 documentation for a description of how to create views using SQL.

To create a table:

### Procedure

1. From the Table pull-down in the Tables window ([Figure 83 on page 167](#)), select 1, New, and press Enter.

The New Table window is displayed ([Figure 112 on page 197](#)).

2. Type required information in the fields.
3. To see a list of available table spaces, place the cursor in the Tablespace field, and press F4.

The Prompt for Tablespace window is displayed. If the table is related to existing tables, you might want to put the table in the same table space.

4. Select a table space from the list, and press Enter.

The product returns to the New Table window, and the table space appears in the Tablespace field.

**Note:** To create a table space, see [“Creating a table space” on page 198](#).

New Table

Type information. Then press F5 to add columns. To select an already added column, press Enter.

|                  |       |                  |     |
|------------------|-------|------------------|-----|
| Table name . . . |       | Prefix . . . .   | DRL |
| Database . . .   | DRLDB | Tablespace . . . | +   |
| Comments . . .   | >     |                  |     |

| / Column                   | Type | Length | Nulls | Primary Key |
|----------------------------|------|--------|-------|-------------|
| ***** BOTTOM OF DATA ***** |      |        |       |             |

Command ===>

|         |          |         |              |            |            |
|---------|----------|---------|--------------|------------|------------|
| F1=Help | F2=Split | F3=Exit | F4=Prompt    | F5=Add col | F6=Indexes |
| F7=Bkwd | F8=Fwd   | F9=Swap | F10=Show fld | F11=Delete | F12=Cancel |

*Figure 112. New Table window*

5. Press F5 to add a column to the table.

The product displays the Add Column window ([Figure 95 on page 182](#)).

6. Type the required information in the fields, and press Enter.

You are returned to the Add Column window.

7. When you finish adding columns to the table, press F12.

You are returned to the New Table window.

8. Press F6 to add indexes to the table.

The Indexes window is displayed ([Figure 96 on page 183](#)).

9. Press F5 to add an index.

The Add Index window is displayed ([Figure 98 on page 184](#)).

10. Type the required information in the fields, and press Enter.

The index is added and you are returned to the Indexes window.

11. Press F3 to return to the New Table window.

12. Press F3 when you finish typing information.

The table is added to the database and you are returned to the Tables window.

### **Using an existing table as a template**

#### **About this task**

You can also create a table by using an existing table as a template.

#### **Procedure**

1. From the Tables window, select the table to use as a template.
2. Select 1, New, from the Table pull-down.

The New Table window is displayed.

The fields are filled with information from the template table.

3. The rest of the procedure is the same as when creating a table without a template.

**Note:** The index for the template table is not copied and must be added for the primary key. To add an index, see [“Displaying and adding a table index” on page 182](#).

### *Deleting a column from the table*

#### **About this task**

You can use the administration dialog to delete a column from a table you are defining. To delete a column:

#### **Procedure**

1. From the New Table window, select an existing column.
2. Press F11 to delete the column.

A confirmation window is displayed.

3. Verify the deletion by pressing Enter.

The column is deleted and you are returned to the New Table window.

### **Deleting a table or view**

#### **About this task**

To delete a table or view:

#### **Procedure**

1. Select the table or view to delete in the Tables window ([Figure 83 on page 167](#)) and select 6, Delete, from the Table pull-down.

**Note:** IBM Z Performance and Capacity Analytics prevents you from deleting table definitions that affect, or are affected by, other product objects. To delete a table definition, remove links from the table to other product objects.

A confirmation window is displayed.

2. Verify the deletion by pressing Enter.

The table or view is deleted and you are returned to the Tables window.

**Note:** A table in a partitioned table space cannot be explicitly deleted (dropped). You can drop the table space that contains it. This does not have any impact on other tables because only one table can be defined in a single table space.

### **Creating a table space**

#### **About this task**

Db2 tables are in table spaces. For a new table, you might need to create a table space.

You can use the administration dialog to create a table space. You must have some knowledge of Db2 databases before creating the table space. See “[Understanding table spaces](#)” on [page 111](#) for more information about table spaces, or refer to the discussion of designing a database in *Db2 for z/OS: Administration Guide and Reference*.

To create a table space:

#### **Procedure**

1. From the New Table window ([Figure 112 on page 197](#)), place the cursor in the Tablespace field and press F4.

The Prompt for Tablespace window is displayed.

2. From the Prompt for Tablespace window, press F5.

The New Tablespace window is displayed.

3. Type required information in the fields, and press Enter.

A table space is created and you are returned to the Prompt for Tablespace window.

4. Press Enter again to return to the New Table window.
5. Continue creating the table as described in [“Creating a table” on page 196](#).

**Note:** It is also possible to create a table space without creating a table: use the Maintenance pull-down in the Tables window (as described in [“Displaying and modifying a table or index space” on page 191](#)) and select New from the Tablespace pull-down in the Tablespace window.

## Creating an update definition

### About this task

In IBM Z Performance and Capacity Analytics, update definitions specify how to store data from log records in Db2 tables and how to use data from one table to update another. Each component includes all the update definitions that it uses. However, if you tailor the objects used during a collect, or create components of your own, you might need to create more update definitions.

You can use the administration dialog to create an update definition. You can also use log collector language. Refer to the *Language Guide and Reference* for more information about defining update definitions using log collector language.

To create an update definition:

### Procedure

1. From the Tables window ([Figure 83 on page 167](#)), select a table for addition of an update definition, and press F5.

The Update Definitions window is displayed ([Figure 99 on page 185](#)).

2. To use an existing update definition as a template, select one of the update definitions from the list and press F5. Otherwise, do not select an update definition.

The New Update Definition window is displayed. The columns are filled with values from the template.

3. To create an update definition without a template, press F5 from the Update Definitions window.

You are prompted for the name of the target table in the Target Table of New Update window. Type the name of the target table, and press Enter.

The New Update Definition window is displayed.

4. Type required information in the fields, and press F3.

The new update definition is saved and you are returned to the Update Definitions window.

You might choose to use abbreviations for expressions in the expression fields. Or you might require that data be distributed over some interval or used in availability processing. See these topics in [“Displaying and modifying update definitions of a table” on page 184](#) for information:

- [“Working with abbreviations” on page 186](#)
- [“Modifying a distribution clause” on page 188](#)
- [“Modifying an apply schedule clause” on page 188](#)

5. Press F3 again to return to the Tables window.

## Deleting an update definition

### About this task

Update definitions are supplied for all data tables. You can use the administration dialog to delete an update definition you no longer need. IBM Z Performance and Capacity Analytics removes all references to the update from its system tables. However, it does not delete the definition member; you can use the dialog to reinstall it.

To delete an update definition of a table:

### Procedure

1. From the Tables window ([Figure 83 on page 167](#)), select the table and press F5.  
The Update Definitions window for the table is displayed ([Figure 99 on page 185](#)). All update definitions where the selected table is either the source or the target are included.
2. Select the update definition to delete, and press F11.  
A confirmation window is displayed.
3. Verify the deletion by pressing Enter.  
The definition is updated and you are returned to the Update Definitions window.
4. Press F3 to return to the Tables window.

## Administering user access to tables

### About this task

When you install a component, IBM Z Performance and Capacity Analytics grants read access to the users or groups you have specified in dialog parameters (the default is the DRLUSER group). You can use the administration dialog to grant or revoke table access to other IBM Z Performance and Capacity Analytics users.

To grant table access to other users:

### Procedure

1. From the **Tables** window ([Figure 83 on page 167](#)), select one or more tables to grant access to.
2. Select 5, Grant, from the Utilities pull-down.

The **Grant Privilege** window is displayed ([Figure 113 on page 200](#)).

The screenshot shows a terminal window with a menu bar at the top: Table Maintenance Utilities Edit View Other Help. Below the menu bar, the text 'Tables' and 'ROW 186 TO 198 OF 212' are visible. The main window is titled 'Grant Privilege' and contains the following text: 'Type information. Then press Enter to save and return.' followed by 'Table . . . . : DRL.SAMPLE\_H', 'User ID . . . . : \_\_\_\_\_', and 'Access . . . . 1 1. Read only', '2. Read and update', '3. All'. At the bottom of the window, there are function key shortcuts: F1=Help, F2=Split, F9=Swap, F12=Cancel, F8=Fwd, F9=Swap, F10=Actions, F11=Dispay, F12=Cancel, and F7=Bkwd.

*Figure 113. Grant Privilege window*

3. Type required information in the fields, and press Enter.  
The user ID is granted access to the table.
4. When you finish granting access to the table, press F12.



If you selected more than one table, the **Grant Privilege** window for the next table is displayed. When you complete the **Grant Privilege** window for the last table, you are returned to the **Tables** window.

### Revoking table access

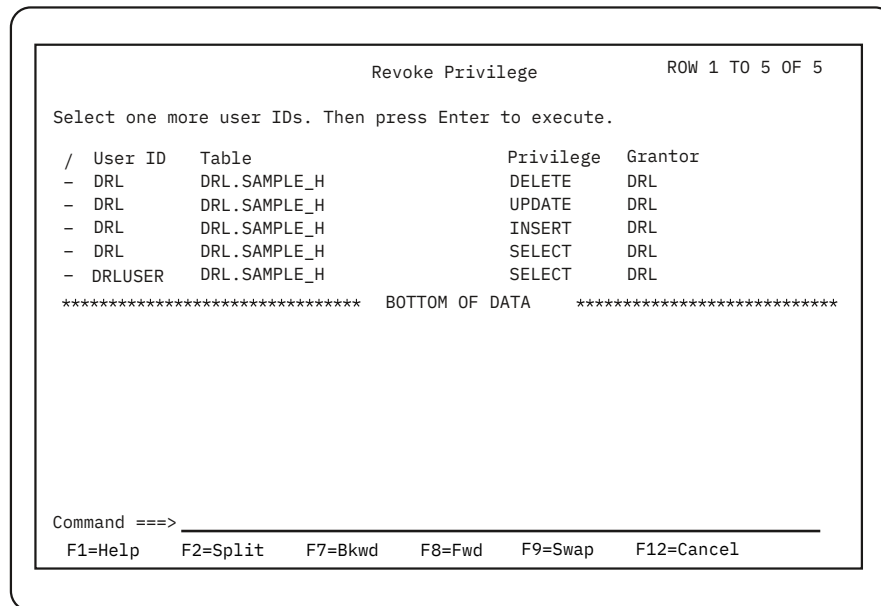
#### About this task

To revoke table access:

#### Procedure

1. From the **Tables** window (Figure 83 on page 167), select one or more tables to revoke access to.
2. Select 6, Revoke, from the Utilities pull-down.

The **Revoke Privilege** window (Figure 114 on page 201) is displayed.



Revoke Privilege ROW 1 TO 5 OF 5

Select one more user IDs. Then press Enter to execute.

| / | User ID | Table        | Privilege | Grantor |
|---|---------|--------------|-----------|---------|
| - | DRL     | DRL.SAMPLE_H | DELETE    | DRL     |
| - | DRL     | DRL.SAMPLE_H | UPDATE    | DRL     |
| - | DRL     | DRL.SAMPLE_H | INSERT    | DRL     |
| - | DRL     | DRL.SAMPLE_H | SELECT    | DRL     |
| - | DRLUSER | DRL.SAMPLE_H | SELECT    | DRL     |

\*\*\*\*\* BOTTOM OF DATA \*\*\*\*\*

Command ==> \_\_\_\_\_

F1=Help F2=Split F7=Bkwd F8=Fwd F9=Swap F12=Cancel

Figure 114. Revoke Privilege window

3. Select the user IDs with table access privileges to revoke, and press Enter.

The access privileges are revoked and you are returned to the Tables window.

## Working with the log data manager option

This section contains information about the IBM Z Performance and Capacity Analytics log data manager option, which automates and simplifies the collection of data.

After providing a summary of the log data manager, this section then describes:

- How the log data manager is invoked from the administration dialog (page [“Summary of how the log data manager is used”](#) on page 202).
- The job for recording of log data sets for collection (page [“Job step for recording a log data set for collection”](#) on page 202).
- Modifying log collector statements to be used in the collect (page [“Modifying log collector statements”](#) on page 205).
- Modifying the list of log data sets to be collected (page [“Listing and modifying the list of log data sets to be collected”](#) on page 207).
- The collect job and the parameters it uses (page [“The DRLJLDMC collect job and the parameters it uses”](#) on page 210).

## Summary of how the log data manager is used

- Modifying the list of successfully collected log data sets (page [“Listing and modifying the list of log data sets to be collected”](#) on page 207).
- Modifying the list of unsuccessfully collected log data sets (page [“Modifying the list of unsuccessfully collected log data sets”](#) on page 215).

## Summary of how the log data manager is used

You usually include a log data set for use with the log data manager by inserting a job step DRLELDML in the job that creates the log data set. The job step DRLELDML records the log data set as being ready to be collected by the log data manager collect job. You must run the job step DRLELDML for each log data set that you want to be collected.

The log data manager collect job DRLELDMC then performs the data collection and updates the database tables.

You can also use the Administration dialog windows to do the following:

- Amend the list of log data sets to be collected.
- Amend the list of the log data sets that were successfully or unsuccessfully collected.
- Amend the collect statements used in a collect.

## Invoking the log data manager

### About this task

To invoke the log data manager:

### Procedure

1. From the Administration Dialog window, select 3, Logs, to display the Logs window.
2. Select one of the displayed logs, then select 5, Open Log Data Manager (a new option provided with the log data manager) from the Log pull-down.

The log data manager Main Selection window ([Figure 115 on page 202](#)) is displayed.

```
DRLELDML      Log Data Management of SMF logs
Select one of the following. Then press Enter.

--  1. Log collector statements
    2. Log data set to be collected
    3. Log data sets collected successfully
    4. Log data sets collected with failure

F1=Help  F2=Split  F9=Swap  F12=Cancel
```

*Figure 115. Log Data Manager Main Selection window.*

Each of these options is discussed in the sections of this chapter.

3. The Main Selection window gives you the possibility to:
  - Browse, add, delete and modify log collector statements.
  - Add, delete, and change the list of log data sets to be collected by the collect job.
  - List the log data sets that were collected successfully by the collect job.
  - List the log data sets that were collected unsuccessfully by the collect job.

## Job step for recording a log data set for collection

The job step DRLJLDML records a log data set as being ready to be collected. The collect job DRLJLDMC then performs the collection of this log data set (described in [“The DRLJLDMC collect job and the parameters it uses”](#) on page 210).

After job step DRLJLDML has successfully run, IBM Z Performance and Capacity Analytics will have created a record in system table DRLLDM\_LOGDATASETS (described in “[DRLLDM\\_LOGDATASETS](#)” on page 220). You must run this job step for each log data set that you want to be collected by the log data manager. The list of log data sets to be collected can then be displayed, changed, or deleted, or a log data set added for collection (an alternative to using the DRLJLDML job), using the Log Data Sets To Be Collected window, described in “[Listing and modifying the list of log data sets to be collected](#)” on page 207.

## Using the DRLJLDML job step

### About this task

To use the DRLJLDML job step:

### Procedure

1. Ensure that your log data sets are cataloged (otherwise the DRLJLDML job step does not work).
2. Take a copy of the supplied sample DRLJLDML job step.
3. Insert the DRLJLDML job step in each job that creates a log data set, and which you want to be collected by the log data manager. For Generation Data Sets, you must insert the DRLJLDML job step after each Generation Data Set member that has been created.
4. Enter the name of the log data set (\*.stepname.ddname) in the DRLLOG DD statement of the job step (described in “[#unique\\_287/unique\\_287\\_Connect\\_42\\_drla9d131549522](#)” on page 203).
5. Run the job you have now amended, to create the log data set.

### DRLJLDML sample job

This job is shipped with IBM Z Performance and Capacity Analytics as sample job DRLJLDML.

```
//DRLJLDML JOB (ACCT#),'LOGS'
//*****
//* Name:    DRLJLDML                                     *
//*                                               *
//* Function:                                     *
//*   Log Data Manager - register a log data set sample job *
//*                                               *
//*   This job is used to register the log data set (only one) *
//*   specified in DRLLOG in the DRLLDM_LOGDATASETS as being ready *
//*   for collect by the Log Data Manager. *
//*                                               *
//* Input:                                     *
//*   The exec DRLELDML accepts the following parameters: *
//*                                               *
//*   SYSPREFIX=xxxxxxx  Prefix for system tables.      default=DRLSYS *
//*   PLAN=xxxxxxx      Db2 plan name                  default=DRLPLAN *
//*   SYSTEM=xxxxxxx    Db2 subsystem name.            default=DSN *
//*   SHOWSQL=xxx       Show SQL. YES/NO               default=NO *
//*   LOGTYPE=xxxxxxxxx  Log type (e.g. SMF). Required. *
//*   LOGID=xxxxxx      Log ID. If not specified (or '='), a blank *
//*                   Log ID is generated, and the default collect*
//*                   statement is used in collect. *
//*   ONTAPE=N/Y        Specify if the LOG name is on DASD or not. If *
//*                   not coded, it defaults to NO. *
//*                                               *
//*   DRLLOG DD card:   Name of log data set to be registered *
//*                   (can refer to a previous step). *
//*                   It must be cataloged. *
//*                                               *
//* Output:             Log data set name registered in *
//*                   sysprefix.DRLLDM_LOGDATASETS together *
//*                   with LOG_NAME, LOG_ID and TIME_ADDED. *
//*                   Confirmation message including data set name *
//*                                               *
//* Notes: *
//*   Before you submit the job, do the following: *
//*   1. Fill in a correct log data set name. *
//*   2. Check that the steplib db2loadlibrary is correct. *
//*   3. Change the input parameters to DRLELDML as required. *
//*   4. Change the Db2 load library name according to *
//*       the naming convention of your installation. *
```

## Job step for recording a log data set for collection

```
//*      Default is 'db2loadlibrary'.                                     *
//*      5. Change the IZPCA high level qualifier. Default id 'DRLvrm' *
//*                                                                 *
//*****
//LDMLOG  EXEC PGM=IKJEFT01
//*
//SYSPROC DD DISP=SHR,DSN=DRLvrm.SDRLEXEC
//STEPLIB DD DISP=SHR,DSN=DRLvrm.SDRLLOAD
//        DD DISP=SHR,DSN=db2loadlibrary                                <--
//*****
//* MESSAGES
//*
//DRLOUT  DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
//*****
//* LOG DATA SET
//*      DSN=*.stepname.ddname can be used
//*
//DRLLOG  DD DISP=SHR,DSN=...                                           <--
//*****
//* START EXEC DRLELDML
//*
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
%DRELDML SYSTEM=DSN  SYSPREFIX=DRLSYS                                  -
LOGTYPE=SMF                                                -
LOGID=' ' ONTAPE=N
/*
```

### Setting the parameters for job DRLJLDML

#### About this task

These are the rules for entering parameter values:

1. **LOGTYPE** is the only parameter that *must* be changed by you. The remaining parameters are optionally changed by you.
2. Blanks must not exist before or after an equal (=) sign.
3. Blanks must not exist within a parameter value.
4. A parameter value must not be enclosed in apostrophes.
5. A continuation mark (-) can be placed in any column.

The following are the DRLJLDML job parameters:

#### **SYSPREFIX**

The prefix of all IBM Z Performance and Capacity Analytics system and control Db2 tables. If you do not specify a value here, the default DRLSYS is used.

#### **SYSTEM**

The Db2 subsystem. The default value is DSN.

#### **PLAN**

The name of the Db2 application plan. The default value is DRLPLAN.

#### **SHOWSQL**

When this value is set to YES, all executed SQL statements will be written to an output file. The default value is NO.

#### **LOGTYPE, LOGID**

Each combination of LOGTYPE and LOGID identifies the collect statements to be used by the collect job (which is run after this job):

- If you do not enter a value for LOGID, or if you enter two apostrophes with no blank between (""), the default collect statements for this LOGTYPE will be used for collecting the log data set.
- If you set LOGID to a user-defined value, the collect statements for the user-defined value will be used for this LOGTYPE, when collecting the log data set.



### Results

**Note:** The **COMMIT AFTER BUFFER FULL ONLY** parameter will not be accepted in the collect statement member if the collect involves concatenated log data sets (an appropriate error message is displayed). The reason is that such concatenated data sets are never recorded in the DRLLOGDATASETS system table as being collected.

```

EDIT ---- DRLxxx.SDRLDEFS(DRLBSMF)----- COLUMNS 0
***** ***** TOP OF DATA *****
000001 COLLECT SMF;
***** ***** BOTTOM OF DATA *****

COMMAND ==>                                SCROLL ==
F1=Help      F2=Split    F3=Exit    F5=Rfind    F6=Rchange  F7=Up
F8=Down      F9=Swap     F10=Left   F11=Right   F12=Cancel

```

Figure 117. Edit collect statements window

### Modifying IBM Z Performance and Capacity Analytics-supplied collect statements

#### About this task

Not all the components have a default collect statement supplied by the product. You must modify the collect statements for these log types to use with these components. You might also want to modify other IBM Z Performance and Capacity Analytics-supplied collect statements. In all cases, a warning is displayed if you attempt to edit a collect statement member that resides in the product distribution library.

**Note:** Any modifications you make to IBM Z Performance and Capacity Analytics-supplied collect statements are lost if a PTF or new release updates the member containing the collect statements.

To modify an IBM Z Performance and Capacity Analytics-supplied collect statement member:

#### Procedure

1. Copy the member containing the collect statements to your local library.
2. Use option F6=Modify of the Log Data Manager Collect Statements window to change the data set name of the default log ID (see [“Modifying log collector statements” on page 205](#) for details).
3. Edit the collect statements member as you require.

### Adding a log ID and collect statements data set

#### About this task

To add a log ID and data set name to the list:

#### Procedure

1. Press F5 and the Add Collect Statements Definition window is displayed ([Figure 118 on page 207](#)).
2. Type a log ID and data set name and press Enter. The log ID and data set name are added to the Log Data Manager Collect Statements list in alphanumeric sequence. However, a non-existent data set is not created.

```

DRLDLDMA          Add Collect Statements Definition for SMF

Type information.  Then press Enter to save.

Log ID           _____ (blank for default collect statements)
Data set name     _____

F1=Help    F2=Split    F9=Swap    F12=Cancel

```

Figure 118. Add Collect Statements Definition window

## Changing the collect statements data set name

### About this task

To change the name of a collect statements data set:

### Procedure

1. Select the log ID corresponding to the data set name which you want to modify, and press F6. The Modify Collect Statements Definition window is displayed ([Figure 119 on page 207](#))
2. Type the modified data set name and press Enter. The data set name is changed in the Log Data Manager Collect Statements list.

```

DRLDLDMB          Modify Collect Statements Definition for SMF

Type information.  Then press Enter to save.

Log ID           MVSA_____
Data set         DRLxxx.LOCAL.DEFS(MVSACOLL)_____

F1=Help    F2=Split    F9=Swap    F12=Cancel

```

Figure 119. Modify Collect Statements Definition window

## Listing and modifying the list of log data sets to be collected

In order to list and modify the list of log data sets to be collected, this section describes the following:

- [“Listing the log data sets to be collected” on page 207](#)
- [“Modifying the log ID for a log data set” on page 208](#)
- [“Deleting information about a log data set” on page 209](#)
- [“Recording a log data set to be collected again” on page 209](#)
- [“Adding a log data set to be collected” on page 209](#)

### Listing the log data sets to be collected

#### About this task

To list the log data sets to be collected:

#### Procedure

Select 2, Log data sets to be collected, from the log data manager Main Selection window.

The Log Data Sets To Be Collected window ([Figure 120 on page 208](#)) is displayed, one row for each log ID and log data set.

### What to do next

Each list of log data sets are sorted firstly by log ID, and then by the date the log data set was added.

Each log data set displayed in this window has a value in the Status column, which can contain one of these values:

- blank

The log data set is ready to be collected by the DRLMLDMC job (see [“The DRLJLDMC collect job and the parameters it uses”](#) on page 210 for details).

- 'SELECT'

This value occurs when the log data set has been selected for collect by the DRLMLDMC job, but the collect has not completed. The data set is protected from a collect by a “parallel” invocation of the DRLMLDMC job. If the DRLMLDMC job abends, the action you take depends upon how many log data sets have the status 'SELECT' after the abend has occurred:

- If there are many log data sets with status 'SELECT', run job DRLELDMC with parameter CLEANUP=YES, to record the log data sets as ready for collection again.
- If there are only a few log data sets with status 'SELECT', it is easier to manually record the data sets as ready for collection again by selecting F4=Rerun for these log data sets.

- A log collector return code or a system or user abend code

This occurs when the log data set was collected with a failure, and the Rerun option was selected for this log data set in the Log Data Sets Collected with Failure window (described in [“Modifying the list of unsuccessfully collected log data sets”](#) on page 215). The data set is collected again the next time job DRLELDMC is run.

| DRLDLDMT SMF Log Data Sets To Be Collected            |        |                           |               |        |  |
|-------------------------------------------------------|--------|---------------------------|---------------|--------|--|
| Select a data set. Then press Enter to modify Log ID. |        |                           |               |        |  |
| /                                                     | Log ID | Log data set              | Time added    | Status |  |
| -                                                     |        | SYS170.SMFLOG.SLOG9501222 | 2004-11-22.13 |        |  |
| s                                                     | MVSA   | SYS170.SMFLOGA.SLOG950122 | 2004-11-21.23 | SELECT |  |
| -                                                     | MVSB   | SYS170.SMFLOGB.SLOG950122 | 2004-11-22.01 |        |  |
| -                                                     | MVSX   | SYS170.SMFLOGX.SLOG950122 | 2004-11-22.01 |        |  |
| -                                                     | MVS1   | SYS170.SMFLOG1.SLOG02     | 2004-11-21.23 | 8      |  |
| -                                                     | MVS2   | SYS170.SMFLOG.MVS2.SLOG01 | 2004-11-21.10 | U0005  |  |
| -                                                     | SYS1   | SYS170.SMFLOG.SYS1.SLOG01 | 2004-11-18.10 | 20     |  |
| Command ==>-----F4=Rerun F5=Add F7=Bkwd F8=Fwd        |        |                           |               |        |  |
| F1=Help                                               |        | F2=Split                  | F3=Exit       |        |  |
| F9=Swap                                               |        | F11=Delete                | F12=Cancel    |        |  |

Figure 120. SMF Log Data Sets To Be Collected window

### Modifying the log ID for a log data set

#### About this task

To modify the log ID (the default action) to be used with a log data set:

#### Procedure

1. Select the log ID and press Enter.

The Modify Log ID for a Log Data Set window is displayed ([Figure 121 on page 209](#)).

2. Type the modified log ID and press Enter. The log ID is then changed in the Log Data Sets To Be Collected list.

**Note:** You can also use this window to display the full length of a truncated log data set name. Data set names longer than 34 characters are truncated in the Log Data Sets To Be Collected window, but are displayed in full in the Modify Log ID for a Log Data Set window.



```

DRLDLMM      Modify Log ID for a SMF Log Data Set

Type Log ID.  Then press Enter to save.

Log ID      MVSA      (blank for default collect statements)
Data set    SYS150.SMFLOGA.SLOG950122

F1=Help      F2=Split    F9=Swap    F12=Cancel

```

Figure 121. Modify Log ID For a Log Data Set window.

## Deleting information about a log data set

### About this task

To delete an entry from the Log Data Sets To Be Collected window:

### Procedure

1. Select the log ID and log data set and press F11.
2. Press Enter to confirm deletion.

## Recording a log data set to be collected again

### About this task

A log data set can be recorded for collection again if it has the value 'SELECT' in the Status column, caused by the collect job abending and as a result, the log data set still having the value 'SELECT' in the Status column.

After the log data set has been recorded for collection again, it is included in the next collect job (described in [“The DRLJLDMC collect job and the parameters it uses”](#) on page 210).

To record a log data set to be collected again:

### Procedure

1. Select the log ID and log data set and press F4
2. Press Enter to confirm.

## Adding a log data set to be collected

### About this task

To add an entry to the Log Data Sets To Be Collected list:

### Procedure

1. Press F5 and the Add a Data Set To Be Collected window is displayed ([Figure 122 on page 210](#)).
2. Type the log ID and log data set name and press Enter.  
The Log Data Sets To Be Collected window is displayed, containing the added entry.

## The collect job and the parameters it uses

```
DRLLDLMN      Add a SMF Data Set To Be Collected

Type information.  Then press Enter to save.

Log ID        _____ (blank for default collect statements)
Data set name  _____

F1=Help      F2=Split    F9=Swap    F12=Cancel
```

Figure 122. Add a Data Set To Be Collected window

An error message is displayed in this window if you attempt to add an already existing log data set.

## The DRLJLDMC collect job and the parameters it uses

The job DRLJLDMC is used to collect log data sets that are recorded as being ready for collection. A system table (described in “[DRLLDM\\_COLLECTSTMT](#)” on page 220) is used to identify the data set containing the collect statements to be used for the collect.

Log data sets are recorded as ready for collection either by running the job DRLJLDMC (see “[Job step for recording a log data set for collection](#)” on page 202 for details), or by using the Log Data Sets To Be Collected window (see “[Listing and modifying the list of log data sets to be collected](#)” on page 207 for details).

### Deciding which log data sets to collect

Using the two parameters **LOGTYPE** and **LOGID** you specify which log data sets you want to collect. If you omit both parameters, all log data sets that are ready to be collected are collected. If, however, you decide to enter values for **LOGTYPE** and **LOGID**, a subset only of the log data sets belonging to the specified log type is collected.

### Concatenation of log data sets

Each time you run the DRLELDMC EXEC, all log data sets corresponding to the values you enter for the parameters **LOGTYPE** and **LOGID** are serially collected. The log collector function is used only once for all log data sets of the same log type and log ID. Log data sets are added to the log collector file DRLLLOG in the order in which they were recorded by the Log Data Manager. As a result, the log collector output files DRLOUT and DRLDUMP may contain the output from many log data sets.

You should also note that if the collect of such a concatenated log data set fails after one or more log data sets have been successfully collected, the remaining log data sets in the concatenation are not collected. You must then rerun the DRLJLDMC collect job, to collect these remaining log data sets.

### Running collect jobs in parallel

If you do not specify the **LOGID** and/or the **LOGTYPE** parameters, the DRLELDMC EXEC calls the log collector and runs the collect job each time a combination of log type and log ID is processed. If you want to decrease the total elapsed time of these collects, you can run DRLJLDMC collect jobs in parallel. However, you should not run jobs with the same **LOGTYPE** parameter in parallel.

### DRLELDMC sample job

This job is shipped with the product as sample job DRLJLDMC.

### DRLJLDMC

```
//DRLJLDMC JOB (ACCT#),'COLLECT'
//*****
//* Name:    DRLJLDMC                               *
//*                               *
//* Function:                               *
//*   Log Data Manager Collect Log Data Sets sample job *
//*                               *
//*   This job is used to collect log data sets that are recorded *
//*   in the DRLLDM_LOGDATASETS system table as being ready for *
//*
```

```

/** collect by the Log Data Manager. *
/** *
/** Input: *
/** The exec DRLELDMC accepts the following parameters: *
/** *
/** SYSPREFIX=xxxxxxx Prefix for system tables. default=DRLSYS *
/** SYSTEM=xxxxxxx Db2 subsystem name. default=DSN *
/** PREFIX=xxxxxxx Prefix for all other tables.default=DRL *
/** PLAN=xxxxxxx Db2 plan name default=DRLPLAN *
/** DSPREFIX=xxxxxxx Prefix for creation of data sets DRLOUT and *
/** DRLDUMP. default=DRL *
/** SHOWSQL=xxx Show SQL. YES/NO default=NO *
/** SHOWINPUT=xxx Copy DRLIN to DRLOUT. YES/NO default=YES *
/** LOGTYPE=xxxxxxxxx Log type (e.g. SMF). If not specified, *
/** all log types are selected for processing. *
/** LOGID=xxxxxx Log ID. If not specified, all log id's are *
/** are selected for processing. Default Log ID *
/** should be coded as '='. *
/** RETENTION=xxx Retention period for DRLOUT, DRLDUMP and *
/** collect result info. default=10 days *
/** PURGE=xxx Purge info for successful collects that *
/** are older than its Retention period *
/** YES/NO default=YES *
/** CLEANUP=xxx Option only to be used after an Abend. *
/** No collect is done. Processes only log data *
/** sets marked with SELECT in the Log Data Sets *
/** To Be Collected list (on panel DRLDLMT). *
/** Output: the data set being collected when *
/** the abend occurred will be moved to the *
/** Collected With Failure list. Other concate- *
/** nated data sets are moved to the Successful *
/** list or made ready for a renewed collect. *
/** YES/NO default=NO *
/** *
/** DRLOUT/DRLDUMP DD card: if any of these files are specified *
/** they will be used by all collects started by *
/** this job. They will then not be controlled *
/** or viewed by the Log Data Manager dialog. *
/** *
/** DRLLOG DD card: Must not be allocated. *
/** *
/** LMDLOG EXEC card: The value used for DYNAMNBR should be *
/** as a minimum, 2 plus the number of *
/** log data sets to be collected. *
/** *
/** Output: The results of the collects are recorded in *
/** sysprefix.DRLDM_LOGDATASETS together *
/** with LOG_NAME, LOG_ID and TIME_ADDED. *
/** Job messages in the DRLMSG file *
/** *
/** Notes: *
/** Before you submit the job, do the following: *
/** 1. Check that the steplib db2loadlibrary is correct. *
/** 2. Change the parameters to DRLELDMC as required. *
/** 3. Change the Db2 load library name according to *
/** the naming convention of your installation. *
/** Default is 'db2loadlibrary'. *
/** 4. Change the IZPCA data set HLQ (default is DRLvrn.) *
/** *
/** *****
/** LDMLLOG EXEC PGM=IKJEFT01,DYNAMNBR=20
/**
/** SYSPROC DD DISP=SHR,DSN=DRLvrn.SDRLEXEC --
/** STEPLIB DD DISP=SHR,DSN=DRLvrn.SDRLOAD --
/** DD DISP=SHR,DSN=db2loadlibrary --
/** *****
/** *DRLOUT DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
/** *DRLDUMP DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
/** *****
/** * MESSAGES
/**
/** *DRLMSG DD SYSOUT=*,DCB=(RECFM=F,LRECL=80)
/** *****
/** * Add the next three DD statements if you collect IMS.
/** * Note 1: IMSVER must specify the same release as the
/** * collect statement used by the Log Data Manager.
/** * Note 2: DRLICHKI must be DUMMY or point out an empty
/** * data set after an IMS restart.
/** *****
/** *DRLICHKI DD DSN=Generation data set(0),DISP=SHR
/** *DRLICHKO DD DSN=Generation data set(+1),DISP(NEW,CATLG)
/** *DRLIPARM DD *

```

## The collect job and the parameters it uses

```
//*IMSVAR=71          -- IMS release being processed. 71 is default
//*MAXOUTPUT=50       -- Allow up to 50 outputs per transaction/BMP
//*MAXUOR=50          -- Allow up to 50 UOR's per BMP
//*****
//* START EXEC DRLJLDMC
//*
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
%DRLJLDMC SYSTEM=DSN  SYSPREFIX=DRLSYS  PREFIX=DRL  -
  DSPREFIX=DRL        -
  LOGTYPE=SMF         -
  LOGID=' '           -
/*
```

### Setting the DYNAMNBR value

The value for the EXEC parameter **DYNAMNBR** should be a minimum of the number of log data sets to be collected, plus 2.

