Tivoli® Decision Support for OS/390®

Administration Guide

Version 1.6, December 2003
Note
Before using this information and the product it supports, read the information in “Notices” on page 421.

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This edition applies to version 1, release 6 of Tivoli Decision Support for OS/390 (product number 5695-101) and to all subsequent releases and modifications until otherwise indicated in new editions.

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- Distributed Monitor component (Sentry) migration job
- MVS component migration jobs
- MVS Performance Management component migration jobs
- RAFBATCH and RAFJOBLOG tables migration job
- Resource Accounting component migration job
- TWS for z/OS-OPC component migration job
- IMS component migration job
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- DFSMS component migration job

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- OS/400 component migration job

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- TWS for z/OS-OPC component migration job
- IMS component migration job
- Migrate MVS availability from MVS component into MVS availability component job
- DFSMS component migration job

MVS performance Management component migration job
- TWS for z/OS-OPC component migration job
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Preface

This book provides an introduction to IBM® Tivoli® Decision Support for OS/390® (hereafter referred to as Tivoli Decision Support for OS/390), the administration dialog, and the reporting dialog. It describes procedures for installing the base product and its features and for administering Tivoli Decision Support for OS/390 through routine batch jobs and the administration dialog.

Tivoli Decision Support for OS/390 was previously known as Tivoli Performance Reporter for OS/390.

The terms MVS™ and OS/390 are used interchangeably throughout this book.

Who should read this book

The Administration Guide is for the Tivoli Decision Support for OS/390 administrator, the person who initializes the Tivoli Decision Support for OS/390 database and customizes and administers Tivoli Decision Support for OS/390.

Readers should be familiar with:
- DB2® and its utilities
- Query Management Facility (QMF™), if QMF is used with Tivoli Decision Support for OS/390
- 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

What this book contains

Use this book as a guide by reading Part I and Part II. Use the remaining sections of the book as a reference. The book contains these parts, chapters and appendixes:

Part I. “Getting started”
- Chapter 1, “Understanding Tivoli Decision Support for OS/390” provides an overview of Tivoli Decision Support for OS/390 and its features.
- Chapter 2, “Installing Tivoli Decision Support for OS/390” describes how to complete the installation of Tivoli Decision Support for OS/390, including information about how to migrate from an earlier release or modification level of Tivoli Decision Support for OS/390 and a summary of installation prerequisites for hardware and software.
- Chapter 3, “Overview of defining Tivoli Decision Support for OS/390 objects” describes how to create Tivoli Decision Support for OS/390 definitions using Tivoli Decision Support for OS/390 dialogs or languages.

Part II. “Administering Tivoli Decision Support for OS/390”
- Chapter 4, “Setting up operating routines” describes running routine batch jobs for such tasks as collecting data, administering the Tivoli Decision Support for OS/390 database, and producing reports.
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- Chapter 5, “Working with components” describes how to work with parts of a Tivoli Decision Support for OS/390 feature, including installing and changing them. It also contains information about how to migrate from an earlier release or modification level of Tivoli Decision Support for OS/390.

- Chapter 6, “Working with log and record definitions” describes how to work with definitions for log data sets and the records within those data sets.

- Chapter 7, “Working with tables and update definitions” describes how to work with data tables, lookup tables, and the flow of data from log data sets to data tables. It also explains how to purge unneeded data from data tables.

- Chapter 8, “Working with the log data manager option” describes how to use the log data manager option to automate the collection of data.

Part III. “Appendixes”

- Appendix A, “System tables and views” describes system tables, which contain definitions for logs, records, updates, and other Tivoli Decision Support for OS/390 objects, and views of DB2 and QMF tables.

- Appendix B, “Control tables and common tables” describes data tables and lookup tables used by most components of Tivoli Decision Support for OS/390. It also describes tables that define holidays, shifts, and operating objectives to Tivoli Decision Support for OS/390.

- Appendix C, “Sample components” describes a simplified component that is shipped with the base and can be used to verify Tivoli Decision Support for OS/390 installation. You can use the Sample component to demonstrate the collection and reporting process.

- Appendix D, “Record definitions supplied with Tivoli Decision Support for OS/390” lists predefined Tivoli Decision Support for OS/390 definitions for record types in log data sets.

- Appendix E, “Naming convention for Tivoli Decision Support for OS/390 definition members” describes the naming standard of members in the Tivoli Decision Support for OS/390 definitions library.

- Appendix F, “Migrating from SLR version 3.3” describes how to migrate Service Level Reporter (SLR) Version 3.3 tables and reports to Tivoli Decision Support for OS/390.

- Appendix G, “Using the REXX-SQL interface” describes how to code REXX programs that call a Tivoli Decision Support for OS/390 module to retrieve DB2 data.

- Appendix H, “Administration dialog options and commands” describes Tivoli Decision Support for OS/390 administration dialog primary window pull-down options and Tivoli Decision Support for OS/390 commands you can use from windows with a command line.

- Appendix I, “Installation reference” describes Tivoli Decision Support for OS/390 data sets and initialization parameters used during installation.

- Appendix J, “Migrating Components from Earlier Releases” describes how to migrate component objects for Tivoli Decision Support for OS/390 from 1.4.0 to 1.6.0, from 1.5.0 to 1.6.0 and from 1.5.1 to 1.6.0.

- Appendix K, “Administration reports” describes the administration reports that map indexspaces to indexes, check tablespace allocation and list current purge criteria.

- Appendix L, “Accessibility” features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully.
A list of abbreviations, glossary, and index follow the appendixes.

Publications

This section lists publications in the Tivoli Decision Support for OS/390 library and any other related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

Tivoli Decision Support for OS/390 library

The following documents are available in the Tivoli Decision Support for OS/390 library:

- Administration Guide, SH19-6816
  Provides information about initializing the Tivoli Decision Support for OS/390 database and customizing and administering Tivoli Decision Support for OS/390.

- Guide to the Reporting Dialog, SH19-6842
  Provides information for users who display existing reports, for users who create and modify reports, and for administrators who control reporting dialog default functions and capabilities.

- Language Guide and Reference, SH19-6817
  Provides information for administrators, performance analysts, and programmers who are responsible for maintaining system log data and reports.

- User’s Guide for the Viewer, SH19-4517
  Provides information about how use the graphical interface for Tivoli Decision Support for OS/390.

- Messages and Problem Determination, SH19-6902
  Provides information to help operators and system programmers understand, interpret, and respond to Tivoli Decision Support for OS/390 messages and codes.

- Accounting Feature for the Host, SH19-4495
  Provides information for users who want to use Tivoli Decision Support for OS/390 to collect and report performance data generated by the Accounting feature.

- Accounting Feature for the Workstation, SH19-4516
  Provides information for users who want to use the Accounting Workstation Option to manage, process, and analyze financial data on a workstation.

- AS/400 System Performance Feature Guide and Reference, SH19-4019
  Provides information for administrators and users about collecting and reporting performance data generated by AS/400® systems.

- CICS Performance Feature Guide and Reference, SH19-6820
  Provides information for administrators and users about collecting and reporting performance data generated by Customer Information and Control System (CICS®).

- Distributed Systems Performance Feature Guide and Reference, SH19-4018
  Provides information for administrators and users about collecting and reporting performance data generated by operating systems and applications running on a workstation.

- IMS Performance Feature Guide and Reference, SH19-6825
  Provides information for administrators and users about collecting and reporting performance data generated by Information Management System (IMS).
Preface

- **Network Performance Feature Installation and Administration**, SH19-6901
  Provides information for network analysts or programmers who are responsible for setting up the network reporting environment.
- **Network Performance Feature Reference**, SH19-6822
  Provides information for network analysts or programmers who are responsible for setting up the network reporting environment.
- **Network Performance Feature Reports**, SH19-6821
  Provides information for network analysts or programmers who use the Network Performance feature reports.
- **System Performance Feature Guide**, SH19-6818
  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**, SH19-6819
  Provides information for administrators and users with a variety of backgrounds who want to use Tivoli Decision Support for OS/390 to analyze Multiple Virtual Storage (MVS) or Virtual Machine (VM) performance data.
- **System Performance Feature Reference Volume II**, SH19-4494
  Provides information for administrators and users with a variety of backgrounds who want to use Tivoli Decision Support for OS/390 to analyze Multiple Virtual Storage (MVS) or Virtual Machine (VM) performance data.
- **IBM Online Library Omnibus Edition OS/390 Collection Kit**, SK2T-6700
  CD containing all OS/390 documentation.
- **IBM Online Library z/OS Software Products Collection Kit**, SK3T-4270
  CD containing all z/OS documentation.

**Using LookAt to look up message explanations**

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

You can access LookAt from the Internet at:


or from anywhere in z/OS or z/OS.e where you can access a TSO/E command line (for example, TSO/E prompt, ISPF, z/OS UNIX System Services running OMVS).

The LookAt Web site also features a mobile edition of LookAt for devices such as Pocket PCs, Palm OS, or Linux-based handhelds. So, if you have a handheld device with wireless access and an Internet browser, you can now access LookAt message information from almost anywhere.

**Accessing publications online**

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Software Information Center Web site. The Tivoli Software Information Center is located at the following Web address:

http://publib.boulder.ibm.com/tividd/td/tdprodlist.html
Click the Tivoli Decision Support for OS/390 link to access the product library.

These publications are available in PDF or HTML format, or both. Translated documents are also available for some products.

**Note:** If you print PDF documents on other than letter-sized paper, select the *Fit to page* check box in the *Adobe Acrobat Print* dialog. This option is available when you click *File* > *Print*. *Fit to page* ensures that the full dimensions of a letter-sized page print on the paper that you are using.

**Ordering publications**

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


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

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

In other countries, see the following Web site for a list of telephone numbers:

http://www.ibm.com/software/tivoli/order-lit/

**Accessibility**

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

For additional information, see the Appendix L, “Accessibility,” on page 417 of this Tivoli Decision Support for OS/390 guide.

**Contacting software support**

If you have a problem with any Tivoli product, refer to the following IBM Software Support Web site:


If you want to contact software support, see the *IBM Software Support Guide* at the following Web site:

http://techsupport.services.ibm.com/guides/handbook.html

The guide provides information about how to contact IBM Software Support, depending on the severity of your problem, and the following information:

- Registration and eligibility
- Telephone numbers and e-mail addresses, depending on the country in which you are located
- Information you must have before contacting IBM Software Support
Conventions used in this book

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

The term z/OS is used in this book to mean z/OS and OS/390 operating systems. Where the term OS/390 does appear, the related information applies only to OS/390 operating systems.

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, multicolon 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

This edition is an updated version that replaces the previous edition of the same book. The changes are:

- Information about database reorganization has been added in Chapter 4, “Setting up operating routines” and Chapter 7, “Working with tables and update definitions.” A new utility, REORG/DISCARD, has been added and described in the same chapters.
• Information has been added about creating alter statements for user-modified objects in Chapter 5, “Working with components.”

• Information has been added about loading and unloading functions, in Chapter 7, “Working with tables and update definitions.”

• New tables and reports have been added in Appendix C, “Sample components,” on page 253 about the new Sample Interval Job/Step Accounting Component.

• Appendix J, “Migrating Components from Earlier Releases” has been updated with new information.

• A new report has been added in Appendix K, “Administration reports,” on page 407.

• Appendix L, “Accessibility” has been added.

Except for editorial changes, updates to this edition are marked with a vertical bar to the left of the change.
Part 1. Getting started

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Chapter 1. Understanding Tivoli Decision Support for OS/390

Tivoli Decision Support for OS/390 (hereafter referred to as Performance Reporter) 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 chapter, you should have a basic understanding of Tivoli Decision Support for OS/390 and be ready to install it.

This chapter describes:
- How Tivoli Decision Support for OS/390 works
- Tivoli Decision Support for OS/390 features
- The log collector
- The Tivoli Decision Support for OS/390 database
- The administration dialog
- The reporting dialog

Introduction to Tivoli Decision Support for OS/390

Tivoli Decision Support for OS/390 has two basic functions:
- Collecting systems management data into a DB2 database
- Reporting on the data

Tivoli Decision Support for OS/390 consists of a base product and several optional features.

The Tivoli Decision Support for OS/390 base can generate graphic and tabular reports using systems management data it stores in its DB2 database. The base product includes the administration dialog, the reporting dialog, and the log collector, all of which interact with a standard DB2 database. [Figure 1] shows an overview of Tivoli Decision Support for OS/390.

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1. To generate and display graphic reports, Tivoli Decision Support for OS/390 uses Graphical Data Display Manager (GDDM). If you are using Tivoli Decision Support for OS/390 without QMF, GDDM is not required. If GDDM is not used, all reports are displayed in tabular form.
Introduction to Tivoli Decision Support for OS/390 performance features

Tivoli Decision Support for OS/390 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.

These performance features are additional to the base function:
- Accounting feature
- AS/400 System Performance feature
- CICS Performance feature
- Distributed Systems Performance feature
- IMS Performance feature
- Network Performance feature
- System Performance feature

Use these features to collect and report on systems management data, such as SMF data or IMS log data.

The Capacity Planner feature enables you to download summarized data from the Tivoli Decision Support for OS/390 database to a workstation, to analyze and plan the usage of key MVS/ESA™ and MVS/XA™ resources.

Each Tivoli Decision Support for OS/390 performance feature has components, which are groups of related Tivoli Decision Support for OS/390 definitions. For example, the MVS Performance Management component consists of everything Tivoli Decision Support for OS/390 needs to collect log data and create reports showing MVS performance characteristics.
Introduction to the log collector

The central part of Tivoli Decision Support for OS/390 is the log collector program that reads performance data and processes it. Log collector tasks are controlled by log, record, update, and other definitions in Tivoli Decision Support for OS/390 system tables. For more information, see "Log collector system tables" on page 227. You can add or modify definitions with both the administration dialog and log collector language statements.

Tivoli Decision Support for OS/390 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 log collector’s main function is to read data and store it in data tables in the Tivoli Decision Support for OS/390 database. The log collector groups the data by hour, day, week, or month; 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

Tivoli Decision Support for OS/390 gets performance data about systems from sequential data sets such as those written by system management facilities (SMF) under MVS or by the Information Management System (IMS). These data sets are called log data sets or logs.

To collect log data, Tivoli Decision Support for OS/390 needs log descriptions. The log collector stores descriptions of logs as log definitions in the Tivoli Decision Support for OS/390 database. All log definitions used by Tivoli Decision Support for OS/390 features are provided with the base product.

The administration dialog enables you to create log definitions or modify existing ones. For more information, see Chapter 6, “Working with log and record definitions,” on page 143.

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 MVS, and SMF record type 110, generated by CICS. For Tivoli Decision Support for OS/390 to process a record, the record type must be defined. Detailed record layouts and field formats and offsets within a record are described in Tivoli Decision Support for OS/390 record definitions. All record definitions used by Tivoli Decision Support for OS/390 features are provided with the base product.

The administration dialog enables you to create and modify record definitions. For more information, see Chapter 6, “Working with log and record definitions,” on page 143.

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 Tivoli Decision Support for OS/390 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 a Tivoli Decision Support for OS/390 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 185.

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

Tivoli Decision Support for OS/390 stores data collected from log data sets in its database tables. It also stores Tivoli Decision Support for OS/390 system data in system tables and site-specific operating definitions in lookup and control tables. A table definition identifies the database and tablespace in which a table resides, and identifies columns in the table. The table definitions used exclusively by a Tivoli Decision Support for OS/390 feature’s components are provided with the feature.

The administration dialog enables you to create or modify lookup and data table definitions. For more information, see Chapter 7, “Working with tables and update definitions,” on page 163.

Log and record procedures

Log procedures and record procedures are user-exit programs for specific data collection situations. Record procedures work on specific record types. Log procedures work on an entire log. The log and record procedures used by Tivoli Decision Support for OS/390 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 159.

Collect process

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

• 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 2 on page 8 shows the collect process. Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390.
2. You initiate the collect either through the dialog or by using a Tivoli Decision Support for OS/390 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 a Tivoli Decision Support for OS/390 record definition.
4. Tivoli Decision Support for OS/390 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 a Tivoli Decision Support for OS/390 record definition.
6. Tivoli Decision Support for OS/390 applies a specific update definition to each known record type and performs the data manipulations and database updates as specified.
7. Tivoli Decision Support for OS/390 often selects data from lookup tables to fulfill the data manipulations that update definitions require.
8. Tivoli Decision Support for OS/390 writes non-summarized and first-level summarized data to data tables specified by the update definitions.
9. Tivoli Decision Support for OS/390 uses updated tables as input for updating other, similar tables that are for higher summary levels. If update definitions specify data summarization:
   a. Tivoli Decision Support for OS/390 selects data from a table as required by the update definitions and performs required data summarization.
   b. Tivoli Decision Support for OS/390 updates other data tables as required by update definitions.
   (Tivoli Decision Support for OS/390 might select data from lookup tables during this process, but this step is not shown in Figure 2 on page 8)
10. After Tivoli Decision Support for OS/390 stores the data from a collect, you can display reports on the data. Tivoli Decision Support for OS/390 uses a query to select the data for the report.
11. Optionally, Tivoli Decision Support for OS/390 might select data from lookup tables specified in the query.
12. Tivoli Decision Support for OS/390 creates report data, displaying, printing, and saving it as you requested.
Figure 2. Overview of Tivoli Decision Support for OS/390 data flow
Introduction to the Tivoli Decision Support for OS/390 database

The IBM Tivoli Decision Support for OS/390 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.

Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 database contains operating definitions in its system tables. These definitions include those for logs, records, updates, and tables shipped with Tivoli Decision Support for OS/390. 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 install and customize Tivoli Decision Support for OS/390 and its features, work with log and record definitions, run jobs and utilities, work with tables in the Tivoli Decision Support for OS/390 database, and define site-specific operating parameters. All of these options are available from the Administration window. 

![Figure 3. Introducing the Administration dialog](image)

Introduction to the reporting dialog

The Tivoli Decision Support for OS/390 reporting dialog enables you to display reports that present the log data that has been stored in the Tivoli Decision Support for OS/390 database. When you use the reporting dialog to display or print a report, Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390, Tivoli Decision Support for OS/390 starts QMF when you work with queries and reports. Otherwise, Tivoli Decision Support for OS/390’s own report generator is used.

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.

2. To generate and display graphic reports, Tivoli Decision Support for OS/390 uses Graphical Data Display Manager (GDDM). If you are using Tivoli Decision Support for OS/390 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 its report definition:

- A query for selecting data (required)
- A form to use to format the data and specify 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 Tivoli Decision Support for OS/390’s built-in report generator
- Display reports
- Define reports for batch execution

The Tivoli Decision Support for OS/390 IBM: Guide to the Reporting Dialog describes the host reporting dialog. For a description of using the Common User Access® (CUA®) interface presented in Tivoli Decision Support for OS/390 windows and helps, refer to the “Getting Started” section of that book. That chapter also describes using BookManager® to link to Tivoli Decision Support for OS/390 online books from dialog windows.
Chapter 2. Installing Tivoli Decision Support for OS/390

This chapter describes how to install Tivoli Decision Support for OS/390. The process starts after a system programmer has performed the SMP/E installation. The SMP/E installation of the Tivoli Decision Support for OS/390 base and its features is described in the *Tivoli Decision Support for OS/390 Program Directory*. The installation prerequisites from the *Tivoli Decision Support for OS/390 Program Directory* are summarized in this chapter.

This chapter describes these installation tasks:

Step 1. Review the results of SMP/E installation.

Step 2. Set up security (performed by you and, possibly, the RACF® administrator).

Step 3. Initialize the DB2 database (performed by you and the DB2 administrator).

Step 4. Prepare the dialog and update the dialog profile.

Step 5. Set personal dialog parameters (performed by you and, possibly, every Tivoli Decision Support for OS/390 user).

Step 6. Create system tables.

Step 7. Set up QMF, if QMF is used with Tivoli Decision Support for OS/390.

Step 8. Set up BookManager.

Step 9. Customize JCL.

Step 10. Test the installation.


Step 12. Install components.

You can also use this information to install other Tivoli Decision Support for OS/390 systems or to install features that you did not install with the Tivoli Decision Support for OS/390 base.
Installation prerequisites

This section lists the hardware and software prerequisites.

Hardware prerequisites

Tivoli Decision Support for OS/390 can run in any hardware environment that supports the required software.

Software prerequisites

The minimum requisites for Tivoli Decision Support for OS/390 to install successfully are:

<table>
<thead>
<tr>
<th>Program number</th>
<th>Product name and minimum VRM/service level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5645–DB2</td>
<td>IBM DATABASE 2 (DB2) Version 6</td>
</tr>
<tr>
<td>5647-A01</td>
<td>OS/390 V2.10 with JES2, JES3</td>
</tr>
<tr>
<td>5694-A01</td>
<td>z/OS 1.1</td>
</tr>
</tbody>
</table>

The functional requisites that Tivoli Decision Support for OS/390 needs at run time for its specific functions to work are:

<table>
<thead>
<tr>
<th>Product number</th>
<th>Product name and minimum VRM/service level</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>5706–254</td>
<td>Query Management Facility (QMF) 3.1.1</td>
<td>Generate and view reports</td>
</tr>
<tr>
<td>5695-167</td>
<td>Graphical Data Display Manager (GDDM) 3.1</td>
<td>Display reports in graphical format</td>
</tr>
<tr>
<td>5668–812</td>
<td>GDDM–PGF Version 2</td>
<td>Transform reports into graphical format</td>
</tr>
<tr>
<td>5648-142</td>
<td>Tivoli Service Desk for OS/390</td>
<td>Generate problem reports from Tivoli Decision Support for OS/390 data</td>
</tr>
<tr>
<td>5695–046</td>
<td>BookManager READ/MVS Release 3</td>
<td>Access Tivoli Decision Support for OS/390 online books</td>
</tr>
<tr>
<td>5722–SS1</td>
<td>OS/400 5.1</td>
<td>AS/400 system performance</td>
</tr>
<tr>
<td>5685–108</td>
<td>NetView FTP 2.1</td>
<td>AS/400 system performance</td>
</tr>
<tr>
<td>5733–196</td>
<td>NetView FTP/400 V3</td>
<td>AS/400 system performance</td>
</tr>
<tr>
<td>5724-B90</td>
<td>Windows® 98 or Windows NT® Version 4.0 SP6 or windows 2000</td>
<td>Accounting Feature</td>
</tr>
<tr>
<td></td>
<td>DB2 High Performance Unload (HPU) 2.1</td>
<td>Unload DB2 data enhancement</td>
</tr>
</tbody>
</table>

Any one of the following:

<table>
<thead>
<tr>
<th>5765–C34</th>
<th>AIX® 4.3</th>
<th>Distributed Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HP–UX** 11-i</td>
<td>Distributed Systems</td>
</tr>
<tr>
<td></td>
<td>Sun Solaris 2.7</td>
<td>Distributed Systems</td>
</tr>
<tr>
<td>5765–C34</td>
<td>AIX 4.3</td>
<td>Viewer</td>
</tr>
<tr>
<td></td>
<td>Sun Solaris 2.7</td>
<td>Viewer</td>
</tr>
<tr>
<td></td>
<td>Windows NT Version 4.0, Windows 98, Windows 2000</td>
<td>Viewer</td>
</tr>
<tr>
<td>Product number</td>
<td>Product name and minimum VRM/service level</td>
<td>Function</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>LINUX RedHat 7.1 (Kernel 2.4.2)</td>
<td>LINUX Performance</td>
<td></td>
</tr>
<tr>
<td>LINUX SUSE 7.0 OS/390 (Kernel 2.2.16)</td>
<td>LINUX Performance</td>
<td></td>
</tr>
<tr>
<td>LINUX SUSE 7.1 (Kernel 2.4.0)</td>
<td>LINUX Performance</td>
<td></td>
</tr>
<tr>
<td>TurboLINUX 6.5 (Kernel 2.2.18)</td>
<td>LINUX Performance</td>
<td></td>
</tr>
</tbody>
</table>

Considerations when migrating from an earlier release or modification level of Tivoli Decision Support for OS/390

If you have already installed Tivoli Decision Support for OS/390, and are migrating to a new release or modification level, there are changes to some of the installation steps.

Migrating to a new release or modification level includes:

1. Migrating the Tivoli Decision Support for OS/390 base to the latest level.
   Before you start migrating the Tivoli Decision Support for OS/390 base, read the information in “Migrating the Tivoli Decision Support for OS/390 base to the latest level” and the rest of chapter 2.
2. Migrating components. This includes:
   • Identifying and saving modified objects for Tivoli Decision Support for OS/390 components that you have already installed
   • Migrating the Tivoli Decision Support for OS/390 components you have already installed to the latest Tivoli Decision Support for OS/390 feature level
   • Reintroducing the changes you made to saved component objects, to the latest level of these objects
   Before you start migrating components, read through the information in Chapter 5, “Working with components,” on page 105. Migration considerations included in other sections of the book are marked Migration considerations.

Migrating the Tivoli Decision Support for OS/390 base to the latest level

When migrating from an earlier release or modification level of Tivoli Decision Support for OS/390, perform these installation steps:

• “Step 1: Review the results of the SMP/E installation” on page 16
• “Step 3: Initialize the DB2 database” on page 21
• “Step 4: Prepare the dialog and update the dialog profile” on page 28
• “Step 5: Set personal dialog parameters” on page 31
• “Step 6: Create or update system tables” on page 34
• “Step 7: Set up QMF” on page 36
• “Step 8: Set up BookManager” on page 37
• “Step 9: Customize JCL” on page 39
• “Step 10: Test the installation of the Tivoli Decision Support for OS/390 base” on page 41
Step 1: Review the results of the SMP/E installation

The following default data set names are created during SMP/E installation of the Tivoli Decision Support for OS/390 base and its features:

**Tivoli Decision Support for OS/390 data sets**

<table>
<thead>
<tr>
<th>Data set name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRL160.SDRLCNTL</td>
<td>Sample jobs and DB2 DBRM module</td>
</tr>
<tr>
<td>DRL160.SDRLDEFS</td>
<td>Definitions of records, tables, and other objects</td>
</tr>
<tr>
<td>DRL160.SDREXEC</td>
<td>REXX execs</td>
</tr>
<tr>
<td>DRL160.SDRLLOAD</td>
<td>Load modules</td>
</tr>
<tr>
<td>DRL160.SDRLSKEL</td>
<td>ISPF skeletons</td>
</tr>
<tr>
<td>DRL160.SDRLA400</td>
<td>OS/400</td>
</tr>
<tr>
<td>DRL160.SDRLWS</td>
<td>Workstation</td>
</tr>
</tbody>
</table>

**Local data sets**

<table>
<thead>
<tr>
<th>Data set name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;HLQ.LOCAL.ADMCFORM</td>
<td>Local GDDM-Presentation Graphics Facility</td>
</tr>
<tr>
<td></td>
<td>(GDDM-PGF) interactive chart utility</td>
</tr>
<tr>
<td></td>
<td>(GDDM/ICU) formats</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.CHARTS</td>
<td>Saved graphic reports (GDDM ADMGDF format)</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.CNTL</td>
<td>Local Tivoli Decision Support for OS/390 jobs</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.DEFS</td>
<td>Local Tivoli Decision Support for OS/390 definitions</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.EXEC</td>
<td>Local Tivoli Decision Support for OS/390 execs</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.MESSAGES</td>
<td>Messages sent through the dialog</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.REPORTS</td>
<td>Saved tabular reports</td>
</tr>
<tr>
<td>&amp;HLQ.LOCAL.USER.DEFS</td>
<td>Local Tivoli Decision Support for OS/390 user/alter definitions</td>
</tr>
</tbody>
</table>

**Language-dependent Tivoli Decision Support for OS/390 data sets**

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

<table>
<thead>
<tr>
<th>Data set name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRL160.SDRLFXXX</td>
<td>GDDM/ICU formats</td>
</tr>
<tr>
<td>DRL160.SDRLMXXX</td>
<td>ISPF messages</td>
</tr>
<tr>
<td>DRL160.SDRLPXXX</td>
<td>ISPF windows</td>
</tr>
<tr>
<td>DRL160.SDRLRXXX</td>
<td>Definitions of reports</td>
</tr>
<tr>
<td>DRL160.SDRLTXXX</td>
<td>ISPF tables</td>
</tr>
<tr>
<td>DRL160.SDRLVXXX</td>
<td>Files for the Viewer</td>
</tr>
</tbody>
</table>
Step 2: Set up security

Migration considerations - Skip this step if you are migrating from a previous release or modification level of Tivoli Decision Support for OS/390.

This section describes how you can protect Tivoli Decision Support for OS/390 data sets and the Tivoli Decision Support for OS/390 database.

Use RACF or a similar product to protect the Tivoli Decision Support for OS/390 data sets. Tivoli Decision Support for OS/390 administrators and users must have read access to the DRL160 data sets and update access to the local data sets.

The data in the Tivoli Decision Support for OS/390 database is protected by DB2. Tivoli Decision Support for OS/390 administrators and users must be granted DB2 privileges to be able to access the data, as follows:

- Administrators need administrator) authority for the Tivoli Decision Support for OS/390 database. They also need the ability to use the prefixes of Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 system tables (to be able to create their own reports).
- The user IDs that you use for Tivoli Decision Support for OS/390 production jobs, such as collect, need DBADM authority.

This step describes two ways you can define authorities for Tivoli Decision Support for OS/390 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 “Tivoli Decision Support for OS/390 security without secondary authorization IDs” on page 19 for more information.

Tivoli Decision Support for OS/390 security using secondary authorization IDs

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 section describes how to define the secondary authorization IDs using RACF. If you assign secondary authorization IDs in another way, consult your DB2 system administrator.
Installing Tivoli Decision Support for OS/390

What to do
If you use RACF group IDs as DB2 secondary authorization IDs, your RACF administrator should:

1. Create three RACF groups. The default RACF group IDs are DRL, DRLSYS, and DRLUSER.
   
The IDs DRL and DRLSYS are also prefixes for the Tivoli Decision Support for OS/390 DB2 tables. If you plan to change the prefixes for Tivoli Decision Support for OS/390 system tables and views (DRLSYS) or for other Tivoli Decision Support for OS/390 tables and views (DRL) in "Step 3: Initialize the DB2 database" on page 21, use your values as RACF group IDs.
   
If all users on your system need access to the Tivoli Decision Support for OS/390 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.
   
```
ADDGROUP DRL DATA ('Tivoli Decision Support for OS/390 TABLES')
ADDGROUP DRLSYS DATA ('Tivoli Decision Support for OS/390 SYSTEM TABLES')
ADDGROUP DRLUSER DATA ('Tivoli Decision Support for OS/390 USERS')
```

2. Connect Tivoli Decision Support for OS/390 administrators to all three groups.
   
Use RACF commands or RACF dialogs to connect user IDs to a RACF group. These commands are samples.

```
CONNECT (admin_user_ID) GROUP(DRL)
CONNECT (admin_user_ID) GROUP(DRLSYS)
CONNECT (admin_user_ID) GROUP(DRLUSER)
```

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

3. Connect Tivoli Decision Support for OS/390 (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 of this chapter.

5. If you use other group IDs than DRLUSER, you must modify the following fields in the Dialog Parameters window (see Figure 12 on page 33):

**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 Tivoli Decision Support for OS/390. 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 Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 users. Edit the Tivoli Decision Support for OS/390 initialization exec DRLFPROE, described in “Step 4: Prepare the dialog and update the dialog profile” on page 28. Variables def_syspref, def_othbpfx, def_iduser1, and def_idsqluser may need to be changed, depending on the changes you made to the IDs.

Tivoli Decision Support for OS/390 security without secondary authorization IDs

If you are not using secondary authorization IDs in DB2, the installation process is slightly different. See “Installation steps when secondary user IDs are not used” for more information.

If you are not using secondary authorization IDs in DB2, all privileges must be granted to individual users:

1. Grant authority to the Tivoli Decision Support for OS/390 Tivoli Decision Support for OS/390 administrators in one of two ways:
   - Create all tables and views with the administrator’s user ID as prefix. That is, replace DRLSYS and DRL with a user ID. Only one Tivoli Decision Support for OS/390 administrator is possible.
     This is the recommended way.
   - Grant SYSADM authority to all Tivoli Decision Support for OS/390 administrators.

2. Give authority to the Tivoli Decision Support for OS/390 users in one of two ways. This is done in step 5 (see “Step 5: Set personal dialog parameters” on page 31 for more information).
   - Specify a list of up to eight user IDs in the field, Users to grant access to, in the Dialog Parameters window (Figure 12 on page 33).
   - Specify PUBLIC in the Users to grant access to field. This gives all users access to Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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.

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: Initialize the DB2 database” on page 21
  Change DRL and DRLSYS in the DRLJDBIN job to ADMIN1, ADMIN2, and ADMIN3.
- “Step 4: Prepare the dialog and update the dialog profile” on page 28
  No changes.
- “Step 5: Set personal dialog parameters” on page 31
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 Tivoli Decision Support for OS/390 in your installation).

- **“Step 6: Create or update system tables” on page 34**
  The system tables should be created with the prefix ADMIN1. Otherwise, there are no changes compared with the information in this step.

- **“Step 7: Set up QMF” on page 36**
  No changes.

- **“Step 8: Set up BookManager” on page 37**
  No changes.

- **“Step 9: Customize JCL” on page 39**
  No changes.

- **“Step 10: Test the installation of the Tivoli Decision Support for OS/390 base” on page 41 and “Step 12: Install components” on page 46**
  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 Tivoli Decision Support for OS/390 users, you must change the Tivoli Decision Support for OS/390 initialization exec DRLFPROF as described in **“Step 4: Prepare the dialog and update the dialog profile” on page 28.**
Step 3: Initialize the DB2 database

Migration considerations - If you are migrating from a previous release of DB2, run the DRLJDBIN job (as described below), remembering to drop the existing views before the CREATE statements.

You must use Tivoli Decision Support for OS/390 to perform several DB2-related installation tasks, which are described below.

Note: Tivoli Decision Support for OS/390 is an update/insert intensive DB2 application. This means that during a collect, Tivoli Decision Support for OS/390 adds and updates many rows in the Tivoli Decision Support for OS/390 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, you might consider implementing another (analytical) DB2 system for the Tivoli Decision Support for OS/390 environment.