The supplied default is 20.

### Setting the parameters for job DRLJLDMC

The rules for entering parameter values are as follows:

1. All parameters are *optional*.
2. Blanks must not exist before or after an equal sign (=).
3. Blanks must not exist within a parameter value.
4. A parameter value must not be enclosed in apostrophes.
5. A continuation mark (-) can be placed in any column.

These are the DRLJLDMC job parameters:

#### **SYSPREFIX**

The prefix of all product system and control Db2 tables. If you do not specify a value here, the default DRLSYS is used.

#### **SYSTEM**

The Db2 subsystem. The default value is DSN.

#### **PREFIX**

The prefix used with all other tables. The default value is DRL.

#### **PLAN**

The name of the Db2 application plan. The default value is DRLPLAN.

#### **DSPREFIX**

The prefix used for the creation of data sets DRLOUT and DRLDUMP. The default is DRL. The names of these data sets are 'dsprefix\_value.Ddate.Ttime.DRLOUT/DRLDUMP' where *date* and *time* are generated. The maximum length of DSPREFIX is 20 characters.

#### **SHOWSQL**

When this value is set to YES, all executed SQL statements are written to an output file. The default value is NO.

#### **SHOWINPUT**

When this value is set to YES, all DRLIN statements are written to DRLOUT. The default value is YES.

#### **LOGTYPE, LOGID**

Each combination of LOGTYPE and LOGID identifies the log IDs to be used in the collect. If log type is not specified, all log types are selected for processing. If log ID is not specified, all log IDs for the log type specified are selected for processing. The default log ID is selected by setting this value to straight quotes (").

#### **RETENTION**

The retention period for DRLOUT, DRLDUMP and the log data manager information that is produced by the collects. The default is 10 days.

**PURGE**

This parameter determines whether or not the information resulting from successful collects should be purged when the date of the information is older than the retention period. The parameter can be set to the value YES or NO. If PURGE is set to YES, all log data manager information about successfully collected log data sets is deleted (for all log types and log IDs). The default value is PURGE=YES.

**CLEANUP**

This parameter is used when the DRLEDMC job has had an abend during a collect of *concatenated* log data sets. If you run the DRLEDMC job with parameter **CLEANUP** set to YES, log data sets that were successfully collected before the abend occurred are moved to the Log Data Sets Successfully Collected list. The log data set that was being collected *when* the abend occurred is moved to the Log Data Sets Collected With Failure list. The default value is CLEANUP=NO.

**DRLOUT DD statement**

If this file is specified, it is used by all collects started by this job. However, this file is not used by the log data manager dialog.

**DRLDUMP DD statement**

If this file is specified, it is used by all collects started by this job. However, this file is not used by the log data manager dialog.

**DRLLLOG DD statement**

Must not be allocated.

## Modifying the list of successfully collected log data sets

**About this task**

To list the log data sets that have been successfully collected:

**Procedure**

Select 3, Log data sets collected successfully, from the log data manager Main Selection window.

The Log Data Sets Collected Successfully window (Figure 123 on page 213) is displayed, one row for each log data set that has been successfully collected by the Log Data Manager for this log type.

The list of data sets are sorted by the Time collected column.

| DRLDLMC      Log Data Sets Collected Successfully for SMF |                           |                     |                       |
|-----------------------------------------------------------|---------------------------|---------------------|-----------------------|
| Select a data set. Then press Enter to view DRLOUT.       |                           |                     |                       |
| /                                                         | Log data set              | Time collected      | RC                    |
| -                                                         | SYS170.SMFLOGX.SLOG950120 | 2004-11-21.02.03.25 | 0                     |
| -                                                         | SYS170.SMFLOGB.SLOG950120 | 2004-11-21.01.33.25 | 0                     |
| -                                                         | SYS170.SMFLOGA.SLOG950120 | 2004-11-21.01.15.10 | 0                     |
| -                                                         | SYS170.SMFLOG.SLOG950120B | 2004-11-21.01.01.20 | 0                     |
| -                                                         | SYS170.SMFLOG.SLOG950120A | 2004-11-21.00.45.20 | 0                     |
| -                                                         | SYS170.SMFLOGA.SLOG950119 | 2004-11-20.23.15.10 | 0                     |
| -                                                         | SYS170.SMFLOG.SLOG950119B | 2004-11-20.01.45.20 | 0                     |
| -                                                         | SYS170.SMFLOGB.SLOG950119 | 2004-11-20.01.13.25 | 0                     |
| -                                                         | SYS170.SMFLOGX.SLOG950119 | 2004-11-20.01.13.25 | 0                     |
| -                                                         | SYS170.SMFLOG.SLOG950119A | 2004-11-20.00.45.20 | 0                     |
| Command ==>                                               |                           |                     |                       |
| F1=Help                                                   | F2=Split                  | F3=Exit             | F5=DRLDUMP            |
| F8=Fwd                                                    | F9=Swap                   | F11=Delete          | F12=Cancel            |
|                                                           |                           |                     | F6=Retent.    F7=Bkwd |

Figure 123. Log Data Sets Collected Successfully window

### Viewing the information about successfully collected log data sets

#### About this task

To view the log data manager information about a log data set (the default action):

#### Procedure

Select a log data set and press Enter.

The DRLOUT data set is displayed in ISPF Browse mode (if a DRLOUT statement was not included in the collect job).

### Viewing the dump data set

#### Procedure

Select the log data set and press F5.

The DRLDUMP data set is displayed using the ISPF Browse function, if a DRLDUMP DD statement was not present in the collect job. DRLDUMP should be empty if the return code from the collect was 0.

### Changing the retention period of information about a log data set

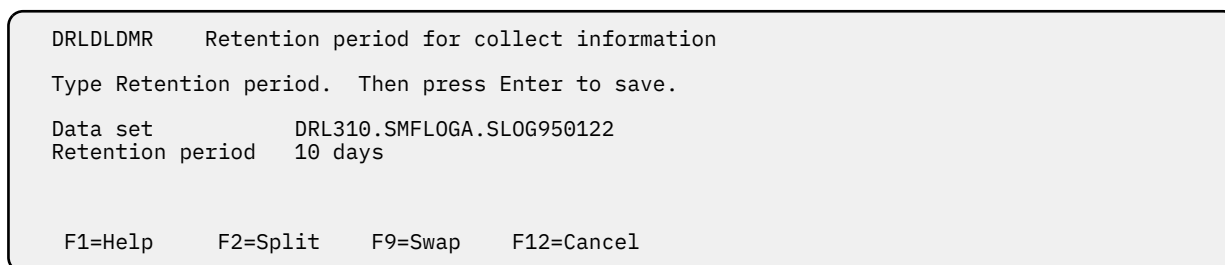
#### About this task

To change the retention period for the log data managerlog data manager information about a log data set:

#### Procedure

1. Select the log data set and press F6. The Retention Period for Collect Information window is displayed ([Figure 124 on page 214](#)).
2. Type the retention period field the number of days you require, and press Enter

**Note:** You are not changing the retention period for the collected log data here, but only the retention period for the log data manager information about the log data set.



```
DRLDLDMR    Retention period for collect information

Type Retention period. Then press Enter to save.

Data set      DRL310.SMFL0GA.SLOG950122
Retention period  10 days

F1=Help      F2=Split    F9=Swap    F12=Cancel
```

Figure 124. Retention Period window

### Deleting the information about a log data set

#### About this task

To delete the log data manager information about a log data set together with DRLOUT and DRLDUMP data sets (if they exist):

#### Procedure

1. Select the log data set for which you want to delete the log data manager information from, and press F11.
2. Press Enter to confirm deletion.

**Note:** You are not deleting the log data set itself, but only the log data manager information about the log data set.

## Modifying the list of unsuccessfully collected log data sets

### About this task

To list the log data sets that have been unsuccessfully collected:

### Procedure

Select 4, Log Data Sets Collected with Failure, from the log data manager Main Selection window.

The Log Data Sets Collected with Failure window ([Figure 125 on page 215](#)) is displayed, one row for each log data set that has been unsuccessfully collected by the Log Data Manager for this log type.

The list of data sets are sorted by the Time collected column.

DRLDLMF

Log Data Sets Collected with Failure for SMF

Select a data set. Then press Enter to view DRLOUT.

|   |                          |                     |    |
|---|--------------------------|---------------------|----|
| / | Log data set             | Time collected      | RC |
| - | SYS170.SMFLOG1.SLOG01    | 2004-11-20.23.22.10 | 8  |
| - | SYS170.SMFLOG.SYS1.SLOG0 | 2004-11-18.10.16.22 | 20 |

Command ==>

|         |          |            |            |            |         |
|---------|----------|------------|------------|------------|---------|
| F1=Help | F2=Split | F3=Exit    | F4=Rerun   | F5=DRLDUMP | F7=Bkwd |
| F8=Fwd  | F9=Swap  | F11=Delete | F12=Cancel |            |         |

Figure 125. Log Data Sets Collected with Failure window

## Viewing the unsuccessfully collected log data set

### About this task

To view the log data set (the default action):

### Procedure

1. Select the log data set and press Enter.
2. The DRLOUT data set is displayed in ISPF Browse mode (if a DRLOUT statement was not included in the collect job).

## Viewing the dump data set

### About this task

To view the dump data set (DRLDUMP):

### Procedure

Select the log data set and press F5.

The DRLDUMP data set is displayed using the ISPF Browse function, if a DRLDUMP DD statement was not present in the collect job. DRLDUMP is empty in most cases if the return code from the collect was 0.

## Recording a log data set to be collected again

### About this task

If you record a log data set for collection again, it is included in the next collect job (described in [“The DRLJLDMC collect job and the parameters it uses” on page 210](#)).

## Modifying the list of successfully collected log data sets

However, the entry you select to be collected again is not deleted from the Log Data Sets Collected with Failure window.

If you select a log data set to be collected a second time (using the F4=Rerun option) after it has already been successfully collected, the log collector detects this incorrect selection and the collect attempt is rejected. However, if you have specified REPROCESS=YES in the collect job to recollect a successfully collected log data set, the log collector does not reject the collect.

To record a log data set to be collected again:

### Procedure

1. Select the log data set.
2. Press F4.

An error message is displayed if this log data set is already included in the list of data sets to be collected.

## Deleting the information about a log data set

### About this task

To delete the information about a log data set from the list shown, together with DRLOUT and DRLDUMP data sets (if they exist):

### Procedure

1. Select the log data set you want to delete, and press F11.
2. Press Enter to confirm deletion.

## Working with the Continuous Collector

This topics shows the commands to stop or modify the operation of the Continuous Collector.

### Stopping the Continuous Collector

To stop the Continuous Collector, enter the following command:

| Command                              | Explanation                    |
|--------------------------------------|--------------------------------|
| STOP <i>jobname</i> P <i>jobname</i> | Stop the Continuous Collector. |

### Modify commands

To modify the Continuous Collector during operation, choose from the following commands:

| Command                                                                                                                    | Explanation                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODIFY <i>jobname</i> ,INTERVAL MESSAGE ON OFF<br>F <i>jobname</i> ,INTERVAL MESSAGE ON OFF<br>F <i>jobname</i> ,IM ON OFF | Turn the commit heart beat message DRL0383I ON or OFF. The message is ON by default when the COMMIT phrase FULL STATISTICS AFTER is used.                                                                                                                                                                  |
| MODIFY <i>jobname</i> ,COMMIT TIME ON OFF<br>F <i>jobname</i> ,COMMIT TIME ON OFF<br>F <i>jobname</i> ,CT ON OFF           | Enable or disable messages at the start and end of database updates and database commits. This function is OFF initially but may be turned on to give an indication of how long the Db2 update and commit are taking. It is not advisable to leave this turned on for a long period of time as performance |



| Command                                                                                                                                                 | Explanation                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                         | may be impacted and additional output is written to the DRLOUT data set.                                                                                                                                                                                                                                                                                                                           |
| MODIFY <i>jobname</i> ,FULL STATISTICS AFTER <i>count</i><br>F <i>jobname</i> ,FULL STATISTICS AFTER <i>count</i> F<br><i>jobname</i> ,FSA <i>count</i> | FSA <i>count</i> (FULL STATISTICS AFTER <i>count</i> ) alters the interval at which the collect statistics are displayed. This is initially set by the COLLECT syntax FULL STATISTICS AFTER <i>integer</i> COMMITS. This may be used to set an interval for the collect statistics for the first time when FULL STATISTICS AFTER <i>integer</i> COMMITS is not specified on the COLLECT statement. |
| MODIFY <i>jobname</i> ,PAUSE<br>F <i>jobname</i> ,PAUSE                                                                                                 | Pause the Continuous Collector until a RESUME command is received. While in the paused state, all MODIFY or STOP commands are still accepted, but no data is read from the input log stream. You can use the pause process to avoid contention with other activities in the IBM Z Performance and Capacity Analytics Db2 subsystem.                                                                |
| MODIFY <i>jobname</i> ,RESUME<br>F <i>jobname</i> ,RESUME                                                                                               | Resume the Continuous Collector. Any parameters changed while the collector was paused come into effect. When a RESUME command is received, processing restarts from where it paused.                                                                                                                                                                                                              |



## Chapter 6. Administration reference

### System tables and views

This section describes system tables and views. These tables are used by the product log collector and dialogs. They are created during installation of the product base, with the prefix for system tables specified in *userid.DRLFPROF*. The default prefix for the tables is DRLSYS.

System tables do not appear in the tables list in the administration dialog.

Each table description includes information about the table, a description of each key column and data column in the table, and an example of the table's contents.

*Key columns* are marked with a "K".

*Data columns* are listed after the last key column.

The tables appear in alphabetical order, with any underscores ignored.

### Log collector system tables

These tables contain definitions used by the log collector. They are maintained by the log collector. **Do not** modify them.

#### DRLEXPRESSIONS

This system table contains one row for each expression or condition in a log, record, record procedure, or update definition.

| Column name       |   | Data type     | Description                                           |
|-------------------|---|---------------|-------------------------------------------------------|
| OBJECT_TYPE       | K | CHAR(8)       | Object type. This is LOG, RECORD, RECPROC, or UPDATE. |
| OBJECT_NAME       | K | VARCHAR(18)   | Name of the object.                                   |
| EXPRESSION_NO     | K | SMALLINT      | Expression sequence number within the object.         |
| EXPRESSION        |   | VARCHAR(2000) | Original expression text.                             |
| PARSED_EXPRESSION |   | VARCHAR(2000) | Parsed version of the expression.                     |

#### DRLFIELDS

This system table contains one row for every field in each defined record type.

| Column name |   | Data type   | Description                                               |
|-------------|---|-------------|-----------------------------------------------------------|
| RECORD_NAME | K | VARCHAR(18) | Name of the record. For a log header, this is *log-name*. |
| FIELD_NO    | K | SMALLINT    | Field sequence number within the record.                  |
| FIELD_NAME  |   | VARCHAR(18) | Name of the field.                                        |

| Column name  |                          | Data type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
|--------------|--------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|--------|--------|---------|---------------|----------|------------------|-------|--------------|---------|--------------|-------|------------|-------|-------|------|-----------------|---------|--------------------------|---------|---------|-----|---------------|-----|-----|----------|----------------|----------|----------------|----------|--------------|----------|--------------|----------|----------------|----------|--------------|----------|----------------|----------|--------------|----------|----------------|----------|----------------|----------|----------------|----------|----------------|----------|---------------|----------|-----------------|---------|----------------|---------|-----------------|
| TYPE         |                          | CHAR(8)      | Type of the field. The following values are possible:<br><br><table><tr><th>Type</th><th>Field Format</th></tr><tr><td>BINARY</td><td>BINARY</td></tr><tr><td>BINARYS</td><td>BINARY SIGNED</td></tr><tr><td>EINTEGER</td><td>EXTERNAL INTEGER</td></tr><tr><td>HEXIN</td><td>EXTERNAL HEX</td></tr><tr><td>DECIMAL</td><td>DECIMAL(p,s)</td></tr><tr><td>ZONED</td><td>ZONED(p,s)</td></tr><tr><td>FLOAT</td><td>FLOAT</td></tr><tr><td>CHAR</td><td>CHAR or CHAR(n)</td></tr><tr><td>CHAR(*)</td><td>CHAR(*) or LENGTH * CHAR</td></tr><tr><td>VARCHAR</td><td>VARCHAR</td></tr><tr><td>BIT</td><td>BIT or BIT(n)</td></tr><tr><td>HEX</td><td>HEX</td></tr><tr><td>DATE_001</td><td>DATE(0CYYDDDF)</td></tr><tr><td>DATE_002</td><td>DATE(YYYYDDDF)</td></tr><tr><td>DATE_003</td><td>DATE(MMDDYY)</td></tr><tr><td>DATE_004</td><td>DATE(YYDDDF)</td></tr><tr><td>DATE_005</td><td>DATE(CYYMMDDF)</td></tr><tr><td>DATE_006</td><td>DATE(YYMMDD)</td></tr><tr><td>DATE_007</td><td>DATE(MMDDYYYY)</td></tr><tr><td>TIME_001</td><td>TIME(1/100S)</td></tr><tr><td>TIME_002</td><td>TIME(HHMMSSTF)</td></tr><tr><td>TIME_003</td><td>TIME(OHHMMSSF)</td></tr><tr><td>TIME_004</td><td>TIME(HHMMSSTH)</td></tr><tr><td>TIME_005</td><td>TIME(HHMMSSXF)</td></tr><tr><td>TIME_006</td><td>TIMER(HHMMSS)</td></tr><tr><td>TIME_007</td><td>TIME(HHMMSSU6)I</td></tr><tr><td>NTV_001</td><td>INTV(MMSSTTTF)</td></tr><tr><td>TSTAMP_</td><td>1TIMESTAMP(TOD)</td></tr></table> | Type | Field Format | BINARY | BINARY | BINARYS | BINARY SIGNED | EINTEGER | EXTERNAL INTEGER | HEXIN | EXTERNAL HEX | DECIMAL | DECIMAL(p,s) | ZONED | ZONED(p,s) | FLOAT | FLOAT | CHAR | CHAR or CHAR(n) | CHAR(*) | CHAR(*) or LENGTH * CHAR | VARCHAR | VARCHAR | BIT | BIT or BIT(n) | HEX | HEX | DATE_001 | DATE(0CYYDDDF) | DATE_002 | DATE(YYYYDDDF) | DATE_003 | DATE(MMDDYY) | DATE_004 | DATE(YYDDDF) | DATE_005 | DATE(CYYMMDDF) | DATE_006 | DATE(YYMMDD) | DATE_007 | DATE(MMDDYYYY) | TIME_001 | TIME(1/100S) | TIME_002 | TIME(HHMMSSTF) | TIME_003 | TIME(OHHMMSSF) | TIME_004 | TIME(HHMMSSTH) | TIME_005 | TIME(HHMMSSXF) | TIME_006 | TIMER(HHMMSS) | TIME_007 | TIME(HHMMSSU6)I | NTV_001 | INTV(MMSSTTTF) | TSTAMP_ | 1TIMESTAMP(TOD) |
| Type         | Field Format             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| BINARY       | BINARY                   |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| BINARYS      | BINARY SIGNED            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| EINTEGER     | EXTERNAL INTEGER         |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| HEXIN        | EXTERNAL HEX             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DECIMAL      | DECIMAL(p,s)             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| ZONED        | ZONED(p,s)               |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| FLOAT        | FLOAT                    |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| CHAR         | CHAR or CHAR(n)          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| CHAR(*)      | CHAR(*) or LENGTH * CHAR |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| VARCHAR      | VARCHAR                  |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| BIT          | BIT or BIT(n)            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| HEX          | HEX                      |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_001     | DATE(0CYYDDDF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_002     | DATE(YYYYDDDF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_003     | DATE(MMDDYY)             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_004     | DATE(YYDDDF)             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_005     | DATE(CYYMMDDF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_006     | DATE(YYMMDD)             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| DATE_007     | DATE(MMDDYYYY)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_001     | TIME(1/100S)             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_002     | TIME(HHMMSSTF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_003     | TIME(OHHMMSSF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_004     | TIME(HHMMSSTH)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_005     | TIME(HHMMSSXF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_006     | TIMER(HHMMSS)            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TIME_007     | TIME(HHMMSSU6)I          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| NTV_001      | INTV(MMSSTTTF)           |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| TSTAMP_      | 1TIMESTAMP(TOD)          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| LENGTH       |                          | SMALLINT     | Length of the field. For DECIMAL and ZONED fields, this is a 1-byte precision followed by a 1-byte scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| OFFSET       |                          | SMALLINT     | Offset of the field in the record or section.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| INSECTION_NO |                          | SMALLINT     | Number of the section where the field is contained. This is zero if the field is not in a section.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |
| REMARKS      |                          | VARCHAR(254) | Description of the field, set by the COMMENT ON statement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |              |        |        |         |               |          |                  |       |              |         |              |       |            |       |       |      |                 |         |                          |         |         |     |               |     |     |          |                |          |                |          |              |          |              |          |                |          |              |          |                |          |              |          |                |          |                |          |                |          |                |          |               |          |                 |         |                |         |                 |

**DRLLDM\_COLLECTSTMT**

This system table contains one row for each combination of log type and log ID that is defined to the Log Data Manager. Each row identifies the collect statement that is used for the log type/log ID combination.

| Column name     |   | Data type   | Description                                                                                            |
|-----------------|---|-------------|--------------------------------------------------------------------------------------------------------|
| LOG_NAME        | K | VARCHAR(18) | Name of the log type.                                                                                  |
| LOG_ID          | K | CHAR(8)     | The log ID.                                                                                            |
| COLLECT_STMT_DS |   | VARCHAR(54) | Name of the data set that contain the collect statement, including the member name (for a PDS member). |

**DRLLDM\_LOGDATASETS**

This system table contains one or more rows for each log data set recorded by the Log Data Manager.

| Column name  |   | Data type   | Description                                                             |
|--------------|---|-------------|-------------------------------------------------------------------------|
| DATASET_NAME | K | VARCHAR(54) | Name of the log data set, including the member name (for a PDS member). |

| Column name       |   | Data type   | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOG_NAME          | K | VARCHAR(18) | Name of the log type.                                                                                                                                                                                                                                                                                                                                                                                                 |
| TIME_COLLECTED    | K | TIMESTAMP   | Timestamp of the collect. For a data set not yet collected it is 0001-01-01-00.00.00.000000. For a successfully collected data set it is set to the value of the TIME_COLLECTED field in the corresponding entry in DRLLOGDATASETS. For an unsuccessfully collected data set, or a successfully collected data set in which no record was recognized, it set to the timestamp when DRLELDMC called the log collector. |
| LOG_ID            |   | CHAR(8)     | The log ID currently associated with this data set.                                                                                                                                                                                                                                                                                                                                                                   |
| TIME_ADDED        |   | TIMESTAMP   | Timestamp when the log data set was first recorded.                                                                                                                                                                                                                                                                                                                                                                   |
| TIME_COLLECT_CALL |   | TIMESTAMP   | Timestamp when the DRLELDMC exec called the log collector to process the log data set.                                                                                                                                                                                                                                                                                                                                |
| COLLECT_RC        |   | CHAR(5)     | The return code from the collect. It is blank if not yet collected; '0' or '4' if successfully collected; >= '8' if unsuccessfully collected without abend; 'Unn' if the collect ended with a user abend; 'Snn' if the collect ended with a system abend.                                                                                                                                                             |
| OUTPUT_DS         |   | VARCHAR(35) | The high level qualifiers used when DRLOUT and/or DRLDUMP data sets were created.<br>'OUTPUT_DS_value.DRLOUT' is the data set name of the DRLOUT file. This value is blank if no DRLOUT or DRLDUMP data set has been created.                                                                                                                                                                                         |
| RETENTION         |   | SMALLINT    | Retention period in days. Null field if not yet collected.                                                                                                                                                                                                                                                                                                                                                            |
| RETENTION_DATE    |   | INTEGER     | Collect date expressed as number of days from January 1, Year 1. This field is used for purge calculations. Null field if not yet collected.                                                                                                                                                                                                                                                                          |
| COMPLETE          |   | CHAR(1)     | Flag indicating the status of the log data set. It is blank if the data set is ready to be collected; 'S' if the collect is running; 'Y' if successfully collected; 'F' if collected with failure.                                                                                                                                                                                                                    |

**DRLLOGDATASETS**

This system table contains one row for each collected log data set.

| Column name     |   | Data type   | Description                                                                                                                                                                                                                                                                                                                          |
|-----------------|---|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOG_NAME        | K | VARCHAR(18) | Name of the log definition.                                                                                                                                                                                                                                                                                                          |
| FIRST_RECORD    | K | VARCHAR(80) | First 80 bytes of the first identified record in the data set. This is used to identify the data set and make sure that it is not collected again. If the record is a user defined one, avoid beginning the record with data needed to distinguish two records. For more information, refer to <i>Language Guide and Reference</i> . |
| DATASET_NAME    | K | VARCHAR(54) | Name of the data set, including the member name (for a PDS member).                                                                                                                                                                                                                                                                  |
| VOLUME          |   | CHAR(6)     | Volume serial number for the data set.                                                                                                                                                                                                                                                                                               |
| LOG_SOURCE      |   | CHAR(16)    | Reserved.                                                                                                                                                                                                                                                                                                                            |
| FIRST_TIMESTAMP |   | TIMESTAMP   | Timestamp of the first record in the log. This is only set if TIMESTAMP expression is specified for the log.                                                                                                                                                                                                                         |
| LAST_TIMESTAMP  |   | TIMESTAMP   | Timestamp of the last record in the log. This is only set if TIMESTAMP expression is specified for the log.                                                                                                                                                                                                                          |

| Column name      |  | Data type | Description                                                                                                                                                                                                                                                  |
|------------------|--|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NCOLLECTS        |  | SMALLINT  | Number of times the data set has been collected. If this is greater than 1, it means that collect has been run with the REPROCESS operand to collect the data set again.                                                                                     |
| TIME_COLLECTED   |  | TIMESTAMP | Date and time when collect ended.                                                                                                                                                                                                                            |
| USER_ID          |  | CHAR(8)   | ID of the user running collect.                                                                                                                                                                                                                              |
| COMPLETE         |  | CHAR(1)   | Shows whether the data set has been completely processed. This is Y (the data set has been completely processed) or N (the data set has only been partly processed).                                                                                         |
| RETURN_CODE      |  | SMALLINT  | Return code from collect; 0 or 4.                                                                                                                                                                                                                            |
| NRECORDS         |  | INTEGER   | Number of records read from the log data set.                                                                                                                                                                                                                |
| NSELECTED        |  | INTEGER   | Number of records identified.                                                                                                                                                                                                                                |
| NUPDATES         |  | INTEGER   | Number of database rows updated when the data set was collected.                                                                                                                                                                                             |
| NINSERTS         |  | INTEGER   | Number of database rows inserted when the data set was collected.                                                                                                                                                                                            |
| NDELETES         |  | INTEGER   | Number of database rows deleted when the data set was collected.                                                                                                                                                                                             |
| ELAPSED_SECONDS  |  | INTEGER   | Collect elapsed time, in seconds. The actual collect elapsed time is a bit longer since there is some activity after this table has been updated.                                                                                                            |
| NSKIPPED         |  | INTEGER   | Number of records skipped due to timestamp overlap (applies when ON TIMESTAMP OVERLAP SKIP specified).                                                                                                                                                       |
| LOGSTREAM_BLK_ID |  | CHAR(8)   | The block ID number of the log stream record that was read prior to the last SQL COMMIT performed by the Continuous Collector. On a restart, the Continuous Collector will attempt to continue reading the log stream at the saved block ID number plus one. |
| LOGSTREAM_TS     |  | CHAR(8)   | The timestamp of the log stream record that was read prior to the last SQL COMMIT performed by the Continuous Collector.                                                                                                                                     |

**DRLLOGS**

This system table contains one row for each defined log type.

| Column name    |   | Data type   | Description                                                                                                                                                                                                                                                                                   |
|----------------|---|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LOG_NAME       | K | VARCHAR(18) | Name of the log.                                                                                                                                                                                                                                                                              |
| VERSION        |   | VARCHAR(18) | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM. <i>nnn</i> [.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |
| HEADER         |   | CHAR(1)     | Shows whether a header is defined for the log. This is Y (a header is defined) or N (no header is defined). If there is a header, it is contained in the DRLRECORDS and DRLFIELDS tables.                                                                                                     |
| REC_FMT        |   | CHAR(1)     |                                                                                                                                                                                                                                                                                               |
| LENGTH_EXPR_NO |   | SMALLINT    |                                                                                                                                                                                                                                                                                               |

| Column name        |  | Data type    | Description                                                                                                               |
|--------------------|--|--------------|---------------------------------------------------------------------------------------------------------------------------|
| TIMESTAMP_EXPR_NO  |  | SMALLINT     | Number of the TIMESTAMP expression in the DRLEXPRESSIONS table. This is zero if no TIMESTAMP expression is specified.     |
| LOG_SOURCE_EXPR_NO |  | SMALLINT     |                                                                                                                           |
| FIRST_CONDITION_NO |  | SMALLINT     | Number of the FIRST RECORD condition in the DRLEXPRESSIONS table. This is zero if no FIRST RECORD condition is specified. |
| LAST_CONDITION_NO  |  | SMALLINT     | Number of the LAST RECORD condition in the DRLEXPRESSIONS table. This is zero if no LAST RECORD condition is specified.   |
| LOGPROC            |  | CHAR(8)      | Name of the log procedure to use for the log. This is blank if no log procedure is specified.                             |
| LOGPROC_LANGUAGE   |  | CHAR(8)      | Programming language that the log procedure is written in. This is ASM or C.                                              |
| LOGPROC_PARM_NO    |  | SMALLINT     | Number of the log procedure PARM expression in the DRLEXPRESSIONS table. This is zero if no PARM expression is specified. |
| TIME_DEFINED       |  | TIMESTAMP    | Date and time when the log was defined.                                                                                   |
| CREATOR            |  | CHAR(8)      | ID of the user who defined the log.                                                                                       |
| REMARKS            |  | VARCHAR(254) | Description of the log, set by the COMMENT ON statement.                                                                  |

**DRLPURGECOND**

This system table contains one row for each purge condition in defined data tables.

| Column name   |   | Data type    | Description                                                                                                                                                                                                                                                                                   |
|---------------|---|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TABLE_PREFIX  | K | CHAR(8)      | Prefix of the table.                                                                                                                                                                                                                                                                          |
| TABLE_NAME    | K | VARCHAR(18)  | Name of the table.                                                                                                                                                                                                                                                                            |
| VERSION       |   | VARCHAR(18)  | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM. <i>nnn</i> [.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |
| SQL_CONDITION |   | VARCHAR(254) | An SQL condition that defines rows to be deleted from the database when the PURGE statement is executed.                                                                                                                                                                                      |
| TIME_DEFINED  |   | TIMESTAMP    | Date and time when the purge condition was defined.                                                                                                                                                                                                                                           |
| CREATOR       |   | CHAR(8)      | ID of the user who defined the purge condition.                                                                                                                                                                                                                                               |

**DRLRECORDPROCS**

This system table contains one row for each defined record procedure.

| Column name  |   | Data type   | Description                                                                                                                                                                                                                                                                                   |
|--------------|---|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROGRAM_NAME | K | CHAR(8)     | Name of the record procedure (name of the load module that gets invoked).                                                                                                                                                                                                                     |
| VERSION      |   | VARCHAR(18) | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM. <i>nnn</i> [.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |

| Column name       |  | Data type    | Description                                                                                                 |
|-------------------|--|--------------|-------------------------------------------------------------------------------------------------------------|
| LANGUAGE          |  | CHAR(8)      | Programming language that the record procedure is written in. This is ASM or C.                             |
| PARAMETER_EXPR_NO |  | SMALLINT     | Number of the PARM expression in the DRLEXPRESSIONS table. This is zero if no PARM expression is specified. |
| TIME_DEFINED      |  | TIMESTAMP    | Date and time when the record procedure was defined.                                                        |
| CREATOR           |  | CHAR(8)      | ID of the user who defined the record procedure.                                                            |
| REMARKS           |  | VARCHAR(254) | Description of the record procedure, set by the COMMENT ON statement.                                       |

**DRLRECORDS**

This system table contains one row for each defined record type and one row for each defined header in log definitions.

| Column name  |   | Data type    | Description                                                                                                                                                                                                                                                                          |
|--------------|---|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RECORD_NAME  | K | VARCHAR(18)  | Name of the record. For a log header, this is *log-name*.                                                                                                                                                                                                                            |
| VERSION      |   | VARCHAR(18)  | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM.nnn[.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |
| LOG_NAME     |   | VARCHAR(18)  | Name of the log that contains the record.                                                                                                                                                                                                                                            |
| BUILT_BY     |   | CHAR(8)      | Name of the record procedure that builds the record, if any.                                                                                                                                                                                                                         |
| NFIELDS      |   | SMALLINT     | Number of fields in the record.                                                                                                                                                                                                                                                      |
| NSECTIONS    |   | SMALLINT     | Number of sections in the record.                                                                                                                                                                                                                                                    |
| CONDITION_NO |   | SMALLINT     | Number of the IDENTIFIED BY condition in the DRLEXPRESSIONS table. This is zero if no IDENTIFIED BY condition is specified.                                                                                                                                                          |
| TIME_DEFINED |   | TIMESTAMP    | Date and time when the record was defined.                                                                                                                                                                                                                                           |
| CREATOR      |   | CHAR(8)      | ID of the user who defined the record.                                                                                                                                                                                                                                               |
| REMARKS      |   | VARCHAR(254) | Description of the record, set by the COMMENT ON statement.                                                                                                                                                                                                                          |

**DRLRPROCINPUT**

This system table contains one row for every defined record type that must be processed by a record procedure.

| Column name  |   | Data type   | Description                                               |
|--------------|---|-------------|-----------------------------------------------------------|
| PROGRAM_NAME | K | CHAR(8)     | Name of the record procedure.                             |
| RECORD_NAME  | K | VARCHAR(18) | Name of the record that is input to the record procedure. |

**DRLSECTIONS**

This system table contains one row for every defined section in defined record types.

| Column name |   | Data type   | Description                                |
|-------------|---|-------------|--------------------------------------------|
| RECORD_NAME | K | VARCHAR(18) | Name of the record.                        |
| SECTION_NO  | K | SMALLINT    | Section sequence number within the record. |



| Column name    |  | Data type   | Description                                                                                                               |
|----------------|--|-------------|---------------------------------------------------------------------------------------------------------------------------|
| SECTION_NAME   |  | VARCHAR(18) | Name of the section.                                                                                                      |
| CONDITION_NO   |  | SMALLINT    | Number of the PRESENT IF condition in the DRLEXPRESSIONS table. This is zero if no PRESENT IF condition is specified.     |
| OFFSET_EXPR_NO |  | SMALLINT    | Number of the OFFSET expression in the DRLEXPRESSIONS table. This is zero if no OFFSET expression is specified.           |
| LENGTH_EXPR_NO |  | SMALLINT    | Number of the LENGTH expression in the DRLEXPRESSIONS table. This is zero if no LENGTH expression is specified.           |
| NUMBER_EXPR_NO |  | SMALLINT    | Number of the NUMBER expression in the DRLEXPRESSIONS table. This is zero if no NUMBER expression is specified.           |
| INSECTION_NO   |  | SMALLINT    | Number of the section that this section is contained in. This is zero if the section is not contained in another section. |
| REPEATED       |  | CHAR(1)     | Shows whether the section is repeated. This is Y (the section is repeated) or N (the section is not repeated).            |

**DRLUPDATECOLS**

This system table contains one row for every column in each update definition, including GROUP BY, SET, and MERGE columns.

| Column name   |   | Data type   | Description                                                                                                                                                 |
|---------------|---|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPDATE_NAME   | K | VARCHAR(18) | Name of the update definition.                                                                                                                              |
| UPDATECOL_NO  | K | SMALLINT    | Sequence number of the column in the update definition.                                                                                                     |
| COLUMN_NAME   |   | VARCHAR(18) | Name of the column.                                                                                                                                         |
| COLUMN_NO     |   | SMALLINT    | Number of the column in the table definition.                                                                                                               |
| FUNCTION      |   | CHAR(8)     | This is blank for GROUP BY columns; SUM, MAX, MIN, COUNT, FIRST, LAST, AVG, or PERCENT for SET columns; or INTTYPE, START, END, or QUIET for MERGE columns. |
| EXPRESSION_NO |   | SMALLINT    | Number of the expression in the DRLEXPRESSIONS table.                                                                                                       |
| COUNT_COLUMN  |   | VARCHAR(18) | If the function is AVG or PERCENT, this contains the name of the column that contains the count of values.                                                  |
| PERCENTILE    |   | SMALLINT    | If the function is PERCENT, this contains the percentile value (1 - 99).                                                                                    |

**DRLUPDATEDISTR**

This system table contains one row for every distributed field or column in each update definition.

| Column name |   | Data type   | Description                                               |
|-------------|---|-------------|-----------------------------------------------------------|
| UPDATE_NAME | K | VARCHAR(18) | Name of the update definition.                            |
| DISTR_NO    | K | SMALLINT    | Field or column sequence number in the DISTRIBUTE clause. |
| FIELD_NAME  |   | VARCHAR(18) | Name of the field or column to be distributed.            |

**DRLUPDATELETS**

This system table contains one row for every identifier in the LET clause of each update definition. (The identifiers are defined as *abbreviations* in the administration dialog.)

| Column name   |   | Data type   | Description                                           |
|---------------|---|-------------|-------------------------------------------------------|
| UPDATE_NAME   | K | VARCHAR(18) | Name of the update definition.                        |
| LET_NO        | K | SMALLINT    | Sequence number of the identifier in the LET clause.  |
| LET_NAME      |   | VARCHAR(18) | Name of the identifier.                               |
| EXPRESSION_NO |   | SMALLINT    | Number of the expression in the DRLEXPRESSIONS table. |

**DRLUPDATES**

This system table contains one row for each update definition.

| Column name        |   | Data type   | Description                                                                                                                                                                                                                                                                                   |
|--------------------|---|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPDATE_NAME        | K | VARCHAR(18) | Name of the update definition.                                                                                                                                                                                                                                                                |
| VERSION            |   | VARCHAR(18) | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM. <i>nnn</i> [.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |
| SOURCE_PREFIX      |   | CHAR(8)     | Prefix of the source table. This is blank if the source is a record.                                                                                                                                                                                                                          |
| SOURCE_NAME        |   | VARCHAR(18) | Name of the source. This is a record name or a table name.                                                                                                                                                                                                                                    |
| TARGET_PREFIX      |   | CHAR(8)     | Prefix of the target table.                                                                                                                                                                                                                                                                   |
| TARGET_NAME        |   | VARCHAR(18) | Name of the target table.                                                                                                                                                                                                                                                                     |
| SECTION_NAME       |   | VARCHAR(18) | Name of the repeated section, if any, that is used in the update definition.                                                                                                                                                                                                                  |
| CONDITION_NO       |   | SMALLINT    | Number of the WHERE condition in the DRLEXPRESSIONS table. This is zero if no WHERE condition is specified.                                                                                                                                                                                   |
| NLETS              |   | SMALLINT    | Number of identifiers specified in the LET clause.                                                                                                                                                                                                                                            |
| NUPDATECOLS        |   | SMALLINT    | Number of columns in the GROUP BY, SET, and MERGE clauses.                                                                                                                                                                                                                                    |
| SCHEDULE_EXPR_NO   |   | SMALLINT    | Number of the APPLY SCHEDULE expression in the DRLEXPRESSIONS table. This is zero if APPLY SCHEDULE is not specified.                                                                                                                                                                         |
| SCHEDULE_CALEXP_NO |   | SMALLINT    |                                                                                                                                                                                                                                                                                               |
| SCHEDULE_INTTYPE   |   | VARCHAR(18) | Name of the source column or field that defines the interval type.                                                                                                                                                                                                                            |
| SCHEDULE_START     |   | VARCHAR(18) | Name of the source column or field that defines the interval start timestamp.                                                                                                                                                                                                                 |
| SCHEDULE_END       |   | VARCHAR(18) | Name of the source column or field that defines the interval end time stamp.                                                                                                                                                                                                                  |
| SCHEDULE_STATUS    |   | VARCHAR(18) | Name of the identifier that contains the schedule status.                                                                                                                                                                                                                                     |
| NDISTR_FIELDS      |   | SMALLINT    | Number of fields or columns that are distributed.                                                                                                                                                                                                                                             |
| DISTR_BY_EXPR_NO   |   | SMALLINT    | Number of the DISTRIBUTE BY expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified.                                                                                                                                                                              |
| DISTR_FROM_EXPR_NO |   | SMALLINT    | Number of the DISTRIBUTE FROM expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified.                                                                                                                                                                            |

| Column name      |  | Data type    | Description                                                                                                      |
|------------------|--|--------------|------------------------------------------------------------------------------------------------------------------|
| DISTR_TO_EXPR_NO |  | SMALLINT     | Number of the DISTRIBUTE TO expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified. |
| DISTR_TIMESTAMP  |  | VARCHAR(18)  | Name of the identifier that contains the distribution interval start timestamp.                                  |
| DISTR_INTERVAL   |  | VARCHAR(18)  | Name of the identifier that contains the distribution interval length.                                           |
| TIME_DEFINED     |  | TIMESTAMP    | Date and time when the update was defined.                                                                       |
| CREATOR          |  | CHAR(8)      | ID of the user who defined the update.                                                                           |
| REMARKS          |  | VARCHAR(254) | Description of the update definition, set by the COMMENT ON statement.                                           |

## Dialog system tables

These tables contain definitions used by IBM Z Performance and Capacity Analytics dialogs and utilities. **Do not** modify them.

### DRLCHARTS

This system table stores information extracted from the host graphical report formats (ADMCFORM data). Data is inserted into this table at installation time by the host DRLIRD2 member. If GDDM version 3 or later is installed and available, DRLCHARTS is also updated by the host exec DRLECHRT when a report is saved in the host ISPF dialog.

| Column name |   | Data type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|---|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHART_NAME  | K | CHAR(8)   | ADMCFORM name. This is the same as the CHART column in the DRLREPORTS table.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| TYPE        |   | SMALLINT  | <p>This column shows a number identifying the chart type:</p> <p><b>1</b> Line chart</p> <p><b>2</b> Surface chart</p> <p><b>3</b> Histogram</p> <p><b>41, 42, 43</b> Bar chart. The 4 indicates that this is a bar chart; 1, 2, or 3 indicates whether the bars are side by side (1), stacked (2), or overlaid (3).</p> <p><b>5</b> Pie chart</p> <p><b>6</b> Venn diagram</p> <p><b>7</b> Polar chart</p> <p><b>8</b> Tower diagram</p> <p><b>9</b> Table. This is not used.</p> <p><b>10</b> Combination chart.</p> |

## Dialog system tables

| Column name  |  | Data type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|--|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VALUES       |  | SMALLINT    | <p>This column contains one of the values 0, 1, 2, or 3. The column is valid only for chart types 4 (bar) and 5 (pie). For bar charts, the values are:</p> <p><b>0</b><br/>No values are shown</p> <p><b>1</b><br/>Values are shown at the top/end of the bar</p> <p><b>2</b><br/>Values are shown inside the bars</p> <p><b>3</b><br/>Values are shown as in GDDM version 1 release 3</p> <p>For pie charts, the values are:</p> <p><b>1</b><br/>Values are shown</p> <p><b>2</b><br/>No values are shown</p> |
| AXIS_ORIENT  |  | SMALLINT    | Axis orientation. This can be 1 or 2. 1 means vertical y-axis and bars. 2 means horizontal y-axis and bars.                                                                                                                                                                                                                                                                                                                                                                                                    |
| Y_DATA_TYPE  |  | VARCHAR(50) | <p>If the chart type is 10 (combination), this column shows the chart type for each data group:</p> <p><b>1</b><br/>Line chart</p> <p><b>2</b><br/>Surface chart</p> <p><b>3</b><br/>Histogram</p> <p><b>41, 42, 43</b><br/>Bar chart</p> <p>For example, 1, 42, 42, 42, 42 identifies a combination chart with a line chart and stacked bars. For a bar chart, the number is concatenated to indicate bar position as in TYPE above.</p>                                                                      |
| X_AXIS_TITLE |  | VARCHAR(52) | This is a string containing the x-axis title.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Y_AXIS_TITLE |  | VARCHAR(52) | This is a string containing the y-axis title.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### DRLCOMPONENTS

This system table contains one row for each IBM Z Performance and Capacity Analytics component.

| Column name    |   | Data type   | Description                                                                                                                                             |
|----------------|---|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPONENT_NAME | K | VARCHAR(18) | Name of the component.                                                                                                                                  |
| DESCRIPTION    |   | VARCHAR(50) | Description of the component that is shown in the dialog.                                                                                               |
| STATUS         |   | CHAR(1)     | Component status. This is blank if the component is not installed, I if the component is installed online, or B if the component is installed in batch. |
| TIME_INSTALLED |   | TIMESTAMP   | Date and time when the component was installed or defined.                                                                                              |
| USER_ID        |   | CHAR(8)     | ID of the user who installed or defined the component.                                                                                                  |

### DRLCOMP\_OBJECTS

This system table contains one row for every object in each component.

| Column name    |   | Data type   | Description                                                                                         |
|----------------|---|-------------|-----------------------------------------------------------------------------------------------------|
| COMPONENT_NAME | K | VARCHAR(18) | Name of the component.                                                                              |
| OBJECT_NAME    | K | VARCHAR(18) | Name of the object.                                                                                 |
| OBJECT_TYPE    | K | CHAR(8)     | Type of object. This is LOG, RECORD, RECPROC, TABSPACE, LOOKUP, TABLE, UPDATE, REPORT, or REPGROUP. |
| MEMBER_NAME    |   | CHAR(8)     | Name of the member in the SDRLDEFS or SDRLRxxx library where the object is defined.                 |
| PART_NAME      |   | VARCHAR(18) | Name of the component part that the object belongs to, if any.                                      |
| EXCLUDE_FLAG   |   | CHAR(1)     | Flag to determine if this object is excluded from installation of the component.                    |

**DRLCOMP\_PARTS**

This system table contains one row for every part in each component.

| Column name    |   | Data type   | Description                                                                                                                                                            |
|----------------|---|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPONENT_NAME | K | VARCHAR(18) | Name of the component.                                                                                                                                                 |
| PART_NAME      | K | VARCHAR(18) | Name of the component part.                                                                                                                                            |
| DESCRIPTION    |   | VARCHAR(50) | Description of the component part that is shown in the dialog.                                                                                                         |
| STATUS         |   | CHAR(1)     | Component part status. This is blank if the component part is not installed, I if the component part is installed online, or B if the component is installed in batch. |
| TIME_INSTALLED |   | TIMESTAMP   | Date and time when the component part was installed or defined.                                                                                                        |
| USER_ID        |   | CHAR(8)     | ID of the user who installed or defined the component part.                                                                                                            |

**DRLGROUPS**

This system table contains one row for each defined report group.

| Column name  |   | Data type   | Description                                                                                                                                                                                                                                                                   |
|--------------|---|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GROUP_NAME   | K | VARCHAR(18) | Group ID.                                                                                                                                                                                                                                                                     |
| GROUP_OWNER  | K | CHAR(8)     | Owner of the group. This is blank for a public group.                                                                                                                                                                                                                         |
| VERSION      |   | VARCHAR(18) | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM.nnn[.APAR_number], where nnn is the version, release, modification level of the object. |
| DESCRIPTION  |   | VARCHAR(50) | Description of the group that is shown in the dialog.                                                                                                                                                                                                                         |
| TIME_CREATED |   | TIMESTAMP   | Date and time when the group was defined.                                                                                                                                                                                                                                     |
| CREATOR      |   | CHAR(8)     | ID of the user who defined the group.                                                                                                                                                                                                                                         |

**DRLGROUP\_REPORTS**

This system table contains one row for every report in each defined report group.

| Column name |   | Data type   | Description         |
|-------------|---|-------------|---------------------|
| GROUP_NAME  | K | VARCHAR(18) | Group ID.           |
| GROUP_OWNER | K | CHAR(8)     | Owner of the group. |

## Dialog system tables

| Column name  |   | Data type   | Description                                    |
|--------------|---|-------------|------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18) | ID of the report that belongs to the group.    |
| REPORT_OWNER | K | CHAR(8)     | Owner of the report that belongs to the group. |

### DRLREPORTS

This system table contains one row for each defined report.

| Column name  |   | Data type    | Description                                                                                                                                                                                                                                                                                   |
|--------------|---|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18)  | Report ID.                                                                                                                                                                                                                                                                                    |
| REPORT_OWNER | K | CHAR(8)      | Owner of the report. This is blank for a public report.                                                                                                                                                                                                                                       |
| VERSION      |   | VARCHAR(18)  | Version level. The value of VERSION is set for an object when the object is defined and is taken from the value of keyword VERSION. For definitions supplied by IBM, the value is IBM. <i>nnn</i> [.APAR_number], where <i>nnn</i> is the version, release, modification level of the object. |
| DESCRIPTION  |   | VARCHAR(50)  | Description of the report that is shown in the dialog.                                                                                                                                                                                                                                        |
| TYPE         |   | CHAR(8)      | Type of report. This is QUERY, TABDATA, or GRAPH.                                                                                                                                                                                                                                             |
| BATCH        |   | CHAR(1)      | Y if the report should be produced in batch; N otherwise.                                                                                                                                                                                                                                     |
| PRINT        |   | CHAR(1)      | Y if the report should be printed when produced in batch; N otherwise.                                                                                                                                                                                                                        |
| SAVE         |   | CHAR(1)      | Y if the report should be saved when produced in batch; N otherwise.                                                                                                                                                                                                                          |
| RUN_CYCLE    |   | CHAR(8)      | Batch run cycle for the report. This is DAILY, WEEKLY, or MONTHLY.                                                                                                                                                                                                                            |
| QUERY_PREFIX |   | CHAR(8)      | Prefix of the QMF query that should be run when the report is produced.                                                                                                                                                                                                                       |
| QUERY        |   | VARCHAR(18)  | Name of the QMF query that should be run when the report is produced.                                                                                                                                                                                                                         |
| FORM_PREFIX  |   | CHAR(8)      | Prefix of the QMF form that should be used when the report is produced.                                                                                                                                                                                                                       |
| FORM         |   | VARCHAR(18)  | Name of the QMF form that should be used when the report is produced.                                                                                                                                                                                                                         |
| CHART        |   | CHAR(8)      | Name of the GDDM-ICU format to be used for the report. Blank means that the report is tabular.                                                                                                                                                                                                |
| FILE         |   | CHAR(8)      | Name of the member where the data is saved (if type is TABDATA or GRAPH), or where the data should be saved when the report is produced in batch (if save is Y).                                                                                                                              |
| MACRO        |   | CHAR(8)      | Not used.                                                                                                                                                                                                                                                                                     |
| TABLE_NAME   |   | VARCHAR(254) | Name of the table or tables on which the the report is bases. This is extracted from the query when the report is defined.                                                                                                                                                                    |
| NVARIABLES   |   | SMALLINT     | Number of variables defined for the report or extracted from the query.                                                                                                                                                                                                                       |
| NATTRIBUTES  |   | SMALLINT     | Number of attributes defined for the report.                                                                                                                                                                                                                                                  |
| TIME_CREATED |   | TIMESTAMP    | Date and time when the report was defined.                                                                                                                                                                                                                                                    |
| CREATOR      |   | CHAR(8)      | ID of the user who defined the report.                                                                                                                                                                                                                                                        |
| REMARKS      |   | VARCHAR(254) | Long free-format description of the report that can be entered from the dialog.                                                                                                                                                                                                               |

| Column name    |  | Data type | Description                                                                                                                                                                                            |
|----------------|--|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FINAL_SUMMARY  |  | CHAR(3)   | This is valid when QMF is not used. If FINAL_SUMMARY is set to YES, a row containing totals for all numeric columns is generated at the end of the report.                                             |
| ACROSS_SUMMARY |  | CHAR(3)   | If ACROSS_SUMMARY is set to YES for a report of the Across type, a summary column is created to the right in the report. It contains one total value for each row. This is valid when QMF is not used. |

**DRLREPORT\_ATTR**

This system table contains one row for every attribute in each defined report.

| Column name  |   | Data type   | Description                                             |
|--------------|---|-------------|---------------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18) | Report ID.                                              |
| REPORT_OWNER | K | CHAR(8)     | Owner of the report. This is blank for a public report. |
| ATTRIBUTE_NO | K | SMALLINT    | Attribute sequence number.                              |
| ATTRIBUTE    |   | VARCHAR(18) | Attribute value.                                        |

**DRLREPORT\_COLUMNS**

This system table contains one row for every column in each defined report if QMF is not used. The information is taken from the QMF form.

| Column name  |   | Data type   | Description                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|---|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18) | Report ID.                                                                                                                                                                                                                                                                                                                                                                                                |
| REPORT_OWNER | K | CHAR(8)     | Owner of the report. This is blank for a public report.                                                                                                                                                                                                                                                                                                                                                   |
| COLUMN_NO    | K | SMALLINT    | Column number.                                                                                                                                                                                                                                                                                                                                                                                            |
| HEADING      |   | VARCHAR(40) | Column heading.                                                                                                                                                                                                                                                                                                                                                                                           |
| USAGE        |   | CHAR(7)     | Usage code.                                                                                                                                                                                                                                                                                                                                                                                               |
| INDENT       |   | SMALLINT    | Column indentation.                                                                                                                                                                                                                                                                                                                                                                                       |
| WIDTH        |   | SMALLINT    | Column width.                                                                                                                                                                                                                                                                                                                                                                                             |
| EDIT         |   | CHAR(5)     | Edit code.                                                                                                                                                                                                                                                                                                                                                                                                |
| SEQ          |   | SMALLINT    | Column sequence number.                                                                                                                                                                                                                                                                                                                                                                                   |
| DEFINITION   |   | VARCHAR(50) | The DEFINITION column can define an additional report column, which is not present in the SQL query. The definition must be a valid REXX expression, and may contain numeric constants and variables of the &n type, where n is an existing column number. The DEFINITION column is intended only for existing IBM Z Performance and Capacity Analytics reports and is not used for user-defined reports. |

**DRLREPORT\_QUERIES**

This system table contains one row for every query line in each defined report, if QMF is not used.

| Column name  |   | Data type   | Description                                             |
|--------------|---|-------------|---------------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18) | Report ID.                                              |
| REPORT_OWNER | K | CHAR(8)     | Owner of the report. This is blank for a public report. |
| LINE_NO      | K | SMALLINT    | Line number in the query.                               |
| QUERY_LINE   |   | VARCHAR(80) | Query text.                                             |

**DRLREPORT\_TEXT**

This system table is used for host reports when QMF is not used. It contains one row for every heading and footing row. It also contains one row if there is a final summary line with a final text, and one row if there is an expression that limits the number of output rows in the report.

| Column name  |   | Data type   | Description                                                   |
|--------------|---|-------------|---------------------------------------------------------------|
| REPORT_NAME  | K | VARCHAR(18) | Report ID.                                                    |
| REPORT_OWNER | K | CHAR(8)     | Owner of the report. This is blank for a public report.       |
| TYPE         | K | CHAR(8)     | Text type. This is HEADING, FOOTING, DETAIL, FINAL or ROWS.   |
| LINE_NO      | K | SMALLINT    | Line number for HEADING and FOOTING.                          |
| ALIGNMENT    |   | CHAR(6)     | Shows how the text should be aligned; left, center, or right. |
| TEXT         |   | VARCHAR(55) | Text for one line of a report text (see TYPE above).          |

**DRLREPORT\_VARS**

This system table contains one row for every variable in each defined report. The variables may be specified in the DEFINE REPORT statement or extracted from the query.

| Column name     |   | Data type   | Description                                                                                                                                                                                                   |
|-----------------|---|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REPORT_NAME     | K | VARCHAR(18) | Report ID.                                                                                                                                                                                                    |
| REPORT_OWNER    | K | CHAR(8)     | Owner of the report. This is blank for a public report.                                                                                                                                                       |
| VARIABLE_NO     | K | SMALLINT    | Sequence number of the variable.                                                                                                                                                                              |
| VARIABLE_NAME   |   | VARCHAR(18) | Name of the variable.                                                                                                                                                                                         |
| EXPRESSION      |   | VARCHAR(80) | Expression in the query that is compared with the variable, if the variable is found in the query. This is used, with TABLE_NAME in the DRLREPORTS table, to find a list of possible values for the variable. |
| OPERATOR        |   | CHAR(4)     | Operator that is used when comparing the variable and the expression, if the variable is found in the query. This is =, <=, >=, IN, or LIKE.                                                                  |
| DATA_TYPE       |   | CHAR(8)     | Data type of the variable, if specified. This is CHAR, NUMERIC, DATE, TIME, or TIMESTAMP.                                                                                                                     |
| REQUIRED        |   | CHAR(1)     | Shows whether the variable must be given a value. This is Y for yes, or N or blank for no.                                                                                                                    |
| DEFAULT         |   | VARCHAR(40) | Default value to use for the variable, if specified.                                                                                                                                                          |
| IN_HEADER       |   | CHAR(1)     | Variable to determine if the IBM Z Performance and Capacity Analytics variable is used in the header. This is Y for yes, or N for no.                                                                         |
| IN_HEADER_VALUE |   | VARCHAR(35) | Default header value for a non-required variable without a substitution value.                                                                                                                                |

**DRLSEARCH\_ATTR**

This system table contains one row for every attribute in each saved report search.

| Column name  |   | Data type   | Description                                                   |
|--------------|---|-------------|---------------------------------------------------------------|
| SEARCH_NAME  | K | VARCHAR(18) | Name of the saved search.                                     |
| SEARCH_OWNER | K | CHAR(8)     | Owner of the saved search. This is blank for a public search. |



| Column name  |   | Data type   | Description                                                                                                   |
|--------------|---|-------------|---------------------------------------------------------------------------------------------------------------|
| ATTR_SET_NO  | K | SMALLINT    | Attribute set sequence number. The attribute sets are logically ORed together.                                |
| ATTRIBUTE_NO | K | SMALLINT    | Attribute sequence number within the attribute set. The attributes within a set are logically ANDed together. |
| ATTRIBUTE    |   | VARCHAR(18) | Attribute value. This can contain global search characters.                                                   |

### DRLSEARCHES

This system table contains one row for each saved report search.

| Column name  |   | Data type   | Description                                                                       |
|--------------|---|-------------|-----------------------------------------------------------------------------------|
| SEARCH_NAME  | K | VARCHAR(18) | Name of the saved search.                                                         |
| SEARCH_OWNER | K | CHAR(8)     | Owner of the saved search. This is blank for a public search.                     |
| DESCRIPTION  |   | VARCHAR(50) | Description of the search that is shown in the dialog.                            |
| NATTR_SETS   |   | SMALLINT    | Number of attribute sets used in the search.                                      |
| REPORT_DESC  |   | VARCHAR(50) | Report description used in the search. This can contain global search characters. |
| REPORT_TYPE  |   | CHAR(8)     | Report type specified in the search.                                              |
| REPORT_OWNER |   | CHAR(8)     | Report owner specified in the search.                                             |
| TIME_CREATED |   | TIMESTAMP   | Date and time when the search was saved.                                          |
| CREATOR      |   | CHAR(8)     | ID of the user who saved the search.                                              |

### GENERATE\_PROFILES

This system table contains one row for each profile for each generate statement profile. It is used when installing components that use the GENERATE statement to create table spaces, partitioning, and indexes.

| Column name     |   | Data type   | Description                                                                                                                                                                                                                                                          |
|-----------------|---|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROFILE         | K | VARCHAR(18) | Profile name. This value is specified on the <b>PROFILE</b> parameter of the GENERATE TABLESPACE and GENERATE INDEX statements.                                                                                                                                      |
| COMPONENT_ID    | K | VARCHAR(18) | IBM Z Performance and Capacity Analytics component ID or %. Allows for a unique profile for an IBM Z Performance and Capacity Analytics component.                                                                                                                   |
| SUBCOMPONENT_ID | K | VARCHAR(18) | IBM Z Performance and Capacity Analytics subcomponent ID or %. Allows for a unique profile for an IBM Z Performance and Capacity Analytics subcomponent. An explicit subcomponent is only valid for a profile where an explicit value is specified for COMPONENT_ID. |
| TABLESPACE_NAME | K | VARCHAR(18) | Table space name or %. An explicit value can be specified even if explicit values are not also specified for COMPONENT_ID and SUBCOMPONENT_ID.                                                                                                                       |
| TABLESPACE_TYPE |   | VARCHAR(9)  | Table space type (RANGE, GROWTH, SEGMENTED). If invalid, GROWTH will be used. For type RANGE, there must be a set of definitions in the GENERATE_KEYS system table with the same profile name.                                                                       |
| MAXPARTS        |   | INTEGER     | Maximum partitions. Used with TABLESPACE_TYPE of GROWTH or SEGMENTED.                                                                                                                                                                                                |

| Column name |  | Data type    | Description                                                                                                                                                                                                                                           |
|-------------|--|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NUMPARTS    |  | INTEGER      | Initial number of partitions. Used with TABLESPACE_TYPE of GROWTH. (For range partitioning, NUMPARTS is calculated from the number of entries in the GENERATE_KEYS table).                                                                            |
| SEGSIZE     |  | INTEGER      | Segment size for all table space types.                                                                                                                                                                                                               |
| TBSPACE1    |  | VARCHAR(250) | The first set of SQL options allowed for GENERATE TABLESPACE. (TBSPACE1 contains parameters that are in the select group prior to the parameter <b>DSSIZE</b> in the Db2 SQL Reference syntax diagram for the CREATE TABLESPACE statement.)           |
| TBSPACE2    |  | VARCHAR(250) | The second set of SQL options allowed for GENERATE DEFAULT TABLESPACE. (TBSPACE2 contains parameters that are in the select group prior to the parameter <b>SEGSIZE</b> in the Db2 SQL Reference syntax diagram for the CREATE TABLESPACE statement.) |
| INDEX1      |  | VARCHAR(250) | The first set of SQL options allowed for GENERATE INDEX. (INDEX1 contains parameters that are in the select group following the parameter <b>partition-element</b> in the Db2 SQL Reference syntax diagram for the CREATE INDEX statement.)           |
| INDEX2      |  | VARCHAR(250) | The second set of SQL options allowed for GENERATE INDEX. (INDEX2 contains parameters that are in the select group starting with <b>BUFFERPOOL-bpname</b> in the Db2 SQL Reference syntax diagram for the CREATE INDEX statement.)                    |

### GENERATE\_KEYS

This system table contains one row for each partition of a generate statement profile using range-partitioning. It is used when installing components that use the GENERATE statement to create range-partitioned table spaces, partitioning and indexes.

| Column name       |   | Data type    | Description                                                                                                                                                                                                                                                          |
|-------------------|---|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROFILE           | K | VARCHAR(18)  | Profile name. This value is specified on the <b>PROFILE</b> parameter of the GENERATE PARTITIONING statement.                                                                                                                                                        |
| COMPONENT_ID      | K | VARCHAR(18)  | IBM Z Performance and Capacity Analytics component ID or %. Allows for a unique profile for an IBM Z Performance and Capacity Analytics component.                                                                                                                   |
| SUBCOMPONENT_ID   | K | VARCHAR(18)  | IBM Z Performance and Capacity Analytics subcomponent ID or %. Allows for a unique profile for an IBM Z Performance and Capacity Analytics subcomponent. An explicit subcomponent is only valid for a profile where an explicit value is specified for COMPONENT_ID. |
| TABSPACE_NAME     | K | VARCHAR(18)  | Table space name or %. An explicit value can be specified even if explicit values are not also specified for COMPONENT_ID and SUBCOMPONENT_ID.                                                                                                                       |
| PART_NUM          | K | INTEGER      | The number of the physical partition for the table space. NUMPARTS for a RANGE table space is the number of PART_NUM entries for this profile name.                                                                                                                  |
| PARTITION_OPTIONS |   | VARCHAR(250) | A string of partition options added to each partition of the partition-by-range specification of the generated CREATE TABLESPACE statement.                                                                                                                          |

| Column name   |  | Data type    | Description                                                                                                                                                                                                                                         |
|---------------|--|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RANGE_COLUMNS |  | VARCHAR(250) | Specifies the columns of the range-partitioning key. Provide a comma-separated list of the columns comprising the range-partitioning key. Column options as defined by the Db2 ALTER TABLE ... ADD PARTITION BY RANGE syntax may also be specified. |
| PARTITION_KEY |  | VARCHAR(250) | The limiting key value for the partition boundary.                                                                                                                                                                                                  |
| INCLUSIVE     |  | CHAR(1)      | Specifies if the range values are included in the data partition: either Y (for inclusive) or N (for not inclusive).                                                                                                                                |

## Views on Db2 and QMF tables

These views on Db2 tables are required for users without access to the tables.

| View name      | Description                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------|
| DRLCOLUMNS     | This view is based on SYSIBM.SYSCOLUMNS in the Db2 catalog. It is used to get column names and comments.                   |
| DRLINDEXES     | This table is based on SYSIBM.SYSINDEXES in the Db2 catalog. It is used to get table index information.                    |
| DRLINDEXPART   | This view is based on SYSIBM.SYSINDEXPART in the Db2 catalog. It is used to get index partition information.               |
| DRLKEYS        | This view is based on SYSIBM.SYSKEYS in the Db2 catalog. It is used to get information on index keys.                      |
| DRLOBJECT_DATA | This view is based on Q.OBJECT_DATA, a QMF control table that contains information about QMF objects.                      |
| DRLTABAUTH     | This view is based on SYSIBM.SYSTABAUTH in the Db2 catalog. It is used to get table privilege information.                 |
| DRLTABLEPART   | This view is based on SYSIBM.SYSTABLEPART in the Db2 catalog. It is used to get table space information.                   |
| DRLTABLES      | This view is based on SYSIBM.SYSTABLES in the Db2 catalog. It is used to get a list of tables and comments for the tables. |
| DRLTABLESPACE  | This view is based on SYSIBM.SYSTABLESPACE in the Db2 catalog. It is used to get a list of table spaces.                   |
| DRLVIEWS       | This view is based on SYSIBM.SYSVIEWS in the Db2 catalog. It is used to get view definitions.                              |

## Views on IBM Z Performance and Capacity Analytics system tables

These views on IBM Z Performance and Capacity Analytics dialog system tables are required for users without access to the tables.

| View Name          | Description                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------|
| DRLUSER_GROUPREPS  | This view is based on DRLGROUP_REPORTS. It allows a user to update only his own report groups. |
| DRLUSER_GROUPS     | This view is based on DRLGROUPS. It allows a user to update only his own report groups.        |
| DRLUSER_REPORTATTR | This view is based on DRLREPORT_ATTR. It allows a user to update only his own reports.         |
| DRLUSER_REPORTS    | This view is based on DRLREPORTS. It allows a user to update only his own reports.             |
| DRLUSER_REPORTVARS | This view is based on DRLREPORT_VARS. It allows a user to update only his own reports.         |
| DRLUSER_SEARCHATTR | This view is based on DRLSEARCH_ATTR. It allows a user to update only his own searches.        |
| DRLUSER_SEARCHES   | This view is based on DRLSEARCHES. It allows a user to update only his own searches.           |

| View Name          | Description                                                                               |
|--------------------|-------------------------------------------------------------------------------------------|
| DRLUSER_REPORTQRYS | This view is based on DRLREPORT_QUERIES. It allows a user to update only his own reports. |
| DRLUSER_REPORTCOLS | This view is based on DRLREPORT_COLUMNS. It allows a user to update only his own reports. |
| DRLUSER_REPORTTEXT | This view is based on DRLREPORT_TEXT. It allows a user to update only his own reports.    |

## Control tables and common tables

This chapter describes control tables and common tables. These tables are used by many IBM Z Performance and Capacity Analytics components. The tables are provided with the IBM Z Performance and Capacity Analytics base.