Initializing DB2 database when installing Tivoli Decision Support for OS/390 for first time

If you are installing Tivoli Decision Support for OS/390 for the first time, follow the instructions below to run the DRLJDBIN job:

1. Copy member DRLJDBIN in the DRL160.SDRLCNTL library to the &HLQ.LOCAL.CNTL library. DRLJDBIN appears in Figure 4 on page 22 and Figure 1 on page 4.
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.

Notes:

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 Tivoli Decision Support for OS/390 database.

4. Submit the job to:
   - Bind the DB2 plan used by Tivoli Decision Support for OS/390. The plan does not give privileges (it contains only dynamic SQL statements) thereby making it safe to grant access to all users (PUBLIC).
   - Create the DB2 storage group and database used by Tivoli Decision Support for OS/390.
   - Grant DB2 DBADM authority as database administrators of DRLDB to DRL and DRLSYS.
   - Create views on the DB2 catalog for Tivoli Decision Support for OS/390 dialog functions for users who do not have access to the DB2 catalog.
Installing Tivoli Decision Support for OS/390

DRLJDBIN job

//DRLJDBIN JOB (ACCT#), 'DATABASE INIT'
/*****************************************************************************/
/* Name: DRLJDBIN */
/* Status: Tivoli Decision Support for OS/390 1.6.0 */
/* Function: */
/* 1. Bind the Tivoli Decision Support for OS/390 */
/* 2. Create storage group and database for Tivoli Decision */
/* 3. Create views on the DB2 catalog. */
/* Notes: */
/* Before you submit the job, do the following: */
/* 1. Check that the DB2 and Tivoli Decision Support for */
/*    OS/390 data set names are correct. Search for DSN610 */
/*    and DRL161 to find the data set names. */
/* 2. If the DB2 subsystem name is not DSN, change */
/*    DB2 SYSTEM(DSN) to DSN SYSTEM(subsystem-name). */
/* 3. If you are not using DB2 6, change DSNTIA61 to */
/*    the name of the corresponding plan for your release. */
/* 4. In the CREATE STOGROUP statement, supply names for */
/*    the volume(s) and catalog to use. */
/*    If you already have a storage group defined, remove */
/*    the CREATE STOGROUP statement and change the CREATE */
/*    DATABASE statement to use this storage group. */
/* 5. If you are using a database name that is different */
/*    from the default (DRLDB), change all occurrences of */
/*    DRLDB to the new name. Use the command: */
/*    CHANGE DRLDB database-name WORD ALL */
/* 6. If you want to use a default buffer pool for the */
/*    tablespaces created within the database different */
/*    from BP0, change the BUFFERPOOL parameter in the */
/*    CREATE DATABASE statement as desired. */
/* 7. If you want to use a default buffer pool for the */
/*    indexes created within the database, you can specify */
/*    it with the additional parameter of the CREATE */
/*    DATABASE statement, valid from DB2 V6 on. */
/*    The parameter is INDEXPB. */
/* 8. If you are using a table prefix that is different */
/*    from the default (DRL), change all occurrences of */
/*    the word DRL to the new name. Use the command: */
/*    CHANGE DRL table-prefix WORD ALL */

Figure 4. DRLJDBIN job (member of DRL161.SDRLCNTL) (Part 1 of 3)
9. IF YOU ARE USING A SYSTEM TABLE PREFIX THAT IS DIFFERENT FROM THE DEFAULT (DRLSYS), CHANGE ALL OCCURENCES OF DRLSYS TO THE NEW NAME.
   USE THE COMMAND:
   CHANGE DRLSYS SYSTEM-TABLE-PREFIX WORD ALL

10 IF YOU ARE USING A USER GROUP THAT IS DIFFERENT FROM THE DEFAULT (DRLUSER), CHANGE ALL OCCURENCES OF DRLUSER TO THE NEW NAME.
   USE THE COMMAND:
   CHANGE DRLUSER USER_GROUP WORD ALL

11 IF YOU ARE MIGRATING FROM A PREVIOUS RELEASE OF DB2 TO A NEW ONE, YOU NEED TO:
   - PQ61494
   - PTR537
   (A) UNLOAD (IN ORDER TO SAVE DATA)
   - PQ61494
   (B) DROP THE EXISTING OBJECTS
   BEFORE CREATE STATEMENTS
   - PQ61494
   (C) DATA SHOULD BE RELOADED INTO NEWLY CREATED OBJECTS.
   - PQ61494

CHANGE ACTIVITY:

01 2001-08-24 BB - PQ49985 :
   ADDED NOTE (POINT 11) IN ORDER TO NOTIFY THAT, FOR MIGRATIONS, EXISTING OBJECTS NEED BE DROPPED BEFORE CREATE

02 2002-05-27 BB - PQ61494 :
   CHANGED NOTE (POINT 11) IN ORDER TO NOTIFY THAT, FOR MIGRATIONS, EXISTING OBJECTS NEED BE UNLOADED BEFORE DROP; ALSO, AFTER CREATE, THEY NEED BE RELOADED.

03 2003-03-07 RV - SPECIFY THAT THE COMMENTS ADDED BY APARS PQ49985 AND PQ61494 REFER TO MIGRATION TO A NEW RELEASE OF DB2

**********************************************************************
//DBINIT EXEC PGM=IKJEFT01
//STPLIB DD DISP=SHR,DSN=DSN610.DSNLOAD
//DBRMLIB DD DISP=SHR,DSN=DRL160.SDRLCNTL(DRLPSQLX)
//SYSPRINT DD SYSOUT**
//SYSTSPRT DD SYSOUT**
//SYSTSIN DD *
DSN SYSTEM(DSN)
   BIND PLAN(DRLPLAN) MEMBER(DRLPSQLX) -
      ACTION(REPLACE) RETAIN ISOLATION(CS)
   RUN PROGRAM(DSNTIAD) PLAN(DSNTIA61) -
      LIB('DSN610.RUNLIB.LOAD')
END
//SYSIN DD *
GRANT EXECUTE ON PLAN DRLPLAN TO PUBLIC;

CREATE STOGROUP DRLSG
   VOLUMES (VOLUME1, VOLUME2, ...)
   VCAT CATALOG-NAME;

GRANT USE OF STOGROUP DRLSG TO DRL, DRLSYS WITH GRANT OPTION;

Figure 5. DRLJDBIN job (member of DRL161.SDRLCNTL) (Part 2 of 3)
CREATE DATABASE DRLDB
    BUFFERPOOL BP0
    STOGROUP DRLSG;

GRANT DBADM ON DATABASE DRLDB TO DRL, DRLSYS WITH GRANT OPTION;

CREATE VIEW DRLSYS.DRLTABLES AS
    SELECT * FROM SYSIBM.SYSTABLES
    WHERE CREATOR IN ('DRL', 'DRLSYS');
GRANT SELECT ON DRLSYS.DRLTABLES TO DRL, DRLUSER;

CREATE VIEW DRLSYS.DRLCOLUMNS AS
    SELECT * FROM SYSIBM.SYSCOLUMNS
    WHERE TBCREATOR IN ('DRL', 'DRLSYS');
GRANT SELECT ON DRLSYS.DRLCOLUMNS TO DRL, DRLUSER;

CREATE VIEW DRLSYS.DRLETABLESPACE AS
    SELECT * FROM SYSIBM.SYSTABLESPACE
    WHERE DBNAME = 'DRLDB';
GRANT SELECT ON DRLSYS.DRLETABLESPACE TO DRL, DRLUSER;

/*

Figure 6. DRLJDBIN job (member of DRL161.SDRLCNTL) (Part 3 of 3)
Customization considerations for the CICS Partitioning feature

If you are going to use the CICS Partitioning feature, run the DRLJDBIP job. DRLJDBIP creates additional storage groups that are used in the partitioned tablespaces of the CICS Partitioning feature.

To run DRLJDBIP:

1. Copy member DRLJDBIP in the DRL160.SDRLCNTL library to the &HLQ.LOCAL.CNTL library. DRLJDBIP appears in Figure 7 on page 26 and Figure 8 on page 27.
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 person with DB2 SYSADM authority (or someone who has access to the DB2 catalog) must submit the job.
4. Submit the job.
DRLJDBIP job

//DRLJDBIP JOB (ACCTE),'SG FOR PARTITION'
.beginPath
/*****************************************************************************/
/**
/**
/** Licensed Materials - Property of IBM
/**
/** See Copyright Instructions.
/**
/*****************************************************************************/
/**
/** Name: DRLJDBIP
/**
/** Status: Tivoli Decision Support for OS/390 1.6.0
/**
/** Function:
/**  Create storage groups for CICS Partitioning feature.
/**
/** Notes:
/**  You need DB2 SYSADM authority to successfully execute this job. Before you submit the job, do the following:
/** 1. Check that the DB2 and Tivoli Decision Support for OS/390 data set names are correct. Search for DSN610 and DRL160 to find the data set names.
/** 2. If the DB2 subsystem name is not DSN, change SYSTEM=DSN to SYSTEM=subsystem-name in the SYSTSIN step.
/** 3. If you are using a system table prefix that is different from the default (DRLSYS), change DRLSYS in the CREATE STOGROUP statement to the new name.
/** 4. If you are using a table prefix that is different from the default (DRL), change DRL in the CREATE STOGROUP statement to the new name.
/** 5. If you are using a storage group that is different from the default, change STOGR1, STOGR2, STOGR3, STOGR4 in the CREATE and GRANT statements. If you need more/less storage groups, modify the number (add/delete) of CREATE and GRANT statements.
/** 6. Specify the VOLUMES you are using for the storage groups (VOLSTOGRxx).
/** 7. Specify the VCAT parameter in the CREATE statement (CATALOG-NAME).
/**
/*****************************************************************************/

Figure 7. DRLJDBIP job (member of DRL160.SDRLCNTL) (Part 1 of 2)
Figure 8. DRLJDBIP job (member of DRL160.SDRLCNTL) (Part 2 of 2)
Step 4: Prepare the dialog and update the dialog profile

The TDS load library and the TDS exec library must be allocated at the startup of your TSO logon proc. Tivoli Decision Support for OS/390 dynamically allocates other libraries and data sets as it starts, and allocates still others as certain functions are performed. This step describes how to set up procedures for start-up and for letting Tivoli Decision Support for OS/390 allocate the libraries and data sets it needs.

1. Ensure that the Tivoli Decision Support for OS/390 load library, the Tivoli Decision Support for OS/390 exec library, the DB2 load library, and the QMF load library (optional), GDDM libraries, load libraries, and data sets for BookManager are accessible to your TSO session:
   a. Make the Tivoli Decision Support for OS/390 load library (DRL160.SDRLOAD), the DB2 load library, the QMF load library, the GDDM load library, and the BookManager load library accessible by performing one of these tasks:
      • Allocate the SDRLOAD library, the DB2 load library (DSNLOAD), the QMF load library (DSQLOAD), the GDDM load library (SADMMOD), and the BookManager load library (SEOYLOAD) to STEPLIB in the generic logon procedure. For example:

        //STEPLIB DD DISP=SHR,DSN=DRL160.SDRLOAD
        // DD DISP=SHR,DSN=DSNLOAD
        // DD DISP=SHR,DSN=DSQLOAD
        // DD DISP=SHR,DSN=GDDM.SADMMOD
        // DD DISP=SHR,DSN=SEOYLOAD
        // DD DISP=SHR,DSN=DSN610.DSNLOAD

      • Add SDRLOAD, DSQLOAD, SADMMOD, SEOYLOAD, and DSNLOAD to the link list.
      • Copy SDRLOAD, DSQLOAD, SADMMOD, SEOYLOAD, and DSNLOAD 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.
   b. Make the local exec library, the Tivoli Decision Support for OS/390 exec library (DRL160.SDRLEXEC), and (optionally) the BookManager CLIST library accessible by performing one of these tasks:
      • Allocate the libraries to SYSPROC in the logon procedure, for example:

        //SYSPROC DD DISP=SHR,DSN=&HLQ.LOCAL.EXEC
        // DD DISP=SHR,DSN=DRL160.SDRLEXEC
        // DD DISP=SHR,DSN=SEOYCLIB

      Note: If you are running MVS/XA, add the DB2 and QMF (if required) CLIST and EXEC libraries to the above list.
      • Allocate the libraries to SYSEXEC in the logon procedure, for example:

        //SYSEXEC DD DISP=SHR,DSN=&HLQ.LOCAL.EXEC
        // DD DISP=SHR,DSN=DRL160.SDRLEXEC
        // DD DISP=SHR,DSN=SEOYCLIB

      Note: If you are running MVS/XA, add the DB2 and QMF (if required) CLIST and EXEC libraries to the above list.
      • Use the ALTLIB function to allocate the libraries.

If Tivoli Decision Support for OS/390 is invoked by using the ALTLIB function on the application level, make sure that only the Tivoli Decision Support for OS/390 exec library is included. Allocate other exec libraries to user level by using the ALTLIB ACT USER(EXEC) command.
c. Make the ADMPC data set accessible by allocating it in the logon procedure, for example:

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

Tivoli Decision Support for OS/390 dynamically allocates other libraries and data sets, such as the GDDM symbols data set GDDM.SADMSYM, when a user starts a Tivoli Decision Support for OS/390 dialog. "Allocation overview" on page 344 describes the libraries that Tivoli Decision Support for OS/390 allocates and when it allocates them.

2. If you have used any values other than default values for DRLJDBIN or for Tivoli Decision Support for OS/390 data set names, you must modify the Tivoli Decision Support for OS/390 TSOUSERID.DRLFPROF file (allocated copying the DRLFPROF member of DRL160.SDRLCNTL).

**Migration considerations** - You can use your previous version of the DRLEINI11 exec as a guide for modifying the current version of this user.DRLFPROF file.

DRLEINI1 sets dialog defaults for all users. Tivoli Decision Support for OS/390 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 for users so Tivoli Decision Support for OS/390 users need not change dialog parameter fields to begin using Tivoli Decision Support for OS/390.

**Migration considerations** - Before you start using the new Administration dialog, you must delete the member DRLPROF from the ISPPROF ddname library. This ensures that you use the correct environment, by refreshing your ISPF profile.

a. Allocate a sequential dataset with name user.DRLFPROF, LRECL=80 BLKSIZE=32720 RECFM=FB and copy the DRLFPROF member of the SDRLCNTL library.

b. Locate and change any variable values that you have changed during installation.

**Notes:**

1) Change values for data set names that identify DB2 and, optionally, QMF and GDDM libraries.

2) If you do not have BookManager installed, type blanks as the value of these BookManager variables in DRLFPROF:

```
bookshelf_ds
```

3) If you do not plan to use the Viewer to work with reports, change the value for VIEWER to NO.

**Note:** However, if you set VIEWER to YES, you can run your own reports at any time in the future. A YES here also means that the reports are usable without QMF in the future, even if you now use QMF with Tivoli Decision Support for OS/390 and have set QMFUSE to YES.

4) If you do not use QMF with Tivoli Decision Support for OS/390, change the value for qmfuse to NO.

5) If you do not use GDDM with Tivoli Decision Support for OS/390, change the value for gddmuse to NO. (If QMF is used, GDDM must be used.)

"DRLFPROF user-modifiable area" on page 324 shows the DRLFPROF file containing the parameters to be modified.
3. You can add Tivoli Decision Support for OS/390 to an ISPF menu.

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 Tivoli Decision Support for OS/390 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 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: Set personal dialog parameters

Migration considerations - You should have edited the dialog parameters profile, file DRLFPROF from the DRL160.SDRLCNTL library, and copied it into the sequential dataset user.DRLFPROF in [Step 4: Prepare the dialog and update the dialog profile] on page 28. If you edited the file to match your installation values, you do not need 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.

Tivoli Decision Support for OS/390 stores parameters for each user in member DRLPROF in the library allocated to the ISPPROF ddname, which is usually tsoprefix.ISPF.PROFILE.

This section describes the procedure that every user must perform to use the Tivoli Decision Support for OS/390 dialogs if you did not edit the DRLFPROF file. Perform this step if necessary.

To set dialog parameters:
1. From the command line of an ISPF/PDF window, do one of the following:
   - Type TSO %DRLEINIT to display the Tivoli Decision Support for OS/390 Primary Menu [Figure 9]. — OR —
   - Type TSO %DRLEINIT Administration to display the Administration window [Figure 10 on page 32].

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

![Figure 9. Tivoli Decision Support for OS/390 Primary Menu](image-url)
2. If you start from the Primary Menu, type 2, Administration, and press Enter to display the Administration window [Figure 10].

![Figure 10. Administration window](image)

3. From the Administration Dialog window, select 1, System, to display the System window [Figure 11].

![Figure 11. System window](image)

Note: If your installation does not use QMF, Import QMF initialization query is not selectable.

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

Tivoli Decision Support for OS/390 displays the Dialog Parameters window [Figure 12 on page 33].
Note: If your installation does not use QMF with Tivoli Decision Support for OS/390, 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 331.

![Dialog Parameters window](image)

**Figure 12. Dialog Parameters window**

Note: When you see this indicator:

More: +

in the upper-right corner of a Tivoli Decision Support for OS/390 window, press F8 to scroll down. If the indicator shows a minus sign (-), press F7 to scroll up. For more information about using Tivoli Decision Support for OS/390 dialog windows, refer to the description in the *Guide to the Reporting Dialog*.

You must scroll through the window to display all its fields. "Overview of the Dialog Parameters window” on page 331 shows the entire Dialog Parameters window; both the version shown if QMF is used with Tivoli Decision Support for OS/390 and the version shown if QMF is not used with it. “Dialog parameters and descriptions” on page 334 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.

Tivoli Decision Support for OS/390 saves the changes and returns to the System window. Although some changes become effective immediately, all changes become effective in your next session when Tivoli Decision Support for OS/390 can allocate any new data sets you may have selected.
Step 6: Create or update system tables

Migration considerations - If you are migrating from an earlier release or modification level, follow the description below to update your existing system tables and their contents.

Before you can use all dialog functions, you must do one of the following:
- Create DB2 tables if you are installing Tivoli Decision Support for OS/390 for the first time.
- Update existing DB2 tables if you are migrating from an earlier release or modification level.

These DB2 tables are used by Tivoli Decision Support for OS/390 to store its definitions and are known as system tables.

To create or update system tables you must first:
1. From the System window, select 2, System tables.
   Tivoli Decision Support for OS/390 displays the System Tables window (Figure 13).

2. To create system tables for the first time, from the System Tables window, press F5 (Create).
   Tivoli Decision Support for OS/390 creates system tables and fills in information about feature components by searching DRL160.SDRLDEFS to see which features you have installed with SMP/E.
   Tivoli Decision Support for OS/390 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:
   DSN748I SQLCODE = -904, ERROR: UNSUCCESSFUL EXECUTION CAUSED BY AN UNAVAILABLE RESOURCE. REASON 00D70025, TYPE OF RESOURCE 00000220 AND RESOURCE NAME DB2A.DSNDNC.DRLDB.A.I0001.A001
For information about specific DB2 messages, refer to the *IBM DATABASE 2: Messages and Codes*. System messages should be error free, with a DB2 return code of zero. After creating the system tables, Tivoli Decision Support for OS/390 returns to the System Tables window where you must press F12 to return to the System window.

**Migration considerations** - If you are migrating from an earlier release or modification level, follow the instructions below.

From the System Tables window press F6 (Update) to update your existing system tables. The System Tables window displays Status: Created, and a creator name.

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

- **PRA001 - INDEXSPACE cross-reference.** For more information, see “PRA001 - Indexspace cross-reference” on page 407.
- **PRA002 - ACTUAL TABLESPACE allocation.** For more information, see “PRA002 - Actual tablespace allocation” on page 409.
- **PRA003 - TABLE PURGE condition.** For more information, see “PRA003 - Table purge condition” on page 410.
- **PRA 004 - LIST COLUMNS for a requested table with comments.** For more information, see “PRA004 - List columns for a requested table with comments” on page 411.
- **PRA 005 - LIST ALL TABLES with comments.** For more information, see “PRA005 - List all tables with comments” on page 412.
- **PRA 006 - LIST USER MODIFIED objects.** For more information, see “PRA006 - List User Modified Objects” on page 413.
Step 7: Set up QMF

Migration considerations - If you are migrating from an earlier release or modification level of Tivoli Decision Support for OS/390, you can skip this step, but only if you have performed this step during a previous installation.

Note: Tivoli Decision Support for OS/390 can use QMF, for example, to display and work with reports. If your installation does not use QMF, the information in this section does not apply, and option 3, Import QMF initialization query, is not selectable in the System window.

When Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 objects in QMF lists.

To import the QMF query from member DRLQINIT (in the DRL160.DRL160.SDRLDEFS library) and save it in QMF as DRLSYS.DRLQINIT, from the System window (Figure 14), select 3, Import QMF initialization query, and press Enter.

![Figure 14. System window](image)

Tivoli Decision Support for OS/390 imports the query into QMF, after which it returns to the System window.
Step 8: Set up BookManager

Migration considerations - Perform this step if necessary.

Tivoli Decision Support for OS/390 provides many links between its dialogs and the online Tivoli Decision Support for OS/390 books, but you must install the online books to enable the links. Tivoli Decision Support for OS/390 online books are distributed on CD in the OS/390 Collection Kit.

To make Tivoli Decision Support for OS/390 online books available:
1. Follow the instructions in the OS/390 Collection Kit to transfer online books from the CD to the MVS system where you run Tivoli Decision Support for OS/390.

   After the transfer is finished, you can rename the data sets to your standards. The data set default names are:

<table>
<thead>
<tr>
<th>Data set name in MVS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBMBK.DRL5SH.xx.BKSHLF</td>
<td>Bookshelf</td>
</tr>
<tr>
<td>IBMBK.DRL5SH.xx.BKINDEX</td>
<td>Bookshelf index</td>
</tr>
<tr>
<td>IBMBK.DRL5BAxx.BOOK</td>
<td>Administration Guide</td>
</tr>
<tr>
<td>IBMBK.DRL5BDxx.BOOK</td>
<td>Guide to the Reporting Dialog</td>
</tr>
<tr>
<td>IBMBK.DRL5BLxx.BOOK</td>
<td>Language Guide and Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5BYxx.BOOK</td>
<td>Messages and Problem Determination</td>
</tr>
<tr>
<td>IBMBK.DRL5FAxx.BOOK</td>
<td>AS/400 System Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5FCxx.BOOK</td>
<td>CICS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5FExx.BOOK</td>
<td>System Performance Feature Reference Volume II</td>
</tr>
<tr>
<td>IBMBK.DRL5FIxx.BOOK</td>
<td>IMS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5Fjxx.BOOK</td>
<td>Accounting Feature for the Host</td>
</tr>
<tr>
<td>IBMBK.DRL5FGxx.BOOK</td>
<td>Accounting Feature for the Workstation</td>
</tr>
<tr>
<td>IBMBK.DRL5FNxx.BOOK</td>
<td>Network Performance Feature Installation and Administration</td>
</tr>
<tr>
<td>IBMBK.DRL5FOxx.BOOK</td>
<td>Network Performance Feature Reports</td>
</tr>
<tr>
<td>IBMBK.DRL5FPxx.BOOK</td>
<td>Network Performance Feature Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5FRxx.BOOK</td>
<td>Distributed Systems Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IBMBK.DRL5FSxx.BOOK</td>
<td>System Performance Feature Guide</td>
</tr>
<tr>
<td>IBMBK.DRL5FTxx.BOOK</td>
<td>System Performance Feature Reference Volume I</td>
</tr>
<tr>
<td>IBMBK.DRL5BVxx.BOOK</td>
<td>User’s Guide for the Viewer</td>
</tr>
<tr>
<td>IBMBK.DRL5OTxx.BOOK</td>
<td>Topics in Online Books</td>
</tr>
</tbody>
</table>

2. If you rename the book data sets, use BookManager to create a bookshelf and index that use the new names.

Tivoli Decision Support for OS/390 dialogs link to books that are identified from the bookshelf data set name in user.DRLFPROF. Change the bookshelf data set name in user.DRLFPROF to enable the linkage between the dialogs and the books.
For example, to enable the Tivoli Decision Support for OS/390 bookshelf named IBMBK.EPDMBKS.BK SHELF, use this statement:

```bash
epdmbks = "'IBMBK.EPDMBKS.BK SHELF'"
```

3. Make the Tivoli Decision Support for OS/390 bookshelf available to BookManager READ/MVS as described in Online Library: Distributing and Customizing the Library so that all users can access it.
Step 9: Customize JCL

*Migration considerations* - Change these IBM-supplied jobs, to integrate your own existing modifications into the jobs.

The DRL160.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 Chapter 4, “Setting up operating routines,” on page 67, 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 95 for more information.

**DRLJCOLL and DRLJCOxx**
A sample job for collecting log data. See “Collecting log data” on page 67 for more information.

**DRLJCOPY**
A sample job for backing up a Tivoli Decision Support for OS/390 tablespace with the DB2 COPY utility. See “Backing up the Tivoli Decision Support for OS/390 database” on page 87 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 Service Desk problem records. See “Administering problem records” on page 102 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 “Purging Utility” on page 85 for more information.

**DRLJREOR**
A sample job for reorganizing the Tivoli Decision Support for OS/390 database with the DB2 REORG utility. See “Purging Utility” on page 85 for more information.

**DRLJRUNS**
A sample job for updating statistics on Tivoli Decision Support for OS/390 tablespaces with the DB2 RUNSTATS utility. See “Monitoring the size of the Tivoli Decision Support for OS/390 database” on page 90 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 tablespaces” on page 78 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 Tivoli Decision Support for OS/390 jobs.
Step 10: Test the installation of the Tivoli Decision Support for OS/390 base

Migration considerations - Perform this step as it is described below. If the Sample component is already installed, deinstall it and install it again.

Before you install Tivoli Decision Support for OS/390 feature components, ensure that the installation has been successful:

1. Install the Sample component using the information in "Installing a component" on page 108. 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.

2. After you install the Sample component, select 3, Logs, from the Administration window and press Enter. Tivoli Decision Support for OS/390 displays the Logs window (Figure 15).

Figure 15. Logs window

3. From the Logs window, select the SAMPLE log and press F11. Tivoli Decision Support for OS/390 displays the Collect window (Figure 16 on page 42).
Installing Tivoli Decision Support for OS/390

Figure 16. Collect window

4. Type DRL160.SDRLDEFS(DRLSAMPL) in the Data set field and press F4 (Online).

   Tivoli Decision Support for OS/390 starts the online collect. 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.

   Tivoli Decision Support for OS/390 displays the Reporting Dialog Defaults
   window. (Refer to Guide to the Reporting Dialog for more information.)

8. Press Enter to display the Reports window Figure 17 on page 43.)
9. From the Reports window, type a ? (question mark) in the selection field next to Sample Report 1 and press Enter. Tivoli Decision Support for OS/390 starts BookManager and displays the online version of this book.

10. When you finish viewing the information, press F3 (Exit) until you return to the Reports window.

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

   Tivoli Decision Support for OS/390 displays the Data Selection window (Figure 18 on page 44).

12. Press Enter to generate the report.
Tivoli Decision Support for OS/390 runs the query associated with the report and displays the report through GDDM/ICU. (Figure 133 on page 268 shows the report.)

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

14. From the Reports window, press F3 to return to the Administration window.

---

3. If your installation does not have GDDM, the report is displayed in tabular format.
Step 11: Review DB2 parameters

Before you install components, you can review DB2 table and indexspace parameters such as:
- Buffer pool
- Compression (DB2 Version 4 or later)
- Erase on deletion
- Free space
- Lock size
- Number of partitions, for a partitioned space
- Number of subpages, for an indexspace
- 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 Tivoli Decision Support for OS/390.

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

To change parameters:
1. From the Administration window, select 2, Components, and press Enter.
2. Select a component.
3. Select the Space pull-down.
4. Select Tablespace, to change tablespace definitions, or select Indexes, to change index definitions.
5. 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 DATABASE 2 SQL Reference.

Tivoli Decision Support for OS/390 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: Install components

Migration considerations - Migration considerations for migrating components are described in Chapter 5, “Working with components,” on page 105.

In previous installation steps, you have:

- Installed all Tivoli Decision Support for OS/390 data sets
- Set up access to Tivoli Decision Support for OS/390 data
- Initialized the Tivoli Decision Support for OS/390 database
- Allocated the required data sets of related products
- Initialized Tivoli Decision Support for OS/390 dialog parameters
- Created Tivoli Decision Support for OS/390 system tables
- Initialized QMF for Tivoli Decision Support for OS/390 (if applicable)
- Set up BookManager for Tivoli Decision Support for OS/390 Tivoli Decision Support for OS/390 users
- Customized sample Tivoli Decision Support for OS/390 JCL
- Tested Tivoli Decision Support for OS/390 (with the Sample component)
- Reviewed DB2 parameters

You are now ready to install Tivoli Decision Support for OS/390 features. To install components, use the information in “Installing a component” on page 108, and in these books:

<table>
<thead>
<tr>
<th>Feature name</th>
<th>Book name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Tivoli Decision Support for OS/390 IBM: Accounting Feature for the Host</td>
</tr>
<tr>
<td>AS/400 Performance</td>
<td>AS/400 System Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>CICS Performance</td>
<td>CICS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Distributed Systems Performance</td>
<td>Tivoli Decision Support for OS/390 IBM: Distributed Systems Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IMS Performance</td>
<td>IMS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Network Performance</td>
<td>Network Performance Feature Installation and Administration</td>
</tr>
<tr>
<td>System Performance</td>
<td>System Performance Feature Reference Volume I and II</td>
</tr>
</tbody>
</table>

The rest of this chapter describes tasks that you can do as required at a later time.
Installing other Tivoli Decision Support for OS/390 systems

You can install more than one Tivoli Decision Support for OS/390 system on the same DB2 subsystem. This is useful if you want to develop and test new Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 system, repeat the installation from “Step 2: Set up security” on page 17 to “Step 12: Install components” on page 46 and specify different values for:

- DB2 subsystem
- Database
- System table prefix
- Other tables prefix
- RACF groups (if necessary)
- Local data sets

You can use the same Tivoli Decision Support for OS/390 data sets (DRLi60.SDRLEXEC, for example) for both systems.

For example, assume your user ID is BILL, and you want a private Tivoli Decision Support for OS/390 system. You could use these values:

<table>
<thead>
<tr>
<th>Dialog parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2 subsystem</td>
<td>DB2T</td>
</tr>
<tr>
<td>Database</td>
<td>BILLDB</td>
</tr>
<tr>
<td>System table prefix</td>
<td>BILL</td>
</tr>
<tr>
<td>Other table prefix</td>
<td>BILL</td>
</tr>
<tr>
<td>Users to grant access to</td>
<td>BILL</td>
</tr>
<tr>
<td>Local data sets</td>
<td>BILL.DEFS...and so on</td>
</tr>
</tbody>
</table>

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 Tivoli Decision Support for OS/390 system, establish a valid RACF group ID and use the group ID as the prefix instead of BILL.
Installing Tivoli Decision Support for OS/390 features separately

Use this information if you are installing Tivoli Decision Support for OS/390 features separately; that is, not at the same time as you installed the Tivoli Decision Support for OS/390 base and any features.

To install features:
1. Follow the instructions in the Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 system tables with information about the features you are installing:
   a. From the Tivoli Decision Support for OS/390 Administration window, select 1, System, to display the System window [Figure 11 on page 32].
   b. Select 2, System tables, to display the System Tables window [Figure 19].
   c. Press F6 (Update) to update the Tivoli Decision Support for OS/390 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 108) verifies the feature’s installation.

Enabling the Tivoli Data Warehouse

To enable Tivoli Data Warehouse you must first install Tivoli Data Warehouse product then the Warehouse Enablement Packs related to the components installed in Tivoli Decision Support for OS/390.

For these steps refer to the following documentation manuals:
- Installing and Configuring Tivoli Data Warehouse
- Tivoli Data Warehouse Release Notes
• IBM Tivoli Decision Support for OS/390 Warehouse Enablement Pack Implementation Guide(s)
Chapter 3. Overview of defining Tivoli Decision Support for OS/390 objects

This chapter describes how a feature definition member is used to update system tables. It then describes how Tivoli Decision Support for OS/390 uses the resulting component definitions to install a component’s objects. This chapter also describes how to work with definitions (creating or changing them) with both the dialog and Tivoli Decision Support for OS/390’s log collector language.

For an in-depth look at log collector language (and report definition language) statements, refer to the Language Guide and Reference.

This chapter uses the Sample component as the basis of most of its examples. For more information, see the Language Guide and Reference.

You do not have to read this chapter to learn how to use the administration dialog.

How Tivoli Decision Support for OS/390 component installation works

Component installation starts with the SMP/E installation of a feature’s definition members in the DRL160.SDRLDEFS library. Tivoli Decision Support for OS/390 features provide definition members that update the Tivoli Decision Support for OS/390 system tables with information about each of the definitions in a feature.

Defining definition library members with SQL

These members, DRLIxxxx members in the DRL160.SDRLDEFS library, contain SQL statements that are executed when you create or update the system tables from the dialog. There is one such definition member for each feature, one for the Sample component, and one for migration from SLR.
Overview of defining IBM Tivoli Decision Support for OS/390 objects

Figure 20 shows the DRLIxxx definition member for the Sample component. These members use the SQL log collector language statement to pass an argument (the rest of the statement) to DB2.

```
/*****************************************************************************/
/* Sample Component */
/***************************************************************************/
SQL INSERT INTO ASYSPREFIX.DRLCOMPONENTS
  (COMPONENT_NAME, DESCRIPTION, USER_ID)
VALUES('SAMPLE','Sample Component',USER);
/***************************************************************************/
/* Log and record definitions */
/***************************************************************************/
SQL INSERT INTO ASYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
VALUES('SAMPLE','LOG','SAMPLE','DRLSAMP');
:
/***************************************************************************/
/* Tablespace, table, and update definitions */
/***************************************************************************/
SQL INSERT INTO ASYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
VALUES('SAMPLE','TABSPACE','DRLSSAMP','DRLSSAMP');
:
/***************************************************************************/
/* Report and report group definitions */
/***************************************************************************/
SQL INSERT INTO ASYSPREFIX.DRLCOMP_OBJECTS
  (COMPONENT_NAME, OBJECT_TYPE, OBJECT_NAME, MEMBER_NAME)
VALUES('SAMPLE','REPGROUP','SAMPLE','DRLSAMP');
:
```

Figure 20. Tivoli Decision Support for OS/390 definition member DRLISAMP—defining component definitions

How Tivoli Decision Support for OS/390 controls object replacement

From Tivoli Decision Support for OS/390 1.2.0 onwards, a variable VERSION is added to the DEFINE statements. A corresponding column VERSION is added to the Tivoli Decision Support for OS/390 system tables where Tivoli Decision Support for OS/390 objects are defined.