Each table description includes information about the table, and a description of each key column and data column in the table.

*Key columns* are marked with a "K".

*Data columns* come after the last key column and are sorted in alphabetical order, with any underscores ignored.

The tables appear in alphabetical order, with any underscores ignored.

**Note:** Data tables with similar contents (that is, data tables with the same name but different suffixes) are described under one heading. For example, [“AVAILABILITY\\_D, \\_W, \\_M”](#) on page 240 contains information about three similar tables:

```
AVAILABILITY_D
AVAILABILITY_W
AVAILABILITY_M
```

Except for the DATE column and TIME column, the contents of these three tables are identical. Differences in the contents of similar tables are explained in the column descriptions.

The DATE and TIME information are stored in the standard Db2 format and displayed in the local format.

### Control tables

The control tables are created during installation of the IBM Z Performance and Capacity Analytics base. The tables control results returned by some log collector functions.

Control tables appear in the tables list in the administration dialog.

#### DAY\_OF\_WEEK

This control table defines the day type to be returned by the DAYTYPE function for each day of the week. The day type is used as a key in the PERIOD\_PLAN and SCHEDULE control tables.

| Column name |   | Data type | Description                                              |
|-------------|---|-----------|----------------------------------------------------------|
| DAY_OF_WEEK | K | SMALLINT  | Day of week number, 1 through 7 (Monday through Sunday). |
| DAY_TYPE    |   | CHAR(8)   | Day type for the day of week.                            |

#### Example of table contents

```

DAY
OF
WEEK
-----
1  MON
2  TUE
3  WED
4  THU
```

5 FRI  
6 SAT  
7 SUN

## PERIOD\_PLAN

This control table defines the periods to be returned by the PERIOD function, which is described in the *Language Guide and Reference*. A period plan defines the partition of a day into periods (such as shifts) for each day type defined by the DAY\_OF\_WEEK and SPECIAL\_DAY control tables.

| Column name    |   | Data type | Description                                                                                                                                                                                                                                                                                                                        |
|----------------|---|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PERIOD_PLAN_ID | K | CHAR(8)   | You can have different sets of period names for different systems. Each application normally uses a system ID from the log to match this field, for example the MVS system ID for an MVS performance application. Specify % for the rows that specify your default set of period names. This can contain global search characters. |
| DAY_TYPE       | K | CHAR(8)   | Day type the period applies to. This can be any of the day types specified in the DAY_OF_WEEK and SPECIAL_DAY control tables.                                                                                                                                                                                                      |
| START_TIME     | K | TIME      | Time when the period starts.                                                                                                                                                                                                                                                                                                       |
| END_TIME       |   | TIME      | Time when the period ends.                                                                                                                                                                                                                                                                                                         |
| PERIOD_NAME    |   | CHAR(8)   | Name of the period.                                                                                                                                                                                                                                                                                                                |

### Example of table contents

| PERIOD<br>PLAN<br>ID | DAY<br>TYPE | START<br>TIME | END<br>TIME | PERIOD<br>NAME |
|----------------------|-------------|---------------|-------------|----------------|
| %                    | MON         | 00.00.00      | 08.00.00    | NIGHT          |
| %                    | MON         | 08.00.00      | 17.00.00    | PRIME          |
| %                    | MON         | 17.00.00      | 24.00.00    | NIGHT          |
| %                    | TUE         | 00.00.00      | 08.00.00    | NIGHT          |
| %                    | TUE         | 08.00.00      | 17.00.00    | PRIME          |
| %                    | TUE         | 17.00.00      | 24.00.00    | NIGHT          |
| %                    | WED         | 00.00.00      | 08.00.00    | NIGHT          |
| %                    | WED         | 08.00.00      | 17.00.00    | PRIME          |
| %                    | WED         | 17.00.00      | 24.00.00    | NIGHT          |
| %                    | THU         | 00.00.00      | 08.00.00    | NIGHT          |
| %                    | THU         | 08.00.00      | 17.00.00    | PRIME          |
| %                    | THU         | 17.00.00      | 24.00.00    | NIGHT          |
| %                    | FRI         | 00.00.00      | 08.00.00    | NIGHT          |
| %                    | FRI         | 08.00.00      | 17.00.00    | PRIME          |
| %                    | FRI         | 17.00.00      | 24.00.00    | NIGHT          |
| %                    | SAT         | 00.00.00      | 24.00.00    | WEEKEND        |
| %                    | SUN         | 00.00.00      | 24.00.00    | WEEKEND        |
| %                    | HOLIDAY     | 00.00.00      | 24.00.00    | HOLIDAY        |

## SCHEDULE

This control table defines the schedules to be returned by the APPLY SCHEDULE function. A schedule is a time period when a resource is planned to be up; it is used in availability calculations.

| Column name   |   | Data type | Description                                                                                                                                                                                                          |
|---------------|---|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SCHEDULE_NAME | K | CHAR(8)   | Name of the schedule. By giving different names to schedules, you can have different schedules for the various systems or resources. The AVAILABILITY_PARM table controls which schedule name to use for a resource. |
| DAY_TYPE      | K | CHAR(8)   | Day type the schedule applies to. This can be any of the day types specified in the DAY_OF_WEEK and SPECIAL_DAY control tables.                                                                                      |
| START_TIME    | K | TIME      | Time when the schedule starts.                                                                                                                                                                                       |
| END_TIME      |   | TIME      | Time when the schedule ends.                                                                                                                                                                                         |

**Example of table contents**

| SCHEDULE<br>NAME | DAY<br>TYPE | START<br>TIME | END<br>TIME |
|------------------|-------------|---------------|-------------|
| STANDARD         | MON         | 08.00.00      | 17.00.00    |
| STANDARD         | TUE         | 08.00.00      | 17.00.00    |
| STANDARD         | WED         | 08.00.00      | 17.00.00    |
| STANDARD         | THU         | 08.00.00      | 17.00.00    |
| STANDARD         | FRI         | 08.00.00      | 17.00.00    |
| STANDARD         | SAT         | 00.00.00      | 00.00.00    |
| STANDARD         | SUN         | 00.00.00      | 00.00.00    |
| STANDARD         | HOLIDAY     | 00.00.00      | 00.00.00    |

**SPECIAL\_DAY**

This control table defines the day type to be returned by the DAYTYPE function for special dates such as holidays. The day type is used as a key in the PERIOD\_PLAN and SCHEDULE control tables.

| Column name |   | Data type | Description                                  |
|-------------|---|-----------|----------------------------------------------|
| DATE        | K | DATE      | Date to be defined as special day.           |
| DAY_TYPE    |   | CHAR(8)   | Day type for the date; for example, HOLIDAY. |

**Example of table contents**

| DATE       | DAY<br>TYPE |
|------------|-------------|
| 1999-12-25 | HOLIDAY     |
| 2000-01-01 | HOLIDAY     |

**AGGR\_VALUE**

This table is to be used to assign a default value to a key field if it is not required in the aggregation. If a record is found in the AGGR\_VALUE for a particular table and column, then the default value is used in the aggregation. This has the potential to reduce the number of rows collected for that particular table.

| Column name    |   | Data type | Description                       |
|----------------|---|-----------|-----------------------------------|
| AGGR_TABLE     | K | CHAR(18)  | Name of IZPCA table.              |
| AGGR_COLUMN    | K | CHAR(18)  | Name of IZPCA column.             |
| AGGR_DEF_VALUE |   | CHAR(16)  | Default value to assign to field. |

**Example of table contents**

| AGGR<br>TABLE | AGGR<br>COLUMN  | AGGR<br>DEF<br>VALUE |
|---------------|-----------------|----------------------|
| DB2_PACKAGE_H | CORRELATION_ID  | \$USER               |
| DB2_PACKAGE_H | PRIMARY_AUTH_ID | \$USER               |

**CICS control tables**

The CICS control tables are created during installation of the IBM Z Performance and Capacity Analytics base. The tables control results returned by some log collector functions during CICS log data collection.

CICS control tables appear in the tables list in the administration dialog.

**CICS\_DICTIONARY**

This control table is used during CICS log data collection. The CICS record procedure, DRL2CICS, uses CICS\_DICTIONARY to store the latest dictionary record processed for each unique combination of MVS\_SYSTEM\_ID, CICS\_SYSTEM\_ID, CLASS and VERSION. For more information, refer to the *CICS Performance Feature Guide and Reference*.

| Column name         |   | Data type | Description                                                                                                                                                            |
|---------------------|---|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MVS_SYSTEM_ID       | K | CHAR(4)   | MVS system ID. From SMFMNSID (V3) or SMFSID (V2).                                                                                                                      |
| CICS_SYSTEM_ID      | K | CHAR(8)   | CICS generic ID. This is the VTAM® application identifier for the CICS system that produced the dictionary. From SMFMNPRN (V3) or SMFSPRN (V2).                        |
| CLASS               | K | SMALLINT  | Monitoring class. This is 2 for accounting (CICS/MVS V2 only), 3 for performance data, and 4 for exception data (CICS/MVS V2 only). From SMFMNCL (V3) or MNSEGCL (V2). |
| VERSION             | K | SMALLINT  | Version of the CICS system that produced the dictionary. This is 2 for CICS/MVS (V2) and 3 for CICS/ESA (V3). Set by DRL2CICS based on SMFMNSTY (V3) or SMFSTY (V2).   |
| FIELD_NO            | K | SMALLINT  | Assigned connector for this dictionary entry (CMODCONN). This is also the index to the dictionary entry array.                                                         |
| CICS_VER            | K | CHAR(4)   | CICS version and release that created this dictionary (from the field SMFMNRVN). EX. 0410.                                                                             |
| DICTIONARY_ENTRY_ID |   | CHAR(12)  | Dictionary entry ID. It is made up of the CMODNAME, CMODTYPE and CMODIDNT fields in the dictionary entry. It is used to uniquely identify each dictionary entry.       |
| OUTPUT_LENGTH       |   | SMALLINT  | Field length for matching DICTIONARY_ENTRY_ID in CICS_FIELD. It is used for building the output record.                                                                |
| OUTPUT_OFFSET       |   | SMALLINT  | Field offset for matching DICTIONARY_ENTRY_ID in CICS_FIELD. It is used for building the output record.                                                                |
| USED                |   | CHAR(8)   | A flag indicating (if = Y) that this dictionary entry has been updated with field length and offset data from a matching DICTIONARY_ENTRY_ID in CICS_FIELD.            |

### CICS\_FIELD

This control table is used during CICS log data collection. The CICS record procedure, DRL2CICS, uses CICS\_FIELD to store field lengths and offsets for dictionary fields described in [“CICS\\_DICTIONARY” on page 238](#). For more information, refer to the *CICS Performance Feature Guide and Reference*.

| Column name         |   | Data type | Description                                                                                                                                                                                |
|---------------------|---|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLASS               | K | SMALLINT  | CMF record class. 2 for accounting (CICS/MVS V2 only), 3 for performance data (transaction and global (CICS/MVS V2 only)) and 4 for exception data (CICS/MVS V2 only).                     |
| DICTIONARY_ENTRY_ID | K | CHAR(12)  | This is the dictionary entry ID. It is made up of the CMODNAME, CMODTYPE and CMODIDNT fields in the dictionary entry. It is used to uniquely identify each dictionary entry.               |
| FIRST_CICS_VER      | K | CHAR(4)   | This is first version of CICS that introduced this CMODTYPE and CMODIDNT with these attributes. This allows multiple versions of the same key as many fields were changed with CICS TS 3.2 |
| OUTPUT_LENGTH       |   | SMALLINT  | This is the field length that is used to build the output record.                                                                                                                          |
| OUTPUT_OFFSET       |   | INTEGER   | This is the field offset that is used to build the output record. This offset should match the SMF_CICS_T, _G, _A, _E2 record definitions.                                                 |

### Common data tables

These tables are ordinary data tables that are used by many components. They are provided with the IBM Z Performance and Capacity Analytics base, but not created until the installation of the first component that uses them.

### Naming standard for common data tables

Names of IBM Z Performance and Capacity Analytics common data tables are in this format:

*content\_suffix*

where:

- *content* is a description (for example, AVAILABILITY for system and resource availability data).
- *suffix* indicates the summarization level of the data in the table (for example, AVAILABILITY\_D for availability data summarized by day).

A common table name can have these summarization-level suffixes:

**\_T**

The table holds nonsummarized data (**timestamped** data).

**\_D**

The table holds data summarized by **day**.

**\_W**

The table holds data summarized by **week**.

**\_M**

The table holds data summarized by **month**.

### AVAILABILITY\_D, \_W, \_M

These tables provide daily, weekly, and monthly statistics on the availability of systems and subsystems. They contain consolidated data from the AVAILABILITY\_T table.

The default retention periods for these tables are:

#### AVAILABILITY\_D

90 days

#### AVAILABILITY\_W

400 days

#### AVAILABILITY\_M

800 days

| Column name    |   | Data type    | Description                                                                                                                                                                                                                                              |
|----------------|---|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DATE           | K | DATE         | Date that the availability data applies to. For the <b>_W</b> table, this is the date of the first day of the week. For the <b>_M</b> table, this is the date of the first day of the month.                                                             |
| SYSTEM_ID      | K | CHAR(8)      | System ID such as an MVS or VM system ID.                                                                                                                                                                                                                |
| AREA           | K | CHAR(8)      | Major area the resource is related to, such as MVS or NETWORK.                                                                                                                                                                                           |
| RESOURCE_TYPE  | K | CHAR(8)      | Resource type.                                                                                                                                                                                                                                           |
| RESOURCE_NAME  | K | CHAR(8)      | Resource name.                                                                                                                                                                                                                                           |
| RESOURCE_GROUP | K | CHAR(8)      | Resource group.                                                                                                                                                                                                                                          |
| AVAIL_OBJ_PCT  |   | DECIMAL(4,1) | Availability objective for the resource, in percent. This is from the column AVAIL_OBJ_PCT in the AVAILABILITY_PARM lookup table. This value should be compared with the actual availability, which is calculated as: 100*UP_IN_SCHEDULE/SCHEDULE_HOURS. |
| MEASURED_HOURS |   | FLOAT        | Number of hours measured.                                                                                                                                                                                                                                |
| SCHEDULE_DAYS  |   | SMALLINT     | Number of days during the week or month that the resource was scheduled to be up. This column is only present in the <b>_W</b> and <b>_M</b> tables.                                                                                                     |
| SCHEDULE_HOURS |   | FLOAT        | Number of hours the resource was scheduled to be up.                                                                                                                                                                                                     |
| STARTS         |   | SMALLINT     | Number of times the resource was started.                                                                                                                                                                                                                |



| Column name        |  | Data type | Description                                                   |
|--------------------|--|-----------|---------------------------------------------------------------|
| STARTS_IN_SCHEDULE |  | SMALLINT  | Number of times the resource was started within the schedule. |
| STOPS              |  | SMALLINT  | Number of times the resource was stopped.                     |
| STOPS_IN_SCHEDULE  |  | SMALLINT  | Number of times the resource was stopped within the schedule. |
| UP_HOURS           |  | FLOAT     | Number of hours the resource was up.                          |
| UP_IN_SCHEDULE     |  | FLOAT     | Number of hours the resource was up within the schedule.      |

### AVAILABILITY\_T

This table provides detailed availability data about the system as a whole and all its subsystems. The data comes from many different sources. For every resource tracked, this table contains one row for each time interval with a different status.

The default retention period for this table is 10 days.

| Column name        |   | Data type | Description                                                                                                                                                                                                                                                                                                       |
|--------------------|---|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM_ID          | K | CHAR(8)   | System ID such as an MVS or VM system ID.                                                                                                                                                                                                                                                                         |
| AREA               | K | CHAR(8)   | Major area the resource is related to, such as MVS or NETWORK.                                                                                                                                                                                                                                                    |
| RESOURCE_TYPE      | K | CHAR(8)   | Resource type.                                                                                                                                                                                                                                                                                                    |
| RESOURCE_NAME      | K | CHAR(8)   | Resource name.                                                                                                                                                                                                                                                                                                    |
| RESOURCE_GROUP     | K | CHAR(8)   | Resource group.                                                                                                                                                                                                                                                                                                   |
| INTERVAL_TYPE      | K | CHAR(3)   | Interval type. Possible values are: ==,  =, == ,  = , XXX,  XX, XX ,  X , and blank, where:<br><b>=</b><br>Indicates that the resource is up (available)<br><b>X</b><br>Indicates that the resource is down<br><b> </b><br>Indicates an interval start or end<br><b>blank</b><br>Means that the status is unknown |
| START_TIME         | K | TIMESTAMP | Start time of the interval.                                                                                                                                                                                                                                                                                       |
| END_TIME           |   | TIMESTAMP | End time of the interval.                                                                                                                                                                                                                                                                                         |
| QUIET_INTERVAL_SEC |   | INTEGER   | Number of seconds after the interval end that the resource is expected to remain in the same status. If another interval with a start time within this range appears, the two intervals are merged.                                                                                                               |

### EXCEPTION\_T

This table provides a list of exceptions that have occurred in the system and require attention. The data comes from many different sources.

The layout of this table cannot be changed by the user.

The default retention period for this table is 14 days.

| Column name |   | Data type | Description                                                     |
|-------------|---|-----------|-----------------------------------------------------------------|
| DATE        | K | DATE      | Date when the exception occurred.                               |
| TIME        | K | TIME      | Time when the exception occurred.                               |
| SYSTEM_ID   | K | CHAR(8)   | System where the exception occurred.                            |
| AREA        | K | CHAR(8)   | Major area the exception is related to, such as MVS or NETWORK. |

## Common lookup tables

| Column name        |   | Data type   | Description                                                                                                                                                               |
|--------------------|---|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EXCEPTION_ID       | K | VARCHAR(18) | Short description of the exception type. This can be used to count the number of exceptions of different types.                                                           |
| RESOURCE_NAME1     | K | CHAR(8)     | Name of the first resource that the exception is related to.                                                                                                              |
| RESOURCE_NAME2     | K | CHAR(8)     | Name of the second resource that the exception is related to.                                                                                                             |
| DATE_GENERATED     |   | DATE        | Date when the problem was recorded in the Information/Management database. This is null if no problem record has been generated.                                          |
| EXCEPTION_DESC     |   | VARCHAR(45) | Text that describes the exception, in any format.                                                                                                                         |
| PROBLEM_FLAG       |   | CHAR(1)     | Controls whether a problem record should be automatically generated for the exception. This can be Y (generate a problem record) or N (do not generate a problem record). |
| PROBLEM_NUMBER     |   | CHAR(8)     | The Information/Management problem-record number. This is null if no problem record has been generated.                                                                   |
| SEVERITY           |   | CHAR(2)     | Severity of the problem. This is user-defined.                                                                                                                            |
| TRANSACTION_NUMBER |   | INTEGER     | Transaction identifier number.                                                                                                                                            |
| TRANSACTION_CHAR   |   | CHAR(4)     | Transaction number in character format. (in some special cases CICS system tasks are identified as III, JBS, J01-J99, TCB.)                                               |
| PROGRAM_NAME       |   | CHAR(8)     | Name of the program.                                                                                                                                                      |

### MIGRATION\_LOG

This table holds information on what migration jobs have been run, and the results of each step.

The layout of this table cannot be changed by the user.

The default retention period for this table is 14 days.

| Column name    |   | Data type | Description                             |
|----------------|---|-----------|-----------------------------------------|
| JOB_NAME       | K | CHAR(8)   | Migration job name.                     |
| STEP_NO        | K | INTEGER   | Step number of job.                     |
| START_DATE     | K | DATE      | Start date of job.                      |
| START_TIME     | K | TIME      | Start time of job.                      |
| STEP_NAME      |   | CHAR(30)  | Step name of job.                       |
| RETURN_CODE    |   | INTEGER   | Step status code.                       |
| COMPLETED_CODE |   | CHAR      | Y - Completed successfully<br>U - Abend |
| END_DATE       |   | DATE      | End date of last migration step.        |
| END_TIME       |   | TIME      | End time of last migration step.        |

## Common lookup tables

These tables are ordinary lookup tables that are used by many components. They are provided with the IBM Z Performance and Capacity Analytics base, but not created until the installation of the first component that uses them.

### AVAILABILITY\_PARM

This lookup table sets availability parameters. It contains the schedule names and availability objectives to use for the different resources in the system. Its values are used in the AVAILABILITY\_D, \_W, and \_M tables.

| Column name    |   | Data type    | Description                                                                                                    |
|----------------|---|--------------|----------------------------------------------------------------------------------------------------------------|
| SYSTEM_ID      | K | CHAR(8)      | System ID associated with the resource. This can contain global search characters.                             |
| AREA           | K | CHAR(8)      | Major area that the resource is related to, such as MVS or NETWORK. This can contain global search characters. |
| RESOURCE_TYPE  | K | CHAR(8)      | Resource type. This can contain global search characters.                                                      |
| RESOURCE_NAME  | K | CHAR(8)      | Resource name. This can contain global search characters.                                                      |
| RESOURCE_GROUP | K | CHAR(8)      | Resource group. This can contain global search characters.                                                     |
| AVAIL_OBJ_PCT  |   | DECIMAL(4,1) | Availability objective for the resource, in percent.                                                           |
| SCHEDULE_NAME  |   | CHAR(8)      | Schedule name to use for the resource.                                                                         |

**Example of table contents**

| SYSTEM ID | AREA  | RESOURCE TYPE | RESOURCE NAME | RESOURCE GROUP | SCHEDULE NAME | AVAIL OBJ PCT |
|-----------|-------|---------------|---------------|----------------|---------------|---------------|
| -----     | ----- | -----         | -----         | -----          | -----         | -----         |
| %         | %     | %             | %             | %              | STANDARD      | 95.0          |
| ⋮         |       |               |               |                |               |               |

**USER\_GROUP**

This lookup table groups the users of the system into user groups. The values are used in many tables. You can also assign division and department names to the user groups; however, the names are left blank in the predefined tables.

| Column name  |   | Data type | Description                                                                                                                          |
|--------------|---|-----------|--------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM_ID    | K | CHAR(8)   | System ID such as an MVS or VM system ID. This can contain global search characters.                                                 |
| SUBSYSTEM_ID | K | CHAR(8)   | Subsystem ID such as TSO or a CICS* system ID. This can contain global search characters. This is not used in the predefined tables. |
| USER_ID      | K | CHAR(8)   | User ID of the user to be grouped. This can contain global search characters.                                                        |
| DEPARTMENT   |   | CHAR(8)   | Department that the user belongs to. This is not used in the predefined tables.                                                      |
| DIVISION     |   | CHAR(8)   | Division that the user belongs to. This is not used in the predefined tables.                                                        |
| GROUP_NAME   |   | CHAR(8)   | Name of the group that the user belongs to.                                                                                          |

**Example of table contents**

| SYSTEM ID | SUBSYSTEM ID | USER ID | DIVISION | DEPARTMENT | GROUP NAME |
|-----------|--------------|---------|----------|------------|------------|
| -----     | -----        | -----   | -----    | -----      | -----      |
| *         | *            | USER1   |          |            | GROUP1     |
| *         | *            | USER2   |          |            | GROUP2     |
| ⋮         |              |         |          |            |            |

## Sample component

This topic describes the Sample component, the only component shipped with the IBM Z Performance and Capacity Analytics base product. You can use the Sample component for testing the installation of the base product or to demonstrate functionality.

The sample component consists of:

- A sample log and record definition

## Data tables

- Three sample tables with update definitions
- Three sample reports
- A log data set with sample data that can be collected

Figure 126 on page 244 shows an overview of the flow of data from the sample log data set, DRLSAMPL (in the DRLxxx.SDRLEDFS library), through the Sample component of IBM Z Performance and Capacity Analytics, and finally into reports.

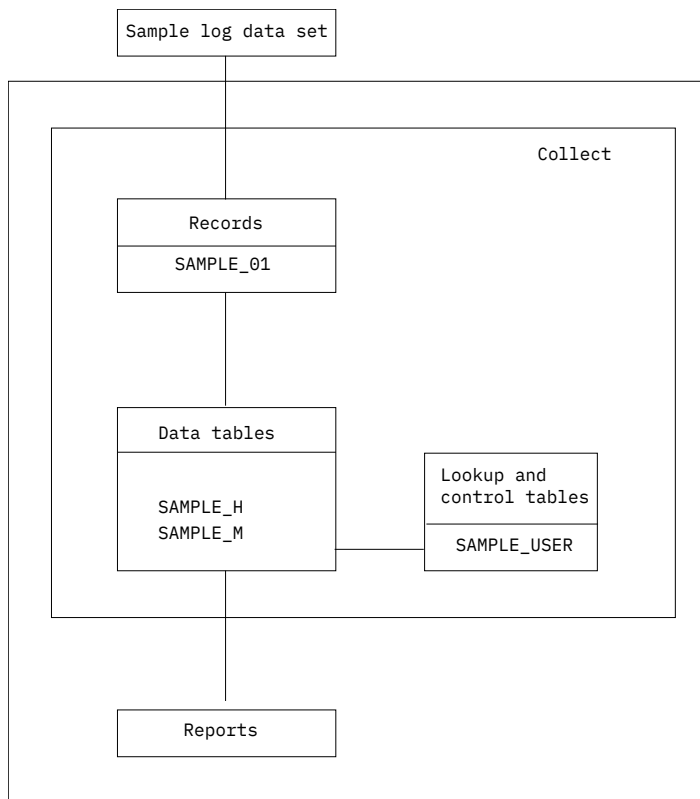


Figure 126. Sample data flow

## SAMPLE\_H, \_M data tables

These tables provide hourly and monthly sample data.

| Column name      |   | Data type | Description                                                                                                                        |
|------------------|---|-----------|------------------------------------------------------------------------------------------------------------------------------------|
| DATE             | K | DATE      | Date. For the <b>_M</b> table, this is the date of the first day of the month. From S01DATE.                                       |
| TIME             | K | TIME      | Time rounded down to the nearest hour. This applies only to the <b>_H</b> table. From S01TIME.                                     |
| SYSTEM_ID        | K | CHAR(4)   | System ID. From S01SYST.                                                                                                           |
| DEPARTMENT_NAME  | K | CHAR(8)   | Department name. From DEPARTMENT_NAME in the SAMPLE_USER lookup table. This is derived using field S01USER from the record as key. |
| USER_ID          | K | CHAR(8)   | User ID. From S01USER.                                                                                                             |
| CPU_SECONDS      |   | FLOAT     | Total processor time, in seconds. Calculated as the sum of S01CPU/100.0.                                                           |
| PAGES_PRINTED    |   | INTEGER   | Number of pages printed. This is the sum of S01PRNT.                                                                               |
| RESPONSE_SECONDS |   | INTEGER   | Total response time, in seconds. This is the sum of S01RESP.                                                                       |
| TRANSACTIONS     |   | INTEGER   | Number of transactions. This is the sum of S01TRNS.                                                                                |

## SAMPLE\_USER lookup table

This lookup table assigns department names to users.

| Column name     |   | Data type | Description     |
|-----------------|---|-----------|-----------------|
| USER_ID         | K | CHAR(8)   | User ID         |
| DEPARTMENT_NAME |   | CHAR(8)   | Department name |

### Example of table contents

| USER<br>ID | DEPARTMENT<br>NAME |
|------------|--------------------|
| -----      | -----              |
| ADAMS      | Appl Dev           |
| GEYER      | Finance            |
| GOUNOT     | Retail             |
| HAAS       | Finance            |
| JONES      | Appl Dev           |
| KWAN       | Marketng           |
| LEE        | Manufact           |
| LUTZ       | Manufact           |
| MARINO     | Retail             |
| MEHTA      | Manufact           |
| PARKER     | Finance            |
| PEREZ      | Retail             |

## Sample component reports

In the report descriptions that follow, this information is included:

### Heading

The title of the report.

### Introduction

A brief introduction to the purpose of the report.

### Report ID

IBM Z Performance and Capacity Analytics assigns each report a unique report identifier. Each report ID consists of SAMPLE and a sequential number, such as SAMPLE01.

### Report group

To make it easier to find reports, IBM Z Performance and Capacity Analytics organizes reports into report groups, which correspond to feature components. Sample component reports belong to the Sample report group.

### Source

Each Sample report contains information adapted from either the SAMPLE\_H or SAMPLE\_M source tables.

### Attributes

Attributes are keys that you can use to search for a particular report. The Sample component reports each have one attribute, Sample.

### Variables

Each report has several variables associated with it. When you select a report to display, IBM Z Performance and Capacity Analytics prompts you for the variables listed in the description.

### Example report

Each example illustrates a typical report.

### Column descriptions

Column descriptions identify the information contained within the report, in detail. If the column contains a calculated value, the formula used for the calculation is included.

### Sample Report 1

This surface chart shows the processor time consumed by different projects. It gives an hourly profile for an average day.

This information identifies the report:

#### Report ID

SAMPLE01

#### Report group

Sample Reports

#### Source

SAMPLE\_H

#### Chart format

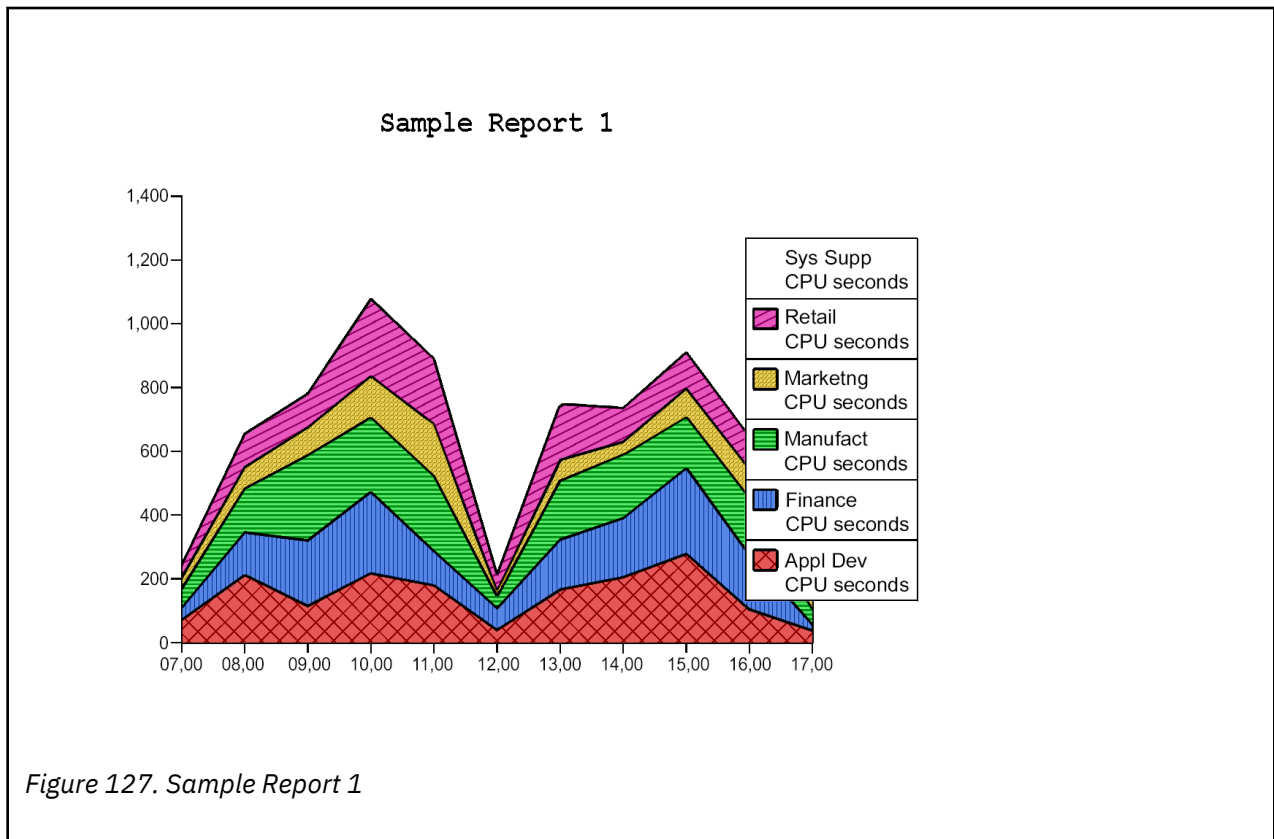
DRLGSURF

#### Attributes

Sample

#### Variables

System ID



The report contains this information:

#### Horizontal axis

Hour, in the format *hh.mm*

#### Vertical axis

Processor time, in seconds

#### Legend

Department name

**Sample Report 2**

This report shows the resources consumed by each user and department.

This information identifies the report:

**Report ID**

SAMPLE02

**Report group**

Sample Reports

**Source**

SAMPLE\_M

**Attributes**

Sample

**Variables**

From\_month, To\_month, System\_ID

| Sample Report 2                                           |                    |            |                   |                                |                |                  |
|-----------------------------------------------------------|--------------------|------------|-------------------|--------------------------------|----------------|------------------|
| Month<br>start date                                       | Department<br>name | User<br>ID | Trans-<br>actions | Average<br>response<br>seconds | CPU<br>seconds | Pages<br>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            |
| IBM Z Performance and Capacity Analytics Report: SAMPLE02 |                    |            |                   |                                |                |                  |

Figure 128. Sample Report 2

The columns in this report contain this information:

**Month start date**

Date of the first day in the month.

**Department name**

Name of the department that the user belongs to.

**User ID**

ID of the user.

**Transactions**

Number of transactions run by the user.

**Average response seconds**

The average response time, in seconds for all transactions. Calculated as RESPONSE\_SECONDS/TRANSACTIONS.

**CPU seconds**

Number of processor seconds consumed.

**Pages printed**

Number of pages printed.

### Sample Report 3

This bar chart shows the processor time consumed by each project during the selected time period, sorted as a toplist.

This information identifies the report:

**Report ID**

SAMPLE03

**Report group**

Sample Reports

**Source**

SAMPLE\_M

**Chart format**

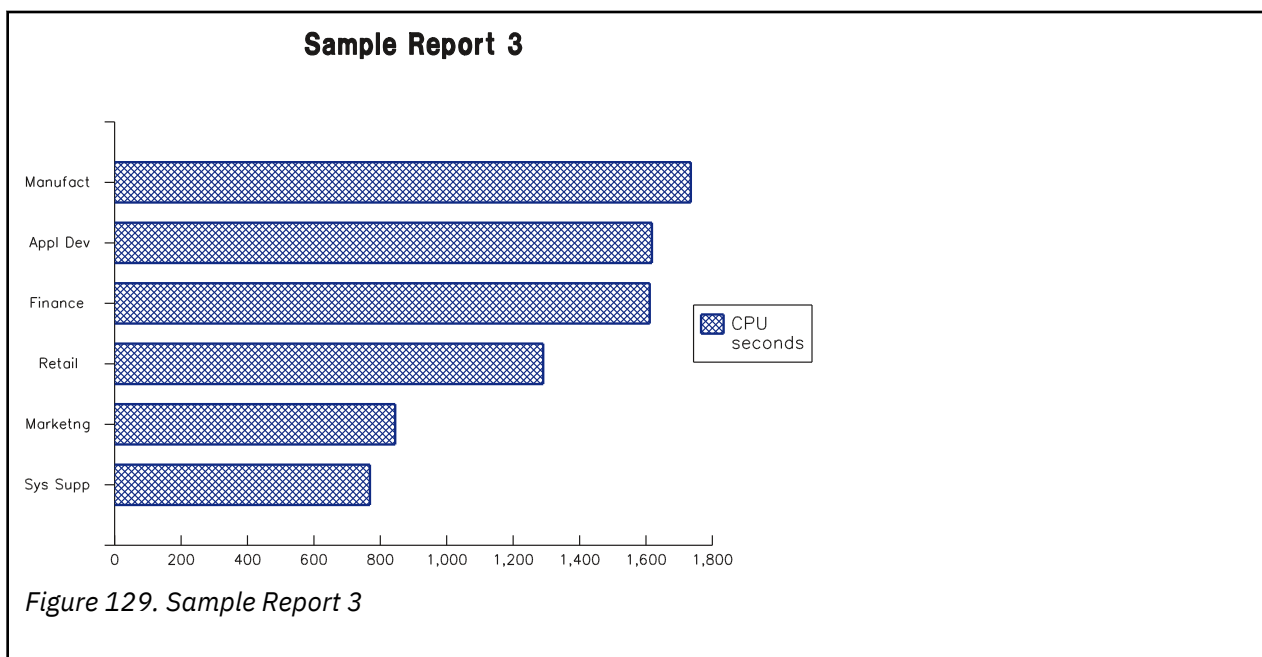
DRLGHORB

**Attributes**

Sample

**Variables**

From\_date, To\_date, System\_ID



The report contains this information:

**Horizontal axis**

Processor time, in seconds

**Vertical axis**

Department name

## Record definitions supplied with IBM Z Performance and Capacity Analytics

In addition to the records used by the components, the IBM Z Performance and Capacity Analytics base product contains definitions of many records. This chapter lists all the records defined by the base product, except for those built by IBM Z Performance and Capacity Analytics exits and utilities.



**SMF records**

| Record name       | Member name | Description                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SMF_000           | DRLRS000    | IPL                                                                                                                                                                                                                                                                                                                                             |
| SMF_002           | DRLRS002    | Dump header                                                                                                                                                                                                                                                                                                                                     |
| SMF_003           | DRLRS003    | Dump trailer                                                                                                                                                                                                                                                                                                                                    |
| SMF_004           | DRLRS004    | Step termination                                                                                                                                                                                                                                                                                                                                |
| SMF_005           | DRLRS005    | Job termination                                                                                                                                                                                                                                                                                                                                 |
| SMF_006           | DRLRS006    | JES2/JES3/PSF/External writer                                                                                                                                                                                                                                                                                                                   |
| SMF_007           | DRLRS007    | Data lost                                                                                                                                                                                                                                                                                                                                       |
| SMF_008           | DRLRS008    | I/O configuration                                                                                                                                                                                                                                                                                                                               |
| SMF_009           | DRLRS009    | VARY device ONLINE                                                                                                                                                                                                                                                                                                                              |
| SMF_010           | DRLRS010    | Allocation recovery                                                                                                                                                                                                                                                                                                                             |
| SMF_011           | DRLRS011    | VARY device OFFLINE                                                                                                                                                                                                                                                                                                                             |
| SMF_014           | DRLRS014    | INPUT or RDBACK data set activity                                                                                                                                                                                                                                                                                                               |
| SMF_015           | DRLRS015    | OUTPUT, UPDAT, INOUT, or OUTIN data set activity                                                                                                                                                                                                                                                                                                |
| SMF_016           | DRLRS016    | DFSORT statistics                                                                                                                                                                                                                                                                                                                               |
| SMF_017           | DRLRS017    | Scratch data set status                                                                                                                                                                                                                                                                                                                         |
| SMF_018           | DRLRS018    | Rename data set status                                                                                                                                                                                                                                                                                                                          |
| SMF_019           | DRLRS019    | Direct access volume                                                                                                                                                                                                                                                                                                                            |
| SMF_020           | DRLRS020    | Job initiation                                                                                                                                                                                                                                                                                                                                  |
| SMF_021           | DRLRS021    | Error statistics by volume                                                                                                                                                                                                                                                                                                                      |
| SMF_022           | DRLRS022    | Configuration                                                                                                                                                                                                                                                                                                                                   |
| SMF_023           | DRLRS023    | SMF status                                                                                                                                                                                                                                                                                                                                      |
| SMF_024           | DRLRS024    | JES2 spool offload                                                                                                                                                                                                                                                                                                                              |
| SMF_025           | DRLRS025    | JES3 device allocation                                                                                                                                                                                                                                                                                                                          |
| SMF_026           | DRLRS026    | JES2/JES3 job purge                                                                                                                                                                                                                                                                                                                             |
| SMF_028           | DRLRS028    | NPM statistics. SMF_028 maps all subtypes of SMF type 28. To improve performance, the subtypes used by IBM Z Performance and Capacity Analytics are mapped with special record definitions (SMF_028_xxx). Note that SMF_028 cannot be used together with these definitions because each log record can be mapped by only one record definition. |
| SMF_028_NTRI      | DRLRSNTR    | NPM NTRI statistics                                                                                                                                                                                                                                                                                                                             |
| SMF_028_TRANSIT   | DRLRSNTT    | NPM transit time statistics                                                                                                                                                                                                                                                                                                                     |
| SMF_028_TRANS_SUM | DRLRSNT1    | NPM Transit Time summary statistics                                                                                                                                                                                                                                                                                                             |
| SMF_028_X25       | DRLRSX25    | NPM X25 statistics                                                                                                                                                                                                                                                                                                                              |
| SMF_028_PU        | DRLRSNPU    | NPM PU statistics                                                                                                                                                                                                                                                                                                                               |
| SMF_028_NPM       | DRLRSNPM    | NPM internal statistics                                                                                                                                                                                                                                                                                                                         |
| SMF_028_LINE      | DRLRSNLI    | NPM line statistics                                                                                                                                                                                                                                                                                                                             |
| SMF_028_NEO       | DRLRSNEO    | NPM NEO statistics                                                                                                                                                                                                                                                                                                                              |
| SMF_028_NCP       | DRLRSNCP    | NPM NCP statistics                                                                                                                                                                                                                                                                                                                              |

**SMF records**

| Record name    | Member name | Description                                                 |
|----------------|-------------|-------------------------------------------------------------|
| SMF_028_LAN    | DRLRSLAN    | NPM LAN statistics                                          |
| SMF_028_VTAM   | DRLRSVTM    | NPM VTAM statistics                                         |
| SMF_030        | DRLRS030    | Common address space work                                   |
| SMF_031        | DRLRS031    | TIOC initialization                                         |
| SMF_032        | DRLRS032    | TSO user work accounting                                    |
| SMF_033        | DRLRS033    | APPC/MVS TP accounting                                      |
| SMF_034        | DRLRS034    | TS-step termination                                         |
| SMF_035        | DRLRS035    | LOGOFF                                                      |
| SMF_036        | DRLRS036    | ICF catalog                                                 |
| SMF_037_HW     | DRLRS037    | NetView Hardware Monitor                                    |
| SMF_037_VPD    | DRLRSVPD    | Network configuration (VPD)                                 |
| SMF_039_1_TO_7 | DRLRS039    | NetView Session Monitor, SMF 39, subtypes 1 to 7            |
| SMF_039_8      | DRLRS039    | NetView Session Monitor, SMF 39, subtype 8                  |
| SMF_040        | DRLRS040    | Dynamic DD                                                  |
| SMF_041        | DRLRS041    | Data-in-virtual Access/Unaccess                             |
| SMF_042_1      | DRLRS042    | BMF performance statistics                                  |
| SMF_042_2      | DRLRS042    | DFP cache control unit statistics                           |
| SMF_042_3      | DRLRS042    | DFP SMS configuration statistics                            |
| SMF_042_5      | DRLRSX42    | DFSMS storage class statistics                              |
| SMF_042_6      | DRLRSX42    | DFSMS Data Set statistics                                   |
| SMF_042_14     | DRLRADSM    | ADSTAR Distributed Storage Manager (ADSM) server statistics |
| SMF_042_11     | DRLRSX42    | DFP Extended Remote Copy (XRC) session statistics           |
| SMF_043_2      | DRLRS043    | JES2 start                                                  |
| SMF_043_5      | DRLRS043    | JES3 start                                                  |
| SMF_045_2      | DRLRS045    | JES2 withdrawal                                             |
| SMF_045_5      | DRLRS045    | JES3 stop                                                   |
| SMF_047_2      | DRLRS047    | JES2 SIGNON/start line (BSC only)                           |
| SMF_047_5      | DRLRS047    | JES3 SIGNON/start line/LOGON                                |
| SMF_048_2      | DRLRS048    | JES2 SIGNOFF/stop line (BSC only)                           |
| SMF_048_5      | DRLRS048    | JES3 SIGNOFF/stop line/LOGOFF                               |
| SMF_049_2      | DRLRS049    | JES2 integrity (BSC only)                                   |
| SMF_049_5      | DRLRS049    | JES3 integrity                                              |
| SMF_050        | DRLRS050    | ACF/VTAM* tuning statistics                                 |
| SMF_052        | DRLRS052    | JES2 LOGON/start line (SNA only)                            |
| SMF_053        | DRLRS053    | JES2 LOGOFF/start line (SNA only)                           |
| SMF_054        | DRLRS054    | JES2 integrity (SNA only)                                   |
| SMF_055        | DRLRS055    | JES2 network SIGNON                                         |
| SMF_056        | DRLRS056    | JES2 network integrity                                      |

| Record name | Member name | Description                                                             |
|-------------|-------------|-------------------------------------------------------------------------|
| SMF_057_2   | DRLRS057    | JES2 network SYSOUT transmission                                        |
| SMF_057_5   | DRLRS057    | JES3 networking transmission                                            |
| SMF_058     | DRLRS058    | JES2 network SIGNOFF                                                    |
| SMF_059     | DRLRS059    | MVS/BDT file-to-file transmission                                       |
| SMF_060     | DRLRS060    | VSAM volume data set updated                                            |
| SMF_061     | DRLRS061    | ICF define activity                                                     |
| SMF_062     | DRLRS062    | VSAM component or cluster opened                                        |
| SMF_063     | DRLRS063    | VSAM entry defined                                                      |
| SMF_064     | DRLRS064    | VSAM component or cluster status                                        |
| SMF_065     | DRLRS065    | ICF delete activity                                                     |
| SMF_066     | DRLRS066    | ICF alter activity                                                      |
| SMF_067     | DRLRS067    | VSAM entry delete                                                       |
| SMF_068     | DRLRS068    | VSAM entry renamed                                                      |
| SMF_069     | DRLRS069    | VSAM data space defined, extended, or deleted                           |
| SMF_070     | DRLRS070    | RMF CPU activity                                                        |
| SMF_071     | DRLRS071    | RMF paging activity                                                     |
| SMF_072_1   | DRLRS072    | RMF workload activity                                                   |
| SMF_072_2   | DRLRSX72    | RMF storage data                                                        |
| SMF_072_3   | DRLRS072    | RMF goal mode workload activity                                         |
| SMF_072_4   | DRLRSX72    | RMF goal mode delay and storage frame data                              |
| SMF_073     | DRLRS073    | RMF channel path activity                                               |
| SMF_074_1   | DRLRS074    | RMF device activity                                                     |
| SMF_074_2   | DRLRS074    | RMF XCF activity                                                        |
| SMF_074_3   | DRLRSX74    | RMF Device OMVS activity                                                |
| SMF_074_4   | DRLRSX74    | RMF XES/CF activity                                                     |
| SMF_074_6   | DRLRX74     | File system statistics                                                  |
| SMF_075     | DRLRS075    | RMF page/swap data set activity                                         |
| SMF_076     | DRLRS076    | RMF trace activity                                                      |
| SMF_077     | DRLRS077    | RMF enqueue activity                                                    |
| SMF_078_1   | DRLRS078    | RMF I/O queueing activity for the 308x, 908x, and 4381 processors       |
| SMF_078_2   | DRLRS078    | RMF virtual storage activity                                            |
| SMF_078_3   | DRLRS078    | RMF I/O queueing activity for the 3090, 9021, 9121, and 9221 processors |
| SMF_079     | DRLRS079    | RMF Monitor II activity                                                 |
| SMF_080     | DRLRS080    | RACF processing                                                         |
| SMF_081     | DRLRS081    | RACF initialization                                                     |
| SMF_082_1   | DRLRS082    | PCF record                                                              |
| SMF_082_2   | DRLRS082    | CUSP record                                                             |
| SMF_083     | DRLRS083    | RACF audit record for data sets                                         |

## SMF records

| Record name   | Member name | Description                                                |
|---------------|-------------|------------------------------------------------------------|
| SMF_084_1     | DRLRS084    | JMF - FCT analysis                                         |
| SMF_084_2     | DRLRS084    | JMF - FCT summary and highlights                           |
| SMF_084_3     | DRLRS084    | JMF - spool data management                                |
| SMF_084_4     | DRLRS084    | JMF - resqueue cellpool, JCT and control block utilization |
| SMF_084_5     | DRLRS084    | JMF - job analysis                                         |
| SMF_084_6     | DRLRS084    | JMF - JES3 hot spot analysis                               |
| SMF_084_7     | DRLRS084    | JMF - JES internal reader DSP analysis                     |
| SMF_084_8     | DRLRS084    | JMF - JES3 SSI response time analysis                      |
| SMF_084_9     | DRLRS084    | JMF - JES3 SSI destination queue analysis                  |
| SMF_085       | DRLRS085    | OAM record                                                 |
| SMF_088       | DRLRS088    | System logger                                              |
| SMF_089       | DRLRS089    | Product Usage Data                                         |
| SMF_090       | DRLRS090    | System status                                              |
| SMF_092       | DRLRS092    | z/OS UNIX activity                                         |
| SMF_094       | DRLRS094    | 3494, 3495 Tape library data server statistics             |
| SMF_099       | DRLRS099    | SMS System Resource Manager decisions                      |
| SMF_100_0     | DRLRS100    | Db2 statistics, system services                            |
| SMF_100_1     | DRLRS100    | Db2 statistics, database services                          |
| SMF_100_2     | DRLRS100    | Db2 statistics, dynamic ZPARMs                             |
| SMF_100_3     | DRLRS100    | Db2 statistics, Buffer, Manager Group Buffer Pool          |
| SMF_101       | DRLRS101    | Db2 accounting                                             |
| SMF_101_1     | DRLRS101    | Db2 accounting, Packages extension                         |
| SMF_102       | DRLRS102    | Db2 system initialization parameters                       |
| SMF_110_0     | DRLRS110    | CICS/ESA journaling record                                 |
| SMF_110_0_V2  | DRLRS110    | CICS/MVS monitoring record                                 |
| SMF_110_1     | DRLRS110    | CICS/ESA monitoring record                                 |
| SMF_110_1_1   | DRLRS110    | CICS/TS <3.2 record                                        |
| SMF_110_1_5   | DRLR110T    | CICS transaction resource - expanded                       |
| SMF_110_2     | DRLR1102    | CICS/ESA and CICS/TS statistics record                     |
| SMF_110_3     | DRLRS1103   | CICS/TS statistics record                                  |
| SMF_110_4     | DRLR1103    | CICS/TS CF statistics record                               |
| SMF_110_5     | DRLR1103    | CICS/TS NC statistics record                               |
| SMF_110_1_C   | DRLRS110    | CICS/TS 3.2+ - may be compressed                           |
| SMF_110_1_CO  | DRLRS110    | CICS/TS 3.2+ - expanded                                    |
| SMF_110_E     | DRLRS110    | CICS/ESA exception record - expanded                       |
| SMF_112_203_C | DRLRS112    | OMEGAMON® XE for CICS file and database usage - compressed |
| SMF_112_203   | DRLRS112    | OMEGAMON XE for CICS file and database usage - expanded    |
| SMF_114_1     | DRLRS114    | System Automation Tracking                                 |

| Record name   | Member name | Description                                            |
|---------------|-------------|--------------------------------------------------------|
| SMF_115       | DRLRS115    | WebSphere MQ for z/OS statistics                       |
| SMF_116       | DRLRS116    | WebSphere MQ for z/OS statistics                       |
| SMF_117       | DRLRS117    | Websphere Message Broker                               |
| SMF_118_1     | DRLRS118    | TCP/IP API calls record                                |
| SMF_118_3     | DRLRS118    | TCP/IP FTP client calls record                         |
| SMF_118_4     | DRLRS118    | TCP/IP TELNET client calls record                      |
| SMF_118_20    | DRLRS118    | TCP/IP TELNET server record                            |
| SMF_118_5     | DRLRS118    | TCP/IP general statistics record                       |
| SMF_118_70    | DRLRS118    | TCP/IP FTP server record                               |
| SMF_119_1     | DRLRS119    | TCP connection initiation                              |
| SMF_119_2     | DRLRS119    | TCP connection termination                             |
| SMF_119_3     | DRLRS119    | FTP client transfer completion                         |
| SMF_119_4     | DRLRS119    | TCP/IP Profile Information record                      |
| SMF_119_5     | DRLRS119    | TCP/IP statistics                                      |
| SMF_119_6     | DRLRS119    | Interface statistics                                   |
| SMF_119_7     | DRLRS119    | Server port statistics                                 |
| SMF_119_8     | DRLRS119    | TCP/IP stack start/stop                                |
| SMF_119_10    | DRLRS119    | UDP socket close                                       |
| SMF_119_20    | DRLRS119    | TN3270 server SNA session initiation                   |
| SMF_119_21    | DRLRS119    | TN3270 server SNA session termination                  |
| SMF_119_22    | DRLRS119    | TSO telnet client connection initiation                |
| SMF_119_23    | DRLRS119    | TSO telnet client connection termination               |
| SMF_119_70    | DRLRS119    | FTP server transfer completion                         |
| SMF_119_72    | DRLRS119    | FTP server logon failure                               |
| SMF_119_73    | DRLRS119    | IPSec IKE Tunnel Activation/Refresh record             |
| SMF_119_74    | DRLRS119    | IPSec IKE Tunnel Deactivation/Expire record            |
| SMF_119_75_80 | DRLRS119    | IPSec Dynamic Tunnel Activation/Refresh                |
| SMF_119_75_80 | DRLRS119    | IPSec Dynamic Tunnel Deactivation record               |
| SMF_119_75_80 | DRLRS119    | IPSec Dynamic Tunnel Added record                      |
| SMF_119_75_80 | DRLRS119    | IPSec Dynamic Tunnel Removed record                    |
| SMF_119_75_80 | DRLRS119    | IPSec Manual Tunnel Activation record                  |
| SMF_119_75_80 | DRLRS119    | IPSec Manual Tunnel Deactivation record                |
| SMF_120_1     | DRLRS121    | Server activity record                                 |
| SMF_120_2     | DRLRS122    | WebSphere Application Server container activity record |
| SMF_120_3     | DRLRS123    | Server interval record                                 |
| SMF_120_4     | DRLRS124    | WebSphere Application Server container interval record |
| SMF_120_5     | DRLRSJWA    | J2EE container activity record                         |
| SMF_120_6     | DRLRSJWI    | J2EE container interval record                         |

## DFSMS/RMM records

| Record name | Member name | Description                                    |
|-------------|-------------|------------------------------------------------|
| SMF_120_7   | DRLRSJWA    | Web container activity record                  |
| SMF_120_8   | DRLRSJWI    | Web container interval record                  |
| SMF_120_9   | DRLRS129    | Request Activity record                        |
| SMF_120_10  | DRLRS12A    | Outbound Request record                        |
| SMF_120_11  | DRLRSRWL    | Liberty request record                         |
| SMF_120_12  | DRLRSJWL    | Liberty Java batch job record                  |
| SMF_123     | DRLRS123    | SMF HPQS statistics                            |
| SMF_194     | DRLRS194    | TS7700 Virtualization Engine statistics record |
| SMF_IXFP_01 | DRLRIXFP    | IXFP subsystem performance                     |
| SMF_IXFP_02 | DRLRIXFP    | IXFP channel interface statistics              |
| SMF_IXFP_03 | DRLRIXFP    | IXFP functional device performance             |
| SMF_IXFP_04 | DRLRIXFP    | IXFP device module performance                 |
| SMF_IXFP_05 | DRLRIXFP    | IXFP deleted data space release                |
| SMF_IXFP_06 | DRLRIXFP    | IXFP snapshot event data                       |
| SMF_IXFP_07 | DRLRIXFP    | IXFP space utilization record                  |
| SMF_IXFP_08 | DRLRIXFP    | IXFP snapshot extended event data record       |

These records are user-defined; that is, they are not part of the standard IBM records in the range 0-127. However, they are written by IBM licensed programs.

The default record numbers are provided within parentheses.

| Record name  | Member name | Description                                          |
|--------------|-------------|------------------------------------------------------|
| SMF_CACHE_03 | DRLRS245    | Cache RMF Reporter, 3990 model 03 (245)              |
| SMF_CACHE_06 | DRLRS245    | Cache RMF Reporter, 3990 model 06 (245)              |
| SMF_CACHE_13 | DRLRS245    | Cache RMF Reporter, 3880 model 13 (245)              |
| SMF_CACHE_23 | DRLRS245    | Cache RMF Reporter, 3880 model 23 (245)              |
| SMF_FTP      | DRLRSFTP    | NetView File Transfer Program (FTP) log record (252) |

## DFSMS/RMM records

| Record name   | Member name | Description                              |
|---------------|-------------|------------------------------------------|
| DFRMM_VOLUME  | DRLRRMMV    | Extract file volume record               |
| DFRMM_RACK    | DRLRRMMR    | Extract file rack number record          |
| DFRMM_SLBIN   | DRLRRMMS    | Extract file storage location bin record |
| DFRMM_PRODUCT | DRLRRMMP    | Extract file product record              |
| DFRMM_VRS     | DRLRRMMK    | Extract file VRS record                  |
| DFRMM_OWNER   | DRLRRMMO    | Extract file owner record                |
| DFRMM_DATASET | DRLRRMMD    | Extract file data set record             |

## IMS SLDS records

These records come from the IMS recovery log.

No reliable release indicators exist in the IMS records, so one log definition exists for each IMS release supported. The log and record names contain *Vnn* where *nn* is the IMS version and release; B1 for IMS V11, C1 for IMS V12, D1 for IMS V13, E1 for IMS V14, F1 for IMS V15.

The records are described in IMS mapping macros.

| Record name   | Member name | Description                                                |
|---------------|-------------|------------------------------------------------------------|
| IMS_Vnn0_01   | DRLRInnS    | Message Queue record (message received from a CNT)         |
| IMS_Vnn0_02   | DRLRInnS    | IMS command record                                         |
| IMS_Vnn0_03   | DRLRInnS    | Message Queue record (message received from an SMB or IMS) |
| IMS_Vnn0_06   | DRLRInnS    | IMS event accounting record                                |
| IMS_Vnn0_07   | DRLRInnS    | Program termination accounting record                      |
| IMS_Vnn0_08   | DRLRInnS    | Program schedule record                                    |
| IMS_Vnn0_10   | DRLRInnS    | Security violation record                                  |
| IMS_Vnn0_11   | DRLRInnS    | Start of conversation record                               |
| IMS_Vnn0_12   | DRLRInnS    | End of conversation record                                 |
| IMS_Vnn0_13   | DRLRInnS    | SPA insert record                                          |
| IMS_Vnn0_16   | DRLRInnS    | Sign on/off record                                         |
| IMS_Vnn0_18   | DRLRInnS    | Extended checkpoint record                                 |
| IMS_Vnn0_20   | DRLRInnS    | Database open record                                       |
| IMS_Vnn0_21   | DRLRInnS    | Database close record                                      |
| IMS_Vnn0_24   | DRLRInnS    | Database error record                                      |
| IMS_Vnn0_30   | DRLRInnS    | Message queue prefix changed record                        |
| IMS_Vnn0_31   | DRLRInnS    | Message queue GU record                                    |
| IMS_Vnn0_32   | DRLRInnS    | Message queue reject record                                |
| IMS_Vnn0_33   | DRLRInnS    | Message queue DRRN free record                             |
| IMS_Vnn0_34   | DRLRInnS    | Message queue cancel record                                |
| IMS_Vnn0_35   | DRLRInnS    | Message queue enqueue record                               |
| IMS_Vnn0_36   | DRLRInnS    | Message queue dequeue record                               |
| IMS_Vnn0_37   | DRLRInnS    | Message queue syncpoint transfer record                    |
| IMS_Vnn0_38   | DRLRInnS    | Message queue syncpoint fail record                        |
| IMS_Vnn0_4C   | DRLRInnS    | Program/Database start/stop record                         |
| IMS_Vnn0_400D | DRLRInnS    | Checkpoint CCB record                                      |
| IMS_Vnn0_400E | DRLRInnS    | Checkpoint SPA record                                      |
| IMS_Vnn0_4001 | DRLRInnS    | Checkpoint begin                                           |
| IMS_Vnn0_4002 | DRLRInnS    | Checkpoint message queue record                            |
| IMS_Vnn0_4003 | DRLRInnS    | Checkpoint CNT record                                      |
| IMS_Vnn0_4004 | DRLRInnS    | Checkpoint SMB record                                      |
| IMS_Vnn0_4005 | DRLRInnS    | Checkpoint CTB record                                      |
| IMS_Vnn0_4006 | DRLRInnS    | Checkpoint DMB record                                      |
| IMS_Vnn0_4007 | DRLRInnS    | Checkpoint PSB record                                      |

| Record name   | Member name | Description                                  |
|---------------|-------------|----------------------------------------------|
| IMS_Vnn0_4008 | DRLRInnS    | Checkpoint CLB record                        |
| IMS_Vnn0_4014 | DRLRInnS    | Checkpoint SPA QB record                     |
| IMS_Vnn0_4015 | DRLRInnS    | Checkpoint EQE record                        |
| IMS_Vnn0_4020 | DRLRInnS    | Checkpoint CIB record                        |
| IMS_Vnn0_4021 | DRLRInnS    | Checkpoint VTCB record                       |
| IMS_Vnn0_4070 | DRLRInnS    | Checkpoint MSDB begin                        |
| IMS_Vnn0_4071 | DRLRInnS    | Checkpoint MSDB ECNT record                  |
| IMS_Vnn0_4072 | DRLRInnS    | Checkpoint MSDB header                       |
| IMS_Vnn0_4073 | DRLRInnS    | Checkpoint MSDB pagefixed                    |
| IMS_Vnn0_4074 | DRLRInnS    | Checkpoint MSDB pageable                     |
| IMS_Vnn0_4079 | DRLRInnS    | Checkpoint MSDB end                          |
| IMS_Vnn0_4080 | DRLRInnS    | Checkpoint Fast Path begin                   |
| IMS_Vnn0_4081 | DRLRInnS    | Checkpoint Fast Path ECNT record             |
| IMS_Vnn0_4082 | DRLRInnS    | Checkpoint Fast Path EMHB record             |
| IMS_Vnn0_4083 | DRLRInnS    | Checkpoint Fast Path RCTE record             |
| IMS_Vnn0_4084 | DRLRInnS    | Checkpoint Fast Path DMCB/DMAC record        |
| IMS_Vnn0_4085 | DRLRInnS    | Checkpoint Fast Path MTO buffer record       |
| IMS_Vnn0_4086 | DRLRInnS    | Checkpoint Fast Path DMHR/DEDB buffer record |
| IMS_Vnn0_4087 | DRLRInnS    | Checkpoint Fast Path ADSC record             |
| IMS_Vnn0_4088 | DRLRInnS    | Checkpoint Fast Path IEEQE record            |
| IMS_Vnn0_4089 | DRLRInnS    | Checkpoint Fast Path end                     |
| IMS_Vnn0_4098 | DRLRInnS    | Checkpoint end blocks record                 |
| IMS_Vnn0_4099 | DRLRInnS    | Checkpoint end queues record                 |
| IMS_Vnn0_41   | DRLRInnS    | Checkpoint batch record                      |
| IMS_Vnn0_42   | DRLRInnS    | Log buffer control record                    |
| IMS_Vnn0_43   | DRLRInnS    | Log data set control record                  |
| IMS_Vnn0_45FF | DRLRInnS    | End of statistics                            |
| IMS_Vnn0_450A | DRLRInnS    | Statistics latch record                      |
| IMS_Vnn0_450B | DRLRInnS    | Statistics dispatch storage record           |
| IMS_Vnn0_450C | DRLRInnS    | Statistics DFSCBT00 storage record           |
| IMS_Vnn0_450D | DRLRInnS    | Statistics RecAny pool record                |
| IMS_Vnn0_450E | DRLRInnS    | Statistics fixed pools storage record        |
| IMS_Vnn0_450F | DRLRInnS    | Dispatcher statistics record                 |
| IMS_Vnn0_4502 | DRLRInnS    | Statistics queue pool record                 |
| IMS_Vnn0_4503 | DRLRInnS    | Statistics format buffer pool record         |
| IMS_Vnn0_4504 | DRLRInnS    | Statistics database buffer pool              |
| IMS_Vnn0_4505 | DRLRInnS    | Statistics main pools record                 |
| IMS_Vnn0_4506 | DRLRInnS    | Statistics scheduling stats record           |



| Record name       | Member name | Description                                                    |
|-------------------|-------------|----------------------------------------------------------------|
| IMS_Vnn0_4507     | DRLRInnS    | Statistics logger record                                       |
| IMS_Vnn0_4508     | DRLRInnS    | Statistics VSAM subpool record                                 |
| IMS_Vnn0_4509     | DRLRInnS    | Statistics program isolation record                            |
| IMS_Vnn0_47       | DRLRInnS    | Statistics active region record                                |
| IMS_Vnn0_48       | DRLRInnS    | OLDS padding record                                            |
| IMS_Vnn0_5050     | DRLRInnS    | Full function database update undo/redo successful record      |
| IMS_Vnn0_5051     | DRLRInnS    | Full function database update unsuccessful record              |
| IMS_Vnn0_5052     | DRLRInnS    | Full function database update undo KSDS insert record          |
| IMS_Vnn0_5501FE00 | DRLRInnS    | External sub-system Db2 snap in doubt record                   |
| IMS_Vnn0_56       | DRLRInnS    | External sub-system record                                     |
| IMS_Vnn0_5901     | DRLRInnS    | EMH input record                                               |
| IMS_Vnn0_5903     | DRLRInnS    | EMH output record                                              |
| IMS_Vnn0_5920     | DRLRInnS    | Fast path MSDB change record                                   |
| IMS_Vnn0_5921     | DRLRInnS    | Fast path DEDB area data set open record                       |
| IMS_Vnn0_5922     | DRLRInnS    | Fast path DEDB area data set close record                      |
| IMS_Vnn0_5923     | DRLRInnS    | Fast path DEDB area data set status record                     |
| IMS_Vnn0_5924     | DRLRInnS    | Fast path DEDB area data set EQE creation record               |
| IMS_Vnn0_5936     | DRLRInnS    | EMH dequeue record                                             |
| IMS_Vnn0_5937     | DRLRInnS    | EMH FP syncpoint record                                        |
| IMS_Vnn0_5938     | DRLRInnS    | EMH FP syncpoint failure record                                |
| IMS_Vnn0_5950     | DRLRInnS    | Fast Path database update record                               |
| IMS_Vnn0_5953     | DRLRInnS    | Fast Path database update (utilities) record                   |
| IMS_Vnn0_5954     | DRLRInnS    | Fast Path database DEDB open record                            |
| IMS_Vnn0_5955     | DRLRInnS    | Fast Path sequential dependent syncpoint record                |
| IMS_Vnn0_5957     | DRLRInnS    | Fast Path database DMAC record                                 |
| IMS_Vnn0_5970     | DRLRInnS    | Fast Path hot standby MSDB relocation record                   |
| IMS_Vnn0_67       | DRLRInnS    | Communications trace, DMHR on I/O error and snap trace records |
| IMS_Vnn0_67FA     | DRLRInnS    | Trace table log record                                         |
| IMS_Vnn0_7201     | DRLRInnS    | ETO user create record                                         |
| IMS_Vnn0_7202     | DRLRInnS    | ETO user delete record                                         |
| IMS_Vnn0_7203     | DRLRInnS    | ETO user modify record                                         |
| IMS_Vnn0_7204     | DRLRInnS    | ETO lterm addition record                                      |

## DCOLLECT records

These records are produced by the DFP DCOLLECT utility.