During the installation of the Tivoli Decision Support for OS/390 components, a preprocessor checks each definition member to see if an object already exists (from the installation of an earlier level of the Tivoli Decision Support for OS/390 component). If the object does not already exist, the DEFINE statement for this object is passed to the Tivoli Decision Support for OS/390 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 DEFINE statement for the object is replaced 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, a DROP statement is inserted immediately before the DEFINE statement.

All Tivoli Decision Support for OS/390 log, record, record procedure, and update objects shipped with Tivoli Decision Support for OS/390 1.2.0 contain the VERSION variable, which can take the value:
Overview of defining IBM Tivoli Decision Support for OS/390 objects

- ‘IBM.110’ for Tivoli Decision Support for OS/390 objects created by Tivoli Decision Support for OS/390 1.1.0 and not modified by Tivoli Decision Support for OS/390 1.1.1 or 1.2.0.
- ‘IBM.111’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.1.1 and not modified by Tivoli Decision Support for OS/390 1.2.0.
- ‘IBM.120’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.2.0. and not modified by Tivoli Decision Support for OS/390 1.3.0.
- ‘IBM.130’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.3.0. and not modified by Tivoli Decision Support for OS/390 1.4.0.
- ‘IBM.140’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.4.0. and not modified by Tivoli Decision Support for OS/390 1.5.0.
- ‘IBM.150’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.5.0.
- ‘IBM.151’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.5.1.
- ‘IBM.160’ for Tivoli Decision Support for OS/390 objects created or modified by Tivoli Decision Support for OS/390 1.6.0.

How Tivoli Decision Support for OS/390 determines installation order

After Tivoli Decision Support for OS/390 stores the names of a feature’s component objects and definition members, you can use the dialog to install the feature’s components. Tivoli Decision Support for OS/390 queries the system tables to determine the names of definition members in the DRL160.SDRLDEFS, DRL160.SDRLRxxx, and DRL160.SDRLFxxx libraries. (xxx is ENU for the English language version of Tivoli Decision Support for OS/390 and JPN for the Japanese version.)

Tivoli Decision Support for OS/390 requires some definitions to exist before it can install other ones. For example, if a component contains a record procedure, Tivoli Decision Support for OS/390 must install the record definition that maps the source record for the record procedure before it can install the record procedure. Furthermore, Tivoli Decision Support for OS/390 must install the record procedure before installing the record definition that maps the record procedure’s output. The definition members that Tivoli Decision Support for OS/390 supplies often combine several definitions in the same member to ensure their order of installation.

Table 2 shows the order in which Tivoli Decision Support for OS/390 installs a feature’s definitions.

<table>
<thead>
<tr>
<th>Order</th>
<th>Definition type</th>
<th>Naming convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Log</td>
<td>DRLLxxxx</td>
</tr>
<tr>
<td>2</td>
<td>Record</td>
<td>DRLRxxxx</td>
</tr>
<tr>
<td>3</td>
<td>Record procedure</td>
<td>Within DRLRxxxx members</td>
</tr>
<tr>
<td>4</td>
<td>Tablespace</td>
<td>DRLSxxxx</td>
</tr>
</tbody>
</table>
Overview of defining IBM Tivoli Decision Support for OS/390 objects

Table 2. Order of installation of feature definition members (continued)

<table>
<thead>
<tr>
<th>Order</th>
<th>Definition type</th>
<th>Naming convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Lookup table</td>
<td>Within DRLTxxxx members</td>
</tr>
<tr>
<td>6</td>
<td>Table</td>
<td>DRLTxxxx</td>
</tr>
<tr>
<td>7</td>
<td>Update</td>
<td>Usually within DRLTxxxx members (occasionally in DRLUxxxx members)</td>
</tr>
<tr>
<td>8</td>
<td>View</td>
<td>Usually within DRLTxxxx members (occasionally in DRLVxxxx members)</td>
</tr>
<tr>
<td>9</td>
<td>Report group</td>
<td>DRLOxxxx</td>
</tr>
<tr>
<td>10</td>
<td>Report</td>
<td>DRLOxxxx</td>
</tr>
</tbody>
</table>

The order of installation within a definition type is determined by the sorting sequence of the definition member names. The examples that follow appear in the same order that Tivoli Decision Support for OS/390 would install them.

**Defining logs with log collector language**

DRLLxxxx members of the DRL160.SDRLDEFS library define log types to Tivoli Decision Support for OS/390. Figure 21 shows the definition member for the SAMPLE log type.

```
DEFINE LOG SAMPLE VERSION 'IBM.110';
COMMENT ON LOG SAMPLE IS 'Sample log definition';
```

*Figure 21. Tivoli Decision Support for OS/390 definition member DRLLSAMP—defining a log type*

**Defining records with log collector language**

DRLRxxxx members of the DRL160.SDRLDEFS library define record types to Tivoli Decision Support for OS/390. Figure 22 shows the definition for the SAMPLE_01 record type. (Appendix D, “Record definitions supplied with Tivoli Decision Support for OS/390,” on page 275 describes Tivoli Decision Support for OS/390 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 22. Tivoli Decision Support for OS/390 definition member DRLRSAMP—defining a record type*
Defining tablespaces

DRLSxxxx members of the DRL160.SDRLDEFS library define tablespaces to Tivoli Decision Support for OS/390. Figure 23 shows the definition for the DRLSSAMP tablespace of the Sample component. (Tivoli Decision Support for OS/390 defines at least one tablespace per component to contain all the component’s tables.)

```
SQL CREATE TABLESPACE DRLSSAMP
  IN &DATABASE
  USING STOGROUP &STOGROUP
  PRIQTY 60
  SECQTY 30
  SEGSIZE 8
  BUFFERPOOL &TSBUFFERPOOL
  LOCKSIZE TABLE;
```

*Figure 23. Tivoli Decision Support for OS/390 definition member DRLSSAMP—defining a tablespace*
Defining tables and updates

DRLTxxxx members of the DRL160.SDRLDEFS library define tables and updates to Tivoli Decision Support for OS/390. [Figure 24 on page 57] and [Figure 25 on page 58] show the definition for tables (that includes the lookup table) and updates of the Sample component. These members use the SQL log collector language statement to create tables in the Tivoli Decision Support for OS/390 database, populate lookup tables, and grant access to the tables.

They also use DEFINE UPDATE statements to create update definitions in Tivoli Decision Support for OS/390 system tables.
Overview of defining IBM Tivoli Decision Support for OS/390 objects

/***************************************************/
/* 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;

Figure 24. Tivoli Decision Support for OS/390 definition member DRLTSAMP—defining tables and updates (Part 1 of 2)
Overview of defining IBM Tivoli Decision Support for OS/390 objects

DRLUxxx members of the DRL160.SDRLDEFS library define updates not previously defined in DRLTxxx definition members. For example, member DRLUMMVAV in the DRL160.SDRLDEFS library defines updates from record types SMF_030 and SMF_070 to the AVAILABILITY_T table.

DRLVxxx members of the DRL160.SDRLDEFS library define views not previously defined in DRLTxxx definition members. For example, member DRLVC901 in the DRL160.SDRLDEFS library defines views on the CICS_T_TRAN_T table for CICS unit-of-work processing.
Defining reports

DRLOxxxx members of the DRL160.SDRLRENU library use report definition language to define report groups and reports in Tivoli Decision Support for OS/390 system tables. Report definition members are contained in national-language-specific definition libraries:

<table>
<thead>
<tr>
<th>Language</th>
<th>Report definitions library</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>SDRLRENU</td>
</tr>
<tr>
<td>Japanese</td>
<td>SDRLRJPN</td>
</tr>
</tbody>
</table>

Figure 26 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 DRLGHRB
   ATTRIBUTES SAMPLE
   GROUPS SAMPLE;
```

Figure 26. Tivoli Decision Support for OS/390 definition member DRLOSAMP—defining reports and report groups

The Tivoli Decision Support for OS/390 report definition program uses the definitions in DRLOxxxx members to locate these types of data sets for each report:

<table>
<thead>
<tr>
<th>Member type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLQxxxx</td>
<td>Report queries in DRL160.SDRLRENU</td>
</tr>
<tr>
<td>DRLFxxxx</td>
<td>Report forms in DRL160.SDRLRENU</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 imports members in these data sets to QMF to provide queries and forms for predefined reports. If QMF is not used, or if RD2 is set to YES in user.DRLFPROF (see Appendix I, “Installation reference,” on page 323 for more information about DRLFPROF), the contents of these members are stored in Tivoli Decision Support for OS/390 system tables.
Overview of defining IBM Tivoli Decision Support for OS/390 objects

DRLQxxxx members in the DRL160.SDRLRENU library are queries for predefined reports. Figure 27 shows the query for Sample Report 1.

```sql
SELECT TIME, DEPARTMENT_NAME, SUM(CPU_SECONDS)
FROM &PREFIX.SAMPLE_H
WHERE SYSTEM_ID = &SYSTEM_ID.
GROUP BY TIME, DEPARTMENT_NAME
```

Figure 27. Tivoli Decision Support for OS/390 definition member DRLQSA01—report query

DRLFxxxx members in the DRL160.SDRLRENU library are QMF forms for predefined English reports. For example, DRLFSA01 is the QMF form for Sample Report 1.

DRLGxxxx members in the DRL160.SDRLFENU library are GDDM/ICU formats for predefined English reports. For example, DRLGSURF is the GDDM/ICU format used for Sample Report 1.

GDDM/ICU formats are national-language specific:

<table>
<thead>
<tr>
<th>Language</th>
<th>GDDM/ICU formats library</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>SDRLFENU</td>
</tr>
<tr>
<td>Japanese</td>
<td>SDRLFJPN</td>
</tr>
</tbody>
</table>

Collecting data

To collect log data, you can use either the Tivoli Decision Support for OS/390 administration dialog or log collector language statements that you execute through either a job or the dialog. This section shows 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.

**Collecting data through the administration dialog**

To collect log data from a SAMPLE log data set:

1. From the Tivoli Decision Support for OS/390 Administration window, select 3, Logs, and press Enter.
   Tivoli Decision Support for OS/390 displays the Logs window.
2. From the Logs window, select Sample and press F11.
   Tivoli Decision Support for OS/390 displays the Collect window.
3. Type DRL160.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, Tivoli Decision Support for OS/390 displays statistics about the collect. (See “Sample collect messages” on page 71 for more information about the statistics.)
5. When the collect is complete, press F3.
   Tivoli Decision Support for OS/390 returns to the Logs window.
6. From the Logs window, press F3.
   The product returns to the Tivoli Decision Support for OS/390 Administration window.
Using log collector language to collect data

To collect log data using the SAMPLE log definition, create and submit the JCL (Figure 28).

```
//jobname JOB parameters
//LC EXEC PGM=DRLPLC,PARM=('SYSPREFIX=DRLSYS SYSTEM=DSN')
//STEPLIB DD DISP=SHR,DSN=DRL160.SDRLLOAD
//DRLIN DD * COLLECT SAMPLE;
//DRLLOG DD DISP=SHR,DSN=DRL160.SDRLDEFS(DRLSAMPL)
//DRLOUT DD SYSOUT=*  
//DRLDUMP DD SYSOUT=*  
```

Figure 28. Invoking the log collector in batch to collect data

Tivoli Decision Support for OS/390 uses the log collector program (DRLPLC) to collect the SAMPLE log type, using these ddnames:

<table>
<thead>
<tr>
<th>DD statement name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLIN</td>
<td>Contains the COLLECT statement</td>
</tr>
<tr>
<td>DRLLOG</td>
<td>Identifies the log data set</td>
</tr>
<tr>
<td>DRLOUT</td>
<td>Identifies where collect messages are routed</td>
</tr>
</tbody>
</table>

Adding a field to a record definition

You can use the administration dialog or log collector language statements to modify definitions. This example shows how to use either method to add a field to a record definition.

Using the administration dialog to add a field definition

To add a field, MY_FIELD, to the record definition, SAMPLE_01, of the Sample component:

1. From the Logs window, select SAMPLE and press Enter.
2. From the SAMPLE Record Definitions window, select SAMPLE_01 and press Enter.
3. From the SAMPLE_01 Record Definition window, press F5.
   Tivoli Decision Support for OS/390 displays a blank Field Definition window.
4. Type the values shown in Figure 29 on page 62 and press Enter to save the field definition.
5. Press F12 when you finish adding fields.
Tivoli Decision Support for OS/390 returns to the SAMPLE_01 Record Definition window, shown in Figure 30.

5. Press F12 when you finish adding fields.
Tivoli Decision Support for OS/390 returns to the SAMPLE_01 Record Definition window, shown in Figure 30.

6. Press F3 to save your changes to SAMPLE_01 and return to the SAMPLE Record Definitions window.

**Using log collector language to add the field definition**
To do the same task with log collector language:
Overview of defining IBM Tivoli Decision Support for OS/390 objects

1. Create a member ADDFIELD, in the DRL.LOCAL.DEFS library, and type this statement in it:
   
   ```sql
   ALTER RECORD SAMPLE_01
      ADD FIELDS(MY_FIELD OFFSET 4 LENGTH 2 BINARY);
   ```

2. In the SAMPLE Record Definitions window, select 5, Process Tivoli Decision Support for OS/390 statements, from the Other pull-down and press Enter.
3. Type the values shown in Figure 31.

4. Press F5 to execute the statement.
   
   A browse window appears with the log collector result (Figure 32).

5. Press F3 to return to the Process Tivoli Decision Support for OS/390 statements window.
6. Press F12 to return to the SAMPLE Record Definitions window.
Overview of defining IBM Tivoli Decision Support for OS/390 objects
### Part 2. Administering Tivoli Decision Support for OS/390

#### Chapter 4. Setting up operating routines

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#### Administering the Tivoli Decision Support for OS/390 database

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<td>Deleting a component</td>
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#### Chapter 6. Working with log and record definitions

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<th>Task</th>
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<td>153</td>
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<tr>
<td>Deleting a log definition</td>
<td>153</td>
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Chapter 7. Working with tables and update definitions

Chapter 8. Working with the log data manager option
Chapter 4. Setting up operating routines

This chapter describes how to develop operating routines for:
- Collecting log data
- Administering the Tivoli Decision Support for OS/390 database
- Administering reports

The sample jobs in this chapter may not be identical to those shipped with Tivoli Decision Support for OS/390. Before using the jobs in this chapter, refer to the samples in the DRL160.SDRLCNTL library.

Collecting log data

One of your primary responsibilities is to establish routines to collect data. This section describes how to collect data in batch without using the dialog. See "Collecting data from a log into DB2 tables" on page 146 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 Chapter 8, “Working with the log data manager option,” on page 207.

The DRLJCOLL job in the DRL160.SDRLCNTL library is a generic collect job, adaptable for most logs. Figure 33 on page 68 and Figure 34 on page 69 show DRLJCOLL, used to collect data from an SMF log data set.
//DRLJCOLL JOB (ACCT#),'COLLECT'
//******************************************************************************
//* Licensed Materials - Property of IBM                                      *
//* 5695-101 (C) Copyright IBM Corporation 1993, 2003                       *
//* See Copyright Instructions.                                              *
//******************************************************************************
//* Name: DRLJCOLL                                                           *
//* Status: Tivoli Decision Support for OS/390 1.6.0                         *
//* Function: Tivoli Decision Support for OS/390 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) *
//* SET JES_COMPLEX = ' ';                                                  *
//* COLLECT SYSLOG_JES2;                                                   *
//* For operations log (OPERLOG) produced using the System Logger, use the COLLECT statement above and change the DD LOG statement as follows: *
//* DRLLOG DD DSN=SYSPLEX.OPERLOG,DISP=SHR,                                 *
//* SUBSYS=(LOGR,, 'FROM=(1995/152,00:00),TO=(1995/153,23:59,GMT')          *
//* 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)                         *

Figure 33. DRLJCOLL job for collecting data from an SMF data set (Part 1 of 2)
Some logs require special collect procedures, which Tivoli Decision Support for OS/390 supplies:

<table>
<thead>
<tr>
<th>Collect job name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLJCOIM</td>
<td>Collects IMS log data</td>
</tr>
<tr>
<td>DRLJCOIN</td>
<td>Collects Tivoli Service Desk data</td>
</tr>
<tr>
<td>DRLJCOVP</td>
<td>Collects network configuration data</td>
</tr>
<tr>
<td>DRLJCOS1</td>
<td>Collects OS/2 data</td>
</tr>
</tbody>
</table>

Notes:
- Before you submit the job:
  - Check the Tivoli Decision Support for OS/390 and DB2 data set names.
  - Check the DB2 subsystem name (default is DSN) and Tivoli Decision Support for OS/390 system table.
  - Insert the correct collect statement in DRLIN (as described above).
  - Specify the name of the log data set in DRLLOG.

Figure 34. DRLJCOLL job for collecting data from an SMF data set (Part 2 of 2)

Some logs require special collect jobs, which Tivoli Decision Support for OS/390 supplies:

Collect job name | Description
---|---
DRLJCOIM | Collects IMS log data
DRLJCOIN | Collects Tivoli Service Desk data
DRLJCOVP | Collects network configuration data
DRLJCOS1 | Collects OS/2 data
Setting up operating routines

Collecting data from IMS

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 Service Desk

The sample job, DRLJCOIN uses DRLJRT to read data from the Tivoli Service Desk database. DRLJRT is a Tivoli Service Desk report format table (RFT) in the DRL160.SDRLCNTL library. For information about collecting data from the Tivoli Service Desk database, refer to the System Performance Feature Reference Volume 1.

Collecting network configuration data

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

When you set up Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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 Chapter 8, “Working with the log data manager option,” on page 207.

Monitoring collect activity

Tivoli Decision Support for OS/390 provides statistics about collect activity in messages (called collect messages) and in the DRLSYS.DRLOGDATASETS 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 Tivoli Decision Support for OS/390 objects.
- Any other errors that the log collector finds.
Sample collect messages

Figure 35 shows a set of sample messages generated during a collect job.

DRL0300I Collect started at 2000-12-04-10.04.15
DRL0302I Processing SMF.DATASET on VOL01
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
DRL0301I 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:

<table>
<thead>
<tr>
<th>Record name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF_000</td>
<td>0</td>
</tr>
<tr>
<td>SMF_006</td>
<td>6</td>
</tr>
<tr>
<td>SMF_007</td>
<td>0</td>
</tr>
<tr>
<td>SMF_021</td>
<td>0</td>
</tr>
<tr>
<td>SMF_025</td>
<td>0</td>
</tr>
<tr>
<td>SMF_026</td>
<td>476</td>
</tr>
<tr>
<td>SMF_030</td>
<td>3737</td>
</tr>
<tr>
<td>SMF_070</td>
<td>40</td>
</tr>
<tr>
<td>SMF_071</td>
<td>40</td>
</tr>
<tr>
<td>SMF_072_1</td>
<td>280</td>
</tr>
<tr>
<td>SMF_090</td>
<td>0</td>
</tr>
<tr>
<td>Unrecognized</td>
<td>3</td>
</tr>
</tbody>
</table>
DRL0321I Total | 4582 |
DRL0003I
DRL0316I Records built by record procedures:

<table>
<thead>
<tr>
<th>Record name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF_030_X</td>
<td>0</td>
</tr>
<tr>
<td>SMF_070_X</td>
<td>200</td>
</tr>
</tbody>
</table>
DRL0321I Total | 2212 |
DRL0003I
DRL0325I Table name | Buffer | Database |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DRL.AVAILABILITY_D</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>DRL.AVAILABILITY_M</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>DRL.AVAILABILITY_T</td>
<td>9</td>
<td>78</td>
</tr>
<tr>
<td>DRL.MVS_WORKLOAD_H</td>
<td>144</td>
<td>336</td>
</tr>
<tr>
<td>DRL.MVS_WORKLOAD_M</td>
<td>60</td>
<td>12</td>
</tr>
</tbody>
</table>
DRL0325I Total | 2643   | 99019   | 2148    | 495   |
DRL0003I
DRL0301I Collect ended at 2000-12-04-10.09.43

Figure 35. Sample collect messages
Using collect messages

To use collect messages effectively, follow this 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. Tivoli Decision Support for OS/390 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.

   Tivoli Decision Support for OS/390 writes data to the database when:

   • The buffer is full. See “Improving collect performance” on page 75 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 Tivoli Decision Support for OS/390 identified in the log; for example:

   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

   Tivoli Decision Support for OS/390 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; for example:

   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 ----------------- | --------
   DRL0319I 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 Tivoli Decision Support for OS/390 finds records that require handling by record procedures, it produces temporary, intermediate records for further Tivoli Decision Support for OS/390 processing. Messages show the names and numbers of intermediate records built by record procedures while Tivoli Decision Support for OS/390 was processing the log data set.
The messages appear in a group; for example:

DRL0316I Records built by record procedures:

<table>
<thead>
<tr>
<th>Record name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF_030_X</td>
<td>2012</td>
</tr>
<tr>
<td>SMF_070_X</td>
<td>200</td>
</tr>
</tbody>
</table>

DRL0318I 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:

<table>
<thead>
<tr>
<th>Table name</th>
<th>Inserts</th>
<th>Updates</th>
<th>Inserts</th>
<th>Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRL.Availability_D</td>
<td>3</td>
<td>23</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>DRL.MVS_Workload_M</td>
<td>60</td>
<td>12</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>DRL0327I Total</td>
<td>2643</td>
<td>99019</td>
<td>2148</td>
<td>495</td>
</tr>
</tbody>
</table>

**Reviewing log statistics**

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 148 for more information.

**Note:** There are no lookup tables in the table name list.

**Using the DRLLOGDATASETS table**

To view collect statistics, select a log definition from the Logs window, press F6 to see the data sets that Tivoli Decision Support for OS/390 has collected for the log, choose a data set, and press Enter. Tivoli Decision Support for OS/390 displays the Collect Statistics window (Figure 36 on page 74).

**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.
Setting up operating routines

Figure 36. Collect Statistics window

Tivoli Decision Support for OS/390 can produce a report from DRLLOGDATASETS that shows statistics for every collect job in the table.

Tivoli Decision Support for OS/390 does not update DRLLOGDATASETS until a collection results in a successful commit. If Tivoli Decision Support for OS/390 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 DRLLOGDATASETS. 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 88 for more information.

Refer to “DRLLOGDATASETS” on page 229 for a description of its columns.
Improving collect performance

Correct collect performance problems with these tuning actions:

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 Tivoli Decision Support for OS/390 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 AFTERnnn 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) Recreate the table.

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.

4. Run collect when the processing load from other programs is low and when DB2 use is light.

Note: Compared to SLR V3, Tivoli Decision Support for OS/390 collect usually requires more processor time but has the same or shorter elapsed time.
Administering the Tivoli Decision Support for OS/390 database

Maintaining the Tivoli Decision Support for OS/390 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 access to it.

Regular maintenance tasks are:

1. Running a purge job.
   To control database size, purge data regularly. The Tivoli Decision Support for OS/390 PURGE statement lets you delete obsolete data while keeping summarized data. In most cases, the product summarizes hourly and daily data in weekly or monthly tables. Purging daily data does not affect data summarized by month. Using the PURGE statement minimizes the space used and improves collect time.
   See “Purging Utility” on page 85 for more information.

2. Running the REORG utility.
   The DB2 REORG utility reorganizes tablespaces and indexes to improve DB2 access performance and space utilization. Use the REORG utility after a purge job to free the space of the purged data.
   See “Purging Utility” on page 85 for more information.

3. Running a backup job.
   Back up the database periodically.
   See “Backing up the Tivoli Decision Support for OS/390 database” on page 87 for more information.

4. Updating views on the DB2 catalog.
   Update views on the DB2 catalog whenever DB2 parameters change, such as when adding a new Tivoli Decision Support for OS/390 database or a new prefix for Tivoli Decision Support for OS/390 tables, to give all dialog users access to DB2 catalog information.

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 Tivoli Decision Support for OS/390.

See “Monitoring the size of the Tivoli Decision Support for OS/390 database” on page 90 for more information.

The rest of this section introduces Tivoli Decision Support for OS/390’s use of DB2 as its database manager and shows how to use DB2 to maintain the product’s database.
Understanding DB2 concepts

By default, Tivoli Decision Support for OS/390 names for DB2-related items are:

**Tivoli Decision Support for OS/390 name**

<table>
<thead>
<tr>
<th>Description</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names the DB2 subsystem</td>
<td>DSN</td>
</tr>
<tr>
<td>Names the Tivoli Decision Support for OS/390 database</td>
<td>DRLDB</td>
</tr>
<tr>
<td>Names the Tivoli Decision Support for OS/390 tablespace that contains log collector system tables</td>
<td>DRLSSYS1</td>
</tr>
<tr>
<td>Names the Tivoli Decision Support for OS/390 tablespace that contains other Tivoli Decision Support for OS/390 system tables</td>
<td>DRLSSYS2</td>
</tr>
<tr>
<td>Names the Tivoli Decision Support for OS/390 tablespace that contains tables for the Sample component</td>
<td>DRLSSAMP</td>
</tr>
<tr>
<td>Names the Tivoli Decision Support for OS/390 tablespace that contains common tables that most Tivoli Decision Support for OS/390 components use</td>
<td>DRLSCOM</td>
</tr>
</tbody>
</table>

The names of other Tivoli Decision Support for OS/390 tablespaces depend on the components you install. There is at least one tablespace for each component.

**Figure 37** shows the Tivoli Decision Support for OS/390 data areas in the DB2 subsystem.

\[\text{Figure 37. DB2 environment for the Tivoli Decision Support for OS/390 database}\]

Understanding how Tivoli Decision Support for OS/390 uses DB2

**Figure 37** shows a Tivoli Decision Support for OS/390 installation that uses one Tivoli Decision Support for OS/390 database. There can be more than one Tivoli Decision Support for OS/390 database in one installation of the product, more than one Tivoli Decision Support for OS/390 installation in one DB2 subsystem, more than one DB2 subsystem with an installation of the product, and so on.
Understanding tablespaces

Figure 37 shows that the product uses several tablespaces in the DRLDB database. A tablespace contains one or more tables and is the logical unit addressed by DB2 utilities such as COPY and REORGanize.

The DRLSSYS1 and DRLSSYS2 tablespaces contain Tivoli Decision Support for OS/390 system tables and always exist in a functioning Tivoli Decision Support for OS/390 system. When you install a Tivoli Decision Support for OS/390 component, it creates at least one segmented tablespace for the component within its database. The exact configuration of tablespaces you have depends on the components you have installed.

To list the tablespaces 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 38 shows the list of tablespaces, with the Utilities pull-down.

<table>
<thead>
<tr>
<th>Tablespace</th>
<th>Utilities</th>
<th>Other</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLSAIX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSCI0B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSCOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSCP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSD2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSDFSM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLSDPAM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 38. Tablespace list window

When you change tablespace or indexspace parameters, the product uses SQL commands to alter the space directly, and creates a job to unload and load table data as necessary. Tivoli Decision Support for OS/390 does not change the definition of the tablespace: to do this, select the Space pull-down on the Components window.

If you create a table in the the product’s database, you must specify the database and tablespace in which DB2 is to create the table. Once created, a table can be addressed by its table name only: you need not specify the tablespace name.

“Working with tables and update definitions” on page 180 describes how to use the administration dialog to view, change, or create tablespaces.

Calculating and monitoring tablespace requirements

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 DRL160.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. Figure 39 shows DRLJTBSR.

To customize the job to your requirements, you must change some parameters in DRLJTBSR. For a description of these parameters, see “Parameters for tablespace reporting” on page 81.

```c
//DRLJTBSR JOB (ACCT$_), 'SPACE'
//*******************************************************************************
/*
/* Licensed Materials - Property of IBM
/*
/* 5695-101 (C) COPYRIGHT IBM CORPORATION 1993, 2003
/*
/* See Copyright instructions.
/*
*******************************************************************************
/* Name:  DRLJTBSR
/*
/* STATUS: Tivoli Decision Support for OS/390 1.6.0
/*
/* FUNCTION: Print a report of estimated total kilobytes based on
/* estimated records number and average record length
/* for each table on component.
/* Average records size is calculated, if the table is
/* not created, reading the Tivoli Decision Support for
/* OS/390 definition library
/*
/*
/* Notes:
/* Before you submit the job, do the following:
/* 1. Check that the data set names are correct.
/* 2. Change the parameters to DRLETBRS as required.
/*
*******************************************************************************
/SPACE EXEC PGM=IKJEFT01,DYNAMNBR=25
//--
//STEPLIB DD DISP=SHR,DSN=DRL160.SDRLLOAD
//SYSPROC DD DISP=SHR,DSN=DRL160.SDRLEXEC
//SYSEXEC DD DISP=SHR,DSN=DRL160.SDRLEXEC
//--
/* START EXEC DRLETBRS
//SYSPRINT DD SYSOUT=
//SYSTSPRT DD SYSOUT=
//SYSTSN DD *
%DRLETBRS LIBRARY= DRL160.SDRLDEFS
  DB2SUBSYS= DSN
  SYSPREFIX= DRLSYS
  COMPONENT= xxxx
  TABLENAME= *
  RECNNUMBER= xxxx
  PAGESIZE= 4K
  MAXROWS= 255
  PCTFREE= 5
  FREEPAGE= 0
  COMPRESS= 0
/*
```

Figure 39. DRLJTBSR job that reports tablespace requirements
Setting up operating routines

Figure 40 shows sample output for job DRLJTBSR that shows the space required for all tables of the IMS collect component.

Statistics for space required for a component:

<table>
<thead>
<tr>
<th>Input library</th>
<th>DRL160.SDRLDEFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Db2 subsystem</td>
<td>DSN1</td>
</tr>
<tr>
<td>PR system prefix</td>
<td>PRM3SYS</td>
</tr>
<tr>
<td>Component</td>
<td>IMSV710C</td>
</tr>
<tr>
<td>Table name</td>
<td>*</td>
</tr>
<tr>
<td>Estimated records number</td>
<td>500000</td>
</tr>
<tr>
<td>Page size</td>
<td>4096</td>
</tr>
<tr>
<td>Maxrows per page</td>
<td>255</td>
</tr>
<tr>
<td>Percentage of free space</td>
<td>5</td>
</tr>
<tr>
<td>Number of free pages</td>
<td>0</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table name</th>
<th>New</th>
<th>Tablespace</th>
<th>Definition member</th>
<th>Avg record length</th>
<th>Record per page</th>
<th>Estimated total pages</th>
<th>Estimated kilobytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS_APPLICATION_H</td>
<td>N</td>
<td>DRLSIA01</td>
<td>DRLTIMSA</td>
<td>651</td>
<td>5</td>
<td>100002</td>
<td>400008</td>
</tr>
<tr>
<td>IMS_APPLICATION_W</td>
<td>N</td>
<td>DRLSIA02</td>
<td>DRLTIMSA</td>
<td>648</td>
<td>5</td>
<td>100002</td>
<td>400008</td>
</tr>
<tr>
<td>IMS_CHKPT_IOSAM_T</td>
<td>N</td>
<td>DRLSIS01</td>
<td>DRLTIMSS</td>
<td>169</td>
<td>22</td>
<td>22730</td>
<td>90920</td>
</tr>
<tr>
<td>IMS_CHKPT_POOL5_T</td>
<td>N</td>
<td>DRLSIS02</td>
<td>DRLTIMSS</td>
<td>99</td>
<td>39</td>
<td>12023</td>
<td>51292</td>
</tr>
<tr>
<td>IMS_CHKPT_REGION_T</td>
<td>N</td>
<td>DRLSIS03</td>
<td>DRLTIMSS</td>
<td>101</td>
<td>38</td>
<td>13160</td>
<td>52540</td>
</tr>
<tr>
<td>IMS_CHKPT_STATS_T</td>
<td>N</td>
<td>DRLSIS04</td>
<td>DRLTIMSS</td>
<td>518</td>
<td>7</td>
<td>71430</td>
<td>285720</td>
</tr>
<tr>
<td>IMS_CHKPT_VSAM_T</td>
<td>N</td>
<td>DRLSIS05</td>
<td>DRLTIMSS</td>
<td>194</td>
<td>19</td>
<td>26318</td>
<td>105272</td>
</tr>
<tr>
<td>IMS_SYSTEM_D</td>
<td>N</td>
<td>DRLSIY01</td>
<td>DRLTIMSY</td>
<td>642</td>
<td>6</td>
<td>83335</td>
<td>333340</td>
</tr>
<tr>
<td>IMS_SYSTEM_Q</td>
<td>N</td>
<td>DRLSIY02</td>
<td>DRLTIMSY</td>
<td>645</td>
<td>6</td>
<td>83335</td>
<td>333340</td>
</tr>
<tr>
<td>IMS_TRANSACTION_D</td>
<td>N</td>
<td>DRLSIT02</td>
<td>DRLTIMSR</td>
<td>646</td>
<td>5</td>
<td>100002</td>
<td>400008</td>
</tr>
<tr>
<td>IMS_TRANSACTION_H</td>
<td>N</td>
<td>DRLSIT01</td>
<td>DRLTIMSR</td>
<td>649</td>
<td>5</td>
<td>100002</td>
<td>400008</td>
</tr>
<tr>
<td>IMS_TRANSACTION_W</td>
<td>N</td>
<td>DRLSIT03</td>
<td>DRLTIMSR</td>
<td>646</td>
<td>5</td>
<td>100002</td>
<td>400008</td>
</tr>
</tbody>
</table>

Figure 40. Sample output for DRLJTBSR
### Parameters for tablespace reporting

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value to set</th>
<th>Explanation</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIBRARY</td>
<td>Tivoli Decision Support for OS/390 definition library (UPPERCASE)</td>
<td>The name of the partitioned dataset that contains definitions of Tivoli Decision Support for OS/390 tables. This is a required parameter. It is used for component tables that do not yet exist.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2SUBSYS</td>
<td>DB2 subsystems name (UPPERCASE)</td>
<td>The DB2 subsystem where Tivoli Decision Support for OS/390 resides. This is a required parameter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYSPREFIX</td>
<td>Prefix for system tables (UPPERCASE)</td>
<td>The prefix of all Tivoli Decision Support for OS/390 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPONENT</td>
<td>Component name (UPPERCASE)</td>
<td>The name of a Tivoli Decision Support for OS/390 component. This is a required parameter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TABLENAME</td>
<td>The name of the table (UPPERCASE)</td>
<td>The name of the Tivoli Decision Support for OS/390 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECN NUMBER</td>
<td>Number of rows</td>
<td>The estimated number of rows. This is a required parameter and must be numeric.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAGESIZE</td>
<td>DB2 page size</td>
<td>The DB2 page size. This is an optional parameter; when specified, it must be either 4K or 32K.</td>
<td>4096 (4K)</td>
<td></td>
</tr>
<tr>
<td>MAXROWS</td>
<td>Maximum number of rows per page</td>
<td>The maximum number of rows per page. This is an optional parameter; when specified, it must be a numeric value between 1 and 255.</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>PCTFREE</td>
<td>Percentage of free space on each page</td>
<td>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.</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>FREEPAGE</td>
<td>Number of free space pages</td>
<td>The number of free space pages. This is an optional DB2 parameter; when specified, it must be a numeric value between 1 and 255.</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>COMPRESS</td>
<td>Compression ratio</td>
<td>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.</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

For detailed information about the parameters, refer to the DB2 for OS/390 SQL Reference.
For information about DB2, refer to the DB2 for OS/390 Administration Guide.
For information about the algorithm used for calculating tablespace requirements, refer to the DB2 for OS/390 Installation Guide.
Setting up operating routines

Considerations when running DRLJTBSR
The sample job DRLJTBSR invokes the DRLETBSR exec. Before you can use DRLETBSR, the Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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 dataset member that defines each component table (see the LIBRARY parameter). Use this exec only for standard Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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 old and useless data from the tables, to have an updated database and improve 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 following utility 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, pre-loaded in Tivoli Decision Support for OS/390. 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 is the data set containing the saved records, and it can be used at a later time to reload discarded data in the table, if required.

Automatically, 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 Universal Database for OS/390 and 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 Tivoli Decision Support for OS/390:

From the Tables window, select option 12 from the Utilities pull-down menu.
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 tablespace where the selected tables reside. Discard operation is only performed on the selected tables, while the Reorg operation is performed on all the tables contained in the tablespace. You cannot run 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.

In this second case, from the Tablespace window, you select the tablespaces for the Reorg operation: the Discard operation is automatically run on all the tables contained in the selected tablespaces, according to the conditions specified in the DRLPURGECOND table.

All the tables that have a discard condition specified in the DRLPURGECOND table are included in the processing. All the tables that do not have any discard condition specified in the DRLPURGECOND table are ignored.
### Setting up operating routines

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, two data sets are automatically created:

- **SYSPUNCH** is 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 tablespaces at a time. However, in the data sets described above 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 tablespace that contains several tables:

```sql
//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 Disk for this SORT operation.  
//**********                                   
//DB2UTIL EXEC DSNUPROC,                        
// SYSTEM=DSN6,UID=MYUID                       
//**********                                   
//DSNPROC.STEPLIB DD DISP=SHR,DSN='SYS1.DSN610.SDSNLOAD'  
//DSNPROC.SYREC DD DSN=MYUID.DRLUNLD,UNIT=SYSDA,  
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)      
//DSNPROC.SYSREC DD DSN=MYUID.DRLWORK,UNIT=SYSDA,  
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)      
//DSNPROC.SORTOUT DD DSN=MYUID.DRLSORTOUT,UNIT=SYSDA,  
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)      
//DSNPROC.WORK DD DSN=MYUID.WORK1,UNIT=SYSDA,  
// SPACE=(4096,(1,1)),DISP=(MOD,DELETE,CATLG)      
//DSNPROC.SYSPUNCH DD DSN=(MOD,CATLG),           
// DSN=MYUID.TAB.SYSPUNCH,                      
// SPACE=(4096,(1,1)),UNIT=SYSDA                
//DSNPROC.SYSDISC DD DSN=(MOD,CATLG),            
// DSN=MYUID.TAB.DISCARDS,                      
// SPACE=(4096,(5040,504)),UNIT=SYSDA,           
// DCB=(RECFM=FB,LRECL=410,BLKSIZE=27880)        
//DSNPROC.SYSIN DD *                           
//REODIS 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              
```

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WHEN (DATE < CURRENT DATE - 104 DAYS)
/

In this example, the Reorg/Discard utility reorganizes the MYUID.DRLSCOM tablespace 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 set are reused every time the utility is run for all tables.

Purging 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 DRL160.SDRLCNTL library), purges all Tivoli Decision Support for OS/390 database tables with purge conditions. [Figure 43] shows part of DRLJPURG.