For a description of these records, refer to *z/OS DFSMS: Access Method Services for Catalog*.

| Record name | Member name | Description                        |
|-------------|-------------|------------------------------------|
| DCOLLECT_A  | DRLRDCOA    | VSAM base cluster association name |

## EREP records

| Record name | Member name | Description                            |
|-------------|-------------|----------------------------------------|
| DCOLLECT_AG | DRLRDCAG    | Aggregate Group information            |
| DCOLLECT_B  | DRLRDCOB    | Data set backup version information    |
| DCOLLECT_BC | DRLRDCBC    | Base Configuration information         |
| DCOLLECT_C  | DRLRDCOC    | DASD capacity planning information     |
| DCOLLECT_D  | DRLRDCOD    | Active data set information            |
| DCOLLECT_DC | DRLRDCDC.   | Data Class construct information       |
| DCOLLECT_DR | DRLRDCDR.   | Optical Drive information              |
| DCOLLECT_LB | DRLRDCLB.   | Optical Library information            |
| DCOLLECT_M  | DRLRDCOM    | Migration data set information         |
| DCOLLECT_MC | DRLRDCMC    | Management Class construct information |
| DCOLLECT_SC | DRLRDCSC    | Storage Class construct information    |
| DCOLLECT_SG | DRLRDCSG    | Storage Group construct information    |
| DCOLLECT_T  | DRLRDCOT    | Tape capacity planning information     |
| DCOLLECT_V  | DRLRDCOV    | Volume information                     |
| DCOLLECT_VL | DRLRDCVL.   | SMS Volume information                 |

## EREP records

For a description of these records, refer to the *Environmental Record Editing and Printing Program (EREP) User's Guide and Reference*.

| Record name | Member name | Description                      |
|-------------|-------------|----------------------------------|
| EREP_30     | DRLRE030    | DASD long outboard record        |
| EREP_36     | DRLER036    | VTAM long outboard record        |
| EREP_50     | DRLER050    | IPL system initialization record |

## Linux on zSeries records

These records are produced by the zLinux programs on your zLinux nodes.

| Record name      | Member name | Description                               |
|------------------|-------------|-------------------------------------------|
| ZLINUX_CPU       | DRLRZPCP    | zLinux CPU performance record             |
| ZLINUX_DISK_FS   | DRLRZPDI    | zLinux disk space performance record      |
| ZLINUX_DISKIO    | DRLRZPIO    | zLinux disk I/O performance record        |
| ZLINUX_PAGING    | DRLRZPPA    | zLinux paging space performance record    |
| ZLINUX_HARDCONF  | DRLRZCNF    | zLinux hardware configuration record      |
| ZLINUX_SOFTCONF  | DRLRZCNF    | zLinux software configuration record      |
| ZLINUX_USR_CMD   | DRLRZACO    | zLinux process/command accounting record  |
| ZLINUX_WTMP_INFO | DRLRZMTP    | zLinux connect accounting record          |
| ZLINUX_REC_PI    | DRLRLNX1    | PI log record reformatted to fixed layout |
| ZLINUX_REC_DF    | DRLRLNX1    | DF log record reformatted to fixed layout |
| ZLINUX_REC_WW    | DRLRLNX1    | WW log record reformatted to fixed layout |

| Record name   | Member name | Description                               |
|---------------|-------------|-------------------------------------------|
| ZLINUX_REC_TO | DRLRLNX1    | TO log record reformatted to fixed layout |

## RACF records

These records come from the RACF Database Unload utility output that contains RACF configuration data.

For a description of these records, refer to *RACF Macros and Interfaces*.

| Record name | Member name | Description                         |
|-------------|-------------|-------------------------------------|
| RACF_100    | DRLRR100    | Group basic data                    |
| RACF_200    | DRLRR200    | User basic data                     |
| RACF_205    | DRLRR205    | User connect data                   |
| RACF_400    | DRLRR400    | Data set basic data                 |
| RACF_402    | DRLRR402    | Data set conditional access         |
| RACF_404    | DRLRR404    | Data set access                     |
| RACF_500    | DRLRR500    | General resource basic data         |
| RACF_505    | DRLRR505    | General resource access             |
| RACF_507    | DRLRR507    | General resource conditional access |

## Tivoli Workload Scheduler for z/OS (OPC) records

These records come from the OPC track log.

For a description of these records, refer to the *Tivoli Workload Scheduler: Diagnosis Guide and Reference*.

| Record name | Member name | Description                        |
|-------------|-------------|------------------------------------|
| OPC_03_P    | DRLROP03    | OPC current plan operation         |
| OPC_03_C    | DRLROP03    | OPC current plan occurrence        |
| OPC_03_3    | DRLROP03    | OPC current plan system automation |
| OPC_04      | DRLROP04    | OPC current plan job name table    |
| OPC_23      | DRLROP23    | OPC operation event                |
| OPC_24      | DRLROP24    | OPC MCP event                      |
| OPC_27      | DRLROP27    | OPC missed feedback                |
| OPC_29      | DRLROP29    | OPC auto tracked event             |

## VM accounting records

For a description of these records, refer to *z/VM: CP Planning and Administration*.

| Record name | Member name | Description                            |
|-------------|-------------|----------------------------------------|
| VMACCT_01   | DRLRVA01    | Virtual machine resource use           |
| VMACCT_02   | DRLRVA02    | Dedicated devices                      |
| VMACCT_03   | DRLRVA03    | Temporary disk space                   |
| VMACCT_04   | DRLRVA04    | LOGON or AUTOLOG with invalid password |
| VMACCT_05   | DRLRVA05    | Successful LINK to protected minidisk  |
| VMACCT_06   | DRLRVA06    | LINK with invalid password             |

## VMPRF records

| Record name | Member name | Description                         |
|-------------|-------------|-------------------------------------|
| VMACCT_07   | DRLRVA07    | Log off from VSCS-controlled device |
| VMACCT_08   | DRLRVA08    | Disconnect or log off               |

## VMPRF records

For a description of these records, refer to the *VMPRF User's Guide and Reference*.

| Record name | Member name | Description              |
|-------------|-------------|--------------------------|
| VMPRF_01    | DRLRVM01    | VMPRF system data        |
| VMPRF_02    | DRLRVM02    | VMPRF processor data     |
| VMPRF_11    | DRLRVM11    | VMPRF configuration data |
| VMPRF_41    | DRLRVM41    | VMPRF user data          |
| VMPRF_61    | DRLRVM61    | VMPRF DASD data          |

## z/VM Performance Toolkit records

For a description of these records, refer to the *z/VM Performance Toolkit* manual.

| Record name | Member name | Description                                                                 |
|-------------|-------------|-----------------------------------------------------------------------------|
| VMPERFT_00  | DRLRPT00    | System configuration data                                                   |
| VMPERFT_01  | DRLRPT01    | General system load data                                                    |
| VMPERFT_02  | DRLRPT02    | Processor load data                                                         |
| VMPERFT_03  | DRLRPT03    | Logical processor load data (LPAR only)                                     |
| VMPERFT_04  | DRLRPT04    | Minidisk cache data                                                         |
| VMPERFT_05  | DRLRPT05    | CP services activity data                                                   |
| VMPERFT_06  | DRLRPT06    | Channel busy (HF sampling)                                                  |
| VMPERFT_07  | DRLRPT07    | Channel measurement facility data                                           |
| VMPERFT_08  | DRLRPT08    | Extended channel measurement facility data                                  |
| VMPERFT_3A  | DRLRPT3A    | Overall user transaction data                                               |
| VMPERFT_3C  | DRLRPT3C    | Shared segment data                                                         |
| VMPERFT_3E  | DRLRPT3E    | Shared data spaces                                                          |
| VMPERFT_41  | DRLRPT41    | User resource usage and wait states                                         |
| VMPERFT_42  | DRLRPT42    | User class resource usage and wait states (same layout as FC41)             |
| VMPERFT_43  | DRLRPT43    | System totals for user resource usage and wait states (same layout as FC41) |
| VMPERFT_44  | DRLRPT44    | User transactions and response time                                         |
| VMPERFT_45  | DRLRPT45    | User class transactions and response time data (same layout as FC44)        |
| VMPERFT_46  | DRLRPT46    | System totals for user transactions and response time data                  |
| VMPERFT_51  | DRLRPT51    | I/O processor activity data                                                 |
| VMPERFT_55  | DRLRPT55    | Virtual switch records                                                      |
| VMPERFT_61  | DRLRPT61    | General DASD data                                                           |
| VMPERFT_65  | DRLRPT65    | DASD cache data                                                             |
| VMPERFT_68  | DRLRPT68    | DASD CP owned (system areas)                                                |

| Record name | Member name | Description                               |
|-------------|-------------|-------------------------------------------|
| VMPERFT_6F  | DRLRPT6F    | SCSI device records                       |
| VMPERFT_6D  | DRLRPT6D    | Queued Direct Input Output (QDIO) support |
| VMPERFT_71  | DRLRPT71    | DASD SEEKS data                           |
| VMPERFT_A2  | DRLRPTA2    | SFS and BFS server data                   |
| VMPERFT_A4  | DRLRPTA4    | Multitasking users data                   |
| VMPERFT_A6  | DRLRPTA6    | TCP/IP server data                        |
| VMPERFT_A7  | DRLRPTA7    | TCP/IP links data                         |
| VMPERFT_A8  | DRLRPTA8    | Reusable server kernel summary data       |
| VMPERFT_A9  | DRLRPTA9    | Linux application data                    |

## Administration dialog options and commands

This chapter describes actions you can access from primary windows in the IBM Z Performance and Capacity Analytics administration dialog. These actions include dialog window pull-downs and commands you issue from the command line. These sections describe the actions:

- “IBM Z Performance and Capacity Analytics dialog options” on page 261
- “IBM Z Performance and Capacity Analytics commands” on page 267

### IBM Z Performance and Capacity Analytics dialog options

This section describes the menu bar options for the IBM Z Performance and Capacity Analytics windows. Under each menu bar option, there is a list of pull-down options available, with references to where the pull-down options are described.

#### Administration window

```

Options  Other  Utilities  Help
-----
          IBM Z Performance and Capacity Analytics Administration
Option ==> -----
1 System      Perform system tasks          System ID . . : AUS1
2 Components  Install components             Db2 Subsystem : DEC1
3 Logs        Show installed log objects    Db2 plan name : DRLPLAN
4 Tables      Show installed data tables    System tables : DRLSYSYY
5 Reports     Run reports                  Data tables . : DRLYY

F1=Help      F2=Split      F3=Exit      F9=Swap      F10=Actions  F12=Cancel

```

The menu bar options of the Administration window are:

#### Options

- 1. Dialog parameters...
- 2. Reporting dialog defaults...
- 3. Exit

#### Dialog parameters

See “Dialog parameters - variables and fields” on page 81.

#### Reporting dialog defaults

Refer to the *Guide to Reporting* for more information.

### Exit

Returns to the previous window.

### Other

- 1. QMF
  2. DB2I
  3. ISPF/PDF
  4. Process IZPCA statements...
  5. Messages...

### QMF

Refer to the *Guide to Reporting* for more information. If your installation does not use QMF, this item is not selectable.

### DB2I

See [“Using available tools to work with the IBM Z Performance and Capacity Analytics database”](#) on page 123.

### ISPF/PDF

Displays the ISPF/PDF primary menu.

### Process IZPCA statements

See [“Working with fields in a record definition”](#) on page 161.

### Messages

Refer to the *Guide to Reporting* for more information.

### Utilities

- 1. Network
  2. Workstation interface
  3. Generate problem records...
  4. System Diagnostics
  5. TPM Extract
  6. Search installed objects

### Network

Refer to the *Network Performance Feature Installation and Administration* manual .

### Generate problem records

See [“Administering problem records”](#) on page 131.

### System Diagnostics

Refer to the topic "System Diagnostics" in the *Messages and Problem Determination* manual.

### TPM Extract

Extracts usage data from IBM Z Performance and Capacity Analytics data tables which can be imported into Tivoli Performance Modeller.

### Search installed objects

Utility for searching installed component objects such as table columns, table comments, records, updates, and reports.

### Help

- 1. Using help
  2. General help
  3. Keys help
  4. Product information

### Using help

Refer to the *Guide to Reporting* for more information.

### General help

Refer to the *Guide to Reporting* for more information.



### Process IBM Z Performance and Capacity Analytics statements

See [“Working with fields in a record definition”](#) on page 161.

### Messages

Refer to the *Guide to Reporting* for more information.

### Help

As for Help on the Administration window (see [“Help”](#) on page 262).

### Logs window

|                                                               |                             |
|---------------------------------------------------------------|-----------------------------|
| Log Utilities View Other Help                                 |                             |
| -----                                                         |                             |
| Logs                                                          |                             |
| Row 1 to 3 of 3                                               |                             |
| Command ==> -----                                             |                             |
| Select a log. Then press Enter to display record definitions. |                             |
| /                                                             | Logs Description            |
| -                                                             | DCOLLECT DFSMS DCOLLECT log |

The menu bar options of the Logs window are:

### Log

#### New

See [“Creating a log definition”](#) on page 158.

#### Open log definition

See [“Viewing and modifying a log definition”](#) on page 156.

#### Open record definitions

See [“Viewing and modifying a record definition”](#) on page 159.

#### Open collected log data sets

See [“Viewing a list of log data sets collected”](#) on page 149.

#### Open Log Data Manager

See [“Working with the log data manager option”](#) on page 201.

#### Delete

See [“Deleting a log definition”](#) on page 158.

#### Save definition

See [“Saving a table definition in a data set”](#) on page 195 for a description of a similar action, saving definitions for tables.

#### Print list

See [“Printing a list of IBM Z Performance and Capacity Analytics tables”](#) on page 195 for a description of a similar action, printing a list of tables.

#### Exit

Saves changes and returns to the previous window.

### Utilities

#### Collect

See [“Collecting data from a log into Db2 tables”](#) on page 151.

#### Display log

See [“Displaying the contents of a log”](#) on page 153.

#### Show log statistics

See [“Displaying log statistics”](#) on page 152.

### View

#### All

Lists all logs in the Logs window.



**Some**

Restricts the list of logs displayed in the Logs window when you specify selection criteria.

**Other****QMF**

Refer to the *Guide to Reporting* for more information. If your installation does not use QMF, this item is not selectable.

**DB2I**

See [“Using available tools to work with the IBM Z Performance and Capacity Analytics database” on page 123.](#)

**ISPF/PDF**

Displays the ISPF/PDF primary menu.

**Process IBM Z Performance and Capacity Analytics statements**

See [“Working with fields in a record definition” on page 161.](#)

**Messages**

Refer to the *Guide to Reporting* for more information.

**Help**

As for Help on the Administration window (see [“Help” on page 262.](#))

**Tables window**

|                    |                     |                   |              |                    |               |              |
|--------------------|---------------------|-------------------|--------------|--------------------|---------------|--------------|
| <u>T</u> able      | <u>M</u> aintenance | <u>U</u> tilities | <u>E</u> dit | <u>V</u> iew       | <u>O</u> ther | <u>H</u> elp |
| -----              |                     |                   |              |                    |               |              |
| Tables             |                     |                   |              | Row 1 to 33 of 161 |               |              |
| Command ===> ----- |                     |                   |              |                    |               |              |
| /                  | Tables              | Prefix            | Type         |                    |               |              |
| -                  | AGGR_VALUE          | DRLSYSYY          | TABLE        |                    |               |              |
| -                  | GENERATE_KEYS       | DRLSYSYY          | TABLE        |                    |               |              |
| -                  | GENERATE_PROFILES   | DRLSYSYY          | TABLE        |                    |               |              |
| -                  | KPMZ_CPUMF_PT_T     | DRLYY             | TABLE        |                    |               |              |

The menu bar options of the Tables window are:

**Table****New**

See [“Creating a table” on page 196.](#)

**Open table definition**

See [“Opening a table to display columns” on page 180.](#)

**Open updates**

See [“Displaying and modifying update definitions of a table” on page 184.](#)

**Open purge conditions**

See [“Displaying and editing the purge condition of a table” on page 189.](#)

**Open table space**

See [“Displaying and modifying a table or index space” on page 191.](#)

**Delete**

See [“Deleting a table or view” on page 198.](#)

**Save definition**

See [“Saving a table definition in a data set” on page 195.](#)

**Print list**

See [“Printing a list of IBM Z Performance and Capacity Analytics tables” on page 195.](#)

**Exit**

Saves changes and returns to the previous window.

### Maintenance

#### Table space

See [“Displaying and modifying a table or index space” on page 191.](#)

#### Index and index space

See [“Displaying and modifying a table or index space” on page 191.](#)

### Utilities

#### Display

See [“Displaying the contents of a table” on page 168.](#)

#### Show size

See [“Showing the size of a table” on page 171.](#)

#### Import

See [“Importing the contents of an IXF file to a table” on page 174.](#) If your installation does not use QMF, this item is not selectable.

#### Export

See [“Exporting table data to an IXF file” on page 174.](#) If your installation does not use QMF, this item is not selectable.

#### Grant

See [“Administering user access to tables” on page 200.](#)

#### Revoke

See [“Administering user access to tables” on page 200.](#)

#### Recalculate

See [“Recalculating the contents of a table” on page 172.](#)

#### Purge

See [“Purging a table” on page 175.](#)

#### Unload

See [“Unloading and loading tables” on page 175.](#)

#### Load

See [“Unloading and loading tables” on page 175.](#)

### Edit

#### Add rows

See [“Editing the contents of a table” on page 169.](#) If your installation does not use QMF, this item is not selectable.

#### Change rows

See [“Editing the contents of a table” on page 169.](#) If your installation does not use QMF, this item is not selectable.

#### ISPF editor

See [“Editing the contents of a table” on page 169.](#)

### View

#### All

See [“Listing a subset of tables in the Tables window” on page 196.](#)

#### Some

See [“Listing a subset of tables in the Tables window” on page 196.](#)

### Other

#### QMF

Refer to the *Guide to Reporting* for more information. If your installation does not use QMF, this item is not selectable.

#### DB2I

See [“Using available tools to work with the IBM Z Performance and Capacity Analytics database” on page 123.](#)

**ISPF/PDF**

Displays the ISPF/PDF primary menu.

**Process IBM Z Performance and Capacity Analytics statements**

See [“Working with fields in a record definition”](#) on page 161.

**Messages**

Refer to the *Guide to Reporting* for more information.

**Help**

As for Help on the Administration window (see [“Help”](#) on page 262).

**IBM Z Performance and Capacity Analytics commands**

You can immediately execute an action anywhere in an IBM Z Performance and Capacity Analytics dialog by typing these commands on the command line (uppercase letters show the abbreviation for the command):

**COMPonen (see Note)**

Displays the Components window.

**DB2I**

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

**DISPLay RECORD record\_type (see Note)**

Lets you identify a log data set in the Record Selection window from which IBM Z Performance and Capacity Analytics displays records of the specified type in the Record Data window.

**DISPLay report\_ID**

Displays the specified report from the Reports window.

**DISPLay REPort report\_ID**

Displays the specified report. By default, report IDs are listed in the IBM Z Performance and Capacity Analytics Report window next to their corresponding report descriptions. You can toggle the display to show either the report IDs or the report types and owners by pressing F11.

If you do not use a prefix for the report ID (*prefix.report\_ID*), IBM Z Performance and Capacity Analytics assumes the report is public. Otherwise, the prefix must be the owner of the private report.

**DISPLAY TABLE table\_name (see Note)**

Displays the specified table.

IBM Z Performance and Capacity Analytics assumes a prefix that is the value of the Other table prefix field from the Dialog Parameters window:

```
DISPL TAB DRLSYS.DRLTABLES
DISPL TAB MVS_SYSTEM_H or DISPL TAB DRL.MVS_SYSTEM_H
```

**DISPLay table\_name (see Note)**

Displays the specified table from the Tables window.

**DRLESTRA**

Displays the Set/Reset Trace Options window.

**HELP**

Displays general help or, if a message appears, help for the message.

**ISPF**

Displays the ISPF primary menu.

**LOCate argument**

In an IBM Z Performance and Capacity Analytics window, locates the first row that starts with *argument* in the column that was last sorted.

**LOGS (see Note)**

Displays the Logs window.

**PDF**

Displays the ISPF primary menu.

### QMF

If your installation uses QMF, this command starts QMF and displays either its SQL primary window or its prompted query primary menu.

### REPORTs

Starts the reporting dialog.

### Sort *column\_name*|*position* ASC|DESC

Sorts an IBM Z Performance and Capacity Analytics 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.)

### SYStem (see Note)

Displays the System window.

### TABLE (see Note)

Displays the Tables window.

**Note:** This command is not available in end-user mode from the reporting dialog.

## Administration reports

---

This chapter describes the administration reports that are created when you create or update the IBM Z Performance and Capacity Analytics system tables. The reports listed in this chapter are the following:

- “PRA001 - Indexspace cross-reference” on page 268
- “PRA002 - Actual table space allocation” on page 269
- “PRA003 - Table purge condition” on page 270
- “PRA004 - List columns for a requested table with comments” on page 271
- “PRA005 - List all tables with comments” on page 272
- “PRA006 - List User Modified Objects” on page 273

## PRA001 - Indexspace cross-reference

The PRA001 report provides a cross-reference between index spaces and indexes that are present in the IBM Z Performance and Capacity Analytics environment at the time of running the report.

This report enables you to extract the real name of an index, so that you can locate the index in the administration dialog and adjust its space allocation if required.

The source table for this report is the DRLINDEXES system table.

This information identifies the report:

### Report ID

PRA001

### Report group

ADMIN

### Reports Source

DRLINDEXES

### Attributes

INDEX, INDEXSPACE, ADMINISTRATION, Db2,

### Variables

INDEXSPACE. Optional. Type the index name associated with a single index space, or accept the default setting to obtain a complete cross reference between index and index space names for all indexes.

Figure 130 on page 269 shows part of a PRA001 report.

## INDEXSPACE cross-reference

| Indexspace Name | Index Name       |
|-----------------|------------------|
| -----           | -----            |
| DRLLOGSI        | DRLLOGSIX        |
| DRLCOMPR        | DRLCOMP_PART_IX  |
| DRLCOMPO        | DRLCOMPONENT_IX  |
| DRLRECOR        | DRLRECORDSIX     |
| DRLFIEFD        | DRLFIELDSIX      |
| DRLSECTI        | DRLSECTIONSIX    |
| DRLRPROC        | DRLRPROCINPUTIX  |
| DRLR1MX\$       | DRLRECORDPROCSIX |
| DRLUPDAT        | DRLUPDATESIX     |
| DRLUPDCO        | DRLUPDCOLSIX     |
| DRLUPDLE        | DRLUPDLETSIX     |
| DRLPURGE        | DRLPURGEIX       |
| DRLUPDIS        | DRLUPDISTRIX     |
| DRLLOGDA        | DRLLOGDATASETSIX |
| DRLXPRI         | DRLXPRIX         |
| DAYOFRW         | DAY_OF_WEEK_IX   |
| SPECIALR        | SPECIAL_DAY_IX   |
| DRLC1F8M        | DRLCOMP_OBJ_IX   |
| DRLREPOR        | DRLREPORTS_IX    |
| DRLREPRV        | DRLREP_VAR_IX    |
| DRLREPRA        | DRLREP_ATTR_IX   |
| DRLREPRQ        | DRLREP_QRY_IX    |
| DRLREPRC        | DRLREP_COL_IX    |
| DRLREprt        | DRLREP_TEXT_IX   |
| DRLGROUP        | DRLGROUP_IX      |
| DRLGRPRR        | DRLGRP_REP_IX    |
| DRLSEARC        | DRLSEARCH_IX     |
| ..              |                  |
| ..              |                  |
| ..              |                  |

Figure 130. Part of an Indexspace Cross-reference report

The report contains the following information:

#### INDEXSPACE NAME

The name of the index space whose index name has been extracted. This is either the name associated with a single index space or the complete cross reference between index and index space names for all indexes.

#### INDEX NAME

The name of the index associated with the index space.

For information about:

- The DRLINDEXES system table, see [“Views on Db2 and QMF tables” on page 235](#).
- How to run reports, see [“Administering reports” on page 124](#).
- How to display or modify tables or index spaces, see [“Displaying and modifying a table or index space” on page 191](#).

## PRA002 - Actual table space allocation

The PRA002 report shows the actual space allocated to tables. Use the information in this report, together with the information in PRA003, to estimate future space requirements.

The source table for this report is the DRLTABLESPACE system table.

This information identifies the report:

#### Report ID

PRA002

#### Report group

ADMIN

#### Reports Source

DRLTABLESPACE

**Attributes**

TABSPACE, SPACE, ADMINISTRATION, Db2,

**Variables**

TABSPACE\_NAME. Optional. You can select the space allocated to a single table space, or accept the default to obtain complete information for all the Tablespace present.

Figure 131 on page 270 shows part of a PRA002 report.

ACTUAL TABLESPACE SPACE allocation

| Tablespace Name | SPACE Allocated |
|-----------------|-----------------|
| -----           | -----           |
| DRLSADSM        | 1584            |
| DRLSCI08        | 10080           |
| DRLSCOM         | 20160           |
| DRLSCS01        | 1056            |
| DRLSCS02        | 1056            |
| DRLSCS03        | 1056            |
| DRLSCS04        | 1056            |
| DRLSCS05        | 1056            |
| DRLSCS06        | 1056            |
| DRLSCS07        | 1056            |
| DRLSCS08        | 1056            |
| DRLSCS09        | 1056            |
| DRLSCS10        | 1056            |
| DRLSCS11        | 1056            |
| DRLSCS12        | 1056            |
| DRLSCS13        | 1056            |
| DRLSCS14        | 1056            |
| DRLSCS15        | 1056            |
| DRLSCS16        | 1056            |
| DRLSCS17        | 1056            |
| DRLSCS18        | 1056            |
| DRLSCS19        | 1056            |
| ..              |                 |
| ..              |                 |
| ..              |                 |

Figure 131. Part of an Actual Tablespace Allocation report

The report contains the following information:

**Tablespace Name**

The name of the table space whose space allocation has been extracted.

**SPACE Allocated**

The SPACE value as reported in the Db2 catalog (SYSIBM.SYSTABLESPACES table). The column SPACE contains data only if the STOSPACE utility has been run.

For information about:

- The DRLTABLESPACE system table, see [“Views on Db2 and QMF tables” on page 235](#).
- How to run reports, see [“Administering reports” on page 124](#).
- How to display or modify tables or index spaces, see [“Displaying and modifying a table or index space” on page 191](#).
- The SYSTABLESPACE table, refer to the *Db2 for z/OS: SQL Reference*.

**PRA003 - Table purge condition**

This report shows a printable list of current purge conditions. It enables you to review purge criteria and decide which adjustments to make without the need to use the online dialog.

The source table is the DRLPURGCOND system table.

This information identifies the report:

**Report ID**

PRA003

**Report group**

ADMIN

**Reports Source**

DRLPURGECOND

**Attributes**

TABLE, PURGE, ADMINISTRATION, Db2,

**Variables**

TABLE\_NAME. Optional. You can select the purge condition associated with a single table, or accept the default setting to obtain a complete list of current purge conditions.

Figure 132 on page 271 shows part of a PRA003 report.

TABLE PURGE Condition

| Table Name        | Purge Condition                |
|-------------------|--------------------------------|
| -----             |                                |
| TCP_GEN_IP_H      | DATE < CURRENT DATE - 7 DAYS   |
| TCP_GEN_TCP_H     | DATE < CURRENT DATE - 7 DAYS   |
| TCP_API_CALLS_D   | DATE < CURRENT DATE - 30 DAYS  |
| TCP_API_CALLS_H   | DATE < CURRENT DATE - 7 DAYS   |
| TCP_GEN_UDP_H     | DATE < CURRENT DATE - 7 DAYS   |
| TCP_GEN_ICMP_H    | DATE < CURRENT DATE - 7 DAYS   |
| TCP_GEN_IP_D      | DATE < CURRENT DATE - 30 DAYS  |
| TCP_GEN_TCP_D     | DATE < CURRENT DATE - 30 DAYS  |
| TCP_GEN_UDP_D     | DATE < CURRENT DATE - 30 DAYS  |
| TCP_GEN_ICMP_D    | DATE < CURRENT DATE - 30 DAYS  |
| TCP_GEN_IP_W      | DATE < CURRENT DATE - 365 DAYS |
| TCP_GEN_TCP_W     | DATE < CURRENT DATE - 365 DAYS |
| TCP_GEN_UDP_W     | DATE < CURRENT DATE - 365 DAYS |
| TCP_GEN_ICMP_W    | DATE < CURRENT DATE - 365 DAYS |
| TCP_FTP_CLIENT_T  | DATE < CURRENT DATE - 1 DAYS   |
| TCP_FTP_CLIENT_H  | DATE < CURRENT DATE - 7 DAYS   |
| TCP_FTP_CLIENT_D  | DATE < CURRENT DATE - 30 DAYS  |
| TCP_FTP_CLIENT_W  | DATE < CURRENT DATE - 365 DAYS |
| TCP_FTP_SERVER_T  | DATE < CURRENT DATE - 1 DAYS   |
| TCP_FTP_SERVER_H  | DATE < CURRENT DATE - 7 DAYS   |
| TCP_FTP_SERVER_D  | DATE < CURRENT DATE - 30 DAYS  |
| TCP_FTP_SERVER_W  | DATE < CURRENT DATE - 365 DAYS |
| TCP_TN3270_CLNT_T | DATE < CURRENT DATE - 1 DAYS   |
| TCP_TN3270_CLNT_H | DATE < CURRENT DATE - 7 DAYS   |
| ..                |                                |
| ..                |                                |
| ..                |                                |

Figure 132. Part of a Table Purge Condition report

The report contains the following information:

**TABLE NAME**

The name of the table to which the purge idd:break>condition applies.

**PURGE CONDITION**

The purge condition that applies to the table.

For information about:

- The DRLPURGCOND system table, see [“Views on Db2 and QMF tables” on page 235](#).
- How to run reports, see [“Administering reports” on page 124](#).
- How to display or edit purge conditions, see [“Displaying and editing the purge condition of a table” on page 189](#).

## PRA004 - List columns for a requested table with comments

This report shows the column remarks for the selected table.

This information identifies the report:

## PRA005 - List all tables with comments

### Report ID

PRA004

### Report group

ADMIN

### Reports Source

DRLCOLUMNS

### Attributes

COMMENT, PURGE, ADMINISTRATION, Db2, idd:break>TABLE

### Variables

Tablename.

List columns for a requested table with comments

TABLE: DB2\_USER\_TRAN\_H

| KEYS | KEYSEQ | NAME              | COLTYPE | LENGTH | REMARKS                           |
|------|--------|-------------------|---------|--------|-----------------------------------|
| K    | 7      | CORRELATION_ID    | CHAR    | 12     | Correlat. ID value. From QWHCCV.  |
| K    | 10     | DB2_PLAN          | CHAR    | 8      | Plan name. From QWHCPLAN.         |
|      | 0      | BP32_DYN_PREFETCH | FLOAT   | 4      | Num. of DYNAMIC PREFETCH requests |
|      | 0      | BP32_EXPANSIONS   | FLOAT   | 4      |                                   |

IBM Z Performance and Capacity Analytics: PRA004

Figure 133. Example of List columns for a requested table with comment

The report contains the following information:

### Keys

K Indicates if the column is primary Key in the table.

### Keyseq

The column's numeric position within the table's primary key. 0 if it is not part of a primary key.

### Name

Table column name.

### Coltype

The type attribute associated to the column.

### Length

Column length.

### Remarks

Column comment (if defined for the table column). It is 255 char long.

## PRA005 - List all tables with comments

This report lists all the tables with remarks.

This information identifies the report:

### Report ID

PRA005

### Report group

ADMIN

### Reports Source

DRLCOLUMNS

### Attributes

COMMENT, PURGE, ADMINISTRATION, Db2, TABLE

### Variables

Tablename.



```

List all tables with comments
NAME          REMARKS
-----
CICS_DICTIONARY CICS dictionary records. Used and maintained by the recordproc that
CICS_FIELD      CICS dictionary fields. Used to update the dictionary blocks in
DAY_OF_WEEK     This control table defines the day type to be returned by the
DAYTYPE
DB2_APPL_DIST_H This table provides hourly statistics on DDF distributed address
space

```

IBM Z Performance and Capacity Analytics: PRA005

Figure 134. Example of List all tables with comment

The report contains the following information:

**Name**

Table column name.

**Coltype**

The type attribute associated to the column.

**Length**

Column length.

**Remarks**

Table comment. It is 255 characters long.

## PRA006 - List User Modified Objects

The PRA006 report provides the list of all the user-modified objects, that is, the objects that have a version value different from 'IBM.xxx'. The source tables for this report are the DRLCOMP\_OBJECTS, DRLRECORDS, DRLRECORDPROCS, DRLLOGS, DRLUPDATES, DRLREPOSTS system tables.

This information identifies the report.

**Report ID**

PRA006

**Report group**

ADMIN

**Reports Source**

DRLCOMP\_OBJECTS, DRLRECORDS, idd:break>DRLRECORDPROCS, DRLLOGS, DRLUPDATES, DRLREPOSTS

**Attributes**

USER, CHANGES, OBJECTS, ADMINISTRATION

**Variables**

COMPONENT. Optional. Type a component name if you want the user-modified objects for a single component. If you do not specify any value, the complete list of user modified objects is displayed for each installed component.

The following is an extract from a PRA006 report:

| List User Modified Objects |             |                 |             |                   |         |
|----------------------------|-------------|-----------------|-------------|-------------------|---------|
| Component Name             | Object Type | Object Name     | Member Name | Part Name         | Version |
| ADSM                       | LOG         | SMF             | DRLLSMF     | -                 | FLAG    |
| CICSMON                    | LOG         | SMF             | DRLLSMF     | -                 | FLAG    |
|                            | RECORD      | SMF_110_1       | DRLRS110    | -                 | FLAG    |
|                            | REPORT      | CICSA05         | DRLOCI07    | 7 CMF GLOB & ACCT | PN86655 |
|                            |             | CICSA07         | DRLOCI07    | 7 CMF GLOB & ACCT | PN86655 |
|                            | UPDATE      | CICS_TRAN_USR_H | DRLTCITR    | 1 CMF BASIC       | ALTERED |
| CICSMOP                    | LOG         | SMF             | DRLLSMF     | -                 | FLAG    |
|                            | RECORD      | SMF_110_1       | DRLRS110    | -                 | FLAG    |
| CICSSTAP                   | LOG         | SMF             | DRLLSMF     | -                 | FLAG    |
|                            | RECORD      | SMF_110_2       | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_02    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_07    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_08    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_10    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_108   | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_11    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_12    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_16    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_17    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_18    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_21    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_23    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_24    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_25    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_28    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_30    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_34    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_37    | DRLR1102    | -                 | PQ28635 |
|                            |             | SMF_110_2_39    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_40    | DRLR1102    | -                 | PQ28635 |
|                            |             | SMF_110_2_45    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_48    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_48_2  | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_54    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_61    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_63    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_66    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_76    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_81    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_85    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_87    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_88    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_90    | DRLR1102    | -                 | PQXXXXX |
|                            |             | SMF_110_2_93    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_2_94    | DRLR1102    | -                 | PQ03356 |
|                            |             | SMF_110_3       | DRLR1103    | -                 | PQ03356 |
|                            |             | RECPROC         | DRL2CIST    | DRLR1103          | -       |
|                            | UPDATE      | CICS_S_TCPIP_DP | DRLTS3P7    | -                 | PQXXXXX |
|                            |             | CICS_S_TCPIP_TP | DRLTS3P7    | -                 | PQXXXXX |
| .....                      |             |                 |             |                   |         |

The report contains the following information:

#### Component Name

Name of the component which the objects belong to.

#### Object Type

Type of object (Record, Update, Log...).

#### Object Name

Name of the object.

#### Member Name

Name of the member in the IBM Z Performance and Capacity Analytics libraries where the object definition is stored.

#### Part Name

Subcomponent name, if any.

#### Version

Version of the object. You modify this field when you change any objects. It indicates whether an object has been modified.

For information about:

- The DRLCOMP\_OBJECTS, DRLRECORDS, DRLRECORDPROCS, DRLLOGS, DRLUPDATES, DRLREPOSTS system tables, see [“Views on Db2 and QMF tables”](#) on page 235.
- How to run reports, see [“Administering reports”](#) on page 124.

## Using the REXX-SQL interface

This chapter contains General-use Programming Interface and Associated Guidance Information.

IBM Z Performance and Capacity Analytics provides a REXX-SQL interface through the DRL1SQLX module, which supports:

- Loading a Db2 table into an array of REXX variables
- Using SQL EXECUTE IMMEDIATE to execute an argument string that is a valid SQL statement

For more information about Db2 terms and statements mentioned in this chapter, refer to the *Db2 for z/OS: SQL Reference*.

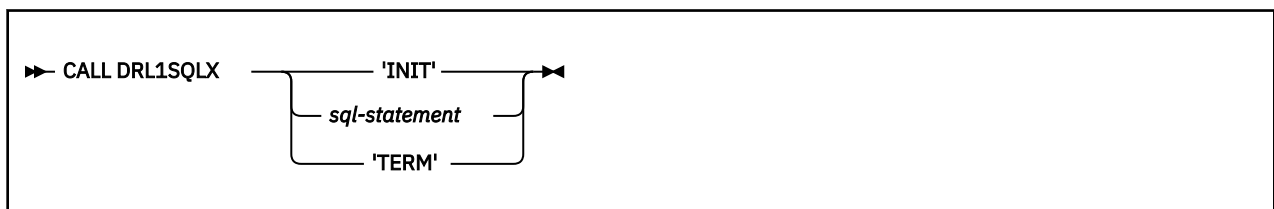
## Calling the DRL1SQLX module

The module derives its input data from the argument on the CALL instruction and from predefined REXX variables. There are reserved REXX variables that the calling REXX exec defines before calling the module.

If a REXX exec passes an SQL SELECT statement as the argument, DRL1SQLX executes the SELECT and returns table data in an array of REXX variables. The module can return any Db2 data type but graphic strings.

The module return code result, set in the variable RESULT, is available to the calling REXX program.

The syntax for running the DRL1SQLX module is:



where:

### INIT

Establishes a call attachment facility (CAF) connection to Db2 that leaves the connection open until a DRL1SQLX TERM statement is executed. There is not an implied COMMIT until the DRL1SQLX TERM statement.

If the REXX program passes INIT as the argument for the CALL DRL1SQLX statement, the connection remains open for each SQL statement call. The connection does not terminate until a CALL DRL1SQLX TERM statement closes it.

If the REXX program does not pass INIT as the argument for the CALL DRL1SQLX statement, the connection is opened at the beginning of each CALL DRL1SQLXsql\_statement and closed at its conclusion, which makes SQL ROLLBACK impossible.

If you are making more than three calls to DRL1SQLX, it is more efficient to use the CALL DRL1SQLX INIT statement first.

### sql-statement

An SQL SELECT or another SQL statement that can be executed with an EXECUTE IMMEDIATE statement. DRL1SQLX appends the SQL statement to SQL EXECUTE IMMEDIATE and executes it.

### TERM

Terminates an existing connection to Db2 and performs an implied COMMIT.

### Input REXX variables

The calling program can define these variables before calling DRL1SQLX:

#### DB2SUBS

The Db2 subsystem that DRL1SQLX addresses.

There is no default for this variable; it must be defined.

#### DB2PLAN

The name of the Db2 application plan. This variable should be coded only if the installation changed the default plan name DRLPLAN when the IBM Z Performance and Capacity Analytics bind job was run.

#### SQLSTEM

The stem of the REXX array that DRL1SQLX uses to return table values when the argument is an SQL SELECT statement.

The stem has an initial value of SQLDATA.

#### SQLMAX

The maximum number of rows to fetch when the argument is an SQL SELECT statement.

SQLMAX has a default value of 5000. Pick an SQLMAX limit that protects you from runaway queries. The maximum supported value is 99999999.

### Output REXX variables

DRL1SQLX always sets these variables:

#### RESULT

The DRL1SQLX return code.

When the argument is an SQL SELECT, DRL1SQLX sets RESULT to 4 if the number of rows in the table is greater than the value of SQLMAX. It issues a message, DRL1007W, to warn you of the condition but completes the select, returning the number of rows specified in SQLMAX.

DRL1SQLX sets these return codes in RESULT:

**0**

Successful execution.

**4**

SQLCODE > 0, SQLMAX invalid or the SQLMAX limit was reached. The error message is in SQLMSG.

**8**

SQLCODE < 0 indicates an SQL error. The error message is in SQLMSG.

**12**

An error that is not an SQL error. The error message is in SQLMSG.

**16**

There was either insufficient REXX storage or a REXX variable that could not be set. The error appears in SQLMSG, if possible.

**20**

The REXX communication routine IRXEXCOM could not be loaded. There is no indication of the error in SQLMSG.

#### SQLCODE

The SQL return code.

This value is positive when there is an SQL warning and negative when there is an SQL error. It is returned in combination with a RESULT of 4 or 8, exclusively.

#### SQLMSG.0

The number of different message values returned when RESULT > 0

#### SQLMSG.1

The value of the first message returned when RESULT > 0

Up to 5 messages can be returned.

### **SQLMSG.n**

The value of the last message returned when RESULT > 0

The value of *n* is the value of SQLMSG.0.

These variables are set by DRL1SQLX after a successful execution of an SQL SELECT statement. For each variable below, *sqlstem* is the value of the SQLSTEM input variable, *y* is the column number, and *z* is the row number:

### **sqlstem.NAME.0**

The number of selected columns.

### **sqlstem.NAME.y**

The names of the selected columns.

The column name of an expression is blank. Each value of *y* is a whole number from 1 through *sqlstem.NAME.0*.

### **sqlstem.LENGTH.y**

The maximum length of the value of the selected columns.

A column name can be longer than the value. Each value of *y* is a whole number from 1 through *sqlstem.NAME.0*.

### **sqlstem.TYPE.y**

The data types of the selected columns.

Each type is copied from the SQLTYPE field in the SQL descriptor area (SQLDA) and is a number ranging from 384 to 501. Each value of *y* is a whole number from 1 through *sqlstem.NAME.0*.

### **sqlstem.0**

The number of rows in the result table.

### **sqlstem.y.z**

The value of the column.

Each value of *y* is a whole number from 1 through *sqlstem.NAME.0*.

Each value of *z* is a whole number from 1 through *sqlstem.0*.

### **Reserved REXX variable**

DRL1SQLX always sets the variable SQLHANDLE on the INIT statement. It must not be reset except by the TERM statement, which must be able to read the value set by the last INIT statement.

SQLHANDLE contains the handle returned when DRL1SQLX connects to Db2 with the INIT statement.

**REXX example of calling DRL1SQLX**

```

/****REXX*****/
/* Execute an SQL SELECT statement and display output */
/****REXX*****/

sqlstmt = "SELECT *",
          "FROM DRL.MVS_SYSTEM_H",
          "WHERE DATE = '2000-05-02'"

db2subs = 'DB2T'           /* subsystem name */
sqlstem = 'RES'            /* name of stem */
sqlmax = 100              /* limit on nbr of rows */

Call DRL1SQLX sqlstmt      /* execute SQL statement */

Say 'DRL1SQLX return code:' result
Say 'SQL return code SQLCODE:' sqlcode

If sqlmsg.0 > 0 Then
  Do n = 1 To sqlmsg.0      /* up to 5 error msgs */
    Say sqlmsg.n
  End

If res.name.0 > 0 Then      /* number of columns */

  /****REXX*****/
  /* Display column names and values for all rows */
  /****REXX*****/
  If res.0 > 0 Then        /* number of rows */
    Do z = 1 To res.0
      Say ' '
      Say 'Following values were returned for row 'z': '
      Do y = 1 To res.name.0
        Say res.name.y: 'res.y.z
      End
    End
  Else
    Say 'No rows were returned'
Exit

```

*Figure 135. Example of REXX-SQL interface call***Using the IBM Db2 Analytics Accelerator**

The IBM® Db2 Analytics Accelerator is a high-performance appliance that integrates business insights into operational processes.

IBM Z Performance and Capacity Analytics includes Analytics Components that are designed to support the IBM Db2 Analytics Accelerator. These components are based on existing non-Analytics components that are modified to allow for the following functions:

- Store data directly to an IBM Db2 Analytics Accelerator removing the need to store data on Db2 for z/OS®.
- Allow for more detailed timestamp level records to be stored.
- Allow for more CPU work to move from z/OS to the IBM Db2 Analytics Accelerator appliance.
- Report to make use of the high query speeds of the IBM Db2 Analytics Accelerator.

The System Data Engine component of the IBM Common Data Provider for z Systems® is used to convert SMF log data into data sets that contain the IBM Z Performance and Capacity Analytics components tables in Db2 internal format. The IBM Db2 Analytics Accelerator Loader for z/OS is then used to load the Db2 internal format data sets directly into the IBM Db2 Analytics Accelerator.

The Analytics components comprise the following items:

- Analytics - z/OS Performance
- Analytics - Db2
- Analytics - KPM CICS

- Analytics - KPM Db2
- Analytics - KPM z/OS

## Relationship of Analytics Components to non-Analytics Components

The Analytics components are based on the following existing non-Analytics components:

| <i>Table 8. Relationship of Analytics components to non-Analytics components</i> |                                     |
|----------------------------------------------------------------------------------|-------------------------------------|
| <b>Analytics</b>                                                                 | <b>Non-Analytics</b>                |
| Analytics - Db2                                                                  | Db2                                 |
| Analytics - KPM CICS                                                             | Key Performance Metrics - CICS      |
| Analytics - KPM Db2                                                              | Key Performance Metrics - Db2       |
| Analytics - KPM z/OS                                                             | Key Performance Metrics - z/OS      |
| Analytics - z/OS Performance                                                     | z/OS Performance Management (MVSPM) |

The Analytics components include Lookup tables that must be customized as per their equivalent Lookup tables in the non-Analytics components:

| <i>Table 9. Relationship of Analytics Lookup table to non-Analytics Lookup table</i> |                               |                                   |
|--------------------------------------------------------------------------------------|-------------------------------|-----------------------------------|
| <b>Member name</b>                                                                   | <b>Analytics Lookup table</b> | <b>non-Analytics Lookup table</b> |
| DRLTA2AP                                                                             | A_DB2_APPLICATION             | DB2_APPLICATION                   |
| DRLTA2AC                                                                             | A_DB2_ACCUMAC                 | DB2_ACCUMAC                       |
| DRLTALUG                                                                             | A_USER_GROUP                  | USER_GROUP                        |
| DRLTALKP                                                                             | A_KPM_THRESHOLDS_L            | KPM_THRESHOLDS                    |
| DRLTALW2                                                                             | A_WORKLOAD2_L                 | MVS_WORKLOAD2_TYPE                |
| DRLTALDA                                                                             | A_DEVICE_ADDR_L               | MVSPM_DEVICE_ADDR                 |
| DRLTALUT                                                                             | A_UNIT_TYPE_L                 | MVSPM_UNIT_TYPE                   |
| DRLTALMI                                                                             | A_MIPS_L                      | MVS_MIPS_T                        |
| DRLTALSP                                                                             | A_SYSPLEX_L                   | MVS_SYSPLEX                       |
| DRLTALWL                                                                             | A_WORKLOAD_L                  | MVS_WORKLOAD_TYPE                 |
| DRLTALTR                                                                             | A_TIME_RES_L                  | MVSPM_TIME_RES                    |

The following table lists all the reports per Analytics component, and their equivalent non-Analytics component reports.

Table 10. Relationship of Analytics component report to non-Analytics component report

| Report name                                | Analytics Report ID | non-Analytics Report ID |
|--------------------------------------------|---------------------|-------------------------|
| Db2 Buffer Pool Exceptions                 | ADB219              | DB219                   |
| Db2 Buffer Pool Statistics, Detail         | ADB215              | DB215                   |
| Db2 Buffer Pool Statistics, Overview       | ADB216              | DB216                   |
| Db2 DBRMs Class 7,8 Times, Overview        | ADB222              | DB222                   |
| Db2 General Measure by Profile, Overview   | ADB212              | DB212                   |
| Db2 IDAA Statistics by Transaction, Detail | ADB244              | DB244                   |
| Db2 Packages Class 7,8 Times, Overview     | ADB221              | DB221                   |
| Db2 Transaction Statistics, Detail         | ADB204              | DB204                   |
| Db2 Transaction Statistics, Overview       | ADB205              | DB205                   |

The following table lists all the tables per Analytics component, and their equivalent non-Analytics component tables.



Table 11. Relationship of Analytics component table to non-Analytics component table

| Component                    | Type  | Analytics component table | Equivalent to non-Analytics component table |
|------------------------------|-------|---------------------------|---------------------------------------------|
| Analytics - z/OS Performance | Table | A_PM_CF_I                 | MVSPM_CF_H                                  |
|                              |       | A_PM_CF_LINK_I            | MVSPM_CF_LINK_H                             |
|                              |       | A_PM_CF_PROC_I            | MVSPM_CF_PROC_H                             |
|                              |       | A_PM_CF_REQ_I             | MVSPM_CF_REQUEST_H                          |
|                              |       | A_PM_CF_CF_I              | MVSPM_CF_TO_CF_H                            |
|                              |       | A_PM_XCF_MEMBER_I         | MVSPM_XCF_MEMBER_H                          |
|                              |       | A_PM_XCF_PATH_I           | MVSPM_XCF_PATH_H                            |
|                              |       | A_PM_XCF_SYS_I            | MVSPM_XCF_SYS_H                             |
|                              |       | A_PM_OMVS_BUF_I           | MVSPM_OMVS_BUF_H                            |
|                              |       | A_PM_OMVS_FILE_I          | MVSPM_OMVS_FILE_H                           |
|                              |       | A_PM_OMVS_GHFS_I          | MVSPM_OMVS_GHFS_H                           |
|                              |       | A_PM_OMVS_HFS_I           | MVSPM_OMVS_HFS_H                            |
|                              |       | A_PM_OMVS_KERN_I          | MVSPM_OMVS_KERN_H                           |
|                              |       | A_PM_OMVS_MOUNT_I         | MVSPM_OMVS_MOUNT_H                          |
|                              |       | A_PM_SYS_CLUST_I          | MVSPM_CLUSTER_H                             |
|                              |       | A_PM_SYS_CPU_I            | MVSPM_CPU_H                                 |
|                              |       | A_PM_SYS_CPUMT_I          | MVSPM_CPUMT_H                               |
|                              |       | A_PM_SYS_ENQ_I            | MVSPM_ENQUEUE_H                             |
|                              |       | A_PM_SYS_LPAR_I           | MVSPM_LPAR_H                                |
|                              |       | A_PM_SYS_SYS_I            | MVSPM_SYSTEM_H                              |
|                              |       | A_PM_SYS_PROD_I           | MVSPM_PROD_T                                |
|                              |       | A_PM_SYS_PRDINT_I         | MVSPM_PROD_INT_T                            |
|                              |       | A_PM_SYS_MSU_I            | MVSPM_LPAR_MSU_T                            |
|                              |       | A_PM_WL_GOAL_I            | MVSPM_GOAL_ACT_H                            |
|                              |       | A_PM_WL_SERVED_I          | MVSPM_WLM_SERVED_H                          |
|                              |       | A_PM_WL_STATE_I           | MVSPM_WLM_STATE_H                           |
|                              |       | A_PM_WL_WKLD_I            | MVSPM_WORKLOAD_H                            |
|                              |       | A_PM_WL_WKLD2_I           | MVSPM_WORKLOAD2_H                           |
|                              |       | A_PM_IO_DATASET_I         | MVSPM_DATASET_H                             |
|                              |       | A_PM_IO_VOLUME_I          | MVSPM_VOLUME_H                              |
|                              |       | A_PM_IO_LCU_I             | MVSPM_LCU_IO_H                              |
|                              |       | A_PM_GS_BMF_I             | MVSPM_BMF_H                                 |
|                              |       | A_PM_GS_CACHE_I           | MVSPM_CACHE_H                               |
|                              |       | A_PM_GS_PAGEDS_I          | MVSPM_PAGE_DS_H                             |
|                              |       | A_PM_GS_PAGING_I          | MVSPM_PAGING_H                              |
|                              |       | A_PM_GS_STORAGE_I         | MVSPM_STORAGE_H                             |
|                              |       | A_PM_GS_STORCLS_I         | MVSPM_STORCLASS_H                           |
|                              |       | A_PM_GS_SWAP_I            | MVSPM_SWAP_H                                |
|                              |       | A_PM_GS_CACHESS_I         | MVSPM_CACHE_ESS_H                           |
|                              |       | A_PM_VS_VLF_I             | MVSPM_VLF_H                                 |
|                              |       | A_PM_VS_CSASQA_I          | MVSPM_VS_CSASQA_H                           |
|                              |       | A_PM_VS_PRIVATE_I         | MVSPM_VS_PRIVATE_H                          |
|                              |       | A_PM_VS_SUBPOOL_I         | MVSPM_VS_SUBPOOL_H                          |
|                              |       | A_PM_DEV_CHAN_I           | MVSPM_CHANNEL_H                             |
|                              |       | A_PM_DEV_HSCHAN_I         | MVSPM_HS_CHAN_H                             |
|                              |       | A_PM_DEV_AP_I             | MVSPM_DEVICE_AP_H                           |
|                              |       | A_PM_DEV_DEVICE_I         | MVSPM_DEVICE_H                              |
|                              |       | A_PM_DEV_FICON_I          | MVSPM_FICON_H                               |
|                              |       | A_PM_DEV_RAID_I           | MVSPM_RAID_RANK_H                           |
|                              |       | A_PM_DEV_ESSLNK_I         | MVSPM_ESSLINK_H                             |
|                              |       | A_PM_DEV_ESSEXT_I         | MVSPM_ESS_EXTENT_H                          |
|                              |       | A_PM_DEV_ESSRNK_I         | MVSPM_ESS_RANK_H                            |
|                              |       | A_PM_DEV_PCIE_I           | MVSPM_PCIE_H                                |
|                              |       | A_PM_Cryp_PCI_I           | MVSPM_CRYPTOPCI_H                           |
|                              |       | A_PM_Cryp_CCF_I           | MVSPM_CRYPTOPCCF_H                          |
|                              |       | A_PM_APP_APPL_I           | MVSPM_APPL_H                                |

Table 11. Relationship of Analytics component table to non-Analytics component table (continued)

| Component            | Type  | Analytics component table                                                                                                                                                                                                                                                                                                                                                                                                                | Equivalent to non-Analytics component table                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analytics - Db2      | Table | A_DB2_SYS_PARM_I<br>A_DB2_DB_I<br>A_DB2_DB_BIND_I<br>A_DB2_DB_QIST_I<br>A_DB2_DB_SYS_I<br>A_DB2_BP_I<br>A_DB2_USERTRAN_I<br>A_DB2_UT_BP_I<br>A_DB2_UT_SACC_I<br>A_DB2_UT_IDAA_I<br>A_DB2_IDAA_STAT_I<br>A_DB2_IDAA_ACC_I<br>A_DB2_IDAA_ST_A_I<br>A_DB2_IDAA_ST_S_I<br>A_DB2_PACK_I<br>A_DB2_SHR_BP_I<br>A_DB2_SHR_BPAT_I<br>A_DB2_SHR_LOCK_I<br>A_DB2_SHR_INIT_I<br>A_DB2_SHR_TRAN_I<br>A_DB2_DDF_I<br>A_DB2_SYSTEM_I<br>A_DB2_STORAGE_I | DB2_SYS_PARAMETER<br>DB2_DATABASE_T<br>DB2_DATABASE_T<br>DB2_DATABASE_T<br>DB2_SYSTEM_T<br>DB2_BUFFER_POOL_T<br>DB2_USER_TRAN_H<br>DB2_USER_TRAN_H<br>DB2_USER_TRAN_H<br>DB2_USER_TRAN_H<br>DB2_IDAA_STAT_H<br>DB2_IDAA_ACC_H<br>DB2_IDAA_STAT_A_H<br>DB2_IDAA_STAT_S_H<br>DB2_PACKAGE_H<br>DB2_BP_SHARING_T<br>DB2_BPATTR_SHR_T<br>DB2_LOCK_SHARING_T<br>DB2_SHARING_INIT<br>DB2_US_TRAN_SHAR_H<br>DB2_USER_DIST_H<br>DB2_SYSTEM_DIST_T<br>DB2_STORAGE_T |
|                      | View  | A_DB2_TRAN_IV<br>A_DB2_DATABASE_IV                                                                                                                                                                                                                                                                                                                                                                                                       | DB2_TRANSACTION_D<br>DB2_DATABASE_T                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Analytics - KPM Db2  | Table | A_KD_UT_I<br>A_KD_UT_BP_I<br>A_KD_EU_I<br>A_KD_EU_BP_I<br>A_KD_PACKAGE_I<br>A_KD_SYS_IO_I<br>A_KD_SYS_TCBSRB_I<br>A_KD_SYS_LATCH_I<br>A_KD_SYS_BP_I<br>A_KD_SYS_BP_SHR_I<br>A_KD_SYS_ST_DBM_I<br>A_KD_SYS_ST_DST_I<br>A_KD_SYS_ST_COM_I<br>A_DB_SYS_DB_WF_I<br>A_DB_SYS_DB_EDM_I<br>A_DB_SYS_DB_SET_I<br>A_DB_SYS_DB_LOCK_I                                                                                                              | KPM_DB2_USERTRAN_H<br>KPM_DB2_USERTRAN_H<br>KPM_DB2_ENDUSER_H<br>KPM_DB2_ENDUSER_H<br>KPM_DB2_PACKAGE_H<br>KPM_DB2_SYSTEM_T<br>KPM_DB2_SYSTEM_T<br>KPM_DB2_LATCH_T<br>KPM_DB2_BP_T<br>KPM_DB2_BP_SHR_T<br>KPM_DB2_STORAGE_T<br>KPM_DB2_STORAGE_T<br>KPM_DB2_STORAGE_T<br>KPM_DB2_DATABASE_T<br>KPM_DB2_DATABASE_T<br>KPM_DB2_DATABASE_T<br>KPM_DB2_LOCK_T                                                                                                 |
| Analytics - KPM CICS | Table | A_KC_MON_TRAN_I                                                                                                                                                                                                                                                                                                                                                                                                                          | KPMC_MON_TRAN_H                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Table 11. Relationship of Analytics component table to non-Analytics component table (continued)

| Component            | Type  | Analytics component table                                                                                                                                                                                                                               | Equivalent to non-Analytics component table                                                                                                                                                                                                             |
|----------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analytics - KPM z/OS | Table | A_KPM_EXCEPTION_I<br>A_KZ_JOB_INT_I<br>A_KZ_JOB_STEP_I<br>A_KZ_LPAR_I<br>A_KZ_STORAGE_I<br>A_KZ_WORKLOAD_I<br>A_KZ_CHANNEL_I<br>A_KZ_CF_I<br>A_KZ_CF_STRUC_I<br>A_KZ_CPUMF_I<br>A_KZ_CPUMF1_I<br>A_KZ_CPUMF_PT_I<br>A_KZ_CPUMF1_PT_I<br>A_KZ_SRM_WKLD_I | KPM_EXCEPTION_T<br>KPMZ_JOB_INT_T<br>KPMZ_JOB_STEP_T<br>KPMZ_LPAR_T<br>KPMZ_STORAGE_T<br>KPMZ_WORKLOAD_T<br>KPMZ_CHANNEL_T<br>KPMZ_CF_T<br>KPMZ_CF_STRUCTR_T<br>KPMZ_CPUMF_T<br>KPMZ_CPUMF1_T<br>KPMZ_CPUMF_PT_T<br>KPMZ_CPUMF1_PT_T<br>KPMZ_SRM_WKLD_T |

There are cases where multiple tables from an Analytics component are combined into a single view. In these cases, the resulting view matches an existing table from an IBM Z Performance and Capacity Analytics non-Analytics component. See the following table for views in the Analytics components that are based on multiple tables from non-Analytics components.

Table 12. Relationship of Analytics component tables used in view to non-Analytics component tables used in view

| Component           | View              | Analytics component tables used in view                                 | Equivalent to non-Analytics component table |
|---------------------|-------------------|-------------------------------------------------------------------------|---------------------------------------------|
| Analytics - Db2     | A_DB2_USERTRAN_IV | A_DB2_USERTRAN_I<br>A_DB2_UT_BP_I<br>A_DB2_UT_SACC_I<br>A_DB2_UT_IDAA_I | DB2_USER_TRAN_H                             |
| Analytics - Db2     | A_DB2_DATABASE_IV | A_DB2_DB_I<br>A_DB2_DB_BIND_I<br>A_DB2_DB_QIST_I                        | DB2_DATABASE_T                              |
| Analytics - KPM Db2 | A_KD_USERTRAN_IV  | A_KD_UT_I<br>A_KD_UT_BP_I                                               | KPM_DB2_USERTRAN_H                          |
| Analytics - KPM Db2 | A_KD_ENDUSER_IV   | A_KD_EU_I<br>A_KD_EU_BP_I                                               | KPM_DB2_ENDUSER_H                           |
| Analytics - KPM Db2 | A_KD_SYSTEM_IV    | A_KD_SYS_IO_I<br>A_KD_SYS_TCBSRB_I                                      | KPM_DB2_SYSTEM_T                            |
| Analytics - KPM Db2 | A_KD_STORAGE_IV   | A_KD_SYS_ST_DBM_I<br>A_KD_SYS_ST_DST_I<br>A_KD_SYS_ST_COM_I             | KPM_DB2_STORAGE_T                           |
| Analytics - KPM Db2 | A_KD_DATABASE_IV  | A_DB_SYS_DB_WF_I<br>A_DB_SYS_DB_EDM_I<br>A_DB_SYS_DB_SET_I              | KPM_DB2_DATABASE_T                          |

## Configuring Analytics Components for use with IBM Db2 Analytics Accelerator

### About this task

You can complete the following steps that are required for IBM Z Performance and Capacity Analytics to use the IBM Db2 Analytics Accelerator to contain the data for the tables of the Analytics components. Tables that are created on an IBM Db2 Analytics Accelerator (IDAA) can be loaded without loading data into Db2, which requires the following items:

- The System Data Engine (SDE) component of the IBM Common Data Provider for z Systems to collect the SMF data instead of using IZPCA Collect. The PTFs for APARs OA52196 and OA52200 must be applied.
- The Db2 Analytics Accelerator Loader for z/OS V2.1 that uses IDAA-Only load mode to load the data that is created by the SDE into the IDAA.