```plaintext
// Function: * Purge data from all Tivoli Decision Support for OS/390 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: * * Check DB2 subsystem and data set names. * * //*************************************************************** //PURGE EXEC PGM=DRLPLC,PARM=('SYSTEM=DSN SYSPREFIX=DRLSYS') //STEPLIB DD DISP=SHR,DSN=DRL160.SDRLLOAD // DD DISP=SHR,DSN=DSN610.DSNLOAD //DRLIN DD * //DRLOUT DD SYSOUT=*,DCB=(RECFM=F,LRECL=80) //DRLDUMP DD SYSOUT=*,DCB=(RECFM=VB,LRECL=32756)
```

[Figure 43. DRLJPURG job that uses all purge conditions]
Purge generates messages that show if the job ran as expected:

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 pull-down on the tabletop list window, shown in Figure 38 on page 78. This reorganizes a whole tabletop.

2. Use option 10, Unload, from the Utilities pull-down 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 tabletop. Figure 44 shows the list of tables, with the Utilities pull-down.

3. Use the sample job, DRLJREOR (in the DRL160.SDRLCNTL library) to build your own job.

Refer to the description of the REORG utility in the DATABASE 2 Administration Guide: Volume III for more information.
Backing up the Tivoli Decision Support for OS/390 database

Back up the Tivoli Decision Support for OS/390 database regularly. Ask your DB2 administrator to add your requirements to site-wide DB2 procedures for backing up the data. If you cannot do this, copy and modify the sample job, DRLJCOPY (in the DRL160.SDRLCNTL library), to back up all Tivoli Decision Support for OS/390 tables.

Determine:

- How often to back up the Tivoli Decision Support for OS/390 database
- Whether to back up all data or just changed data
- The names of tables in the database

Figure 45 shows DRLJCOPY, used to back up the DRLSSYS1 and DRLSSYS2 tablespaces.

```c
/*
* Name: DRLJCOPY
* Status: Tivoli Decision Support for OS/390 1.6.0
* Function:
* Run the DB2 image copy utility to make backup copies
* of Tivoli Decision Support for OS/390 tables.
* This job only copies the table spaces DRLSSYS1
* and DRLSSYS2.
* You must add a COPY statement and data set for each
* tablespace that you want to back up.
* Notes:
* Check the following:
* LIB='DSN610.DSNLOAD' DB2 load library
* SYSTEM=DSN DB2 subsystem name
* DSN=copydsn Name of backup data set
* SPACE= Space required
* COPY TABLESPACE db.ts Database.tablespace name
* FULL YES/NO Full or incremental copy
* /*
* UTIL EXEC DSNUPROC,LIB='DSN610.DSNLOAD',
* SYSTEM=DSN,UID='TEMP',UTPROC='*
* COPY01 DD DSN=copydsn1,
* DISP=(MOD,CATLG),
* SPACE=(16384,(50,50),,,ROUND),
* UNIT=SYSDA
* COPY02 DD DSN=copydsn2,
* DISP=(MOD,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 45. DRLJCOPY job for backing up Tivoli Decision Support for OS/390 tablespaces
Setting up operating routines

Determining when to back up the Tivoli Decision Support for OS/390 database
Back up the database at least weekly to make it easier to recover from errors.

Determining a level of backup
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 tablespaces to back up
The DB2 COPY utility operates on tablespaces. Ensure that all tablespaces 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 DATABASE 2 Administration Guide: Volume II.

Recovering from database errors
These errors might occur in a Tivoli Decision Support for OS/390 database that sees significant activity:

- Out of space in one of the Tivoli Decision Support for OS/390 tablespaces or indexspaces
- 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 Tivoli Decision Support for OS/390 database” on page 89.

Correcting an out-of-space condition in a Tivoli Decision Support for OS/390 tablespace or indexspace
A tablespace or indexspace can be out of space if:

- Volumes in the Tivoli Decision Support for OS/390 storage group are full.
  If DASD is not constrained, the database can continue to grow until performance is an issue. If performance is not an issue, ask the DB2 administrator to add volumes to the Tivoli Decision Support for OS/390 storage group.
  If you cannot add more volumes to your storage group, purge the database before continuing. After purging data, reorganize the affected tablespaces. See “Purging Utility” on page 85 for more information.
- The tablespace or indexspace used its maximum number of extents.
  This could happen if the primary quantity and all secondary quantity (PRIQTY and SECQTY) extents have been exhausted. Tivoli Decision Support for OS/390 tablespaces and indexspaces have a default size specification based on an estimated number of rows in tables in the tablespace. These default values may be too small for a very large site.
To recover from an out-of-space condition:

1. Increase the primary and secondary quantities using the Tivoli Decision Support for OS/390 administration dialog [Figure 109 on page 196], or by using the DB2 SQL statements, ALTER TABLESPACE or ALTER INDEX.

2. Reorganize the tablespace using the DB2 REORG utility as described in "Purging Utility" on page 85, 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

For more information about messages, refer to the IBM DATABASE 2: Messages and Codes.

Correcting corrupted data in the Tivoli Decision Support for OS/390 database

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 recovering DB2 databases, refer to the description of the RECOVER utility in the DATABASE 2 Administration Guide: Volume III and to the description of backing up and recovering databases in the DATABASE 2 Administration Guide: Volume II.

You need not restore Tivoli Decision Support for OS/390 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.DRLOGDATASETS system table. If it had not committed data to the database before the error, Tivoli Decision Support for OS/390 recovers by collecting from the first record in the log.
Monitoring the size of the Tivoli Decision Support for OS/390 database

Monitor the size of the database regularly. Use the DB2 RUNSTATS utility to generate current statistics in the DB2 catalog about any DB2 tablespace, including those in the Tivoli Decision Support for OS/390 database.

The sample job, DRLJRUNS (in the DRL160.SDRLCNTL library), calls the DB2 RUNSTATS utility. Figure 46 shows DRLJRUNS, used to generate statistics for tablespaces DRLSSYS1 and DRLSSYS2.

```c
//***************************************************************
//* Name: DRLJRUNS
//* Status: Tivoli Decision Support for OS/390 1.6.0
//* Function: Run the DB2 RUNSTATS utility to update the DB2 catalog information about Tivoli Decision Support for OS/390 table spaces DRLSSYS1 and DRLSSYS2. You must add a statement for each Tivoli Decision Support for OS/390 table space.
//* Notes: Check the following:
//* LIB='DSN610.DSNLOAD' DB2 load library
//* SYSTEM=DSN DB2 subsystem name
//***************************************************************

//UTIL EXEC DSNUPROC,LIB='DSN610.DSNLOAD', SYSTEM=DSN,UID='TEMP',UTPROC='RUNSTATS TABLESPACE DRLDB.DRLSSYS1 TABLE INDEX
RUNSTATS TABLESPACE DRLDB.DRLSSYS2 TABLE INDEX
/*
```

Figure 46. DRLJRUNS job for generating DB2 statistics

Learn more about the DB2 RUNSTATS utility from the description of its use in DATABASE 2 Administration Guide: Volume III.

Start the RUNSTATS utility from the administration dialog by choosing it from the Utilities pull-down in the Tables window. After using the RUNSTATS utility, use the administration dialog to see the number of bytes used for data in the Tivoli Decision Support for OS/390 database (described in “Showing the size of a table” on page 168).
Understanding how Tivoli Decision Support for OS/390 uses DB2 locking and concurrency

DB2 provides locking and dynamic recovery for the databases it controls. The Tivoli Decision Support for OS/390 database is under DB2 control and uses these DB2 mechanisms.

More than one Tivoli Decision Support for OS/390 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 DATABASE 2 Administration Guide: Volume III.

Deadlock or timeout conditions can occur when more than one user works with Tivoli Decision Support for OS/390 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 potential locking situations:

- 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 tablespace 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 other Tivoli Decision Support for OS/390 systems” on page 47 for more information.

To find out who is locking a resource, use the DB2 COMMANDS option in DB2I to issue this command:

```
-DISPLAY DATABASE(DRLDB) LOCKS LIMIT(100)
```

For more information, refer to the description of monitoring DB2 locking in the DATABASE 2 Administration Guide: Volume III.
Maintaining database security
You control user access to database tables. Although Tivoli Decision Support for OS/390 grants read access to the DRLUSER group ID for any components you install, you can grant or revoke authority to tables in the Tivoli Decision Support for OS/390 database. See “Administering user access to tables” on page 204 for more information.

Monitoring database access
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 DATABASE 2 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 DATABASE 2 Administration Guide: Volume III.

For information about DB2PM, refer to the DATABASE 2 Administration Guide: Volume III and to the DATABASE 2 Performance Monitor User’s Guide.

Using available tools to work with the Tivoli Decision Support for OS/390 database
IBM and other software suppliers provide a variety of database maintenance tools. Because you have database administrator authority for the Tivoli Decision Support for OS/390 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

Select DB2I from the Other pull-down of any Tivoli Decision Support for OS/390 primary window. You can also type DB2I on the command line of a window.

Figure 47 on page 93 shows the DB2I Primary Option Menu.
For more information about DB2I, refer to the description of utility jobs in the DATABASE 2 Administration Guide: Volume I.

Administering lookup and control tables

Periodically review the contents of Tivoli Decision Support for OS/390 lookup and control tables. See Appendix B, “Control tables and common tables,” on page 243 for a description of the columns in lookup and control tables that many Tivoli Decision Support for OS/390 feature components use. Lookup tables used exclusively by a Tivoli Decision Support for OS/390 feature are described in the feature’s documentation.

Edit each lookup table and control table to implement standards and definitions at your site. “Working with data in tables” on page 165 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

As a Tivoli Decision Support for OS/390 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

Tivoli Decision Support for OS/390 users can generate reports using the reporting dialog (for more information, refer to the Tivoli Decision Support for OS/390 IBM: Guide to the Reporting Dialog). However, for frequently requested reports, you should set up jobs that produce the reports regularly.

The general procedure is:
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.

These steps are described in the following sections.

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).
  - 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.
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 Tivoli Decision Support for OS/390 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:

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

When displayed from the dialog, Tivoli Decision Support for OS/390 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:

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

Refer to the *Tivoli Decision Support for OS/390 IBM: Guide to the Reporting Dialog* 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 the Reporting Dialog* for a description of how to create and modify forms.

**Using job DRLJBATR to run reports in batch**
The sample job, DRLJBATR (in the DRL160.SDRLCNTL library), produces all, or a subset, of the reports that have batch settings specified. Figure 48 on page 96 and Figure 49 on page 97 show DRLJBATR.

You need to change some parameters in DRLJBATR to your requirements. For a description of those parameters, see Table 4 on page 98.
Setting up operating routines

//DRLJBATR JOB (ACCT#), 'TIVOLI DECISION DFOR OS/390 REPORTS'
//**************************************************************************
/*
/* Licensed Materials - Property of IBM
/*
/* 5695-101 (C) Copyright IBM Corporation 1993, 2003
/* See Copyright instructions.
/*
/***************************************************************************
/*
/* Name: DRLJBATR
/*
/* Status: Tivoli Decision Support for OS/390 1.6.0
/*
/* Function: Tivoli Decision Support for OS/390 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) PN48405
/* Reports printed to: DRLPRINT w/o QMF (tables) PN48405
/* printer specified (charts) PN48405
/* Reports saved in: DRLREP (tables) PN48405
/* ADMGDF (charts) PN48405
/* Messages written to: DRLOUT PN48405
/*
/* Notes:
/* Before you submit the job, do the following:
/* 1. Check that the data set names are correct.
/* 2. Change the parameters to DRLEBATR as required.
/* 3. Remove QMF DD-statements if you are not using QMF. PN48405
/* Search on 'DSQ' to find such occurrences. PN48405
/* The exception is DSQUCFRM, which should be changed PN68060
/* to DRLUFORM. The dataset name should point to the user defined forms library.
/*
/***************************************************************************
/*
/***************************************************************************
//REPORT EXEC PGM=IKJEFT01
/*
/* STEPLIB DD DISP=SHR,DSN=DRL160.SDRLLOAD
/* DD DISP=SHR,DSN=QMF311.DSLOAD
/* DD DISP=SHR,DSN=DSN610.DSNLOAD
/* SYSPROC DD DISP=SHR,DSN=DRL160.SDRLEXEC
/* DD DISP=SHR,DSN=QMF311.DSCLSTE
/* SYSEXEC DD DISP=SHR,DSN=DRL160.SDRLEXEC
/* DD DISP=SHR,DSN=QMF311.DSLEXECE
/***************************************************************************
/* MESSAGES
/*
/* DRLOUT DD SYSOUT**
/***************************************************************************
/* PRINT REPORTS TO EITHER DSQPRINT OR DRLPRINT PN48405
/*
/* 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
/*

Figure 48. DRLJBATR job for printing or saving reports in batch (Part 1 of 2)
Using the reporting dialog to run reports in batch

To create reports in batch from the reporting dialog:

1. From the Tivoli Decision Support for OS/390 Administration window, select 5, Reports, and press Enter to display the Reports window.

2. Without selecting any reports in the Tivoli Decision Support for OS/390 Reports window, select the Invoke batch option from the Batch pull-down. Tivoli Decision Support for OS/390 displays the Batch Reports Selection window.

3. Type required information, such as whether to run daily, weekly, or monthly reports, and press Enter. If any of the reports contain variables, Tivoli Decision Support for OS/390 displays the Batch Reports Data Selection window.

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 98. Then type SUBMIT on the command line, and press Enter.

Tivoli Decision Support for OS/390 submits your job to run in background.

6. Press F3 to return to the Reports window.

Figure 49. DRLJBATR job for printing or saving reports in batch (Part 2 of 2)
Refer to the *Guide to the Reporting Dialog* for more information about running reports in batch.

### Parameters for batch reporting

Table 4. Parameters for batch reporting

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value to set</th>
<th>Explanation</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
</table>
| SYSTEM    | DB2 subsystem name (UPPERCASE) | The DB2 subsystem where Tivoli Decision Support for OS/390 resides.
This required parameter can be 4 alphanumeric characters. The first character must be alphabetic.
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.
Do not change the value to name another DB2 subsystem to which you might have access. Tivoli Decision Support for OS/390 must use the DB2 subsystem that contains its system, control, and data tables. | DSN | |
| SYSPREFIX | Prefix for system tables (UPPERCASE) | The prefix of all Tivoli Decision Support for OS/390 system and control DB2 tables. The value of this field depends upon your naming conventions and is determined during installation.
This required parameter can be 8 alphanumeric characters. The first character must be alphabetic.
The default is DRLSYS. If the value is something other than DRLSYS, it was changed during installation.
Do not change the value; Tivoli Decision Support for OS/390 uses this value to access its system tables. | DRLSYS | |
| PREFIX    | Prefix for all other tables (UPPERCASE) | The prefix of Tivoli Decision Support for OS/390 data tables in the DB2 database.
Valid values are determined at installation.
This required parameter can be 8 alphanumeric characters. The first character must be alphabetic.
The default is DRL. If the value is something other than DRL, it was changed during installation. | 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 | |
### Table 4. Parameters for batch reporting (continued)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value to set</th>
<th>Explanation</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINTER</td>
<td>Default printer name (UPPERCASE)</td>
<td>The GDDM nickname of a printer to use for printing graphic reports. The printer should be capable of printing GDDM-based graphics. The printer name must be defined in the GDDM nicknames file, allocated to the ADMDEFS dname. Refer to the QMF: Reference and GDDM User’s Guide for more information about defining GDDM nicknames. This parameter cannot be used if QMF=NO.</td>
<td>As defined in the QMF profile</td>
<td></td>
</tr>
<tr>
<td>DIALLANG</td>
<td>1. English 2. Japanese</td>
<td>With this parameter, you specify the language to be used.</td>
<td>1=English</td>
<td></td>
</tr>
<tr>
<td>QMF</td>
<td>YES or NO (UPPERCASE)</td>
<td>With this parameter, you specify whether your installation uses QMF or not.</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>GDDM</td>
<td>YES or NO (UPPERCASE)</td>
<td>With this parameter, you specify if your installation uses GDDM.</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>DRLMAX</td>
<td>nnnn</td>
<td>If your installation does not use QMF, you use this parameter to specify the maximum number of result rows from a query.</td>
<td>5000</td>
<td></td>
</tr>
<tr>
<td>PAGELEN</td>
<td>nn</td>
<td>If your installation does not use QMF, you use this parameter to specify the page length when printing tabular reports.</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>PAGE</td>
<td>The word for page (Mixed case)</td>
<td>If your installation does not use QMF, the word you specify here is inserted before the page number for tabular reports. You can type the word in mixed case, for example, Page.</td>
<td>PAGE</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>The word for total (Mixed case)</td>
<td>If your installation does not use QMF, the word you specify here is used as column heading for across summary columns in tabular reports. You can type the word in mixed case, for example, Total.</td>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td>DECSEP</td>
<td>Period or comma</td>
<td>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.</td>
<td>PERIOD</td>
<td></td>
</tr>
<tr>
<td>DUALSAVE</td>
<td>YES or NO (UPPERCASE)</td>
<td>Allow graphic reports to be saved as tabular reports simultaneously.</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>&amp;variable</td>
<td>A value</td>
<td>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.</td>
<td>Tivoli Decision Support for OS/390 Report (Mixed case)</td>
<td></td>
</tr>
<tr>
<td>PRODNAME</td>
<td>Tivoli Decision Support for OS/390 Report (Mixed case)</td>
<td>This text is used in the report footer. If specified, PRODNAME must be the last parameter.</td>
<td>Tivoli Decision Support for OS/390 Report</td>
<td></td>
</tr>
</tbody>
</table>
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 Tivoli Decision Support for OS/390 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 94.
3. After completing all fields in the Saved Report Definition window, press Enter. Tivoli Decision Support for OS/390 runs the report and saves it 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 the Reporting Dialog 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.

Including saved charts in BookMaster documents

Tivoli Decision Support for OS/390 produces graphic reports in ADMGDF format. It saves them to the data set identified by the job’s ADMGDF ddname or the Saved chart data set field of the Dialog Parameters window. To include charts in a BookMaster document, convert them to page segments (PSEGs).

The GDDM-PGF utility, ADMUCDSO, can perform the conversion. Figure 50 shows a sample job for producing a page segment. Refer to the GDDM-PGF Programming Reference for a complete description of the utility.

```
//job card
//TSO EXEC PGM=IKJEFT01
//ADMGDF DD DISP=SHR,DSN=DRL.LOCAL.CHARTS IN: ADMGDF
//ADMIMAGE DD DISP=SHR,DSN=xxx.xxx.PSEG3820(SAMPLE01) OUT: PSEG3820
//SYSTSPRT DD SYSOUT=* 
//SYSTSPRT DD SYSOUT=* 
CALL 'SYS1.LINKLIB(ADMUCDSO)' - 
'SAMPLE01 GDF 99 4 IMG240 (S 1 6 0 7 10 8 6 5 4 5 0 9 1) (ADMIMAGE)' 
/ 
```

Figure 50. Converting saved graphic report data to a page segment
To use the SAMPLE01 page segment in a BookMaster document that Document Composition Facility (DCF) can format, you use an artwork tag [Figure 51]:

:hl. Sample Report 1
:p. This surface chart shows the CPU time consumed by different projects. It gives an hourly profile for an average day.
:artwork name=sample01.

Figure 51. Using reports in BookMaster documents

**QMF batch reporting**
Batch reporting can also be performed with QMF only, without using Tivoli Decision Support for OS/390 functions. A QMF job can simply execute a QMF procedure that contains QMF commands [Figure 52].

```plaintext
RUN QUERY1 (FORM=FORM1)
PRINT REPORT
RUN QUERY2 (FORM=FORM2)
PRINT REPORT (PRINTER=LOCAL1)
```

Figure 52. 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**
Tivoli Decision Support for OS/390 reports are grouped by component within each feature. Placing more commonly requested reports in new report groups can ease retrievability. Report groups for users with special requirements, such as managers, also makes Tivoli Decision Support for OS/390 reporting more effective.

Refer to the Guide to the Reporting Dialog for information about creating report groups.
Administering problem records

The update definitions of some Tivoli Decision Support for OS/390 components update the common table, EXCEPTION_T, with data about system exceptions that require attention. Review this information and use the Tivoli Decision Support for OS/390 interface for adding selected exceptions to the Tivoli Service Desk 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

To review exceptions and generate problem records:

1. Select 2, Generate problem records, from the Utilities pull-down of the Tivoli Decision Support for OS/390 Administration window and press Enter.

   Tivoli Decision Support for OS/390 displays the Exception Selection window.

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 Service Desk 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.

   Tivoli Decision Support for OS/390 displays the Exception List window.

6. Select an exception and press Enter.

   Tivoli Decision Support for OS/390 displays the Generate Record window. The Generate Record window shows the exception record in detail.

7. If the exception record is one you want to add to the Tivoli Service Desk database, press Enter.

   Tivoli Decision Support for OS/390 generates the problem record.

Generating problem records in batch

Although the sample job, DRLJEXCE (in the DRL160.SDRLCNTL library) does not let you review exception records, it generates problem records in the Tivoli Service Desk database only from EXCEPTION_T records defined as problems.

Note: You must customize the Tivoli Decision Support for OS/390 update definitions that add records to EXCEPTION_T to set the problem flag column.
//DRLJEXCE JOB (ACCT#), 'EXCEPTION REPORTING'
//********************************************************************************
/*
Licensed Materials - Property of IBM
* 5695-101 (C) Copyright IBM Corporation 1993, 2003
See Copyright instructions.
* ********************************************************************************
/*
Name: DRLJEXCE
*
Status: Tivoli Decision Support for OS/390 1.6.0
*
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.
- Tivoli Decision Support for OS/390 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.

********************************************************************************
/*
//EPDMEXCE EXEC PGM=IKJEFT01, DYNAMNBR=25
//STEPLIB DD DISP=SHR, DSN=TSD.SBLMMOD1
// DD DISP=SHR, DSN=DSN610.DSNLOAD
//SYSPROC DD DISP=SHR, DSN=DSN610.DRLEXEC
//**********************************************************************************
// Tivoli Service Desk libraries
//**********************************************************************************
//BLGSD DD DISP=SHR, DSN=TSD.SDDS
//BLGSI DD DISP=SHR, DSN=TSD.SDIDS
//BLGSL DD DISP=SHR, DSN=TSD.SDLOS
//BLGPNL0 DD DISP=SHR, DSN=TSD.IBMPNL5
//BLGPNL1 DD DISP=SHR, DSN=TSD.RPANEL1
//BLMFMT DD DISP=SHR, DSN=TSD.BLMFMT
//ISPLLIB DD DISP=SHR, DSN=TSD.IBMPNL5
//**********************************************************************************
//DRLOUT DD SYSOUT=
//SYSPRINT DD SYSOUT=
//SYSTSPRT DD SYSOUT=
//SYSTSIN DD *
%DRLEREGE SYSTEM=DSN PREFIX=ORL MODE=BATCH
/*

Figure 53. DRLJEXCE job for generating problem records

Chapter 4. Setting up operating routines  103
Chapter 5. Working with components

This chapter describes how to use the administration dialog to work with components. After reading this chapter, you should be familiar with these tasks:

- Installing a component
- Migrating a component from an earlier release or modification level, (including applying IBM-supplied maintenance to Tivoli Decision Support for OS/390 objects)
- Deinstalling a component
- Working with a component definition

In Tivoli Decision Support for OS/390, a component refers to a logical group of objects used to collect log data from a specific source, to update the Tivoli Decision Support for OS/390 database using that data, and to create reports from data in the database. Grouping objects into a component enables you to:

- Install or remove (deinstall) a set of related objects as a package
- View and work with a set of related objects

Each Tivoli Decision Support for OS/390 component can include:

- Log collector definitions for:
  - Log types
  - Record types in log data sets
  - Record procedures
  - Update definitions
- SQL statements that define these DB2 objects for the component:
  - Tables
  - Tables
  - Lookup tables
  - Views
- Report definitions that define the component:
  - Report groups
  - Reports

Definition members in Tivoli Decision Support for OS/390 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 IBM Tivoli Decision Support: Language Guide and Reference.
You can use the administration dialog to work with components. From the Administration window, select 2, Components, and press Enter.

Tivoli Decision Support for OS/390 displays the Components window [Figure 54].

**Installing, deinstalling, or migrating a component**

The Components window lists the components available for Tivoli Decision Support for OS/390 installation on your system. When you install a component, Tivoli Decision Support for OS/390 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 deinstall it. When you deinstall a component, Tivoli Decision Support for OS/390 deletes from its system tables all objects in that component that are not used by any other component. It also deletes all of the component’s DB2 objects, including tables and tablespaces. 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. [Deinstalling a component] on page 115 describes this procedure.

**Migration considerations** - To migrate an already-installed component to the new release, modification or maintenance level, you must first migrate your base. The procedure for migrating your base is given in “Migrating the Tivoli Decision Support for OS390 base to the latest level” in Chapter 2, “Installing Tivoli Decision Support for OS/390”. When the base is successfully migrated, you can then migrate individual components, as described in “Migrating a component”.
Migrating a component

Attention

- Do not deinstall a component that you want to migrate. If you do, your tables are dropped and collected data is lost.
- Do not use option 5 Process Tivoli Decision Support for OS/390 statements from the Other pull-down, to apply IBM-supplied maintenance to Tivoli Decision Support for OS/390 objects. Tivoli Decision Support for OS/390 only checks the VERSION variable when you install using option 2 Components.

To migrate a component:

1. Identify and save objects you have modified.
   
   If an object that has been modified by you is not modified by the latest release, modification, or maintenance level of Tivoli Decision Support for OS/390, you do not need to take any action. This is because Tivoli Decision Support for OS/390 objects that are unchanged from the previous Tivoli Decision Support for OS/390 level are not overwritten. Your own changes therefore remain active.
   
   However, when an object has been modified by IBM and included in the latest Tivoli Decision Support for OS/390 level, any changes that you might have made to this object may be overwritten during reinstallation of the component. Therefore, to save the objects that you have modified and wish to retain for use with the new Tivoli Decision Support for OS/390 component level, you must perform the following actions:
   
   a. Check the lists contained in Appendix J, “Components from Earlier Releases” to see if a particular object has been modified by the new Tivoli Decision Support for OS/390 release or modification level.
   
   b. If you find that the object has been modified, perform the save actions defined in “Actions required to migrate modified objects” on page 403. If you find that the object has not been modified, no save action is required by you.

2. Continue the installation as described in “Installing a component” on page 108.

3. Reintroduce existing changes to component objects.
   
   When you have finished installing the components you must reintroduce already existing changes to component objects.
   
   To ensure that the changes you have saved (in the previous step) can now be introduced into the IBM-modified objects, perform the merge actions defined in “Actions required to migrate modified objects” on page 403.
Installing a component

Migration considerations - If you are reinstalling a component because you are migrating from an earlier release or modification level of Tivoli Decision Support for OS/390, see “Migrating a component” and Appendix J, “Migrating Components from Earlier Releases” for more information.

1. Refer to these books to plan the tasks you must perform to complete the installation:

<table>
<thead>
<tr>
<th>Feature name</th>
<th>Book name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Tivoli Decision Support for OS/390 IBM: Accounting Feature for the Host</td>
</tr>
<tr>
<td>AS/400 Performance</td>
<td>AS/400 System Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>CICS Performance</td>
<td>CICS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Distributed Systems Performance</td>
<td>Tivoli Decision Support for OS/390 IBM: Distributed Systems Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IMS Performance</td>
<td>Tivoli Decision Support for OS/390 IBM: IMS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Network Performance</td>
<td>Network Performance Feature Installation and Administration</td>
</tr>
<tr>
<td>System Performance</td>
<td>System Performance Feature Reference</td>
</tr>
</tbody>
</table>

2. If you want to review DB2 parameters before installing a component, select the component in the Components window, and select the Space pull-down, as shown in **Figure 55**.

![Figure 55. Space pull-down](image)

You can use this pull-down to review and change DB2 space parameters such as:

- Buffer pool
- Compression (DB2 Version 3 or later)
- Erase on deletion
- Free space
- Lock size
- Number of partitions, for a partitioned space
- Number of subpages, for an indexspace
- Primary and secondary space
- Segment size
- Type of space
Working with components

- VSAM dataset 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 Tivoli Decision Support for OS/390. 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 DATABASE 2 SQL Reference.

Tivoli Decision Support for OS/390 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. If you are migrating the CICS Monitoring component, execute the INSERT statement (contained in the DRLTCIFI member) to fill in the CICS_FIELD table. Consider modifying this member if you had customized it in the previous release.

After copying your own modifications in this member, you can run it through Option 5, Process Tivoli Decision Support for OS/390 Reporter statements, from the Other pull-down.

4. From the Components window, select the component to install and press F6 (Install).

If the component you selected contains optional parts (subcomponents), Tivoli Decision Support for OS/390 displays the Component Parts window. If so, either select the parts to install or press F12 to install only those objects that are not in a subcomponent. (Tivoli Decision Support for OS/390 might install some common definitions for the component even though you do not select any of the parts to install.)

Tivoli Decision Support for OS/390 now displays the Installation Options window.

5. 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 Tivoli Decision Support for OS/390 to do anything but update a table in the Tivoli Decision Support for OS/390 database. You can also use your terminal to perform any ISPF or TSO task.

6. Select 1 (online) or 2 (batch) and press Enter.

   If installing the component online, see the next section, “Installing the component online.”
   
   If installing the component in batch mode, see “Installing the component in batch mode” on page 113.