The Analytics components comprise the following items:

- Analytics - z/OS Performance
- Analytics - Db2
- Analytics - KPM CICS
- Analytics - KPM Db2
- Analytics - KPM z/OS

The Analytics components allow for tables to be created as either kind of the following tables:

- Db2 for z/OS tables
- IBM Db2 Analytics Accelerator Accelerator-shadow tables
- IBM Db2 Analytics Accelerator Accelerator-only tables

### Procedure

1. Ensure to apply the PTFs for APAR PI70968 to the IBM Z Performance and Capacity Analytics system.
2. Bind the Db2 plan that is used by IBM Z Performance and Capacity Analytics by specifying the BIND option **QUERYACCELERATION(ELIGIBLE)** or **QUERYACCELERATION(ENABLE)**. For example, assuming the default plan name to be DRLPLAN, the BIND PACKAGE to set ELIGIBLE for the query acceleration register is as follows:

```
//SYSTSIN DD *
  DSN SYSTEM(DSN)
    BIND PACKAGE(DRLPLAN) OWNER(authid) MEMBER(DRLPSQLX) -
      ACTION(REPLACE) ISOLATION(CS) ENCODING(EBCDIC) -
      QUERYACCELERATION(ELIGIBLE)
    BIND PLAN(DRLPLAN) OWNER(authid) PKLIST(*.DRLPLAN.*) -
      ACTION(REPLACE) RETAIN
    RUN PROGRAM(DSNTIAD) PLAN(DSNTIAxx) -
      LIB('xxxx.RUNLIB.LOAD')
END
```

For more information about the sample instructions to BIND with QUERYACCELERATION specified, see *SDRLCNTL(DRLJDBIN)*.

3. Modify the DRLFPROF data set to reflect the settings to apply when installing Analytics components. DRLFPROF is the IBM Z Performance and Capacity Analytics data set that contains user modified parameters. The following parameters in DRLFPROF provide support for the IBM Db2 Analytics Accelerator:

**def\_useaot = "YES" | "NO"**

**"YES"**: Tables are created as Accelerator Only Tables.

**"NO"**: Tables are created in Db2 and are suitable for use either as Db2 tables or as IDAA\_ONLY tables. The default value is **"NO"**.

**def\_accelerator = "xxxxxxx"**

**"xxxxxxx"**: The name of the Accelerator where the tables reside. Required only if using Accelerator Only Tables.

**def\_timeint = "H" | "S" | "T"**

**"H"**: The timestamp for records is rounded to hourly intervals that is similar to non-Analytics tables with a suffix of **"\_H"** in other components.

**"S"**: The timestamp for records is rounded to intervals of a second that is similar to non-Analytics tables with time field instead of timestamp in other components.

**"T"**: The timestamp for tables is the actual timestamp in the SMF log record that is similar to non-Analytics tables with suffix **"\_T"**. The default value is **"T"**.

4. **Important:** This step is required only if you use IBM Z Performance and Capacity Analytics to collect and populate the component tables on Db2 for z/OS, or if you use IBM Z Performance and Capacity Analytics reporting. If you only collect data into the IBM Db2 Analytics Accelerator and does not have the data reside on Db2 for z/OS, configure the lookup tables in the Common Data Provider for z Systems. See the information about collecting data for direct load to the Accelerator in the [IBM Common Data Provider for z Systems V1.1.0 User's Guide \(SC27-4624- 01\)](#).

Customize each lookup table in the Analytics components as per the existing IBM Z Performance and Capacity Analytics non-Analytics lookup tables.

For example, insert the same rows that are currently in DB2\_APPLICATION into A\_DB2\_APPLICATION.

5. Install the desired Analytics component(s).
6. Add tables to the Accelerator.

If IBM Z Performance and Capacity Analytics uses Accelerator Only Tables (AOTs), i.e. the DRLFPROF setting for **def\_useaot** is **"YES"**, Db2 creates the tables on the IBM Db2 Analytics Accelerator when the Analytics components are being installed.

If IBM Z Performance and Capacity Analytics doesn't use AOTs, the tables need to be added to the IBM Db2 Analytics Accelerator. Tables can be added by using the Data Studio Eclipse application, or by using stored procedures. To use stored procedures to add the tables to an IBM Db2 Analytics Accelerator, modify and submit the SDRLCNTL members in the following table:

| Table 13. Relationship of SDRLCNTL member name to Analytics component |                              |
|-----------------------------------------------------------------------|------------------------------|
| SDRLCNTL member name                                                  | Component                    |
| DRLJA2DA                                                              | Analytics - Db2              |
| DRLJAPMA                                                              | Analytics - z/OS Performance |
| DRLJAKCA                                                              | Analytics - KPM CICS         |
| DRLJAKDA                                                              | Analytics - KPM Db2          |
| DRLJAKZA                                                              | Analytics - KPM z/OS         |

7. Load data into lookup tables on the Accelerator.

If IBM Z Performance and Capacity Analytics uses Accelerator Only Tables (AOTs), the lookup tables are populated on the IBM Db2 Analytics Accelerator when the Analytics components are being installed.

If IBM Z Performance and Capacity Analytics doesn't use AOTs, the contents of the lookup tables need to be loaded into the IBM Db2 Analytics Accelerator. Modify and submit the SDRLCNTL members in the following table to move the contents of the lookup tables into the Accelerator

**Note:** Not all components have lookup tables.

Table 14. Relationship of SDRLCNTL member name to Analytics component

| SDRLCNTL member name | Component                    |
|----------------------|------------------------------|
| DRLJAPMK             | Analytics - z/OS Performance |
| DRLJAKDK             | Analytics - KPM Db2          |
| DRLJAKZK             | Analytics - KPM z/OS         |

## Collecting data for direct load to the Accelerator

To collect data for direct load to tables on an IBM Db2 Analytics Accelerator, the following items are required:

- The System Data Engine (SDE) component of the IBM Common Data Provider for z Systems to collect the SMF data instead of using IZPCA Collect. The PTFs for APARs **OA52196** and **OA52200** must be applied.
- The Db2 Analytics Accelerator Loader for z/OS V2.1 by using IDAA-Only load mode to load the data that is created by the SDE into the IDAA.

See the information about collecting data for direct load to the Accelerator in the [IBM Common Data Provider for z Systems V1.1.0 User's Guide \(SC27-4624- 01\)](#).

After the data has been collected, it can be loaded direct to the IBM Db2 Analytics Accelerator.

## Loading data into the Accelerator

### About this task

The Db2 Analytics Accelerator Loader for z/OS V2.1 (Loader) is used to load the Db2 internal format data sets, which are created by the System Data Engine (SDE), directly into the Db2 Analytics Accelerator (Accelerator) without the data residing in Db2 for z/OS.

The Loader is invoked via the Db2 LOAD utility with the following amendments:

- A **DD** statement that indicates the Loader is to intercept the Db2 LOAD utility:

```
//HLODUMMY DD DUMMY
```

- A statement that tells the loader to load data into the Accelerator. This statement indicates the data is only to reside on the IDAA\_ONLY Accelerator, the name of the Accelerator, the schema (e.g. DRLxx) and the table name:

```
//SYSIN DD *
LOAD DATA RESUME YES LOG NO INDDN input_data_set_ddname
IDAA_ONLY ON accelerator-name
INTO TABLE DRLxx.table-name FORMAT INTERNAL;
```

### Procedure

1. To load the data that is created by the System Data Engine, modify and submit the **SDRLCNTL** members in the following table based on the installed components:

| Table 15. Relationship of SDRLCNTL member name to Analytics component |                              |
|-----------------------------------------------------------------------|------------------------------|
| SDRLCNTL member name                                                  | Component                    |
| DRLJA2DD                                                              | Analytics - Db2              |
| DRLJAPMD                                                              | Analytics - z/OS Performance |
| DRLJAKCD                                                              | Analytics - KPM CICS         |
| DRLJAKDD                                                              | Analytics - KPM Db2          |
| DRLJAKZD                                                              | Analytics - KPM z/OS         |

2. Enable acceleration of tables after first data load.

If IBM Z Performance and Capacity Analytics uses Accelerator Only Tables (AOTs), i.e. the DRLFPROF setting for `def_useaot` is **"YES"**, you don't need to enable the tables on the IBM Db2 Analytics Accelerator.

If IBM Z Performance and Capacity Analytics doesn't use AOTs and the Db2 LOAD is the first load for an **IDAA\_ONLY** Accelerator table, after the load has been completed, the table must be enabled for acceleration in the Accelerator. Tables can be enabled by using the Data Studio Eclipse application, or by using stored procedures. To use stored procedures to enable the tables, modify and submit the SDRLCNTL members in the following table:

| Table 16. Relationship of SDRLCNTL member name to Analytics component |                              |
|-----------------------------------------------------------------------|------------------------------|
| SDRLCNTL member name                                                  | Component                    |
| DRLJA2DE                                                              | Analytics - Db2              |
| DRLJAPME                                                              | Analytics - z/OS Performance |
| DRLJAKCE                                                              | Analytics - KPM CICS         |
| DRLJAKDE                                                              | Analytics - KPM Db2          |
| DRLJAKZE                                                              | Analytics - KPM z/OS         |

## Uninstalling components used with an IBM Db2 Analytics Accelerator

### About this task

To uninstall Analytics components that have been configured for use with an IBM Db2 Analytics Accelerator, perform the following steps:

### Procedure

1. Remove tables from the Accelerator.

If IBM Z Performance and Capacity Analytics uses Accelerator Only Tables (AOTs), i.e. the DRLFPROF setting for `def_useaot` is **"YES"**, you don't need to remove tables on the IBM Db2 Analytics Accelerator because the next step will automatically remove them.

If IBM Z Performance and Capacity Analytics doesn't use AOTs, the tables must be removed from the Accelerator prior to uninstalling the component. Modify and submit the SDRLCNTL members in the following table based on the components to be uninstalled. Modify and submit the SDRLCNTL members in the following table according to the components to be uninstalled.

| Table 17. Relationship of SDRLCNTL member name to Analytics component |                              |
|-----------------------------------------------------------------------|------------------------------|
| SDRLCNTL member name                                                  | Component                    |
| DRLJA2DR                                                              | Analytics - Db2              |
| DRLJAPMR                                                              | Analytics - z/OS Performance |
| DRLJAKCR                                                              | Analytics - KPM CICS         |
| DRLJAKDR                                                              | Analytics - KPM Db2          |
| DRLJAKZR                                                              | Analytics - KPM z/OS         |

2. Uninstall the Analytics component(s) by using IBM Z Performance and Capacity Analytics menus.



---

## Chapter 7. Installing the Usage and Accounting Collector

The CIMS Lab Mainframe collector is incorporated into IBM Z Performance and Capacity Analytics and called the Usage and Accounting Collector.

For a description of the Usage and Accounting Collector, see the *System Overview* section in the *Usage and Accounting Collector User Guide*.

To install the Usage and Accounting Collector, follow these steps:

- [“Step 1: Customizing the Usage and Accounting Collector” on page 289](#)
- [“Step 2: Allocating and initializing Usage and Accounting files” on page 292](#)
- To verify your installation, follow these steps:
  - [“Step 3: Processing SMF data using DRLNJOB2 \(DRLCDATA and DRLCACCT\)” on page 292](#)
  - [“Step 4: Running DRLNJOB3 \(DRLCMONY\) to create invoices and reports” on page 294](#)
  - [“Step 5: Processing Usage and Accounting Collector subsystems” on page 296](#)

To support programs such as CICS, Db2, IDMS, IMS, VM/CMS, VSE, DASD Space Chargeback, and Tape Storage Accounting, edit and run the appropriate jobs. Examples of member names are DRLNCICS, DRLNDB2, DRLNDISK.

---

### Step 1: Customizing the Usage and Accounting Collector

#### About this task

Installation job DRLNINIT invokes the REXX program DRLCINIT. This program is a utility that customizes Usage and Accounting Collector jobs to your specifications. DRLCINIT inserts job cards, adds high level nodes to all Usage and Accounting Collector data sets, changes VOLSER numbers, and specifies DSCB model names.

Run job DRLNINIT and follow these steps:

#### Procedure

1. Replace sample job card with user job card.
2. Insert or replace data set name high-level qualifiers.
3. Insert serial numbers on the VOLUME parameter.
4. Insert DSCB model names.

**Note:** If you do not run DRLCINIT, you must change each job member manually as you use it.

### DRLNINIT

#### About this task

To execute job DRLNINIT, follow these instructions:

#### Procedure

1. DRL.SDRLCNTL (DRLMFLST) contains the list of Usage and Accounting Collector jobs that are used in this utility.

2. The SMP/E process allocates &HLQ.LOCAL.CNTL. This DSN stores the customized jobs. The Usage and Accounting Collector JCL is copied to this library and changes are made in this library. The first step in DRLNINIT performs the copy. This makes it possible to execute DRLNINIT repeatedly until the desired result is achieved.

Replace the two occurrences of &HLQ.LOCAL.CNTL in DRLNINIT with the filename that was allocated during the SMP/E install.

3. Job card replacement.

A standard job card can be inserted with a unique jobname. The following parameters in STEP020 control the job card replacement:

**JCDSN=**

Specifies the file containing the standard job card.

For example: JCDSN=DRL .SDRLCNTL (JBCARD)

The contents in member JBCARD is used as the job card.

**JCLINES=**

The number of lines to use from JCDSN.

For example: JCLINES=2

The first two lines in the JCDSN member are used as a job card.

**JCMASK=**

A unique job name can be generated for the execution jobs. The JCMASK is used to specify the common part of the jobname and the position of a sequential number. After the first character, you must enter a sequence of '\*' (asterisk) characters to indicate where to insert the job sequence number. The sequence mask is from 2 to 6 characters in length:

Examples:

**JCMASK**

**Jobnames generated**

**DRL\*\*\*\***

DRL0001, DRL0002, DRL0003...

**P\*\*\*\*\*Q**

P000001Q, P000002Q, P000003Q...

**DRL\*\*DRL**

DRL01DRL, DRL02DRL, DRL03DRL...

**JCSKIP=**

Specify any non-blank character and the Job card replacement process will be skipped.

For example: JCSKIP=Y

No job card customization of the Usage and Accounting Collector execution jobs is done.

4. Insert or replace data set name high level qualifiers. The default filenames used for the Usage and Accounting Collector files start with the high-level qualifier of 'DRL'. The HLQ process in the DRLCINIT utility allows this default to be replaced or an additional high-level qualifier to be inserted. The following parameters in STEP020 control the HLQ processing:

**HLQACT=**

Specifies the action to perform: R=Replace, I=Insert.

For example: HLQACT=R

Every occurrence of a filename with the high-level qualifier of 'DRL.', will be replaced with the value in HLQDSN.

**HLQDSN=**

The new value to use for the high-level qualifier.

For example: HLQDSN=DRL . IZPCAUAC

The default filenames are changed to start with 'DRL.IZPCAUAC'.

**HLQSKIP=**

Specify any non-blank character and the HLQ processing is skipped.

For example: HLQSKIP=Y

No customization of the Usage and Accounting Collector data set names is done.

5. Insert VOLSER numbers. At various places within the Usage and Accounting Collector jobs, volume serial numbers are needed. The DRLCINIT job allows you to replace them all globally. The default volume serial numbers are "?????" throughout the JCL. The default volume serial appears in IDCAMS processing as VOL(?????) and VOL=SER=????? and is used for VSAM file allocation. The JCL also uses VOL=SER=????? for temporary space allocations. The following parameters in STEP020 control the VOLSER processing:

**VOL=**

The replacement volume serial to use instead of "?????"

**VSSKIP=**

Specify any non-blank character and the VOLSER processing is skipped.

For example: VSSKIP=Y

No customization of the Usage and Accounting Collector VOL or VOL=SER parameters is done.

6. Insert **DSCB** model names.

A model **DSCB** parameter is used for the proper functioning of Generation Data Groups (GDGs). The Usage and Accounting Collector JCL is distributed with all model **DSCB** references set to 'MODELDCB'. If your installation does not require the use of this parameter, you can delete it manually from the JCL. The DSCB processing can be used to change the default to a value used at your installation. The following parameters in STEP020 control the **DSCB** processing:

**MDDSCB=**

The replacement model **DSCB** to use instead of **MODELDCB**.

**MDSKIP=**

Specify any non-blank character and the model **DSCB** processing will be skipped.

For example: MDSKIP=Y

No customization of the Usage and Accounting Collector model **DSCB** will be done.

The DRLCINIT utility produces statistics for the execution. If any exceptions are noted, they can be found listed in the DRLMXCEP member of &HLQ.LOCAL.CNTL. These exceptions might or might not be severe enough to cause a JCL error; check DRLMXCEP if exceptions are reported.

```
Statistic report   DDNAME SYSTSPRT

Processing.....

Completed SYSTSIN

69 Files
0 Exceptions

JobCard   : 68 Replacements
HLQ       : 1389 Replacements
Volume    : 30 Replacements
ModelDCB  : 207 Replacements

Normal completion
```

## Step 2: Allocating and initializing Usage and Accounting files

### About this task

DRLNJOB1 is a member in DRL310.SDRLCNTL. This job creates four permanent files and four Generation Data Groups (GDGs). The permanent files are:

### Usage and Accounting Collector client

Member DRLMCLNT contains sample client records. For information about client records, see “Client Identification and Budget Reporting - DRLCCLNT and DRLCBDGT” in the *Usage and Accounting Collector User Guide*.

### Rate

Members DRLMRATE, DRLMRT01, and DRLMRT02 contain sample Rate records. For information about rate records, see “Computer Center Chargeback Program - DRLCMONY” in the *Usage and Accounting Collector User Guide*.

### Dictionary

Members DRLKxxxx contain the default record definitions for the Usage and Accounting Collector Dictionary. For more information about the Usage and Accounting Collector Dictionary, see “Dictionary - CIMSOTVS” in the *Usage and Accounting Collector User Guide*.

### Status and Statistics VSAM

The Status and Statistics file is a VSAM file that should be allocated so that checkpoint and statistical information can be recorded for program DRLCEXTR. Use the default values to create the VSAM files.

**Note:** You do not need to set rates or identify clients at this time.

For the JCL, see member DRLNJOB1 in DRL310.SDRLCNTL.

## Step 3: Processing SMF data using DRLNJOB2 (DRLCDATA and DRLCACCT)

### About this task

This job, which is divided into two steps, runs programs DRLCDATA and DRLCACCT. These programs interface with the z/OS-SMF data set and create the DRL.DRLCACCT.DAILY batch chargeback file.

DRLNJOB2 job is the basis for daily processing and is the only job required on a daily basis for batch chargeback. Logically, it is run immediately after the SMF data set is unloaded to disk or tape. After DRLNJOB2 processing is finished, data set DRL.DRLCACCT.DAILY contains z/OS batch and TSO accounting records, and data set DRL.SMF.HISTORY contains reformatted SMF records.

**Note:** It is recommended that you read “SMF Interface Program - DRLCDATA” and “Accounting File Creation Program - DRLCACCT” in the *Usage and Accounting Collector User Guide* before you start changing the default control statements.

### Procedure

#### 1. OB STEP DRLC2A

This executes program DRLCDATA. For more information, see “SMF Interface Program - DRLCDATA” in the *Usage and Accounting Collector User Guide*.

| Table 18. Explanation of Program DRLCDATA |        |                                |
|-------------------------------------------|--------|--------------------------------|
| Input/output                              | DDNAME | Description                    |
| INPUT                                     | SMFIN  | This is the SMF DUMP data set. |

| Table 18. Explanation of Program DRLCDATA (continued) |          |                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input/output                                          | DDNAME   | Description                                                                                                                                                                                                                                                                                                                                  |
| INPUT                                                 | CIMSCNTL | Data set DRL310.SDRLCNTL (DATAINPT) Contains input control statements. For more information, see the Control Statement Table in Chapter 2. "SMF Interface Program - DRLCDATA" in the <i>Usage and Accounting Collector User Guide</i> .                                                                                                      |
| OUTPUT                                                | CIMSSMF  | Usage and Accounting Collector reformatted SMF data set. Contains each SMF record from the input data set unless limited by a records statement. This data set is designed as a backup data set of reformatted SMF Records. Depending on installation requirements, you might choose to DD DUMMY this data set, or to COMMENT the statement. |
| OUTPUT                                                | CIMSACCT | This data set contains selected SMF chargeback records (6, 30, 101, 110). This data set is used as input in step DRLC2B.                                                                                                                                                                                                                     |
| OUTPUT                                                | CIMSCICS | This data set contains CICS records (SMF Type 110). This record is used by the Usage and Accounting Collector CICS interface programs.                                                                                                                                                                                                       |
| OUTPUT                                                | CIMSDb2  | This data set contains Db2 records (SMF Type 101). This record is used by the Usage and Accounting Collector Db2 interface programs.                                                                                                                                                                                                         |

## 2. SMF Merge

It is recommended that you insert a merge between steps DRLC2A and DRLC2B to create a history of data set DRL.SMF.HISTORY (see member DRLNSMFM in DRL310.SDRLCNTL). The merge field is 7 for one character. Use a cartridge tape and block the output data set to 32K (BLKSIZE = 32760).

The Usage and Accounting Collector Merge is a sample SORT/MERGE set of JCL that creates a sorted history data set of Usage and Accounting Collector accounting records can be found in data set DRL310.SDRLCNTL member DRLNMERG. This job should be run daily after the batch and online Usage and Accounting Collector jobs have been executed.

If DRLNMERG is done on a daily basis, at the end of the month, the Usage and Accounting Collector master file is in account code sort sequence.

You should maintain the history data sets on tape. Leave the daily files on disk for daily reports and set up generation data sets to tape for the history file.

## 3. JOB STEP DRLC2B

This executes program DRLCACCT, which processes the data set created by program DRLCDATA (DDNAME CIMSACCT) and generates the Usage and Accounting Collector batch chargeback data set. For details, see "Accounting File Creation Program - DRLCACCT" in the *Usage and Accounting Collector User Guide*.

| Table 19. Explanation of Program DRLCACCT |          |                                                                                                                                                                                                                      |
|-------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input/output                              | DDNAME   | Description                                                                                                                                                                                                          |
| INPUT                                     | CIMSDATA | Reformatted SMF records. These records are created by DDNAME CIMSACCT in program DRLCDATA. The Usage and Accounting Collector Suspense file for unmatched job step and print records is appended to DDNAME CIMSDATA. |

| Table 19. Explanation of Program DRLCACCT (continued) |          |                                                                                                                                                                                                                                                      |
|-------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input/output                                          | DDNAME   | Description                                                                                                                                                                                                                                          |
| INPUT                                                 | CIMSCNTL | Control statements.                                                                                                                                                                                                                                  |
| INPUT                                                 | CIMSTABL | Optional user-supplied table to convert job names and/or job card account codes to a new format.<br><br>For more information, see Chapter 3. “Accounting File Creation Program - DRLCACCT” in the <i>Usage and Accounting Collector User Guide</i> . |
| INPUT                                                 | CIMSDTVS | Usage and Accounting Collector Dictionary VSAM file.                                                                                                                                                                                                 |
| INPUT                                                 | CIMSPDS  | Control statements.<br><br>This data set is used by DRLCACCT when PROCESS CIMS SERVER RESOURCE RECORDS control statement is specified. A member, DRLMALSA, in this data set contains the control members for the different records.                  |
| OUTPUT                                                | IMSACT2  | Usage and Accounting Collector batch chargeback file containing the 79x accounting records. This data set is used by DRLCEXTR and DRLCMONY.                                                                                                          |
| OUTPUT                                                | CIMSUSPN | Suspense file. This data set contains Step and Print records that have not been matched with a Job Start or Job Stop record.                                                                                                                         |
| OUTPUT                                                | CIMSEXCP | This data set contains records that have not been matched with entries in the CIMSTABL data set.                                                                                                                                                     |
| OUTPUT                                                | CIMSPRNT | This data set contains the runtime parameters and the results of the run.                                                                                                                                                                            |
| OUTPUT                                                | CIMSMMSG | This data set contains informational messages.                                                                                                                                                                                                       |
| OUTPUT                                                | CIMSSEL  | Usage and Accounting Collector accounting records. This data set contains the records that failed date selection when the PROCESS CIMS MAINTENANCE and NON-SELECTED FILE PROCESSING ON control statements are specified.                             |
| OUTPUT                                                | CIMSUNSP | Unsupported CSR records. This data set contains all CSR records that did not have a definition within CIMSDTVS.                                                                                                                                      |

**Note:** For JCL information, see member DRLNJOB2 in DRL310.SDRLCNTL.

## Step 4: Running DRLNJOB3 (DRLCMONY) to create invoices and reports

### About this task

DRLNJOB3 contains the JCL to run program DRLCMONY, which creates invoices and zero-cost invoices (rate determination).

Billing control statements are contained in member DRLMMNY. Edit these statements to customize Usage and Accounting Collector for your installation.

You can use the Usage and Accounting Collector defaults as distributed until you decide on client information, billing rates, and control information.

To run DRLNJOB3, follow these steps:

### Procedure

1. Run DRLN3A.

This step converts the 79x accounting records into CSR+ records. DRLCMONY supports only CSR+ records.

2. Run DRLC3B.

This step sorts the data set created by step DRLC3A into account code, job name, and job log number sequence.

3. Run DRLC3C.

This step is for the Computer Center Billing System - DRLCMONY.

| Input/output | DDNAME   | Description                                                                                                                               |
|--------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| INPUT        | CIMSACCT | Integrated chargeback data set.                                                                                                           |
| INPUT        | CIMSCLVS | Client records.                                                                                                                           |
| INPUT        | CIMSCNTL | Control statements.                                                                                                                       |
| INPUT        | CIMSRTVS | Billing rates.                                                                                                                            |
| INPUT        | CIMSCLDR | Usage and Accounting Collector calendar file.                                                                                             |
| INPUT        | CIMSNCPU | CPU normalization statements.                                                                                                             |
| INPUT        | CIMSSCPU | CPU job class and priority surcharge statements.                                                                                          |
| OUTPUT       | SYSOUT   | Messages                                                                                                                                  |
| OUTPUT       | CIMSPRNT | Processing results.                                                                                                                       |
| OUTPUT       | CIMSINVC | Invoices.                                                                                                                                 |
| OUTPUT       | CIMSMMSG | Informational messages.                                                                                                                   |
| OUTPUT       | CIMSSUM  | Summary records by account. One record per account and billable item - (Rate Code).                                                       |
| OUTPUT       | CIMSIDNT | Identifier data that can be loaded into a Tivoli Usage and Accounting Manager database. This file is produced by DRLCMONY in Server mode. |
| OUTPUT       | CIMSDETL | Detail data that can be loaded into a Tivoli Usage and Accounting Manager database. This file is produced by DRLCMONY in server mode.     |
| OUTPUT       | CIMSUMRY | Summary data that can be loaded into a Tivoli Usage and Accounting Manager database. This file is produced by DRLCMONY in server mode.    |

For record descriptions, refer to “Accounting File Record Descriptions” in the *Usage and Accounting Collector User Guide*.

For JCL information, see member DRLNJOB3 in DRL310.SDRLCNTL.

## Step 5: Processing Usage and Accounting Collector subsystems

### About this task

**Note:** This step is optional.

Usage and Accounting Collector is now installed and ready to be customized for batch chargeback. After you are comfortable with the results you are receiving from the Usage and Accounting Collector z/OS batch system, you can start integrating data from the wide range of subsystems that Usage and Accounting Collector supports.

To integrate a Usage and Accounting Collector subsystem, perform the following steps:

### Procedure

1. Edit the appropriate JCL member. For example, DRLNCICS.
2. Create an account code conversion table.
3. Process the job.
4. Merge the output with the input to program DRLCMONY (DRLNJOB3).
5. Run DRLNJOB3 to generate the integrated invoices.

### Results

The following list provides a list of member names for some of the most commonly-used Usage and Accounting Collector subsystems.

| Table 20. Usage and Accounting Collector Subsystem Member Names (Partial List) |                                                                          |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Subsystem Member name                                                          | Description                                                              |
| DRLNCICS                                                                       | CICS Support                                                             |
| DRLNDB2                                                                        | Db2                                                                      |
| DRLNMQSR                                                                       | MQSeries®                                                                |
| DRLNDISK                                                                       | DASD Space                                                               |
| DRLNTAPE                                                                       | Tape Storage                                                             |
| DRLNIMS                                                                        | IMS                                                                      |
| DRLNUNIV                                                                       | ROSCOE, ADABAS/SMF, IDMS/SMF, RJE, WYLBUR, Oracle, MEMO, Control-T, BETA |



---

## Appendix A. Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides a number of 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 Support. See [“Contacting IBM Support”](#) on page 297 for more information.

---

### Contacting IBM Support

This topic describes how to contact IBM Support if you have been unable to resolve a problem with IBM Z Performance and Capacity Analytics.

Before contacting IBM 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 more information, refer to the IBM Support website at the following links:

#### IBM Support

<https://www.ibm.com/mysupport/s/>

#### IBM Z Support

<https://www.ibm.com/support/pages/ibm-enterprise-support-and-preferred-care-options-ibm-z>

To contact IBM Support to report a problem (*open a case*), follow these steps:

1. Determine the business impact.
2. Describe the problem and gather information.
3. Submit the problem report.

#### 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 the problem and gathering information

When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Support specialists can help you solve the problem efficiently. To save time, know the answers to the following 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 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, product-specific customization, 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 the problem

You can submit your problem to IBM Support in either of the following ways:

### Online

Go to <https://www.ibm.com/mysupport/s/>, click on **Open a case**, and enter the relevant details into the online form.

### By email or phone

For the contact details in your country, go to the IBM Support website at <https://www.ibm.com/support/>. Look for the tab on the right and click **Contact and feedback > Directory of worldwide contacts** for a list of countries by geographic region. Select your country to find the contact details for general inquiries, technical support, and customer support.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Support provides a workaround that you can implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM Support website, so that other users who experience the same problem can benefit from the same resolution.

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# Glossary

---

## A

### **administration**

An IBM Z Performance and Capacity Analytics task that includes maintaining the database, updating environment information, and ensuring the accuracy of data collected.

### **administration dialog**

A set of host windows used to administer IBM Z Performance and Capacity Analytics.

## C

### **collect**

A process used by IBM Z Performance and Capacity Analytics to read data from input log data sets, interpret records in the data set, and store the data in Db2 tables in the IBM Z Performance and Capacity Analytics database.

### **compatibility mode**

A mode of processing, in which the IEAIPSxx and IEAICSxx members of SYS1.PARMLIB determine system resource management.

### **component**

An optionally installable part of an IBM Z Performance and Capacity Analytics feature. Specifically in IBM Z Performance and Capacity Analytics, a component refers to a logical group of objects used to collect log data from a specific source, to update the IBM Z Performance and Capacity Analytics database using that data, and to create reports from data in the database.

### **control table**

A predefined IBM Z Performance and Capacity Analytics table that controls results returned by some log collector functions.

## D

### **data table**

An IBM Z Performance and Capacity Analytics table that contains performance data used to create reports.

### **DFHSM**

In this book, DFHSM is referred to by its new product name. See *DFSMSHsm*.

### **DFSMSHsm**

Data Facility Storage Management Subsystem hierarchical storage management facility. A functional component of DFSMS/MVS used to back up and recover data, and manage space on volumes in the storage hierarchy.

### **DFSMS**

Data Facility Storage Management Subsystem. An IBM licensed program that consists of DFSMSdftp, DFSMSdss, and DFSMSHsm.

## 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.

## G

### **goal mode**

A mode of processing where the active service policy determines system resource management.

## H

### **host**

The MVS system where IBM Z Performance and Capacity Analytics runs collect and where the IBM Z Performance and Capacity Analytics database is installed.

## K

**key columns**

The columns of a Db2 table that together constitute the key.

**L****log collector**

An IBM Z Performance and Capacity Analytics program that processes log data sets and provides other IBM Z Performance and Capacity Analytics services.

**log data set**

Any sequential data set that is used as input to IBM Z Performance and Capacity Analytics.

**log definition**

The description of a log data set processed by the log collector.

**log procedure**

A program module that is used to process all record types in certain log data sets.

**lookup table**

An IBM Z Performance and Capacity Analytics Db2 table that contains grouping, conversion, or substitution information.

**P****IBM Z Performance and Capacity Analytics database**

A set of Db2 tables that includes data tables, lookup tables, system tables, and control tables.

**R****record definition**

The description of a record type contained in the log data sets used by IBM Z Performance and Capacity Analytics, including detailed record layout and data formats.

**record procedure**

A program module that is called to process some types of log records.

**record type**

The classification of records in a log data set.

**report group**

A collection of IBM Z Performance and Capacity Analytics reports that can be referred to by a single name.

**reporting dialog**

A set of host or workstation windows used to request reports.

**resource group**

A collection of network resources that are identified as belonging to a particular department or division. Resources are organized into groups to reflect the structure of an organization.

**S****section**

A structure within a record that contains one or more fields and may contain other sections.

**service class**

A group of work which has the same performance goals, resource requirements, or business importance. For workload management, you assign a service goal and optionally a resource group, to a service class.

**source**

In an update definition, the record or Db2 table that contains the data used to update an IBM Z Performance and Capacity Analytics Db2 table.

**sysplex**

A set of MVS systems communicating and cooperating with each other through certain multisystem hardware components and software services to process customer workloads.

**system table**

A Db2 table that stores information that controls log collector processing, IBM Z Performance and Capacity Analytics dialogs, and reporting.

## **T**

### **target**

In an update definition, the Db2 table in which IBM Z Performance and Capacity Analytics stores data from the source record or table.

### **threshold**

The maximum or minimum acceptable level of usage. Usage measurements are compared with threshold levels.

## **U**

### **update definition**

Instructions for entering data into Db2 tables from records of different types or from other Db2 tables.

## **V**

### **view**

An alternative representation of data from one or more tables. A view can include all or some of the columns contained in the table on which it is defined.





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