**Installing the component online**

Tivoli Decision Support for OS/390 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:

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 *IBM DATABASE 2: Messages and Codes*. If you get this message, you must reinstall the component:

   ```sql
   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 Tivoli Decision Support for OS/390 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 57 on page 111.
2. When you finish browsing the output data set, press F3 (Exit).
   If the component has lookup tables, Tivoli Decision Support for OS/390 displays the Lookup Tables window [Figure 58 on page 112].

---

**Figure 57. Sample log collector messages**

<table>
<thead>
<tr>
<th>Line</th>
<th>Log Collector Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>DRL0125I The record SMF_080 is defined.</td>
</tr>
<tr>
<td>96</td>
<td>DRL0130I The comment is stored for the record SMF_080.</td>
</tr>
<tr>
<td>1007</td>
<td>DRL0201I The update RACFCOMMAND_80 is defined.</td>
</tr>
<tr>
<td>1014</td>
<td>DRL0403I The purge condition for DRL .RACF_COMMAND_T is added.</td>
</tr>
<tr>
<td>1138</td>
<td>DRL0201I The update RACFLOGON_80 is defined.</td>
</tr>
<tr>
<td>1145</td>
<td>DRL0403I The purge condition for DRL .RACF_LOGON_T is added.</td>
</tr>
<tr>
<td>1293</td>
<td>DRL0201I The update RACFOPERATION_80 is defined.</td>
</tr>
<tr>
<td>1300</td>
<td>DRL0403I The purge condition for DRL .RACF_OPERATION_T is added.</td>
</tr>
<tr>
<td>1466</td>
<td>DRL0201I The update RACFRESOURCE_80 is defined.</td>
</tr>
<tr>
<td>1473</td>
<td>DRL0403I The purge condition for DRL .RACF_RESOURCE_T is added.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line</th>
<th>Report Definition Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1503</td>
<td>DRL3001I The group RACF is defined.</td>
</tr>
<tr>
<td>1511</td>
<td>DRL3001I The report RACF01 is defined.</td>
</tr>
<tr>
<td>1519</td>
<td>DRL3001I The report RACF02 is defined.</td>
</tr>
<tr>
<td>1527</td>
<td>DRL3001I The report RACF03 is defined.</td>
</tr>
<tr>
<td>1535</td>
<td>DRL3001I The report RACF04 is defined.</td>
</tr>
<tr>
<td>1543</td>
<td>DRL3001I The report RACF05 is defined.</td>
</tr>
<tr>
<td>1551</td>
<td>DRL3001I The report RACF06 is defined.</td>
</tr>
<tr>
<td>1559</td>
<td>DRL3001I The report RACF07 is defined.</td>
</tr>
</tbody>
</table>

---

2. When you finish browsing the output data set, press F3 (Exit).
   If the component has lookup tables, Tivoli Decision Support for OS/390 displays the Lookup Tables window [Figure 58 on page 112].
Refer to the appropriate feature book (shown in step 1 on page 108) 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. Tivoli Decision Support for OS/390 accesses the ISPF editor where you can edit the lookup table as described in "Editing the contents of a table" on page 166. 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, Tivoli Decision Support for OS/390 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" 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. Tivoli Decision Support for OS/390 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). Tivoli Decision Support for OS/390 returns to the Components window. Tivoli Decision Support for OS/390 has changed the Status field for the component to read Installed.

7. Press F3 (Exit). Tivoli Decision Support for OS/390 returns to the Administration window.

---

**Figure 58. Lookup Tables window**

Refer to the appropriate feature book (shown in step 1 on page 108) 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. Tivoli Decision Support for OS/390 accesses the ISPF editor where you can edit the lookup table as described in "Editing the contents of a table" on page 166. 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, Tivoli Decision Support for OS/390 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" 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. Tivoli Decision Support for OS/390 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). Tivoli Decision Support for OS/390 returns to the Components window. Tivoli Decision Support for OS/390 has changed the Status field for the component to read Installed.

7. Press F3 (Exit). Tivoli Decision Support for OS/390 returns to the Administration window.
Installing the component in batch mode

Tivoli Decision Support for OS/390 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 59 shows a job in an ISPF edit session.

After editing the job:

1. Type SUBMIT on the command line and press Enter.
2. Press F3 after submitting the job.
   Tivoli Decision Support for OS/390 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 110.
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.
   Tivoli Decision Support for OS/390 displays the Tables window.
   Tivoli Decision Support for OS/390 displays the Select Table window Figure 60 on page 114.

Figure 59. Editing an installation job

Using columns to view spool data

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10. Type the values as shown in Figure 60, and press Enter. Tivoli Decision Support for OS/390 displays the Tables window (Figure 61), showing the component’s lookup tables only.

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 166.

13. Press F3 (Exit) when you finish selecting and editing lookup tables.
    Tivoli Decision Support for OS/390 returns to the Administration window.
Test the component to verify its proper installation

1. Collect data from a log data set and review any messages, as described in “Using collect messages” on page 72.

   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 146 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:

<table>
<thead>
<tr>
<th>Feature name</th>
<th>Book name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>Tivoli Decision Support for OS/390 IBM: Accounting Feature for the Host</td>
</tr>
<tr>
<td>AS/400 Performance</td>
<td>AS/400 System Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>CICS Performance</td>
<td>CICS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Distributed Systems Performance</td>
<td>Tivoli Decision Support for OS/390 IBM: Distributed Systems Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>IMS Performance</td>
<td>Tivoli Decision Support for OS/390 IBM: IMS Performance Feature Guide and Reference</td>
</tr>
<tr>
<td>Network Performance</td>
<td>Network Performance Feature Reference</td>
</tr>
<tr>
<td>System Performance</td>
<td>System Performance Feature Reference</td>
</tr>
</tbody>
</table>

3. Display a report to ensure it is correctly installed.

Migration considerations - When you have finished installing the components you must reintroduce existing changes to component objects.

To ensure that the changes you have saved (in steps 1 and 2 in “Migrating a component” in this chapter) can be introduced into the IBM-modified objects, perform the merge actions defined in “Actions required to migrate modified objects” in Appendix J, “Appendix J, “Migrating Components from Earlier Releases.””

Deinstalling a component

To deinstall a component:

1. From the Components window, select the component. Then select the Deinstall option from the Component pull-down.
   Tivoli Decision Support for OS/390 displays a confirmation window.

2. Press Enter to confirm the deinstallation.
   Tivoli Decision Support for OS/390 deletes from its system tables any component definitions not used by other components. It also deletes all DB2 objects of the component, including any tables and tablespaces. The component remains in the list of components, but with its Status field cleared.

Notes:

a. If a component including a common object is deinstalled, the common object is not dropped, unless it is the only installed component that includes the common object.

b. Component parts cannot be deinstalled. To deinstall a component part, you must deinstall the component.
Working with a component definition

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

The variable VERSION, together with the VERSION column in the system tables, is used to:

- Ensure that unchanged Tivoli Decision Support for OS/390 objects are not replaced when a component is migrated
- Provide for the control of Tivoli Decision Support for OS/390 objects that you have changed

The variable VERSION has the value IBM.nnn[APAR_number], where nnn is the Version, Release, and Modification level (for example, IBM.120 is an object supplied with Tivoli Decision Support for OS/390 Version 1 Release 2 Modification Level 0). The value of VERSION is set for all objects when the object is installed (see "How Tivoli Decision Support for OS/390 controls object replacement" on page 52 for details).

If you change a Tivoli Decision Support for OS/390-supplied object, you must set the variable VERSION to something other than IBM.nnn[APAR_number]. During component installation, Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390-supplied objects that you have later modified.

You can also obtain a list of the user-modified objects from the Components window, selecting the Show user objects option in the Component pull-down. You can now decide to:

- Lose your changes and use the new objects supplied by IBM:
  1. In the User Modified Objects window that is automatically displayed, do not select these objects.
  2. Tivoli Decision Support for OS/390 then replaces your objects with the objects from the new Tivoli Decision Support for OS/390 release or modification level.
- Integrate your changes into the new Tivoli Decision Support for OS/390 object:
  1. Change the VERSION variable for the object to something that does not begin with IBM.
  2. Place the definition member containing the changed object in your local library.
  3. Continue with the installation.

Or:

1. Place your customized object definitions in your local user definition library and flag your changes according to the rules described in "Creating alter statements for user-modified objects" on page 118.
2. From the User Modified Members window select the members for which you need to create the alter statements on the customer changes and press F4 (Alter).
   Tivoli Decision Support for OS/390 displays a confirmation window.
3. From the confirmation window, press Enter to confirm that the alter statements must be built.
   The alter statements are created and stored in the local user definition library.
4. Continue with the installation.
Working with components

5. After the installation is finished, run the alter statements from Process TDS statements window, to modify the installed objects.

   • Exclude the new object from the installation (that is, continue to use your own modified copy of the object):
   1. From the User Modified Objects window select the objects you wish to exclude and press F4 (Exclude).
      Tivoli Decision Support for OS/390 displays a Confirmation window.
   2. From the Confirmation window, press Enter to confirm that the object should be excluded from the installation.

Creating alter statements for user-modified objects

A processor that extracts user modifications applied to Tivoli Decision Support for OS/390 objects is supplied inside the product. It is not a general purpose parsing for log collector definitions but it can help you when migrate user-modified objects to a new release or apply maintenance to user-modified objects.

When you modify Tivoli Decision Support for OS/390 objects (UPDATE/RECORD/LOG/RECORDPROC definitions), you can extract your changes and apply them to the same objects after a new release or a maintenance fix is installed.

You can identify the user-modified objects from the Components window, selecting the Show user objects option in the Component pull-down, or from the User Modified Objects panel that is displayed when you reinstall a component. After identifying the objects for which you want to extract user changes, you have to copy their definitions into the local user definition library. The changes to be extracted from the customized members must be flagged with a certain tag, which is then provided as input to a processor internal to the product. The processor extracts all the rows flagged with this tag and builds the related ALTER statements necessary to apply the changes to the object currently installed in the Tivoli Decision Support for OS/390 environment.

The processor should be run on each user-modified object definition before each component is reinstalled, in order to prepare the ALTER statements. You can then proceed with the migration of the component to the new release. When all the new objects are defined, you can run the ALTER statements to apply your own changes. The ALTER statements can be run from the option Other -> Process TDS for OS/390 Statements.

The following parameters are provided as input to the processor:

   • The type of the object contained in the input member (UPDATE, RECORD, LOG and RECORD PROCEDURES)
   • The input member containing the definition with the flagged changes
   • The output member containing the produced ALTER statements
   • The tag that identifies the changes.

How to use modification flags

When you change an object, you must highlight the changes by adding a flag to the modified clauses. Depending on the changes you make, you have to follow different flagging rules:

   • If the clause has been changed, you must add an M immediately after the flag, without any blank between the M and the flag itself (Example: FLAGM).
Working with components

- If the clause has been *added*, you must add an A immediately after the flag, without any blank between the A character and the flag itself (Example: FLAGA).
- If the clause has been *deleted*, you must add a D immediately after the flag, without any blank between the D character and the flag itself (Example: FLAGD)

**Note:** If you want to delete a clause, do not remove it from the definition, but comment and flag it with the D character.

When the processor finds a clause flagged with an ADD or MODIFY flag, it creates the alter statement with the new read clause. If it finds a deletion flag, it creates an alter statement with NONE or DELETE value. The alter with a NONE value deletes the related clause, when run.

This occurs for all the clauses except for FIELDS (in RECORD definition) and LOGPROC (in LOG definition). Because these clauses cannot be directly modified through an alter statement, if they are flagged with the M character, a DELETE and an ADD alter statements are built for them.

It is important to avoid using comments keywords and flags necessary to identify changes in definition clauses.

**Update processor**

For each update definition present in the input member, the processor extracts the name of the update and then parses each of the following clauses:

- WHERE
- DISTRIBUTED
- APPLY SCHEDULE
- LET
- GROUP BY
- SET
- MERGE

If present in the definition. The processor then searches the input flag inside any of these clauses; if it finds any flag, the processor creates the related alter statement.

If the changes affect SET, LET, or GROUP BY clauses, the processor writes the alter statements at identifier level so that, through the alter clause, you can change any single identifier in the clause itself. Therefore, each identifier contained in any of these three clauses must be flagged separately, so the processor can create an alter statement only for the flagged identifiers, without creating it for the whole clause. On the contrary, if the changes affect WHERE, DISTRIBUTED, APPLY SCHEDULE, or MERGE clauses, the processor cannot create an alter statement that impacts only on a portion of the clause, so it creates an alter statement that replaces the whole clause. This means that if you change any of these clauses, you must only add a flag that indicates whether the whole clause has been modified, added, or deleted. Finally, the VERSION column of the DRLUPDATES system table is updated whenever an alter statement is produced for an update definition. The following examples show how to flag modified update definitions:
Example 1:

```
DEFINE UPDATE MKTVACC_01D
VERSION 'USER01'
FROM VMACCT_01
WHERE ACODATE <> ACOTIME --FLAGD
  e 22 TO VM_ACCOUNTING_D
LET
  (FLAG = ACOTIME+ACOVECT,
   FLAG = ACOTIME+ACOVECT, --FLAGA
   FLAG = (AAAAA)) --FLAGA
GROUP BY
  (DATE = ACODATE,
   USER_ID = ACOUSER,
   ACCOUNT_NUMBER = ACONUM)
SET (CONNECT_TIME = SUM(ACCOUNT),
   -- PROCESSOR_TIME = SUM (ACOTIME/1000), --FLAGD
   VECTOR_TIME = PERCENTILE(ACOTIME/100,ACOVECT,20)); --FLAGM
```

The alter statements will be:

```
ALTER UPDATE MKTVACC_01D WHERE NONE;
ALTER UPDATE MKTVACC_01D LET FLAG = ACOTIME+ACOVECT;
ALTER UPDATE MKTVACC_01D LET FLAG = (AAAAA);
ALTER UPDATE MKTVACC_01D SET PROCESSOR_TIME = NONE;
ALTER UPDATE MKTVACC_01D SET VECTOR_TIME = PERCENTILE(ACOTIME/100,ACOVECT,20);
```

Example 2:

```
DEFINE UPDATE MKTVACC_03D
VERSION 'USER01'
FROM VMACCT_01
WHERE ACODATE <> ACOTIME --FLAGM
  TO VM_ACCOUNTING_D
LET
  (FLAG = ACOTIME+ACOVECT,
   MINNY = ACOTIME+ACOVECT, --FLAGA
   FLAG = (AAAAA)) --FLAGA
GROUP BY
  (DATE = ACODATE,
   USER_ID = ACOUSER,
   ACCOUNT_NUMBER = ACONUM)
--MERGE
  -- (INTERVAL_TYPE = CASE SMF30STP
  --       WHEN 2 THEN '==='
  --       WHEN 3 THEN '==!
  --       END,
  --START_TIME = TIMESTAMP(SMF30IDT,SMF30IST),
  --END_TIME = TIMESTAMP(SMF30DTE,SMF30TME),
  --QUIET_INTERVAL_SEC = 5) --FLAGD
;
```

The alter statements will be:

```
ALTER UPDATE MKTVACC_03D WHERE ACODATE <> ACOTIME;
ALTER UPDATE MKTVACC_03D LET MINNY = ACOTIME+ACOVECT;
ALTER UPDATE MKTVACC_03D LET FLAG = (AAAAA);
ALTER UPDATE MKTVACC_03D MERGE NONE;
```

Example 3:

```
DEFINE UPDATE RAFJOB_SMF30_E
VERSION 'IBM.130'
FROM SMF_030
SECTION EXCP
WHERE SMF30WID = 'JES2' OR SMF30WID = 'JES3' --FLAGA
TO &PREFIX.RAFJOBLOG
```
DISTRIBUTE CPU_TIME
BY 3600
START TIMESTAMP(STA_DTE,STA,TME)
END TIMESTAMP(END_DTE,END_TME)
TIMESTAMP CUR_TME
INTERVAL CUR_DUR
--FLAGA
GROUP BY
(J_TIMESTAMP = TIMESTAMP(SMF30RSD,SMF30RST),
 J_JOBNAME = SMF30JBN)
SET (CONNECT_TIME = SUM(ACOUNT),
--PROCESSOR_TIME = SUM (ACOTIME/1000), --FLAGD
);

The alter statements will be:
ALTER UPDATE RAFJOB_SMF30_E WHERE SMF30WID = 'JES2' OR SMF30WID = 'JES3'
ALTER UPDATE RAFJOB_SMF30_E DISTRIBUTE CPU_TIME BY 3600 START TIMESTAMP
(STA_DTE,STA,TME) END TIMESTAMP(END_DTE,END_TME) TIMESTAMP CUR_TME INTERVAL CUR_DUR;
ALTER UPDATE RAFJOB_SMF30_E GROUP BY J_JOBNAME = SMF30JBN;
ALTER UPDATE RAFJOB_SMF30_E SET PROCESSOR_TIME = NONE;

Example 4:
DEFINE UPDATE RAFJOB_SMF30_E
VERSION 'IBM.130'
FROM SMF_030
SECTION EXCP
-- WHERE (SMF30WID = 'JES2' OR SMF30WID = 'JES3') AND SMF30TYP = 5 AND
-- SMF30DEV > '00' --FLAGD
TO &PREFIX.RAFJOBLOG
--APPLY SCHEDULE 'STANDARD'
-- TO TYPE, INT_START, INT_END
-- STATUS SCHED
--FLAGD
LET (---J_NGRAFBLKS = SUM(CASE WHEN SMF30DEV = '10'
--- THEN SMF30BLK/FLOAT(1)
--- ELSE FLOAT(0)
--- END),
---J_NOCRBLKS = SUM(CASE WHEN SMF30DEV = '04'
--- THEN SMF30BLK/FLOAT(1)
--- ELSE FLOAT(0)
--- END),
---J_NMSSBLKS = SUM(CASE WHEN SMF30DEV = '42'
--- THEN SMF30BLK/FLOAT(1)
--- ELSE FLOAT(0)
--- END),
---J_NOTHRBLKS = SUM(CASE WHEN SMF30DEV <> '20'
--- AND SMF30DEV <> '80'
--- THEN SMF30BLK/FLOAT(1)
--- ELSE FLOAT(0)
--- END)
);---FLAGD

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The alter statements will be:

```
ALTER UPDATE RAFJOB_SMF30_E WHERE NONE;
ALTER UPDATE RAFJOB_SMF30_E APPLY SCHEDULE NONE;
ALTER UPDATE RAFJOB_SMF30_E LET SDTE = NONE;
ALTER UPDATE RAFJOB_SMF30_E LET SDTF = (CASE WHEN VALUE(DATE(SMAPISTD),
DATE('2000-01-01')) <> DATE('2000-01-01') THEN DATE(SMAPISTD) END);
ALTER UPDATE RAFJOB_SMF30_E SET J_NGRAFBLKS = NONE;
ALTER UPDATE RAFJOB_SMF30_E SET J_NMSSBLKS = SUM(CASE WHEN SMF30DEV='42'
THEN SMF30BLK/FLOAT(1) ELSE FLOAT(0) END);
ALTER UPDATE RAFJOB_SMF30_E SET J_NOTHRBLKS = NONE;
```

Notes:

1. The ; (semicolon) character indicates the end of a define update statement. It is recommended not to put any flag in the row following the semicolon, otherwise the flag will be ignored. The semicolon must always be at the end of the update statement to close it, even after any possible commented clause.

2. The FROM, SECTION, and TO clauses are not processed because it is recommended not to change them. If one of these clauses is changed, it is recommended to create a new update definition.

3. You cannot insert more than one comment for each flagged row. For example:

   **Incorrect:** -- ANY COMMENT --FLAGA
   **Correct:** -- ANY COMMENT FLAGA

Record processor

For each record definition present in the input member, the processor extracts the name of the record and then parses each of the following clauses:

- **IN LOG**
- **BUILT BY**
- **IDENTIFIED BY**
- **FIELDS**
- **SECTION**
  - **IN SECTION**
  - **PRESENT IF**
  - **OFFSET**
  - **LENGTH**
  - **NUMBER**
  - **REPEATED**

if present in the definition. The processor then searches for an input flag inside any of these clauses and, if it finds any flag, the processor creates the related alter statement.

The clause **FIELDS** can be flagged with the **DELETE**, **ADD**, or **MODIFY** flag. For this clause, the processor writes the alter statements at single field level, so that, through the alter clause, you can change any single field in the clause itself. Therefore, each field contained in this clause must be flagged separately, so the processor can create an alter statement only for the flagged fields, without creating it for the whole clause. Each field is identified by a comma, therefore you have to flag the row where there is the comma that identifies the field to be changed. If you insert an **ADD** flag, the processor creates the following alter statement:

```
ALTER RECORD record-name ADD FIELDS(field-name) IN SECTION section-name
```

If you insert a **DELETE** flag, the processor creates the following alter statement:

```
ALTER RECORD record-name DELETE FIELD field-name
```
Because it is not possible to modify a field through an alter statement, if you insert a MODIFY flag, the processor will create these alter statements:

```
ALTER RECORD record-name DELETE FIELD filed-name
ALTER RECORD record-name ADD FIELDS(filed-name) IN SECTION section-name
```

If the changes affect any of the other clauses, the processor cannot create an alter statement that impacts only a portion of the clause, so it creates an allow statement that replaces the whole clause. Therefore, if one of these clauses is flagged, the processor builds an alter statement on the entire clause. This means that if you change any of these clauses, you must add a flag at the end of it to indicate whether the whole clause has been modified, added, or deleted.

The IN LOG clause can be flagged only with ADD and MODIFY flags. You cannot use the DELETE flag with this clause.

The LENGTH clause can only be flagged with DELETE and MODIFY flags. You cannot use the ADD flag with this clause.

**BUILT BY, IDENTIFIED BY, IN SECTION, PRESENT IF, OFFSET, LENGTH, NUMBER, REPEATED** clauses can be flagged with DELETE, ADD and MODIFY flags. When you insert ADD, or MODIFY flags, the processor creates an alter statement that adds or replaces the whole clause. When you insert a DELETE flag, the processor creates an alter statement with NONE value that deletes the related clause, when run.

The SECTION clause can be flagged only with ADD or DELETE flags. You cannot use the MODIFY flag with this clause. When you insert an ADD flag, the processor creates the following alter statement:

```
ALTER RECORD record-name ADD SECTION section-name IN SECTION section-name ...
```

Even if the SECTION clause has some sub-clauses (such as in-section, present-if...) you must flag only the row containing the SECTION keyword. All the sub-parameters will be included in the alter section statement. The section clause ends when another SECTION parameter is present. Considering the following example:

```
SECTION V4_PS_FIELDS
   IN SECTION PRODUCT
   PRESENT IF SMFNRVN >= '0410'
   OFFSET SMFMNAPS + 40
   FIELDS ....
```

The alter statement will be:

```
ALTER RECORD PROVAPARSER ADD SECTION V4_PS_FIELDS
   IN SECTION PRODUCT
   PRESENT IF SMFNRVN >= '0410' OFFSET SMFMNAPS + 40;
```

On the contrary, if you want to change, add, or delete just one sub-parameter, you do not have to flag the whole clause, but only the sub-clause, as shown in the following example:

```
SECTION V4_PS_FIELDS
   IN SECTION PRODUCT
   PRESENT IF SMFNRVN >= '0410' --FLAGA
   OFFSET SMFMNAPS + 40
   FIELDS ....
```

The alter statements will be:

```
ALTER RECORD PROVAPARSER ALTER SECTION V4_PS_FIELDS PRESENT IF SMFNRVN >= '0410';
```
A **DELETE** flag will cause the processor to generate the following statement:

```
ALTER RECORD record-name DELETE SECTION section-name
```

Moreover, if the processor produces an alter statement for a record definition, it also updates the VERSION column of the DRLRECORDS system table.

The following examples show how to flag modified record definitions:

**Example 1:**

```
DEFINE RECORD PROVAPARSER
VERSION 'IBM.120'
IN LOG SMF
BUILT BY DRL2CICS
IDENTIFIED BY SMFMNRNTY = 110
AND SMFMNSTY = 1
AND SMFMNCL <> 4
```

**Note:** If you want to remove a section and add its fields to the previous section, or directly to the record, you have to add a **DELETE** flag to the section definition, and an **ADD** flag to each of the fields.

The alter statements will be:
ALTER RECORD PROVAPARSER IN LOG SMF;
--
ALTER RECORD PROVAPARSER BUILT BY NONE;
--
ALTER RECORD PROVAPARSER IDENTIFIED BY NONE;
--
ALTER RECORD PROVAPARSER DELETE SECTION PRODUCT;
--
ALTER RECORD PROVAPARSER ADD SECTION V4_PS_FIELDS
IN SECTION PRODUCT PRESENT IF SMFMNRVN >= '0410' OFFSET SMFMNAPS + 40;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( * LENGTH 20 CHAR) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNTAD LENGTH 4 BINARY UNSIGNED) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNLSO LENGTH 8 BINARY) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNTO LENGTH 8 BINARY UNSIGNED) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( * LENGTH 2 BINARY) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNJBN LENGTH 8 CHAR) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNRSD DATE(0CYYDDDF)) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMSRST TIME(1/100S)) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNUIF LENGTH 8 CHAR) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( SMFMNPDN LENGTH 8 CHAR) IN SECTION V4_PS_FIELDS;
--
ALTER RECORD PROVAPARSER SECTION FIELDCONNECTOR LENGTH SMFMNDCL;
--
ALTER RECORD PROVAPARSER SECTION FIELDCONNECTOR NUMBER NONE;
--
ALTER RECORD PROVAPARSER SECTION FIELDCONNECTOR REPEATED;
--
ALTER RECORD PROVAPARSER SECTION DICTIONARY_DATA LENGTH SMFMNDRL;
--
ALTER RECORD PROVAPARSER SECTION DICTIONARY_DATA NONREPEATED;
--
ALTER RECORD PROVAPARSER ADD FIELDS ( CMODIDNT LENGTH 3 CHAR) IN SECTION DICTIONARY_DATA;
--

Example 2:
DEFINE RECORD SMF_101
VERSION 'FLAG'
    -- FLAG
IN LOG SMF
IDENTIFIED BY SM101RTY = 101 AND SM101STF = 0
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FIELDS
(SM0ILEN LENGTH 2 BINARY,
QWA0IPSN LENGTH 2 BINARY)
---------------------------------------------------------------
--- Start of Product Section
---------------------------------------------------------------
--- Start of Instrumentation Data Section
SECTION INSTRUMENTATION
OFFSET QWA0IR0
LENGTH QWA0IRIL
NUMBER QWA0IRIN
FIELDS
(QWACRINV OFFSET 48 LENGTH 4 BINARY, -- Normal: --FLAGA
 -- Normal:
 -- 4 = Reads request
 -- 8 = New user
 -- 12 = Deallocaton
 -- Normal (written at deallocatation)
 -- 16 = Application pgm terminated
 -- Abnormal (written at deallocatation)
 -- 20 = Application pgm abend
 -- 24 = End of memory
 -- 28 = Resolve indoubt
 -- 32 = Stop force etc.
 -- Normal (work unit in doubt):
 -- 40 = Application pgm terminated
 -- Abnormal (work unit in doubt):
 -- 44 = Application pgm abend
 -- 48 = End of memory
 -- 52 = Resolve indoubt
 -- 56 = Stop force etc.
QWACNID OFFSET 52 LENGTH 16 CHAR, --FLAGA
QWACARNS OFFSET 168 LENGTH 4 BINARY, --FLAGA
QWACFLGS OFFSET 224 LENGTH 2 BIT, --FLAGA
 -- QA0CLS2 'X'0001' There is non PQ45496
 -- zero accounting class 2 data. PQ45496
 -- QA0CLS3 'X'0002' There is non PQ45496
 -- zero accounting class 3 data. PQ45496
 -- QA0PARR 'X'0040' There is PQ45496
 -- rollup data for parallel child PQ45496
 -- tasks. PQ45496
QWACRSLV OFFSET 428 LENGTH 4 BINARY, --FLAGA
 -- Number of release svpt requests
QWACRBSV OFFSET 432 LENGTH 4 BINARY, --FLAGA
 -- Number of rollback to svpt rqsts
 * OFFSET 436 LENGTH 4 BINARY, --FLAGA
 -- Not used
QWACANTK OFFSET 440 LENGTH 8 BINARY, --FLAGA
 -- Accumulated wait time due to global contention for
 -- child L-lock
QWACANTM OFFSET 448 LENGTH 8 BINARY, --FLAGA
 -- Accumulated wait time due to global contention for
 -- other L-lock
QWACANTN OFFSET 456 LENGTH 8 BINARY, --FLAGA
 -- Accumulated wait time due to global contention for
 -- pageset/partition P-locks
QWACANT0 OFFSET 464 LENGTH 8 BINARY, --FLAGA
 -- Accumulated wait time due to global contention for
 -- page P-locks
QWACANTQ OFFSET 472 LENGTH 8 BINARY, --FLAGA
 -- Accumulated wait time due to global contention for
 -- other P-lock
QWACARNO OFFSET 492 LENGTH 4 BINARY, --FLAGA
QWACARNO OFFSET 492 LENGTH 4 BINARY, --FLAGA

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-- Number of wait trace events processed for waits for global contention for page P-locks
-- QWACRNQ OFFSET 496 LENGTH 4 BINARY --FLAGD
)

Note: The last field must be deleted, it has been flagged with FLAGD and the parenthesis has been moved to the following row to avoid to comment it.

The alter statements will be:
ALTER RECORD SMF_101 ADD FIELDS ( QWACRINV
OFFSET 48 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACNID
OFFSET 52 LENGTH 16 CHAR) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACRNS
OFFSET 168 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACRINV
OFFSET 224 LENGTH 2 BIT) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACRLSV
OFFSET 428 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACRBSV
OFFSET 432 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( * OFFSET
436 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACAWTK
OFFSET 440 LENGTH 8 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACAWTM
OFFSET 448 LENGTH 8 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACAWTN
OFFSET 456 LENGTH 8 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACAWTO
OFFSET 464 LENGTH 8 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACAWTQ
OFFSET 472 LENGTH 8 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 ADD FIELDS ( QWACARNO
OFFSET 492 LENGTH 4 BINARY) IN SECTION INSTRUMENTATION;
-- ALTER RECORD SMF_101 DELETE FIELD QWACRNQ;
--

Notes:
1. The ; (semicolon) character indicates the end of a define record statement. It is recommended not to put any flag in the row following the semicolon, otherwise the flag will be ignored. The semicolon must always be at the end of the record statement to close it, even after any possible commented clause.
2. The ) (parenthesis) indicates the end of the FIELDS parameter. If you comment it, the end of the fields parameter is lost.
3. To flag a field, you must add the flag in the last row of the field, that is, where the comma is located. A flag that is not properly located, will be ignored.

The following example shows a correct flag location:

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FIELDS
(QWACRINV OFFSET 48 LENGTH 4 BINARY, -- Normal: FLAGA
-- Normal:
-- 4 = Reads request
-- 8 = New user
-- 12 = Deallocatıon
-- Normal (written at deallocatıon)
-- 16 = Application pgm terminated
-- Abnormal (written at deallocatıon)
-- 20 = Application pgm abend
-- 24 = End of memory
-- 28 = Resolve indoubt
-- 32 = Stop force etc.
-- Normal (work unit in doubt):
-- 40 = Application pgm terminated
-- Abnormal (work unit in doubt):
-- 44 = Application pgm abend
-- 48 = End of memory
-- 52 = Resolve indoubt
-- 56 = Stop force etc.

The following example shows an incorrect flag location:

FIELDS
(QWACRINV OFFSET 48 LENGTH 4 BINARY, -- Normal:
-- Normal:
-- 4 = Reads request
-- 8 = New user
-- 12 = Deallocatıon
-- Normal (written at deallocatıon)
-- 16 = Application pgm terminated
-- Abnormal (written at deallocatıon)
-- 20 = Application pgm abend
-- 24 = End of memory
-- 28 = Resolve indoubt
-- 32 = Stop force etc.
-- Normal (work unit in doubt):
-- 40 = Application pgm terminated
-- Abnormal (work unit in doubt):
-- 44 = Application pgm abend
-- 48 = End of memory
-- 52 = Resolve indoubt
-- 56 = Stop force etc. --FLAGA

4. The SECTION sub-clauses (IN SECTION, PRESENT IF, OFFSET, LENGTH, NUMBER and REPEATED) must be written each on a different row.

The following is an example of a correct sub-clause position:

SECTION INSTRUMENTATION
OFFSET QWA01R1O
LENGTH QWA01R1L
NUMBER QWA01R1N

The following is an example of an incorrect sub-clause position:

SECTION INSTRUMENTATION
OFFSET QWA01R1O LENGTH QWA01R1L NUMBER QWA01R1N

5. If you want to add a new section, you have to flag only the row that contains the SECTION keyword. The sub-parameters and fields do not have to be flagged.

6. The processor does not check whether the flagged changes are logically correct or whether their application creates syntax errors in the whole definition. This is checked by the log collector when running the alter statements. Therefore, you have to be careful when you remove fields or sections that are referenced by other sections in the record. If there are errors, the processor will build the alter statement anyway, but you will get errors when you run the alter statements produced.
7. The flagged fields must be coded in one row, and the flag must be in the same row. Other comments can follow in the following rows.

The following is an example of correct coding:

```sql
FIELDS (  
  IMSLOGSQ LENGTH 4 BINARY UNSIGNED, --FLAGM  
  DRLLOGSQ LENGTH 4 BINARY UNSIGNED -- DRL2CSQL generated zero's  
);  
```

The following is an example of wrong coding:

```sql
FIELDS (  
  IMSLOGSQ LENGTH 4 BINARY                  UNSIGNED, --FLAGM  
  DRLLOGSQ LENGTH 4 BINARY UNSIGNED -- DRL2CSQL generated zero's  
);  
```

The following is an example of wrong coding:

```sql
FIELDS (  
  IMSLOGSQ LENGTH 4 BINARY UNSIGNED,  
  DRLLOGSQ LENGTH 4 BINARY UNSIGNED -- DRL2CSQL generated zero's  
);  
```

**Log processor**

For each log definition present in the input member, the processor extracts the name of the log and then parses each of the following clauses:

- HEADER
- TIMESTAMP
- FIRST RECORD
- LAST RECORD
- LOGPROC

if present in the definition. The processor then searches for an input flag inside any of these clauses; if it finds any flag, the processor creates the related alter statement.

If the changes affect any of the LOG clauses, the processor creates an alter statement that replaces the whole clause. Therefore, if one of these clauses is flagged, the processor builds an alter statement on the entire clause. This means that if you change any of these clauses, you must add a flag at the end of it to indicate whether the whole clause has been modified, added, or deleted.

All the LOG clauses can be flagged with DELETE, ADD, and MODIFY flags. The alter statement enables you to add, delete, or replace the whole clause.

For example, if you insert an ADD flag in the HEADER clause, the processor creates the following alter statement:

```sql
ALTER LOG log-name HEADER (field,....);  
```

If you insert a DELETE flag in the HEADER clause, the processor creates the following alter statement:

```sql
ALTER LOG log-name HEADER NONE;  
```

Moreover, if the processor produces an alter statement for a log definition, it also updates the VERSION column of the DRLLOGS system table.

The following examples show how to flag modified log definitions:
DEFINE LOG SAMPLE VERSION 'IBM.151'
HEADER (  
SOITYPE OFFSET 4 LENGTH 2 CHAR,
SOIDATE OFFSET 7 DATE(MMDDYY),
SOITIME OFFSET 14 TIME(HHMMSS)  
) --FLAGA  
TIMESTAMP TIMESTAMP(SOIDATE, SOITIME) --FLAGM  
FIRST RECORD SOITYPE = '2' --FLAGA  
LAST RECORD SOITYPE = '3' --FLAGD  
LOGPROC SAMPRECP PARM 'JES2' --FLAGM  
;  
COMMENT ON LOG SAMPLE IS 'Sample log definition';

The ALTER statements will be:
ALTER LOG SAMPLE HEADER (  
SOITYPE OFFSET 4 LENGTH 2 CHAR,
SOIDATE OFFSET 7 DATE(MMDDYY),
SOITIME OFFSET 14 TIME(HHMMSS)  
); --  
ALTER LOG SAMPLE TIMESTAMP TIMESTAMP(SOIDATE, SOITIME); --  
ALTER LOG SAMPLE FIRST RECORD SOITYPE = '2'; --  
ALTER LOG SAMPLE LAST RECORD NONE; --  
ALTER LOG SAMPLE LOGPROC NONE; --  
ALTER LOG SAMPLE LOGPROC SAMPRECP PARM 'JES2'; --

Note: The ; (semicolon) character indicates the end of a define log statement. It is recommended not to put any flag in the row following the semicolon, otherwise the flag will be ignored. The semicolon must always be at the end of the log statement to close it, even after any possible commented clause.

Record procedure processor
For each procedure definition present in the input member the processor extracts the name of the record procedure and then parses each of the following clauses:
• FOR
• LANGUAGE
• PARM
if present in the definition. The processor then searches for an input flag inside any of these clauses; if it finds any flag, the processor creates the related ALTER statement.

If the changes affect any of the RECORDPROC clauses, the processor creates an ALTER statement that replaces the whole clause. Therefore, if one of these clauses is flagged, the processor builds an ALTER statement on the entire clause. This means that if you change any of these clauses, you must add a flag at the end of it to indicate whether the whole clause has been modified, added or deleted.

As for RECORDPROC statements, FOR and LANGUAGE clauses can be flagged with ADD and MODIFY flags. Only PARM clauses can be flagged also with a DELETE flag.
Moreover, if the processor produces an alter statement for a record procedure definition, it also updates the VERSION column of the DRLRECORDPROCS system table.

The following examples show how to flag modified Recordproc definitions:

```
DEFINE RECORDPROC SAMPROC
  VERSION 'IBM.151'
  FOR SAMPLE_01, SAMPLE_02 --FLAGM
  LANGUAGE C --FLAGM
  PARM &FLAG --FLAGD
;
```

The alter statements will be:

```
ALTER RECORDPROC SAMPROC FOR SAMPLE_01, SAMPLE_02;
--
ALTER RECORDPROC SAMPROC LANGUAGE C;
--
ALTER RECORDPROC SAMPROC PARM NONE;
--
```

**Note:** The ; (semicolon) character indicates the end of a define recordproc statement. It is recommended not to put any flag in the row following the semicolon, otherwise the flag will be ignored. The semicolon must always be at the end of the recordproc statement to close it, even after any possible commented clause.

**How to create customized alter statements**

The input member, where the customized definitions are stored, is read from the local user definition library. You have to create this library during customization and to insert its name in the user.DRLPROF as USERDEFS. All the user-defined definitions must be saved in this library, and the process output is stored in this library as well. The name of the local user definition library is extracted from the ISPF profile filled in when Tivoli Decision Support for OS/390 starts.

To create a customized alter statement:

1. From the Components window, select the component you want to install and press Enter.
Working with components

---

All the objects contained in the selected component and modified by the user are listed in the User Modified Objects window.

2. From the User Modified Objects window, select the objects that you do not want to upgrade to the new release and press F4 to exclude them.

---

Figure 62. Components window

All the objects contained in the selected component and modified by the user are listed in the User Modified Objects window.

2. From the User Modified Objects window, select the objects that you do not want to upgrade to the new release and press F4 to exclude them.

---

Figure 63. User Modified Members window

3. Press Enter, the following window is displayed:
Working with components

Figure 64. User Modified Members window

This window displays all the LOG, RECORD, UPDATE and RECPROC that result user modified or modified by an apar.

From this window you can change the default values under Output Member and Flag.

Note: Members that have the same names are overwritten, so it is important to set different names for different output members.

4. Select the objects for which you want to extract your modifications, change the Flag and Output Member, if necessary, and press F4 to confirm your choice.

A confirmation window is displayed, press Enter to confirm, and the field Alter changes to Yes, as shown in the following window:

Figure 65. User Modified Members window

5. Press Enter, to continue creating the alter statements, and proceed with the installation.
Notes:
1. If you create alter statements for changes identified by different tags, you have to run the processor one time for each tag, and you must specify different output members. You must run the produced alter statements in the correct sequence, according to pre-requisites, if any. The VERSION field is updated by the update processor, so the flag of the object version field is supplied during the last run of the processor.
2. If the changes in record and update definitions are reflected in tables, you must change the table definitions manually. The processor does not process table and report definitions automatically.

Summary of object change flags
The following tables summarize what changes are enabled, and how to indicate them in each object clause.

Global
The whole clause will be deleted/replaced/addeds. The inserted flag refers to the entire clause. If only a portion of the clause has been changed, you have to identify the whole clause with an M flag.

Field
The single field is deleted/replaced/addeds. The flag must be at field level.

Table 5. Update process

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHERE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
<tr>
<td>DISTRIBUT</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
<tr>
<td>APPLY SCHEDULE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
<tr>
<td>LET</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Field</td>
</tr>
<tr>
<td>GROUP BY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Field</td>
</tr>
<tr>
<td>SET</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Field</td>
</tr>
<tr>
<td>MERGE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
</tbody>
</table>

Table 6. Record process

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN LOG</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
<tr>
<td>BUILT BY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
<tr>
<td>IDENTIFIED BY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
</tr>
</tbody>
</table>
### Table 6. Record process (continued)

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| FIELDS   | Y      | Y      | Y   | Field | • Field flags must be placed in the last row, that is where the comma is. If the flag is not properly located, it is ignored.  
• An M flag is interpreted by the processor as both a DELETE and ADD alter statement.  
• The ) (parenthesis) indicates the end of the FIELDS parameter. It must not be commented, otherwise the end of the field is lost. |
| SECTION  | Y      | N      | Y   | Global| To add or delete an entire section clause, you need to flag only the row that contains the SECTION keyword. The entire clause will be processed with all its sub-clauses. The clause end is indicated by the next FIELDS or SECTION parameter. If, instead, you want to change just one section sub-parameter, you need to flag only the clause itself. |
| IN SECTION | Y    | Y      | Y   | Global|                                                                                   |
| PRESENT IF | Y    | Y      | Y   | Global|                                                                                   |
| OFFSET   | Y      | Y      | Y   | Global|                                                                                   |
| LENGHT   | Y      | Y      | N   | Global|                                                                                   |
| NUMBER   | Y      | Y      | Y   | Global|                                                                                   |
| REPEATED | Y      | Y      | Y   | Global|                                                                                   |

### Table 7. Log process

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEADER</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
<tr>
<td>TIMESTAMP</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
<tr>
<td>FIRST RECORD</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
<tr>
<td>LAST RECORD</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
</tbody>
</table>
Working with components

Table 7. Log process (continued)

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGPROC</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td>It is not possible to access LOGPROC single subparameters. The LOGPROC clause is considered as a whole clause, with all its subparameters. When it is identified by an M flag, both a delete and add alter statements are built.</td>
</tr>
</tbody>
</table>

Table 8. Record Procedure process

<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>Delete</th>
<th>Modify</th>
<th>Add</th>
<th>Flag</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
<tr>
<td>LANGUAGE</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
<tr>
<td>PARM</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Global</td>
<td></td>
</tr>
</tbody>
</table>

Listing the modified objects
To obtain a list of the objects you have modified, follow these steps:
1. From the Components window, select a component.
2. From the Component pull-down, select the Show user objects option.

All the objects you have modified, are listed in the displayed window. The version field indicates the level currently installed in the Tivoli Decision Support for OS/390 environment.
Viewing objects in a component

You can use the administration dialog to view a list of objects in a component. To view objects in a component:

1. From the Components window, select the component, and press Enter.

   Tivoli Decision Support for OS/390 displays the Component window [Figure 66] for the component. All Tivoli Decision Support for OS/390 objects in the component are listed.

2. Press F10 to limit the list of objects displayed in the window.
   Tivoli Decision Support for OS/390 displays the View Objects window.

3. Type selection criteria in fields in the View Objects window and press Enter.
   Tivoli Decision Support for OS/390 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.
   Tivoli Decision Support for OS/390 returns to the Components window.

Viewing or editing an object definition

Before you modify any data set that contains Tivoli Decision Support for OS/390 definitions, copy the member to avoid changing the shipped version. Copy any member you plan to change from the Tivoli Decision Support for OS/390 definitions or reports library to your local definitions library, DRL.LOCAL.DEFS. (The default names of the Tivoli Decision Support for OS/390 definitions and reports libraries are DRL160.SDRLDEFS and DRL160.SDRLRENU.)
You can use the administration dialog to view and edit an object definition. To edit an object in a component:

1. From the Component window, select an object to work with, and press Enter.
   Tivoli Decision Support for OS/390 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.
   Tivoli Decision Support for OS/390 returns to the Component window.

Adding an object to a component

Components include object definitions necessary to collect log data, store it in the Tivoli Decision Support for OS/390 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 Chapter 3, “Overview of defining Tivoli Decision Support for OS/390 objects,” on page 51 for more information about definition members.

To add an object to a component:

1. From the Component window, press F5.
   Tivoli Decision Support for OS/390 displays the Add Object window.
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.
   Tivoli Decision Support for OS/390 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

Components include object definitions necessary to collect log data, store it in the Tivoli Decision Support for OS/390 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, Tivoli Decision Support for OS/390 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:

1. From the Component window, select the object to delete, and press F11.
   Tivoli Decision Support for OS/390 displays a Confirmation window.
2. From the Confirmation window, press Enter to confirm the deletion.
   Tivoli Decision Support for OS/390 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

This window User Modified Objects allows you to exclude Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 controls object replacement" on page 52.

To exclude an object from a component installation:
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.

Tivoli Decision Support for OS/390 displays a Confirmation window.
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

After you have excluded an object from the installation of a component (see "Excluding an object from a component installation" for details), you have the option to re-include the object.

To include an object in a component installation:
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.

Tivoli Decision Support for OS/390 displays a Confirmation window.
3. From the Confirmation window, press Enter to confirm that the object should be included in the installation.

Deleting a component

To remove all references to a component from Tivoli Decision Support for OS/390, you can use the administration dialog to delete the component. Do not delete components shipped with Tivoli Decision Support for OS/390 unless you are sure you are not going to use them.

To delete a component:
1. Deinstall the component that you plan to delete. See "Deinstalling a component" on page 115 for more information.

You must deinstall a component before deleting it. Deinstalling deletes all objects of the component.
2. From the Components window, select the component. Then select the Delete option in the Component pull-down.

Tivoli Decision Support for OS/390 displays a confirmation window.
3. Press Enter to confirm the deletion.

Tivoli Decision Support for OS/390 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 Chapter 3, “Overview of defining Tivoli Decision Support for OS/390 objects,” on page 51) 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

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 235. Tivoli Decision Support for OS/390 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 Chapter 3, “Overview of defining Tivoli Decision Support for OS/390 objects,” on page 51.

Note: As you create your component, remember that Tivoli Decision Support for OS/390 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.

Tivoli Decision Support for OS/390 installs component definitions in this order:

1. Log
2. Record
3. Record procedure
4. Tablespace
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 Tivoli Decision Support for OS/390 system on which are creating it, you can use the administration dialog to create the component:

1. Optionally, you can select an existing component for Tivoli Decision Support for OS/390 to use as a template for the new component before performing the next step.
2. From the Components window, press F5.
   Tivoli Decision Support for OS/390 displays the New Component window.
3. Type information about the new component in the fields.
4. Press F5 to add an object to the component.
   Tivoli Decision Support for OS/390 displays the Add Object window. See "Adding an object to a component" on page 138 for more information.
5. Select an object, and press Enter to edit its definition.
   Tivoli Decision Support for OS/390 accesses the ISPF editor, where you can edit the object definition. See "Viewing or editing an object definition" on page 137 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.
   Tivoli Decision Support for OS/390 displays a Confirmation window for you to confirm the deletion. See "Deleting an object from a component" on page 138 for more information.
7. When you finish adding, editing, or deleting objects, press F3.
   Tivoli Decision Support for OS/390 returns to the Components window and lists the new component.
Working with components
Chapter 6. Working with log and record definitions

Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 uses to process SMF log data sets created by MVS. Tivoli Decision Support for OS/390 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 chapter describes how to use the administration dialog to work with log and record definitions. After reading this chapter, you should know how to:

- Work with the contents of logs:
  - View a list of log data sets that Tivoli Decision Support for OS/390 has collected
  - Collect data from a log into DB2 tables
  - Display statistics of log data sets
  - Display the contents of a log data set
  - Generate a report on a record in a log data set
- Work with log definitions:
  - View and modify a log definition and its header fields
  - Create a log definition
  - Delete a log definition
- Work with record definitions:
  - View and modify a record definition:
    - Work with fields in a record definition
    - Work with sections in a record definition
  - Create a record definition
  - Display update definitions associated with a record
  - Delete a record definition
  - View and modify a record procedure definition
  - Create a record procedure definition
  - Delete a record procedure definition

Working with the contents of logs

To work with logs, first display a list of log definitions stored in Tivoli Decision Support for OS/390 system tables:

1. From the Tivoli Decision Support for OS/390 Administration window, select 3, Logs.
2. Press Enter.

   Tivoli Decision Support for OS/390 displays the Logs window (Figure 67 on page 144).
Working with log and record definitions

Figure 67. Logs window

Viewing a list of log data sets collected

The Tivoli Decision Support for OS/390 Data Sets window shows you a list of data sets that have been collected. The window (Figure 68 on page 145) 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:

1. From the Logs window, select a log definition and press F6.

   Tivoli Decision Support for OS/390 displays the Data Sets window for the log type you selected. You can then display collect statistics for each data set.

2. From the Data Sets window, select a data set and press Enter.

   Tivoli Decision Support for OS/390 displays the Collect Statistics window for the data set (Figure 69).

3. Press Enter to return to the Data Sets window after you finish viewing statistics.
To display the contents of a data set record by record, select the data set and press F5.

Tivoli Decision Support for OS/390 displays the Record Selection window. Refer to “Displaying the contents of a log” on page 148 for more information.

Deleting a log data set
To delete data set statistics from Tivoli Decision Support for OS/390 system tables:
1. From the Data Sets window, select the data set and press F11.
   Tivoli Decision Support for OS/390 displays a confirmation window.
2. Press Enter to confirm the deletion.
   Tivoli Decision Support for OS/390 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
Tivoli Decision Support for OS/390 stores data it collects in DB2 tables in the Tivoli Decision Support for OS/390 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 67 for more information about sample collect jobs that Tivoli Decision Support for OS/390 provides.) 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, VMACCT, SMF_VPD, and IMS.
To collect data from a log into DB2 tables:

1. From the Logs window, select a log and press F11.

   Tivoli Decision Support for OS/390 displays the Collect window [Figure 70].

   - Type information. Then press Enter to edit the collect JCL.
   - Data set: DRL150.SDRLDEFS(DRLSAMPL) (reqd)
   - Volume: (If not cataloged)
   - Unit: (Required for batch if Volume defined)
   - Reprocess: Yes
   - Commit after: Buffer full
   - Number of records: 10
   - Buffer size: 2
   - Extension: 2
   - Condition: 1.K
   - End of file
   - Specify number of records

   - Field keys:
     - F1=Help
     - F2=Split
     - F3=Collect
     - F4=Online
     - F5=Include
     - F6=Exclude
     - F8=Fwd
     - F9=Swap
     - F10=Show fld
     - F11=Save def
     - F12=Cancel

   - Collect Log Utilities View Other Help

   Figure 70. Collect window

2. Type the name of the log data set in the Data set field.

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. Tivoli Decision Support for OS/390 displays the Include Tables window.

5. Select those tables to include in the collect process and press Enter. Tivoli Decision Support for OS/390 returns to the Collect window.

   You can exclude tables as well. You need exclude only tables that Tivoli Decision Support for OS/390 would normally update during the collection.

6. Press F6 to exclude tables from the collect process.

   Tivoli Decision Support for OS/390 displays the Exclude Tables window. Select tables to exclude from the collect process and press Enter. Tivoli Decision Support for OS/390 returns to the Collect window.

7. Run the collect either in batch or online:

   - Press Enter to run the collect in batch mode.
   - Tivoli Decision Support for OS/390 builds a JCL job stream for the collect job and accesses the ISPF editor where you can edit and submit the JCL.

   - Press F4 to perform an online collection.
   - Tivoli Decision Support for OS/390 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

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:
1. From the Logs window, select a log definition.
2. Select 3, Show log statistics, from the Log pull-down.
   Tivoli Decision Support for OS/390 prompts you for the name of a log data set.
3. Type the name of the data set and press Enter.
   Tivoli Decision Support for OS/390 displays statistics for the log [Figure 71].

   Tivoli Decision Support for OS/390 displays the Logs window.

Displaying the contents of a log

Tivoli Decision Support for OS/390 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:
1. From the Logs window, select the log.
2. From the Utilities pull-down, select 2, Display log, and press Enter.
Working with log and record definitions

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.

Tivoli Decision Support for OS/390 displays the Record Selection window.

3. 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.

Tivoli Decision Support for OS/390 displays the Record Data window.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Type</th>
<th>Length</th>
<th>Offset</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF30LEN</td>
<td>BIN</td>
<td>2</td>
<td>0</td>
<td>628</td>
</tr>
<tr>
<td>SMF30SEG</td>
<td>BIN</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>SMF30FLG</td>
<td>BIT</td>
<td>1</td>
<td>4</td>
<td>11001110</td>
</tr>
<tr>
<td>SMF30RTY</td>
<td>BIN</td>
<td>1</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>SMF30TME</td>
<td>TIME</td>
<td>4</td>
<td>6</td>
<td>07.00.03.830000</td>
</tr>
<tr>
<td>SMF30DTE</td>
<td>DATE</td>
<td>4</td>
<td>10</td>
<td>2000-06-03</td>
</tr>
<tr>
<td>SMF30SID</td>
<td>CHAR</td>
<td>4</td>
<td>14</td>
<td>MVS1</td>
</tr>
<tr>
<td>SMF30NID</td>
<td>CHAR</td>
<td>4</td>
<td>18</td>
<td>JES2</td>
</tr>
<tr>
<td>SMF30STP</td>
<td>BIN</td>
<td>2</td>
<td>22</td>
<td>3</td>
</tr>
</tbody>
</table>

Press Enter to view the next record.

Record name . : SMF_030 Record number : 3
Data set . . : LOG.SMFSSYSA.W20

Field Data Record

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

Figure 72. Record Data window

4. Press Enter to step through records in the log.
   Each time you press Enter, Tivoli Decision Support for OS/390 displays the next identified record in the log.

5. When you finish viewing record data, press F12.
   Tivoli Decision Support for OS/390 returns to the Logs window.

Creating a report on a record

To produce a report of the data in a record type without performing a collect operation, you can use the Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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:

1. From the Logs window, select the log and press Enter.
   Tivoli Decision Support for OS/390 displays the Record Definitions window for the log [Figure 76 on page 154].

2. Select a record and press F11.
   Tivoli Decision Support for OS/390 displays the List Record window for the record [Figure 73 on page 150].
3. 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, Tivoli Decision Support for OS/390 displays the Report Display Options window.

4. From 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 Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 is to produce the report in the Input Log Data Set Name window, then press Enter.

   Tivoli Decision Support for OS/390 displays the report.

---

**Figure 73. List Record window**

<table>
<thead>
<tr>
<th>Fields</th>
<th>Type</th>
<th>Sort Seq</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF3010F</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF3010N</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF3015B</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF3015T</td>
<td>TIME_001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF301VA</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF301VU</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF30JBN</td>
<td>CHAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF30JNM</td>
<td>CHAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF30JPT</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMF30JYA</td>
<td>BINARY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Command --->

F1=Help  F2=Split  F7=Back  F8=Forward  F9=Swap
F10=Show field  F12=Cancel
Working with log and record definitions

5. When you finish viewing the report, press F3 to exit QMF or the ISPF browse window. Tivoli Decision Support for OS/390 returns to the List Record window.
6. 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 Tivoli Decision Support for OS/390. Log definitions included with each component define the logs that Tivoli Decision Support for OS/390 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

You can use the administration dialog to view or modify log definitions. To view and modify a log definition:

1. From the Logs window, select the log and press F5.

   Tivoli Decision Support for OS/390 displays the Log Definition window [Figure 75] for the log you specified.

   ![Log Definition window](image)

   Figure 75. Log Definition window

2. Change the log definition.
3. Press F5 to display header fields for the log definition.

   Tivoli Decision Support for OS/390 displays the Header Fields window for the log. See "Working with header fields" for more information.

4. When you finish modifying the log definition, press Enter.

   Tivoli Decision Support for OS/390 saves changes and returns to the Logs window.

Working with header fields

To add header fields to a log definition:

1. From the Header Fields window, press F5 to add a header field.

   Tivoli Decision Support for OS/390 displays a blank Header Field Definition window.

2. Type the required information in the fields and press Enter.

   Tivoli Decision Support for OS/390 displays the Header Field Definition window for the next field. Tivoli Decision Support for OS/390 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.

   Tivoli Decision Support for OS/390 returns to the Header Fields window.

4. Press F3 to return to the Log Definition window.

To modify header fields for a log definition:
Working with log and record definitions

1. From the Header Fields window, select the header field and press Enter.
   Tivoli Decision Support for OS/390 displays the Header Field Definition window for the header field you specified.
2. Type changes in the fields and press Enter.
   Tivoli Decision Support for OS/390 returns to the Header Fields window.
3. Press F3 to return to the Log Definition window.

   To delete header fields for a log definition:
1. To delete a header field, select the field and press F11.
   Tivoli Decision Support for OS/390 displays a confirmation window.
2. Press Enter to confirm the deletion.
   Tivoli Decision Support for OS/390 deletes the header field from the list and returns to the Header Fields window.
3. Press F3 to return to the Log Definition window.

Creating a log definition

To collect data from a log that is not defined by a Tivoli Decision Support for OS/390 component, you must create a log definition. You can use the administration dialog to create log definitions, or you can use log collector language. Refer to Language Guide and Reference for more information about creating log definitions with log collector language.

To create a log definition:
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.
   Tivoli Decision Support for OS/390 displays the New Log Definition window.

   Note: If you are using an existing log definition as a template, fields are filled with data from the template.
3. Type information for the new log definition in the fields.
4. Press F5 to add header fields to the log definition.
   Tivoli Decision Support for OS/390 displays the Header Fields window. See "Working with header fields" on page 152 for more information on adding header fields.
5. After you add all the information, press Enter.
   Tivoli Decision Support for OS/390 saves the new log definition and returns to the Logs window.

Deleting a log definition

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 Tivoli Decision Support for OS/390 system tables, but you do not delete the member that defines the log type.
Working with log and record definitions

To delete a log definition:
1. From the Logs window, select a log and then select the Delete option from the Log pull-down.
   Tivoli Decision Support for OS/390 displays a confirmation window.
2. Press Enter to confirm the deletion.
   Tivoli Decision Support for OS/390 deletes the log definition and returns to the Logs window.

Working with record definitions in a log

Each record in a log belongs to a record type that must be defined to Tivoli Decision Support for OS/390 to be collected. Otherwise, Tivoli Decision Support for OS/390 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:
1. From the Tivoli Decision Support for OS/390 Administration window, select 3, Logs, and press Enter.
   Tivoli Decision Support for OS/390 displays the Logs window (Figure 67 on page 144).
2. From the Logs window, select the log that contains the record and press Enter.
   Tivoli Decision Support for OS/390 displays the Record Definitions window (Figure 76) for the log.

---

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=8kwed
F8=Fwd  F9=Swap  F10=Actions  F11=List rec  F12=Cancel

Figure 76. Record Definitions window
Working with log and record definitions

Viewing and modifying a record definition

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:

1. From the Record Definitions window, select the record definition and press Enter.

   Tivoli Decision Support for OS/390 displays the Record Definition window (Figure 77) for the record definition.

<table>
<thead>
<tr>
<th>SMF_030 Record Definition</th>
<th>ROW 1 TO 9 OF 188</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type information. Select a field or a section. Then press Enter to display.</td>
<td></td>
</tr>
<tr>
<td>Log name . . . SMF</td>
<td></td>
</tr>
<tr>
<td>Identified by . . . SMF30RTY= 30 &gt; (condition)</td>
<td></td>
</tr>
<tr>
<td>Built by . . . + (program name)</td>
<td></td>
</tr>
<tr>
<td>Description . . . Common address space work &gt;</td>
<td></td>
</tr>
<tr>
<td>/ Field</td>
<td>Type</td>
</tr>
<tr>
<td>SMF30LEN</td>
<td>BINARY</td>
</tr>
<tr>
<td>SMF30SEG</td>
<td>BINARY</td>
</tr>
<tr>
<td>SMF30FLG</td>
<td>BIT</td>
</tr>
<tr>
<td>SMF30RTY</td>
<td>BINARY</td>
</tr>
<tr>
<td>SMF30TME</td>
<td>TIME_001</td>
</tr>
<tr>
<td>SMF30DTE</td>
<td>DATE_001</td>
</tr>
<tr>
<td>SMF30SID</td>
<td>CHAR</td>
</tr>
<tr>
<td>SMF30WID</td>
<td>CHAR</td>
</tr>
<tr>
<td>SMF30STP</td>
<td>BINARY</td>
</tr>
</tbody>
</table>

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 77. 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.

   Tivoli Decision Support for OS/390 displays the Field Definition window. See “Working with fields in a record definition” on page 156 for more information.

4. To modify a section, select the section and press Enter.

   Tivoli Decision Support for OS/390 displays the Section Definition window. See “Working with sections in a record definition” on page 157 for more information.

5. Press F5 to add fields to the record definition.

   Tivoli Decision Support for OS/390 displays the Field Definition window. See “Working with fields in a record definition” on page 156 for more information.

6. Press F6 to add sections to the record definition.

   Tivoli Decision Support for OS/390 displays the Section Definition window. See “Working with sections in a record definition” on page 157 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, Tivoli Decision Support for OS/390 displays a confirmation window. Otherwise, you are deleting something you just added. Tivoli Decision Support for OS/390 does not ask you to confirm this type of deletion and you can skip step 8.

8. Press Enter to confirm the deletion.
   Tivoli Decision Support for OS/390 deletes the section or field and returns to the Record Definition window.

9. Press F3 when you finish modifying the record definition.
   Tivoli Decision Support for OS/390 saves your changes and returns to the Record Definitions window.

Note: If you have incorrectly modified the record definition, Tivoli Decision Support for OS/390 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

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:

1. From the Record Definition window, press F5.
   Tivoli Decision Support for OS/390 displays a blank Field Definition window.

2. Type the required information in the fields and press Enter.
   Tivoli Decision Support for OS/390 displays another Field Definition window (Figure 78).

![Figure 78. Field Definition window](image-url)
3. Press F12 when you finish adding fields.
   Tivoli Decision Support for OS/390 returns to the Record Definition window.

To modify a field definition:
1. From the Record Definition window, select the field and press Enter.
   Tivoli Decision Support for OS/390 displays the Field Definition window.
2. Type changes in the fields and press Enter.
   Tivoli Decision Support for OS/390 saves changes and returns to the Record Definition window.

Working with sections in a record definition

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:
1. From the Record Definition window, select the section and press Enter.
   Tivoli Decision Support for OS/390 displays the Section Definition window (Figure 79).

2. Type changes in the fields and press Enter.
   Tivoli Decision Support for OS/390 saves changes and returns to the Record Definition window.

To add a section definition to a record definition:
1. From the Record Definition window, press F5.
   Tivoli Decision Support for OS/390 displays a blank Section Definition window.
2. Type the required information in the fields and press Enter.
Working with log and record definitions

Tivoli Decision Support for OS/390 displays another Section Definition window.

3. Press F12 when you finish adding sections.
   Tivoli Decision Support for OS/390 returns to the Record Definition window.

Creating a record definition

You can create record definitions in by using:
• The administration dialog
• 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:
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.
   Tivoli Decision Support for OS/390 displays the New Record Definition window.
3. Type information for the new record definition in fields of the window.
4. Press F5 to add fields to the record definition.
   Tivoli Decision Support for OS/390 displays the Field Definition window. See “Working with fields in a record definition” on page 156 for more information.
5. Press F6 to add sections to the record definition.
   Tivoli Decision Support for OS/390 displays the Section Definition window. See “Working with sections in a record definition” on page 157 for more information.
6. Press F3 when you finish adding fields and sections.
   Tivoli Decision Support for OS/390 saves the new record definition and returns to the Record Definitions window.

Displaying update definitions associated with a record

Update definitions contain instructions for summarizing log data into DB2 tables. The Record Definitions window lets you view which update definitions Tivoli Decision Support for OS/390 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:
1. From the Record Definitions window, select the record with associated update definitions you plan to view and press F6.
   Tivoli Decision Support for OS/390 displays the Update Definitions window, which lists all 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 185 or “Creating an update definition” on page 202 for more information.
2. Press F3 when you finish viewing update definitions.
   Tivoli Decision Support for OS/390 returns to the Record Definitions window.
Deleting a record definition

If you no longer require data from a certain record, you can use the administration dialog to delete the record definition.

Note: Tivoli Decision Support for OS/390 prevents you from deleting record definitions that affect, or are affected by, other Tivoli Decision Support for OS/390 objects. To delete a record definition, remove links from it to other Tivoli Decision Support for OS/390 objects.

To delete a record definition:
1. From the Record Definitions window, select the record definition to delete. Then select 5, Delete, from the Record pull-down. Tivoli Decision Support for OS/390 displays a confirmation window.
2. Press Enter to confirm the deletion. Tivoli Decision Support for OS/390 deletes the record definition and returns to the Record Definitions window.

Viewing and modifying a record procedure definition

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 Tivoli Decision Support for OS/390. Some Tivoli Decision Support for OS/390 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:
1. From the Record Definitions window, select the record definition that is input to the record procedure you plan to modify and press F5. Tivoli Decision Support for OS/390 displays the Record Procedures window for the record definition. 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. Tivoli Decision Support for OS/390 displays the Record Procedure Definition window [Figure 80] for the record procedure.
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).
   Tivoli Decision Support for OS/390 displays the Record Definitions window.
5. From the Record Definitions window, select record definitions to link to the record procedure and press Enter.
   Tivoli Decision Support for OS/390 links the record procedure to the record definitions you identify and returns to the Record Procedure Definition window.
6. When you finish modifying the record procedure definition, press Enter.
   Tivoli Decision Support for OS/390 saves changes and returns 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

If you must add a record procedure, you must first write a program according to the instructions in Language Guide and Reference. You can then use the administration dialog to define the record procedure to Tivoli Decision Support for OS/390.

To create a record procedure definition:

1. From the Record Definitions window, select the record definition from which the new record procedure derives its input and press F5.
   Tivoli Decision Support for OS/390 displays the Record Procedures window for the record definition.
2. From the Record Procedures window, press F5.
   Tivoli Decision Support for OS/390 displays the New Record Procedure Definition window.
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.

Tivoli Decision Support for OS/390 displays the Record Definitions window.

5. From the Record Definitions window, select record definitions to link to the record procedure and press Enter.

Tivoli Decision Support for OS/390 links the record procedure to the record definitions you identify and returns to the Record Procedure Definition window.

6. When you finish entering information, press Enter.

Tivoli Decision Support for OS/390 saves the new record procedure 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.

In addition, you must define a record type as the record procedure’s output. Do this in the Record Definition window (Figure 77 on page 155). 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

If you no longer require a record procedure, you can use the administration dialog to delete the record procedure definition.

**Note:** Tivoli Decision Support for OS/390 prevents you from deleting record procedure definitions that affect, or are affected by, other Tivoli Decision Support for OS/390 objects. To delete a record procedure definition, remove links from the record procedure to other Tivoli Decision Support for OS/390 objects.

To delete a record procedure definition:

1. From the Record Definitions window, select the record definition that is associated with the record procedure to delete and press F5.

   Tivoli Decision Support for OS/390 displays the Record Procedures window for the record definition.

2. From the Record Procedures window, select the record procedure to delete and press F6.

   Tivoli Decision Support for OS/390 displays a confirmation window.

3. Press Enter to confirm the deletion.

   Tivoli Decision Support for OS/390 returns to the Record Procedures window.

4. Repeat this procedure to delete more record procedures or press F3 to return to the Record Definitions window.
Working with log and record definitions
Chapter 7. Working with tables and update definitions

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

- Working with data in tables
  - 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 Tivoli Decision Support for OS/390.)
  - Exporting table data to an IXF file. (This option is available only if your installation uses QMF with Tivoli Decision Support for OS/390.)
  - Purging a table
  - Unloading and loading a table
- Working with tables and update definitions
  - Opening a table to display columns
  - Displaying and modifying update definitions of a table
  - Displaying and editing the purge condition of a table
  - Displaying and modifying a table or indexspace
  - Displaying a view definition
  - Printing a list of Tivoli Decision Support for OS/390 tables
  - Saving a table definition in a data set
  - Listing a subset of tables in the Tables window
  - Creating a table
  - Deleting a table or view
  - Creating a table or indexspace
  - Creating an update definition
  - Deleting an update definition
  - Administering user access to tables
  - Documenting a table

When you use Tivoli Decision Support for OS/390 to collect log data, Tivoli Decision Support for OS/390 stores the data in DB2 tables in its database. To view a list of tables that Tivoli Decision Support for OS/390 uses to store collected data, select 4, Tables, from the Administration window. Tivoli Decision Support for OS/390 displays the Tables window (Figure 81 on page 164). The list in this window includes all Tivoli Decision Support for OS/390 data tables, lookup tables, and control tables.
Working with tables and update definitions

The name of each Tivoli Decision Support for OS/390 table appears in the Tables column in the Tables window.

The Prefix column shows the prefix of each table. Tivoli Decision Support for OS/390 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. Tivoli Decision Support for OS/390 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.

Figure 81. Tables window

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_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
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 Tivoli Decision Support for OS/390.)
• Exporting table data to an IXF file (This option is available only if your installation uses QMF with Tivoli Decision Support for OS/390.)
• Purging a table
• Unloading and loading a table

Displaying the contents of a table

You can use the administration dialog to display the contents of a table.

Note: If QMF is not used with Tivoli Decision Support for OS/390 on your system, this 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 a couple of things you can do to be able 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:

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.

Tivoli Decision Support for OS/390 displays the contents of the table in rows and columns.

Note: The table is not necessarily sorted in key sequence.
Working with tables and update definitions

<table>
<thead>
<tr>
<th>REPORT</th>
<th>DRL.SAMPLE_H</th>
<th>LINE 1</th>
<th>POS 1</th>
<th>79</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>TIME</td>
<td>SYSTEM ID</td>
<td>DEPARTMENT</td>
<td>NAME</td>
</tr>
<tr>
<td>2000-01-01 13.00.00</td>
<td>SYS1</td>
<td>Sys Supp</td>
<td>PIANKA</td>
<td>40</td>
</tr>
<tr>
<td>2000-01-01 15.00.00</td>
<td>SYS1</td>
<td>Appl Dev</td>
<td>ADAMS</td>
<td>72</td>
</tr>
<tr>
<td>2000-01-02 08.00.00</td>
<td>SYS1</td>
<td>Appl Dev</td>
<td>JONES</td>
<td>28</td>
</tr>
<tr>
<td>2000-01-02 11.00.00</td>
<td>SYS1</td>
<td>Retail</td>
<td>PEREZ</td>
<td>21</td>
</tr>
<tr>
<td>2000-01-03 10.00.00</td>
<td>SYS1</td>
<td>Marketing</td>
<td>KWAN</td>
<td>74</td>
</tr>
<tr>
<td>2000-01-03 11.00.00</td>
<td>SYS1</td>
<td>Manufact</td>
<td>LEE</td>
<td>22</td>
</tr>
<tr>
<td>2000-01-03 11.00.00</td>
<td>SYS1</td>
<td>Manufact</td>
<td>LUTZ</td>
<td>2</td>
</tr>
<tr>
<td>2000-01-04 07.00.00</td>
<td>SYS1</td>
<td>Finance</td>
<td>HAAS</td>
<td>26</td>
</tr>
<tr>
<td>2000-01-04 07.00.00</td>
<td>SYS1</td>
<td>Sys Supp</td>
<td>THOMPSON</td>
<td>84</td>
</tr>
<tr>
<td>2000-01-04 08.00.00</td>
<td>SYS1</td>
<td>Marketing</td>
<td>KWAN</td>
<td>63</td>
</tr>
<tr>
<td>2000-01-04 08.00.00</td>
<td>SYS1</td>
<td>Finance</td>
<td>GEYER</td>
<td>94</td>
</tr>
<tr>
<td>2000-01-04 08.00.00</td>
<td>SYS1</td>
<td>Finance</td>
<td>GEYER</td>
<td>94</td>
</tr>
<tr>
<td>2000-01-04 09.00.00</td>
<td>SYS1</td>
<td>Marketing</td>
<td>STERN</td>
<td>51</td>
</tr>
<tr>
<td>2000-01-04 09.00.00</td>
<td>SYS1</td>
<td>Manufact</td>
<td>PULASKI</td>
<td>69</td>
</tr>
</tbody>
</table>

Figure 82. Using QMF to display a Tivoli Decision Support for OS/390 table

3. Press F3 when you finish viewing the contents of the table,
   Tivoli Decision Support for OS/390 returns to the Tables window.

Editing the contents of a table

You can use the administration dialog to edit the contents of a table, using either the QMF table editor (if QMF is used with Tivoli Decision Support for OS/390) 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:
1. From the Tables window (Figure 81 on page 164), select the table to edit.
2. Select 1, Add rows, from the Edit pull-down.
   Tivoli Decision Support for OS/390 calls the QMF table editor in add mode.
3. Enter values for columns, and press F2.
4. Press F3 when you finish adding rows.
   QMF prompts you for confirmation.
5. Press Enter.
   Tivoli Decision Support for OS/390 returns to the Tables window.

To change or delete rows using the QMF table editor:
1. From the Tables window (Figure 81 on page 164), select the table to edit.
2. Select 2, Change rows, from the Edit pull-down.
   Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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 \x00 on the command line and 'X'00' in the field.

7. Press Enter.

Tivoli Decision Support for OS/390 returns to the Tables window.

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, Tivoli Decision Support for OS/390 prompts you to temporarily override the default for this edit session.

Tivoli Decision Support for OS/390 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.

To edit a table using the ISPF editor:
1. From the Tables window (Figure 81 on page 164), select the table to edit.
2. Select 3, ISPF editor, from the Edit pull-down.
3. Tivoli Decision Support for OS/390 copies table rows to a sequential file and accesses the ISPF editor (Figure 83).

Figure 83. 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. Tivoli Decision Support for OS/390 returns to the Tables window without changing the table.
6. Press F3 when you finish editing the table.
Tivoli Decision Support for OS/390 reinserts the rows into the DB2 table and returns to the Tables window.

### Showing the size of a table

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 Tivoli Decision Support for OS/390 database. As described in “Monitoring the size of the Tivoli Decision Support for OS/390 database” on page 90, Tivoli Decision Support for OS/390 provides a sample job, DRLJRUNS, as an example of how to run the RUNSTATS utility. You can also run the RUNSTATS utility like this:

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 tablespaces, select one or more tablespaces (or make no selection to process all the tablespaces) and select the Utilities pull-down, as shown in Figure 38 on page 78.
4. Select option 2, Run DB2 RUNSTATS.

   To learn more about the DB2 RUNSTATS utility, refer to the DATABASE 2 Administration Guide: Volume III.

Then use the administration dialog to check the size of tables in the Tivoli Decision Support for OS/390 database:

1. From the Tables window (Figure 81 on page 164), select tables to display their sizes.

   **Note:** If you do not select any tables, Tivoli Decision Support for OS/390 displays the size of all tables in the Tivoli Decision Support for OS/390 database.

2. Select 2, Show size, from the Utilities pull-down.

   Tivoli Decision Support for OS/390 displays the Table Size window (Figure 84 on page 169).
Notes:

a. You can use the SORT command (for example, SORT KBYTES DESC) to find the largest tables.

b. 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.

Tivoli Decision Support for OS/390 returns to the Tables window.

---

**Figure 84. Table Size window**

<table>
<thead>
<tr>
<th>Name</th>
<th>Prefix</th>
<th>Row</th>
<th>Row length</th>
<th>Kbytes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVSPM_DEVICE_H</td>
<td>DRL</td>
<td>80927</td>
<td>240</td>
<td>18967</td>
</tr>
<tr>
<td>MVSPM_DEVICE_AP_H</td>
<td>DRL</td>
<td>34821</td>
<td>102</td>
<td>3488</td>
</tr>
<tr>
<td>MVSPM_CHANNEL_H</td>
<td>DRL</td>
<td>9338</td>
<td>140</td>
<td>1276</td>
</tr>
<tr>
<td>MVSPM_APPL_H</td>
<td>DRL</td>
<td>2308</td>
<td>491</td>
<td>1145</td>
</tr>
<tr>
<td>MVSPM_WORKLOAD_H</td>
<td>DRL</td>
<td>2727</td>
<td>308</td>
<td>820</td>
</tr>
<tr>
<td>MVSPM_STORAGE_H</td>
<td>DRL</td>
<td>2567</td>
<td>199</td>
<td>498</td>
</tr>
<tr>
<td>MVSPM_PAGE_DS_H</td>
<td>DRL</td>
<td>966</td>
<td>229</td>
<td>216</td>
</tr>
<tr>
<td>MVSPM_XCF_PATH_H</td>
<td>DRL</td>
<td>1296</td>
<td>171</td>
<td>216</td>
</tr>
<tr>
<td>MVSPM_SWAP_H</td>
<td>DRL</td>
<td>1771</td>
<td>114</td>
<td>197</td>
</tr>
<tr>
<td>MVSPM_ENQUEUE_H</td>
<td>DRL</td>
<td>1642</td>
<td>100</td>
<td>160</td>
</tr>
</tbody>
</table>
Recalculating the contents of a table

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. Tivoli Decision Support for OS/390 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:

1. From the Tables window (Figure 81 on page 164), select the source table (the table you plan to modify).
2. Select 8, Recalculate, from the Utilities pull-down.

   Tivoli Decision Support for OS/390 displays the Recalculate window (Figure 85).

   Figure 85. 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.

   Tivoli Decision Support for OS/390 displays the Target Tables window.

4. Select one or more target tables from the list and press Enter.

   Tivoli Decision Support for OS/390 returns 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), Tivoli Decision Support for OS/390 displays the Condition window (Figure 86).

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), Tivoli Decision Support for OS/390 displays the Column Values window (Figure 87 on page 172).
7. Type column values in the fields, and press Enter.
   Tivoli Decision Support for OS/390 performs the recalculate function and returns to the Recalculate window.

8. Press F12 to return to the Tables window.

**Importing the contents of an IXF file to a table**

You might want to import data from another source into a Tivoli Decision Support for OS/390 table. If QMF is used with Tivoli Decision Support for OS/390, 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, Tivoli Decision Support for OS/390 replaces the contents of the table.

To import data into a table:

1. From the Tables window (Figure 81 on page 164), select the table.
2. Select 3, Import, from the Utilities pull-down.
   Tivoli Decision Support for OS/390 displays the Import Data Set window.
3. Type the name of the data set that contains the data you want to import and press Enter.
   Tivoli Decision Support for OS/390 imports the data into the table and returns to the Tables window.
Working with tables and update definitions

Exporting table data to an IXF file

You might want to export data from a Tivoli Decision Support for OS/390 table to an IXF data set. If QMF is used with Tivoli Decision Support for OS/390, you can use the administration dialog to do this.

To export data from a table:
1. From the Tables window (Figure 81 on page 164), select the table.
2. Select 4, Export, from the Utilities pull-down.
   Tivoli Decision Support for OS/390 displays the Export Data Set window.
3. Type the name of the data set to export data into, and press Enter.
   Tivoli Decision Support for OS/390 exports the data into the data set you specified and returns to the Tables window.

Purging a table

Each table in the Tivoli Decision Support for OS/390 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 191 for a description of how to define the purge condition for a table.

Purging the database is normally a batch process. See “Purging Utility” on page 85 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:
1. From the Tables window (Figure 81 on page 164), select tables to purge.
   Note: If you do not select any tables, Tivoli Decision Support for OS/390 purges the contents of all data tables with purge conditions.
2. Select 9, Purge, from the Utilities pull-down.
   Tivoli Decision Support for OS/390 displays the Purge Confirmation window.
3. Press Enter to confirm the purge.
   Tivoli Decision Support for OS/390 executes purge conditions associated with the tables and displays statistics on the number of rows deleted from each table.

Unloading and loading tables

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 tablespace. It enables you to load records into the tables and builds or extends any indexes defined on them. If the tablespace 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 tablespace level, to run it you must have the required authority for all the tables of the tablespace. 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
Working with tables and update definitions

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:
1. From the Tables window (Figure 81 on page 164), select the tables to unload, as shown in Figure 88.

![Figure 88. Selecting tables to unload](image)

2. Select option Unload, from the Utilities pull-down menu. The Unload Utility window opens, as shown in the following figure:

![Figure 89. Unload Utility window](image)

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,
   if the data set already exists, leave the fields UNIT and VOLSER blank. If you need to create a new data set, enter the required information in both the fields.
   If you selected Tape Unload,
   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.

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.

```asm
//UNLOAD JOB (ACCOUNT), 'NAME'
/*
/* THIS JCL HAS BEEN REWRITTEN IN ORDER
/* TO PROPERLY UNLOAD THE DATA FROM DB2 TABLES.
/* DSNTIAUL 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 DSNTIBVR),
/* 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.
/* IMPOSENT :
/* CHECK THE DATA SET PARAMETER IF YOU HAVE CHOOSEN
/* THE UNLOAD ON TAPE.
/*
/*//UNLOAD EXEC PGM=IKJEFT01,DYNAMNBR=20
//SYSTSPRT DD SYSOUT=
//SYSSTIN DD *
//DSN SYSTEM(DSN6)
RUN PROGRAM(DSNTIAUL) PLAN(DSNTIB61) -
   PARM('SQL') LIB('DSN610.RUNLIB.LOAD')
//SYSPRINT DD SYSOUT=
//SYSDUMP 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=xxx,
   // VOL=SER=xxxxx,
   // 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.
* DSNTIAUL 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 DSNTIBVR),
* 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 dataset or tape (for example, if in your table a DATE field is present, you can extract all the data with a date later than 2002-01-01, by writing the appropriate WHERE condition in the SELECT statement of the UNLOAD command).

**Running DB2 High Performance Unload utility**

To run the DB2 High Performance Unload utility, you must have the product correctly installed and configured on the system.

**Note:** The DB2HP Unload utility integration works in batch mode; it can run in interactive mode only if you have DB2 Administration Tool, or DB2 Tools Launchpad, installed on your system. These products are optional and not needed to run the DB2HP Unload utility. For more details about DB2 High Performance Unload see the DB2 High Performance Unload for z/OS User’s Guide.

To run the utility follow these steps:

1. From the Tables window, select the table to unload, as shown in Figure 81 on page 164.

2. From the Utilities pull-down menu, select option DB2HP Unload, as shown in Figure 90.

3. From the DB2 High Performance Unload Utility window, specify the unload type by inserting 1 for disk unload or 2 for tape unload. The default value is disk unload. Then, specify the name of data set that will be used to store the unloaded data, as shown in the following window:
4. If you selected Disk, then if:
   the data set already exists, leave the fields UNIT and VOLSER blank. If you
   need to create a new data set, enter the required information in both the fields.
   If you selected Tape, then:
   Specify the tape unit in the UNIT field, and the tape label in the VOLSER field.

5. 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), the other contains the data unloaded by the utility.

Sample control statement for DB2 High Performance Unload utility:
Data has been unloaded from the AVAILABILITY_D table; the DDNAME for
SYSPUNCH data set must be completed with UNIT and VOLSER information. The
data set input from panel is SYSREC00.

```
//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 (SYSRECO0 AND SYSPUNCH).
/* SYSPUNCH DATASET, IS CREATED AT UNLOAD STEP,
/* as USERID.SYSPUNCH (USERID.SYSPUNCH).
/* SYSRECO0 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,DYNA2MNB=99,
/* PARM=DSN6,DB2UNLOAD'
```
/*
//STEPLIB DD DSN=DSN610.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 (SYSRECO0)
FORMAT DSNTIAUL
LOADDDN SYSPUNCH LOADOPT (RESUME NO REPLACE)
/*
//SYSPRINT DD SYSOUT**
//*
//******** DDNAMES USED BY THE SELECT STATEMENTS ********
//*
//SYSRECO0 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
Working with tables and update definitions

The rest of this chapter describes working with tables and update definitions.

Opening a table to display columns

You can use the administration dialog to view a table definition.

To open a table:
1. From the Tables window, select the table definition you plan to view.
2. Press Enter.
   Tivoli Decision Support for OS/390 opens the table definition. Figure 92 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.

<table>
<thead>
<tr>
<th>Column</th>
<th>Type</th>
<th>Length</th>
<th>Nulls</th>
<th>Primary Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>DATE</td>
<td>4</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>3</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR</td>
<td>4</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>DEPARTMENT_NAME</td>
<td>CHAR</td>
<td>8</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR</td>
<td>8</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>TRANSACTIONS</td>
<td>INTEGER</td>
<td>4</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>RESPONSE_SECONDS</td>
<td>INTEGER</td>
<td>4</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>CPU_SECONDS</td>
<td>FLOAT</td>
<td>8</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>PAGES_PRINTED</td>
<td>INTEGER</td>
<td>4</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

******************************* 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 92. Table window

3. Type changes to comments in the Comments field and press Enter.

   Note: Press F10 to see the entire Comments field.
   Tivoli Decision Support for OS/390 saves changes to the comments.
Displaying and modifying a column definition

To display and modify a column definition:

1. From the Table window, select the column, and press Enter.
   Tivoli Decision Support for OS/390 displays the Column Definition window for the column [Figure 93].

   ![Figure 93. Column Definition window](image)

   Modify comments if required. Then press Enter to save and return.

2. Type changes to comments in the Comments field, and press Enter.

   **Note:** Press F10 to see the entire Comments field.
   Tivoli Decision Support for OS/390 saves changes and returns to the Tables window.
Adding a column to a table

You can add columns to a table, but you cannot delete columns.

To add a column to a table:

1. From the Table window, press F5. Tivoli Decision Support for OS/390 displays the Add Column window (Figure 94).

<table>
<thead>
<tr>
<th>Add Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: ... (required)</td>
</tr>
<tr>
<td>Comments: ...</td>
</tr>
<tr>
<td>Length: ... Primary key: 2</td>
</tr>
<tr>
<td>Nulls: 1. Default 2. NOT NULL 3. NOT NULL WITH DEFAULT</td>
</tr>
</tbody>
</table>

Figure 94. Add Column window

2. Type information for the new column in the window, and press Enter. Tivoli Decision Support for OS/390 adds the new column to the table and returns to the Add Column window.

3. When you finish adding columns to the table, press F12. Tivoli Decision Support for OS/390 returns to the Tables window.

Displaying and adding a table index

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 indexspace” on page 192.

To view or add indexes to a table:

1. From the Tables window, select a table and press Enter.
2. From the Table window, press F6. Tivoli Decision Support for OS/390 displays the Indexes window (Figure 95 on page 183).
3. To view an index definition, select the index and press Enter. Tivoli Decision Support for OS/390 displays the Index window (Figure 96). 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.

4. Press Enter to return to the Indexes window.

5. From the Indexes window, press F5 to add an index to the table. Tivoli Decision Support for OS/390 displays the Add Index window (Figure 97 on page 184).
Working with tables and update definitions

**Add Index window**

6. Type the information for the new index and press Enter.

   Tivoli Decision Support for OS/390 adds the index to the table and returns to the Indexes window.

   **Note:** To modify an index, delete and recreate it.

**Deleting a table index**

To delete a table index:

1. From the Indexes window, select the index and press F11.

   Tivoli Decision Support for OS/390 displays a confirmation window.

2. Press Enter to confirm the deletion.

   Tivoli Decision Support for OS/390 returns to the Indexes window.
Displaying and modifying update definitions of a table

The instructions for entering data from logs into DB2 tables in the Tivoli Decision Support for OS/390 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 collect. 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:
1. From the Tables window (Figure 81 on page 164), select the table and press F5. Tivoli Decision Support for OS/390 displays the Update Definitions window for the table (Figure 98). All update definitions where the selected table is either the source or the target are included.

   ![Update Definitions Window](image)

   **Figure 98. Update Definitions window**

2. Select the update definition to modify and press Enter. Tivoli Decision Support for OS/390 displays the Update Definition window for the update definition (Figure 99 on page 186).
Working with tables and update definitions

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. Tivoli Decision Support for OS/390 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. Tivoli Decision Support for OS/390 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 188 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.

Tivoli Decision Support for OS/390 displays the Abbreviations window. See “Working with abbreviations” on page 188 for more information.
5. Press F6 to modify the distribution clause associated with the update definition.

Tivoli Decision Support for OS/390 displays the Distribution window. See “Modifying a distribution clause” on page 189 for more information.
6. Press F11 to modify the apply schedule clause associated with an update definition.

Tivoli Decision Support for OS/390 displays the Apply Schedule window. See “Modifying an apply schedule clause” on page 190 for more information.
7. Press F3 when you finish modifying the update definition.

Tivoli Decision Support for OS/390 saves changes and returns 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 tables and update definitions

Working with abbreviations
You can use abbreviations to give names to long expressions that are used several times. Using abbreviations improves Tivoli Decision Support for OS/390 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:
1. From the Update Definition window (Figure 99 on page 186), press F5. Tivoli Decision Support for OS/390 displays the Abbreviations window (Figure 100).

   Abbreviations
   ROW 1 TO 3 OF 3

   Modify expressions if required. Press F3 to save and return.

   Abbreviation   Expression
   TS1           TIMESTAMP(SMF70DAT,SMF70IST)+(SMF70INT
   D1            DATE(TS1)
   T1            TIME(TS1)
   ******************************************************
   BOTTOM OF DATA ******************************************************

2. Type modifications in the fields and press Enter.
   Tivoli Decision Support for OS/390 saves changes and returns to the Update Definition window.

To add an abbreviation to an update definition:
1. From the Abbreviations window, press F5.
   Tivoli Decision Support for OS/390 displays the Abbreviation window.

2. Type the abbreviation and the expression in the fields and press Enter.
   Tivoli Decision Support for OS/390 adds the abbreviation and returns to the Abbreviations window.

To delete an abbreviation from an update definition:
1. From the Abbreviations window, select the abbreviation to delete, and press F11.
   Tivoli Decision Support for OS/390 deletes the abbreviation from the list.
Modifying a distribution clause

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:

1. From the Update Definition window [Figure 99 on page 186], press F6. Tivoli Decision Support for OS/390 displays the Distribution window [Figure 101].

   ![Distribution window](image)

   **Figure 101. Distribution window**

2. Type modifications in the fields and press Enter.

   Tivoli Decision Support for OS/390 saves changes and returns to the Update Definition window.
Modifying an apply schedule clause

Tivoli Decision Support for OS/390 uses the apply schedule clause of an update definition in calculating availability. The clause specifies how Tivoli Decision Support for OS/390 should merge schedule information in control tables (see “Control tables” on page 244) with detailed availability information.

To modify the apply schedule clause associated with an update definition:
1. From the Update Definition window [Figure 99 on page 186], press F11. Tivoli Decision Support for OS/390 displays the Apply Schedule window [Figure 102].

2. Type modifications in the fields and press Enter.

Tivoli Decision Support for OS/390 saves changes and returns to the Update Definition window.

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

Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 purge definitions. For more information about this report, see "PRA003 - Table purge condition" on page 410.

To display and edit the purge condition of a table:

1. From the Tables window (Figure 81 on page 164), select the table to update and press F6.

   Tivoli Decision Support for OS/390 displays the Retention Period window (Figure 103) 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.

2. Modify information in the fields. The column is the date or timestamp column in the table that Tivoli Decision Support for OS/390 uses to determine the age of the rows.

3. Press Enter.

   Tivoli Decision Support for OS/390 saves changes and returns to the Tables window.

4. If the purge condition does not have the standard format, Tivoli Decision Support for OS/390 displays the Purge Condition window (Figure 104 on page 192) instead of the Retention Period window.

   Tivoli Decision Support for OS/390 also displays this window if you press F5 from the Retention Period window.
5. Modify the SQL condition, and press Enter.

Tivoli Decision Support for OS/390 saves changes and displays the previous window.

Displaying and modifying a table or indexspace

Each table in the Tivoli Decision Support for OS/390 database is in a tablespace, and each index is in an indexspace. Tivoli Decision Support for OS/390 usually uses one tablespace for each component. You can use the administration dialog to work with tables and indexspaces.

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 described here.

To make a change to a tablespace:
1. From the Tables window (Figure 81 on page 164), select the Maintenance pull-down. Do not select a table first.
2. The pull-down has these options:
   1. Tablespace...
   2. Index and indexspace...

To change tablespace parameters, select 1. You see the window in Figure 105 on page 193 (with the Tablespace pull-down illustrating the options available: you can use the Utilities pull-down to reorganize or get statistics on a tablespace).
You can use the Save definition option to create SQL commands that can recreate the selected tablespace. Note that this does not update the component definition: only the definition of the selected tablespace is saved.

3. Select a tablespace and press Enter. You see the window in Figure 106, which you can use to change the tablespace parameters: change the parameters and press Enter.

Figure 105. Tablespaces window

You can use the Save definition option to create SQL commands that can recreate the selected tablespace. Note that this does not update the component definition: only the definition of the selected tablespace is saved.

3. Select a tablespace and press Enter. You see the window in Figure 106, which you can use to change the tablespace parameters: change the parameters and press Enter.

Figure 106. Tablespace window
Tivoli Decision Support for OS/390 takes action depending on the parameters to be changed:

**Where reorganization is needed**
Some parameter changes need a database reorganization before they take effect. Here, Tivoli Decision Support for OS/390:

a. Makes the change, using ALTER TABLESPACE.
b. 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. Here, Tivoli Decision Support for OS/390 creates a batch job that:

a. Stops the database.
b. Makes the change, using ALTER TABLESPACE.
c. Starts the database again.

Do not submit the job if some task, for example a collect, is using the tablespace, because this stops the collect job.

**In other cases**
Some parameter changes can be made immediately. Tivoli Decision Support for OS/390 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 *DATABASE 2 Administration Guide: Volume II*.

To make a change to an indexspace:

1. From the Tables window (Figure 81 on page 164), select the Maintenance pull-down. Do not select a table first.
2. To change indexspace parameters, select 2. You see the window in Figure 107 (with the Index pull-down illustrating the options available: you can use the Utilities pull-down to reorganize an indexspace).

---

![Figure 107. Indexes window](image_url)
3. Select an indexspace and press Enter. You see the window in Figure 108 which you can use to change the indexspace parameters: change the parameters and press Enter.

![Figure 108: Index window]

Tivoli Decision Support for OS/390 takes action depending on the parameters to be changed:

Where the index must be recreated
Here, Tivoli Decision Support for OS/390:
  a. Asks you to confirm the change.
  b. Deletes the index, with the DROP command.
  c. Redefines the index, using the DEFINE command.

Where the database needs to be stopped
Some parameter changes need exclusive use of the database. Here, Tivoli Decision Support for OS/390 creates a batch job that:
  a. Stops the database.
  b. Makes the change, using the ALTER command.
  c. Starts the database again.

Do not submit the job if some task, for example a collect, is using the indexspace, because this stops the collect job.

In other cases
Some parameter changes can be made immediately. Tivoli Decision Support for OS/390 issues the ALTER command online.

Press F1 to get more information about a parameter, or refer to the discussion of designing a database in DATABASE 2 Administration Guide: Volume II.

If you want just to make tablespace parameter changes that do not require offline or batch action, you can use this alternative method:
1. From the Tables window (Figure 81 on page 164), select a table in the tablespace to open.
2. Select 5, Open tablespsce, from the Table pull-down.

Tivoli Decision Support for OS/390 displays the Tablespace window (Figure 109 on page 196).
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 tablespace.
   Tivoli Decision Support for OS/390 displays the Tables window.

5. Press Enter when you finish viewing this window.
   Tivoli Decision Support for OS/390 returns to the Tablespace window.

6. Press Enter.
   Tivoli Decision Support for OS/390 saves changes to the tablespace and returns to the Tables window.
Displaying a view definition
You can use the administration dialog to display a view definition created with SQL statements.

To display the view definition:
1. From the Tables window, select a view to display, and press Enter.
   Tivoli Decision Support for OS/390 displays the View window [Figure 110].

2. Tivoli Decision Support for OS/390 lets you change any of the comments in a view definition. Change comments by typing new information in a Comments field.

3. Press Enter when you finish displaying the view definition.
   Tivoli Decision Support for OS/390 saves changes and returns to the Tables window.

Printing a list of Tivoli Decision Support for OS/390 tables
Tivoli Decision Support for OS/390 maintains a list of all tables in the Tivoli Decision Support for OS/390 database. You can use the administration dialog to print a list of the tables in the Tivoli Decision Support for OS/390 database.

To print a list of Tivoli Decision Support for OS/390 tables:
1. From the Table pull-down in the Tables window [Figure 81 on page 164], select 8, Print list.
   Tivoli Decision Support for OS/390 displays the Print Options window.
2. Type the required information, and press Enter.
   Tivoli Decision Support for OS/390 routes the list of Tivoli Decision Support for OS/390 tables to the destination you specified.
Saving a table definition in a data set

Each table in the Tivoli Decision Support for OS/390 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:
1. From the Tables window (Figure 81 on page 164), select the table definition to save in a data set.
2. Select 7, Save definition, from the Table pull-down.
   Tivoli Decision Support for OS/390 displays the Save Data Set window.
3. Type the data set name in the field, and press Enter.
   Tivoli Decision Support for OS/390 saves the table definition in the data set you specified and returns to the Tables window.

Listing a subset of tables in the Tables window

When you select 4, Tables, from the Administration window, all tables in the Tivoli Decision Support for OS/390 database are listed in the Tables window. You can use the administration dialog to list only a subset of tables in the Tivoli Decision Support for OS/390 database in the Tables window.

To specify which tables should appear in the Tables window:
1. From the View pull-down in the Tables window (Figure 81 on page 164), select 2, Some, and press Enter.
   Tivoli Decision Support for OS/390 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.
   Tivoli Decision Support for OS/390 lists tables that correspond to the criteria you specified.

To list all tables in the Tables window, select 1, All, from the View pull-down. Tivoli Decision Support for OS/390 lists all tables in the Tivoli Decision Support for OS/390 database.

Creating a table

Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 administration dialog. Refer to the DB2 documentation for a description of how to create views using SQL.
To create a table:

1. From the Table pull-down in the Tables window (Figure 81 on page 164), select 1, New, and press Enter.
   Tivoli Decision Support for OS/390 displays the New Table window (Figure 111).
2. Type required information in the fields.
3. To see a list of available tablespaces, place the cursor in the Tablespace field, and press F4.
   Tivoli Decision Support for OS/390 displays the Prompt for Tablespace window. If the table is related to existing tables, you might want to put the table in the same tablespace.
4. Select a tablespace from the list, and press Enter.
   Tivoli Decision Support for OS/390 returns to the New Table window, and the tablespace appears in the Tablespace field.

Note: To create a tablespace, see “Creating a tablespace” on page 201.
5. Press F5 to add a column to the table.
   Tivoli Decision Support for OS/390 displays the Add Column window (Figure 94 on page 182).
6. Type the required information in the fields, and press Enter.
   Tivoli Decision Support for OS/390 returns to the Add Column window.
7. When you finish adding columns to the table, press F12.
   Tivoli Decision Support for OS/390 returns to the New Table window.
8. Press F6 to add indexes to the table.
   Tivoli Decision Support for OS/390 displays the Indexes window (Figure 95 on page 183).
9. Press F5 to add an index.
   Tivoli Decision Support for OS/390 displays the Add Index window (Figure 97 on page 184).
Working with tables and update definitions

10. Type required information in the fields, and press Enter.
    Tivoli Decision Support for OS/390 adds the index and returns to the Indexes window.

11. Press F3 to return to the New Table window.

12. Press F3 when you finish typing information.
    Tivoli Decision Support for OS/390 adds the table to the database and returns to the Tables window.

You can also create a table using an existing table as a template.

To create a table using an existing table as a template:
1. From the Tables window, select the table to use as a template.
2. Select 1, New, from the Table pull-down.
    Tivoli Decision Support for OS/390 displays the New Table window.

**Note:** 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.

You can use the administration dialog to delete a column from a table you are defining. To delete a column:
1. From the New Table window, select an existing column.
2. Press F11 to delete the column.
    Tivoli Decision Support for OS/390 displays a confirmation window.
3. Verify the deletion by pressing Enter.
    Tivoli Decision Support for OS/390 deletes the column and returns to the New Table window.

Deleting a table or view

To delete a table or view:
1. Select the table or view to delete in the Tables window and select 6, Delete, from the Table pull-down.

**Note:** Tivoli Decision Support for OS/390 prevents you from deleting table definitions that affect, or are affected by, other Tivoli Decision Support for OS/390 objects. To delete a table definition, remove links from the table to other Tivoli Decision Support for OS/390 objects.

Tivoli Decision Support for OS/390 displays a confirmation window.

2. Verify the deletion by pressing Enter.
    Tivoli Decision Support for OS/390 deletes the table or view and returns to the Tables window.

**Note:** A table in a partitioned tablespace cannot be explicitly deleted (dropped). You can drop the tablespace that contains it. This does not have any impact on other tables because only one table can be defined in a single tablespace.
Creating a tablespace

DB2 tables are in tablespaces. For a new table, you might need to create a tablespace.

You can use the administration dialog to create a tablespace. You must have some knowledge of DB2 databases before creating the tablespace. See “Understanding tablespaces” on page 78 for more information about tablespaces, or refer to the discussion of designing a database in DATABASE 2 Administration Guide: Volume II.

To create a tablespace:
1. From the New Table window (Figure 111 on page 199), place the cursor in the Tablespace field and press F4.

   Tivoli Decision Support for OS/390 displays the Prompt for Tablespace window.

2. From the Prompt for Tablespace window, press F5.

   Tivoli Decision Support for OS/390 displays the New Tablespace window (Figure 112).

3. Type required information in the fields, and press Enter.

   Tivoli Decision Support for OS/390 creates a tablespace and returns 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 198.
Creating an update definition

In Tivoli Decision Support for OS/390, 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:

1. From the Tables window (Figure 81 on page 164), select a table for addition of an update definition, and press F5.
   Tivoli Decision Support for OS/390 displays the Update Definitions window (Figure 98 on page 175).
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.
   Tivoli Decision Support for OS/390 displays the New Update Definition window (Figure 113 on page 203). 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.
   Tivoli Decision Support for OS/390 prompts you 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.
   Tivoli Decision Support for OS/390 displays the New Update Definition window (Figure 113 on page 203).
Working with tables and update definitions

Type required information in the fields, and press F3.

Tivoli Decision Support for OS/390 saves the new update definition and returns 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” for information:

- “Working with abbreviations” on page 188
- “Modifying a distribution clause” on page 189
- “Modifying an apply schedule clause” on page 190

5. Press F3 again to return to the Tables window.

Deleting an update definition

Update definitions are supplied for all data tables. You can use the administration dialog to delete an update definition you no longer need. Tivoli Decision Support for OS/390 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:

1. From the Tables window (Figure 81 on page 164), select the table and press F5.

Tivoli Decision Support for OS/390 displays the Update Definitions window for the table (Figure 98 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.

Tivoli Decision Support for OS/390 displays a confirmation window.

3. Verify the deletion by pressing Enter.

Tivoli Decision Support for OS/390 deletes the definition and returns to the Update Definitions window.

4. Press F3 to return to the Tables window.
Administering user access to tables

When you install a component, Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 users.

To grant table access to other users:
1. From the Tables window (Figure 81 on page 164), select one or more tables to grant access to.
2. Select 5, Grant, from the Utilities pull-down.

   Tivoli Decision Support for OS/390 displays the Grant Privilege window (Figure 114).

   ![Figure 114. Grant Privilege window](image)

3. Type required information in the fields, and press Enter.
   Tivoli Decision Support for OS/390 grants the user ID access to the table.
4. When you finish granting access to the table, press F12.
   If you selected more than one table, Tivoli Decision Support for OS/390 displays the Grant Privilege window for the next table. When you complete the Grant Privilege window for the last table, Tivoli Decision Support for OS/390 returns to the Tables window.

To revoke table access:
1. From the Tables window (Figure 81 on page 164), select one or more tables to revoke access to.
2. Select 6, Revoke, from the Utilities pull-down.

   Tivoli Decision Support for OS/390 displays the Revoke Privilege window (Figure 115 on page 205).
Working with tables and update definitions

3. Select the user IDs with table access privileges to revoke, and press Enter.

Tivoli Decision Support for OS/390 revokes access privileges to those user IDs and tables and returns to the Tables window.

Documenting a table

You can use the administration dialog to document a table in BookMaster, the same source format used for Appendix A, “System tables and views” through Appendix C, “Sample components”.

To document a table:
1. From the Tables window (Figure 81 on page 164), select tables to document.
2. Select 7, Document, from the Utilities pull-down.

Tivoli Decision Support for OS/390 displays the Document Data Set window.
3. Type the name of the data set in the field, and press Enter.

Tivoli Decision Support for OS/390 generates BookMaster documentation for the tables and returns to the Tables window.
Working with tables and update definitions
Chapter 8. Working with the log data manager option

This chapter contains information about the Tivoli Decision Support for OS/390 log data manager option, which automates and simplifies the collection of data.

After providing a summary of the log data manager, this chapter then describes:
- How the log data manager is invoked from the administration dialog.
- The job for recording of log data sets for collection.
- Modifying log collector statements to be used in the collect.
- Modifying the list of log data sets to be collected.
- The collect job and the parameters it uses.
- Modifying the list of successfully collected log data sets.
- Modifying the list of unsuccessfully collected log data sets.

Summary of how the log data manager is used

You usually include a log data set for use with the log data manager by 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.

Administration dialog windows also allow you to:
- 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

To invoke the log data manager:

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 log data manager), from the Log pull-down. The log data manager Main Selection window is displayed.

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.
   Each of these options is discussed in the sections of this chapter.

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 collect job and the parameters it uses” on page 217).

After job step DRLJLDML has successfully run, Tivoli Decision Support for OS/390 will have created a record in system table DRLLDM_LOGDATASETS (described in “DRLLDM_LOGDATASETS” on page 229). You must run this job step for each log data set that you want to be collected by 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 215.

Using the DRLJLDML job step

To use the DRLJLDML job step:

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 Figure 117 and Figure 118 on page 210).
5. Run the job you have now amended, to create the log data set.

**DRLJLDML sample job**

This job is shipped with Tivoli Decision Support for OS/390 as sample job DRIJLDML.

```plaintext
//DRLJLDML  JOB (ACCT#), 'TIVOLI DECISION SUPPORT FOR OS/390 LOGS'
//***************************************************************************
//*                                                                   *
//* Licensed Materials - Property of IBM                              *
//*                                                                   *
//* 5695-101 (C) Copyright IBM Corporation 1998, 2003                *
//* See Copyright instructions.                                       *
//*                                                                   *
//***************************************************************************
//* Name:  DRLJLDML                                                     *
//*                                                                   *
//* Function:                                                          *
//* Tivoli Decision Support for OS/390 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 DRLDLM_LOGDATASETS as being ready      *
//* for collection by the Log Data Manager.                           *
//*                                                                   *
//* Input:                                                             *
//* The exec DRELELDML 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=xxxxxxx 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 the collect.                                *
//*                                                                   *
//* DRLLOG DD statement:  Name of the log data set to be recorded     *
//* for future collect. This name can refer                          *
//* to a previous step in which the log data set was created.        *
//* The log data set must be cataloged.                              *
//*                                                                   *
//* Output: The log data set name is recorded in table              *
//* sysprefix.DRLDLM_LOGDATASETS together                            *
//* with LOG_NAME, LOG_ID and TIME_ADDED.                            *
//* A confirmation message containing the data set name is given.    *
//*                                                                   *
//* Notes:                                                            *
//* Before you submit the job, do the following:                     *
//* 1. Enter a correct log data set name in this job.                *
//* 2. Change the steplib DSN610.DSNLOAD to your own name.           *
//* 3. Change the parameters used with DRELELDML.                     *
***************************************************************************
```

*Figure 117. DRLJLDML job (Part 1 of 2)*
Working with the log data manager option

//LDMLOG EXEC PGM=IKJEFT01
/*
//SYSPROC DD DISP=SHR,DSN=DRL160.SDRLEXEC
//STEPLIB DD DISP=SHR,DSN=DRL160.SDRLLOAD
// DD DISP=SHR,DSN=DSN610.DSNLOAD <--
//***********************************************************************
/* 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
/*
//SYSSPRINT DD SYSOUT*
//SYSTSPRT DD SYSOUT*
//SYSTSIN DD *
%DRLELDML SYSTEM=DSN SYSPREFIX=DRLSYS -
 LOGTYPE=SMF -
 LOGID='
/*

Figure 118. DRLJLDML job (Part 2 of 2)

Setting the parameters for job DRLJLDML

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 = 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 DRLJLDML job parameters:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSPREFIX</td>
<td>The prefix of all Tivoli Decision Support for OS/390 system and control DB2 tables. If you do not specify a value here, the default DRLSYS is used.</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>The DB2 subsystem. The default value is DSN.</td>
</tr>
<tr>
<td>PLAN</td>
<td>The name of the DB2 application plan. The default value is DRLPLAN.</td>
</tr>
<tr>
<td>SHOWSQL</td>
<td>When this value is set to YES, all executed SQL statements will be written to an output file. The default value is NO.</td>
</tr>
<tr>
<td>LOGTYPE, LOGID</td>
<td>Each combination of LOGTYPE and LOGID identifies the collect statements to be used by the collect job (which is run after this job):</td>
</tr>
<tr>
<td></td>
<td>• If you do not enter a value for LOGID, or if you enter two apostrophes with no blank between</td>
</tr>
</tbody>
</table>
Working with the log data manager option

(“"), 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.

- Using different values of LOGID will produce more than one collect for a specific LOGTYPE. These collects will normally be run serially. However, you can run these collects in parallel by setting up your system accordingly.
Modifying log collector statements

Listing the data sets containing collect statements

To list the log collector statements used with a log type, select 1, Log collector statements, from the log data manager Main Selection window. The Collect Statements window (Figure 119) is displayed, one row for each log ID defined for the log type. When a default row is created during installation of a Tivoli Decision Support for OS/390 component, the field log ID is always blank.

```
DRLLDLMS  Log Data Manager Collect Statements for SMF

Select a Log ID. Then press Enter to edit the collect statement

/ Log ID     Collect statement data set
 s DRL151.SDRLDEFSDRLBSMF
- MVS A DRL151.LOCAL.DEFS(MVSACOLL)
- MVS B DRL151.LOCAL.DEFS(MVSBCOLL)
- MVS X DRL151.LOCAL.DEFS(MVSXCOLL)
- MVS I DRL151.LOCAL.DEFS(MVSICOLL)
- SYS I DRL151.LOCAL.DEFS(SYSICOLL)

Command ===> F1=Help  F2=Split  F3=Exit  F5=Add  F6=Modify  F7=Bkwd  F8=Fwd  F9=Swap  F11=Delete  F12=Cancel
```

Figure 119. Collect Statements window

Editing the collect statements

To edit (default action) the collect statements for a log ID:

1. Select the log ID whose collect statements you want to edit, and press Enter. The Edit window (Figure 120 on page 213) is displayed.

2. Edit the collect statements using the ISPF editor. If the member does not exist, it will be automatically created by the edit. If the collect statements data set does not exist or is not cataloged, an error message is displayed. A confirmation window is displayed if a member of the Tivoli Decision Support for OS/390 definition library is selected for editing. If you want to edit collect statements that reside in the Tivoli Decision Support for OS/390 distribution library, follow the instructions given in “Modifying Tivoli Decision Support for OS/390-supplied collect statements” on page 213.

3. On completion of the editing, Tivoli Decision Support for OS/390 returns you to the Log Data Manager Collect Statements window.

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 DRLLOGDATSETS system table as being collected.
Modifying Tivoli Decision Support for OS/390-supplied collect statements

Not all the components have a default collect statement supplied by the product.

The collect statements for these log types must be modified by you in order to be used with components such as IMS, DCOLLECT, NETVIEW, JES2, JES3, VMACCT, ICSS and MQSeries®. You may also want to modify other Tivoli Decision Support for OS/390-supplied collect statements. In all cases, a warning is displayed if you attempt to edit a collect statement member that resides in the Tivoli Decision Support for OS/390 distribution library.

Note: Any modifications you make to Tivoli Decision Support for OS/390-supplied collect statements are lost if a PTF or new release updates the member containing the collect statements.

To modify a Tivoli Decision Support for OS/390-supplied collect statement member:

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 212 for details).
3. Edit the collect statements member as you require.

Adding a log ID and collect statements data set

To add a log ID and data set name to the list:

1. Press F5 and the Add Collect Statements Definition window is displayed [Figure 121 on page 214].
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.
Working with the log data manager option

Changing the collect statements data set name

To change the name of a collect statements data set:

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 122).
2. Type the modified data set name and press Enter. The data set name is changed in the Log Data Manager Collect Statements list.
Listing and modifying the list of log data sets to be collected

Listing the log data sets to be collected

To list the log data sets to be collected, 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 123) is displayed, one row for each log ID and log data set.

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 collect job and the parameters it uses” on page 217 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 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 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 223). The data set is collected again the next time DRLMLDMC is run.

<table>
<thead>
<tr>
<th>Log ID</th>
<th>Log data set</th>
<th>Time added</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>SYS150.SMFLOG.SL09501222</td>
<td>2000-01-22.13</td>
<td></td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0GA.SL0950122</td>
<td>2000-01-21.23</td>
<td>SELECT</td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0GB.SL0950122</td>
<td>2000-01-22.01</td>
<td></td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0GX.SL0950122</td>
<td>2000-01-22.01</td>
<td></td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0GL1.SLOG02</td>
<td>2000-01-21.23</td>
<td>8</td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0G.MWS2.SLOG01</td>
<td>2000-01-21.10</td>
<td>U0005</td>
</tr>
<tr>
<td>s</td>
<td>SYS150.SMFL0G.SYS1.SLOG01</td>
<td>2000-01-18.10</td>
<td>20</td>
</tr>
</tbody>
</table>

Command ==> F1=Help F2=Split F3=Exit F4=Rerun F5=Add F6=Bkwd F7=Fwd F9=Swap F11=Delete F12=Cancel

Figure 123. SMF Log Data Sets To Be Collected window

Modifying the log ID for a log data set

To modify the log ID (the default action) to be used with a log data set:
Working with the log data manager option

1. Select the log ID and press Enter. The Modify Log ID for a Log Data Set window is displayed. [Figure 124]
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.

Deleting information about a log data set
To delete an entry from the Log Data Sets To Be Collected window:
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
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 collect job and the parameters it uses” on page 217).

To record a log data set to be collected again:
2. Press Enter to confirm.

Adding a log data set to be collected
To add an entry to the Log Data Sets To Be Collected list:
1. Press F5 and the Add a Data Set To Be Collected window is displayed. (Figure 125 on page 217)
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.
Working with the log data manager option

The 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 “DRLDM_COLLECTSTMT” on page 228) 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 DRLJLDM (see “Job step for recording a log data set for collection” on page 208 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 215 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 DRLLELDMC EXEC, all log data sets corresponding to the values you enter for 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 DRLLOG 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 DRLLELDMC EXEC calls the log collector and run 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 in parallel.
Working with the log data manager option

**DRLELDMC sample job**

This job is shipped with Tivoli Decision Support for OS/390 as sample job DRLJLDMC.

```
//\DRLJLDMC JOB (ACCT#), 'TIVOLI DECISION SUPPORT FOR OS/390 COLLECT'
://******************************************************************************
:// * Licensed Materials - Property of IBM
:// * See Copyright instructions.
:// ******************************************************************************
://
:// Name: DRLJLDMC
://
:// Function:
://  * Tivoli Decision Support for OS/390 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
://  * collection by the Log Data Manager.
://  *
:// Input:
://  * The exec DRLELDMC accepts the following parameters:
://  *
://  * SYSPREFIX=xxxxxx Prefix for system tables. default=DRLSYS
://  * SYSTEM=xxxxxx DB2 subsystem name. default=DSN
://  * PREFIX=xxxxxx Prefix for all other tables. default=DRL
://  * PLAN=xxxxxxx DB2 plan name default=DRLPLAN
://  * DSPREFIX=xxxxxx 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=xxxxxxx Log type (e.g. SMF). If not specified,
://  * all log types are selected for processing.
://  * LOGID=xxxxxx Log ID. If not specified, all log IDs are
://  * selected for processing. Default Log ID
://  * should be coded as ".
://  * RETENTION=xxx Retention period for DRLOUT, DRLDUMP and
://  * other information resulting from the
://  * collect. default=10 days
://  * PURGE=xxx Purge info for successful collects that
://  * are older than its Retention period
://  * YES/NO default=YES
://  *
://  * CLEANUP=xxx Parameter used when the DRLELDMC job has
://  * abended during a collect of concatenated
://  * log data sets. If you run the DRLELDMC job
://  * with 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.
://  * All log data sets that are located after
://  * the abend occurred, are made ready to be
://  * collected again. The log data set that was
://  * being collected when the abend occurred is
://  * moved to the Log Data Sets Collected With
://  * Failure list.
://  * YES/NO default=NO
```

Figure 126. DRLJLDMC (Part 1 of 2)
DRLOUT/DRLDUMP DD statement: if any of these files are specified* they will be used by all collects started * by this job. They will not be controlled * or viewed by the Log Data Manager dialog. *

DRLOG DD statement: Must not be allocated. *

Output: The results of the collects are recorded in * sysprefix.DRLLDM_LOGDATASETS together with * LOG_NAME, LOG_ID and TIME_ADDED. * Messages created by the job are written to * the DRLMSG file. *

Notes: *
* Before you submit the job, do the following: *
* 1. Change the steplib DSN610.DSNLOAD to your value. *
* 2. Change the parameters used with DRLELDMC to your values. *

LDMLOG EXEC PGM=IKJEFT01

SYSPROC DD DISP=SHR,DSN=DRL160.SDRLEXEC
STEXEC DD DISP=SHR,DSN=DRL160.SDRLLOAD
DD DISP=SHR,DSN=DSN610.DSNLOAD

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 data. *
* 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 to 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 *
IMSID=IMS "IMS ID for this IMS system. 'IMS' is * default*
IMSVER=51 "IMS release being processed. Default is 51.*
IMSIDCHECK=FAIL "Force a termination if not correct*
MAXOUTPUT=50 "Allow up to 50 outputs per transaction/BMP *
MAXUOR=50 "Allow up to 50 UOR's per BMP *

DRLELDMC SYSTEM=DSN SYSPREFIX=DRLSYS PREFIX=DRL *
DSPREFIX=DRL *
LOGTYPE=SMF *
LOGID='*

Figure 127. DRLJLDMC (Part 2 of 2)
Setting the parameters for job DRLJLDPMC

Rules for entering parameter values:
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 DRLJLDPMC job parameters:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSPREFIX</td>
<td>The prefix of all Tivoli Decision Support for OS/390 system and control DB2 tables. If you do not specify a value here, the default DRLSYS is used.</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>The DB2 subsystem. The default value is DSN.</td>
</tr>
<tr>
<td>PREFIX</td>
<td>The prefix used with all other tables. The default value is DRL.</td>
</tr>
<tr>
<td>PLAN</td>
<td>The name of the DB2 application plan. The default value is DRLPLAN.</td>
</tr>
<tr>
<td>DSPREFIX</td>
<td>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.</td>
</tr>
<tr>
<td>SHOWSQL</td>
<td>When this value is set to YES, all executed SQL statements are written to an output file. The default value is NO.</td>
</tr>
<tr>
<td>SHOWINPUT</td>
<td>When this value is set to YES, all DRLIN statements are written to DRLOUT. The default value is YES.</td>
</tr>
<tr>
<td>LOGTYPE, LOGID</td>
<td>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 (&quot;).</td>
</tr>
<tr>
<td>RETENTION</td>
<td>The retention period for DRLOUT, DRLDUMP and the log data manager information that is produced by the collects. The default is 10 days.</td>
</tr>
<tr>
<td>PURGE</td>
<td>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.</td>
</tr>
<tr>
<td>CLEANUP</td>
<td>This parameter is used when the DLRELDMC job has abended during a collect of concatenated log data sets. If you run the DLRELDMC job with</td>
</tr>
</tbody>
</table>
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.

**DRLLOG DD statement**
Must not be allocated.

### Modifying the list of successfully collected log data sets

To list the log data sets that have been successfully collected, select 3, Log data sets collected successfully, from the log data manager Main Selection window. The Log Data Sets Collected Successfully window (Figure 128) 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.

<table>
<thead>
<tr>
<th>Command</th>
<th>F1=Help</th>
<th>F2=Split</th>
<th>F3=Exit</th>
<th>F5=DRLDUMP</th>
<th>F6=Retent.</th>
<th>F7=Bkwd</th>
<th>F8=Fwd</th>
<th>F9=Swap</th>
<th>F11=Delete</th>
<th>F12=Cancel</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRDLDMC</td>
<td>Log Data Sets Collected Successfully for SMF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select a data set. Then press Enter to view DRLOUT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/ Log data set</td>
<td>Time collected</td>
<td>RC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGMX.SLOG950120</td>
<td>2000-01-21.02.03.25</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGB.SLOG950120</td>
<td>2000-01-21.01.33.25</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGA.SLOG950120</td>
<td>2000-01-21.01.15.10</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGC.LOOG950120B</td>
<td>2000-01-21.01.01.20</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGC.SLOG950120A</td>
<td>2000-01-21.00.45.20</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGA.SLOG950119</td>
<td>2000-01-20.23.15.10</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGC.SLOG950119B</td>
<td>2000-01-20.01.45.20</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYS150.SMFOGB.SLOG950119A</td>
<td>2000-01-20.00.45.20</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 128. Log Data Sets Collected Successfully window*
Working with the log data manager option

**Viewing the information about successfully collected log data sets**

To view the log data manager information about a log data set (the default action):
1. Select a 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**

To view the dump data set (DRLDUMP):
1. Select the log data set and press F5.
2. 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**

To change the retention period for the log data manager information about a log data set:
1. Select the log data set and press F6. The Retention Period for Collect Information window is displayed (Figure 129).
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.

```
DRLDLMR Retention period for collect information
Type Retention period. Then press Enter to save.

Data set    DRL51.SMFLOGA.SLOG950122
Retention period  10 days

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

*Figure 129. Retention Period window*

**Deleting the information about a log data set**

To delete the log data manager information about a log data set together with DRLOUT and DRLDUMP data sets (if they exist):
1. Select the log data set for which you want to delete the log data manager information, and press F11.
2. Press Enter to confirm deletion.

*Note:* You are not deleting the log data set itself here, but only the log data manager information about the log data set.
Modifying the list of unsuccessfully collected log data sets

To list the log data sets that have been unsuccessfully collected, select 4, Log Data Sets Collected With Failure, from the log data manager Main Selection window. The Log Data Sets Collected With Failure window 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.

<table>
<thead>
<tr>
<th>DRDLDMF</th>
<th>Log Data Sets Collected with Failure for SMF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a data set. Then press Enter to view DRLOUT.</td>
<td></td>
</tr>
<tr>
<td>/</td>
<td>Log data set</td>
</tr>
<tr>
<td>-</td>
<td>SYS150.SMFLOG1.SLOG01</td>
</tr>
<tr>
<td>-</td>
<td>SYS150.SMFLOG.SYS1.SLOG0</td>
</tr>
</tbody>
</table>

Command ==> F1=Help F2=Split F3=Exit F4=Rerun F5=DRLDUMP F7=Bkwd F8=Fwd F9=Swap F11=Delete F12=Cancel

Figure 130. Log Data Sets Collected with Failure window

Viewing the unsuccessfully collected log data set

To view the log data set (the default action):
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

To view the dump data set (DRLDUMP):
1. Select the log data set and press F5.
2. 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

If you record a log data set for collection again, it is included in the next collect job (described in “The collect job and the parameters it uses” on page 217).

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:
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

To delete the information about a log data set from the list shown, together with DRLOUT and DRLDUMP data sets (if they exist):

1. Select the log data set you want to delete, and press F11.
2. Press Enter to confirm deletion.
Part 3. Appendixes
Appendix A. System tables and views

This appendix describes system tables and views. These tables are used by the Tivoli Decision Support for OS/390 log collector and dialogs. They are created during installation of the Tivoli Decision Support for OS/390 base, with the prefix for system tables specified in user.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 alphabetic 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBJECT_TYPE</td>
<td>k CHAR(8)</td>
<td>Object type. This is LOG, RECORD, RECPROC, or UPDATE.</td>
</tr>
<tr>
<td>OBJECT_NAME</td>
<td>k VARCHAR(18)</td>
<td>Name of the object.</td>
</tr>
<tr>
<td>EXPRESSION_NO</td>
<td>k SMALLINT</td>
<td>Expression sequence number within the object.</td>
</tr>
</tbody>
</table>
# System tables

## DRLFIELDS

This system table contains one row for every field in each defined record type.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORD_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the record. For a log header, this is “log-name”.</td>
</tr>
<tr>
<td>FIELD_NO</td>
<td>SMALLINT</td>
<td>Field sequence number within the record.</td>
</tr>
<tr>
<td>FIELD_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the field.</td>
</tr>
<tr>
<td>TYPE</td>
<td>CHAR(8)</td>
<td>Type of the field. The following values are possible:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BINARY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BINARYS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BINARYU</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EINTEGRER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HEXIN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DECIMAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ZONED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLOAT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EFLOAT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CHAR(*)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VARCHAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BIT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATE_007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TIME_001</td>
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<tr>
<td></td>
<td></td>
<td>TIME_002</td>
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<tr>
<td></td>
<td></td>
<td>TIME_003</td>
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<tr>
<td></td>
<td></td>
<td>TIME_004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TIME_005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TIME_006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TIME_007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTV_001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TSTAMP_1</td>
</tr>
<tr>
<td>LENGTH</td>
<td>SMALLINT</td>
<td>Length of the field. For DECIMAL and ZONED fields, this is a 1-byte precision followed by a 1-byte scale.</td>
</tr>
<tr>
<td>OFFSET</td>
<td>SMALLINT</td>
<td>Offset of the field in the record or section.</td>
</tr>
<tr>
<td>INSECTION_NO</td>
<td>SMALLINT</td>
<td>Number of the section where the field is contained. This is zero if the field is not in a section.</td>
</tr>
<tr>
<td>REMARKS</td>
<td>VARCHAR(254)</td>
<td>Description of the field, set by the COMMENT ON statement.</td>
</tr>
</tbody>
</table>

## DRLDDLDM_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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the log type.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LOG_ID</td>
<td>k CHAR(8)</td>
<td>The log ID.</td>
</tr>
<tr>
<td>COLLECT_STMT_DS</td>
<td>VARCHAR(54)</td>
<td>Name of the data set that contain the collect statement, including the member name (for a PDS member).</td>
</tr>
</tbody>
</table>

**DRLLDLM_LOGDATASETS**

This system table contains one or more rows for each log data set recorded by the Log Data Manager.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATASET_NAME</td>
<td>k VARCHAR(54)</td>
<td>Name of the log data set, including the member name (for a PDS member).</td>
</tr>
<tr>
<td>LOG_NAME</td>
<td>k VARCHAR(18)</td>
<td>Name of the log type.</td>
</tr>
<tr>
<td>TIME_COLLECTED</td>
<td>k TIMESTAMP</td>
<td>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.</td>
</tr>
<tr>
<td>LOG_ID</td>
<td>CHAR(8)</td>
<td>The log ID currently associated with this data set.</td>
</tr>
<tr>
<td>TIME_ADDED</td>
<td>TIMESTAMP</td>
<td>Timestamp when the log data set was first recorded.</td>
</tr>
<tr>
<td>TIME_COLLECT_CALL</td>
<td>TIMESTAMP</td>
<td>Timestamp when the DRLELDMC exec called the log collector to process the log data set.</td>
</tr>
<tr>
<td>COLLECT_RC</td>
<td>CHAR(5)</td>
<td>The return code from the collect. It is blank if not yet collected; '0' or '4' if successfully collected; &gt;= '8' if unsuccessfully collected without abend; 'unn' if the collect ended with a user abend; 'Snn' if the collect ended with a system abend.</td>
</tr>
<tr>
<td>OUTPUT_DS</td>
<td>VARCHAR(35)</td>
<td>The high level qualifiers used when DRLOUT and/or DRLDUMP data sets were created. '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.</td>
</tr>
<tr>
<td>RETENTION</td>
<td>SMALLINT</td>
<td>Retention period in days. Null field if not yet collected.</td>
</tr>
<tr>
<td>RETENTION_DATE</td>
<td>INTEGER</td>
<td>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.</td>
</tr>
<tr>
<td>COMPLETE</td>
<td>CHAR(1)</td>
<td>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' it collected with failure.</td>
</tr>
</tbody>
</table>

**DRLLOGDATASETS**

This system table contains one row for each collected log data set.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_NAME</td>
<td>k VARCHAR(18)</td>
<td>Name of the log definition.</td>
</tr>
<tr>
<td>FIRST_RECORD</td>
<td>k VARCHAR(80)</td>
<td>Volume serial number for the data set.</td>
</tr>
<tr>
<td>VOLUME</td>
<td>CHAR(6)</td>
<td></td>
</tr>
</tbody>
</table>
## System tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRST_TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Timestamp of the first record in the log. This is only set if TIMESTAMP expression is specified for the log.</td>
</tr>
<tr>
<td>LAST_TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Timestamp of the last record in the log. This is only set if TIMESTAMP expression is specified for the log.</td>
</tr>
<tr>
<td>NCOLLECTS</td>
<td>SMALLINT</td>
<td>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.</td>
</tr>
<tr>
<td>TIME_COLLECTED</td>
<td>TIMESTAMP</td>
<td>Date and time when collect ended.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user running collect.</td>
</tr>
<tr>
<td>COMPLETE</td>
<td>CHAR(1)</td>
<td>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).</td>
</tr>
<tr>
<td>RETURN_CODE</td>
<td>SMALLINT</td>
<td>Return code from collect; 0 or 4.</td>
</tr>
<tr>
<td>NRECORDS</td>
<td>INTEGER</td>
<td>Number of records read from the log data set.</td>
</tr>
<tr>
<td>NSELECTED</td>
<td>INTEGER</td>
<td>Number of records identified.</td>
</tr>
<tr>
<td>NUPDATES</td>
<td>INTEGER</td>
<td>Number of database rows updated when the data set was collected.</td>
</tr>
<tr>
<td>NINSERTS</td>
<td>INTEGER</td>
<td>Number of database rows inserted when the data set was collected.</td>
</tr>
<tr>
<td>NDELETES</td>
<td>INTEGER</td>
<td>Number of database rows deleted when the data set was collected.</td>
</tr>
<tr>
<td>ELAPSED_SECONDS</td>
<td>INTEGER</td>
<td>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.</td>
</tr>
</tbody>
</table>

## DRLLOGS

This system table contains one row for each defined log type.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_NAME</td>
<td>k</td>
<td>VARCHAR(18) Name of the log.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.</td>
</tr>
<tr>
<td>HEADER</td>
<td>CHAR(1)</td>
<td>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.</td>
</tr>
<tr>
<td>TIMESTAMP_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the TIMESTAMP expression in the DRLEXPRESSIONS table. This is zero if no TIMESTAMP expression is specified.</td>
</tr>
<tr>
<td>FIRST_CONDITION_NO</td>
<td>SMALLINT</td>
<td>Number of the FIRST RECORD condition in the DRLEXPRESSIONS table. This is zero if no FIRST RECORD condition is specified.</td>
</tr>
<tr>
<td>LAST_CONDITION_NO</td>
<td>SMALLINT</td>
<td>Number of the LAST RECORD condition in the DRLEXPRESSIONS table. This is zero if no LAST RECORD condition is specified.</td>
</tr>
</tbody>
</table>
### DRLPURGECOND
This system table contains one row for each purge condition in defined data tables.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE_PREFIX</td>
<td>k CHAR(8)</td>
<td>Prefix of the table.</td>
</tr>
<tr>
<td>TABLE_NAME</td>
<td>k VARCHAR(18)</td>
<td>Name of the table.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.mnn[.APAR_number], where mnn is the Version, Release, Modification level of the object.</td>
</tr>
<tr>
<td>SQL_CONDITION</td>
<td>VARCHAR(254)</td>
<td>An SQL condition that defines rows to be deleted from the database when the PURGE statement is executed.</td>
</tr>
<tr>
<td>TIME_DEFINED</td>
<td>TIMESTAMP</td>
<td>Date and time when the purge condition was defined.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who defined the purge condition.</td>
</tr>
</tbody>
</table>

### DRLRECORDPROCS
This system table contains one row for each defined record procedure.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the record procedure (name of the load module that gets invoked).</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.mnn[.APAR_number], where mnn is the Version, Release, Modification level of the object.</td>
</tr>
<tr>
<td>LANGUAGE</td>
<td>CHAR(8)</td>
<td>Programming language that the record procedure is written in. This is ASM or C.</td>
</tr>
<tr>
<td>PARAMETER_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the PARM expression in the DRLEXPRESSIONS table. This is zero if no PARM expression is specified.</td>
</tr>
<tr>
<td>TIME_DEFINED</td>
<td>TIMESTAMP</td>
<td>Date and time when the record procedure was defined.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who defined the record procedure.</td>
</tr>
<tr>
<td>REMARKS</td>
<td>VARCHAR(254)</td>
<td>Description of the record procedure, set by the COMMENT ON statement.</td>
</tr>
</tbody>
</table>
System tables

**DRLRECORDS**

This system table contains one row for each defined record type and one row for each defined header in log definitions.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORD_NAME</td>
<td>k</td>
<td>Name of the record. For a log header, this is &quot;log-name&quot;.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.</td>
</tr>
<tr>
<td>LOG_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the log that contains the record.</td>
</tr>
<tr>
<td>BUILT_BY</td>
<td>CHAR(8)</td>
<td>Name of the record procedure that builds the record, if any.</td>
</tr>
<tr>
<td>NFIELDS</td>
<td>SMALLINT</td>
<td>Number of fields in the record.</td>
</tr>
<tr>
<td>NSECTIONS</td>
<td>SMALLINT</td>
<td>Number of sections in the record.</td>
</tr>
<tr>
<td>CONDITION_NO</td>
<td>SMALLINT</td>
<td>Number of the IDENTIFIED BY condition in the DRLEXPRESSIONS table. This is zero if no IDENTIFIED BY condition is specified.</td>
</tr>
<tr>
<td>TIME_DEFINED</td>
<td>TIMESTAMP</td>
<td>Date and time when the record was defined.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who defined the record.</td>
</tr>
<tr>
<td>REMARKS</td>
<td>VARCHAR(254)</td>
<td>Description of the record, set by the COMMENT ON statement.</td>
</tr>
</tbody>
</table>

**DRLRPROCINPUT**

This system table contains one row for every defined record type that must be processed by a record procedure.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM_NAME</td>
<td>k</td>
<td>Name of the record procedure.</td>
</tr>
<tr>
<td>RECORD_NAME</td>
<td>k</td>
<td>Name of the record that is input to the record procedure.</td>
</tr>
</tbody>
</table>

**DRLSECTIONS**

This system table contains one row for every defined section in defined record types.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORD_NAME</td>
<td>k</td>
<td>Name of the record.</td>
</tr>
<tr>
<td>SECTION_NO</td>
<td>k</td>
<td>Section sequence number within the record.</td>
</tr>
<tr>
<td>SECTION_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the section.</td>
</tr>
<tr>
<td>CONDITION_NO</td>
<td>SMALLINT</td>
<td>Number of the PRESENT IF condition in the DRLEXPRESSIONS table. This is zero if no PRESENT IF condition is specified.</td>
</tr>
<tr>
<td>OFFSET_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the OFFSET expression in the DRLEXPRESSIONS table. This is zero if no OFFSET expression is specified.</td>
</tr>
<tr>
<td>LENGTH_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the LENGTH expression in the DRLEXPRESSIONS table. This is zero if no LENGTH expression is specified.</td>
</tr>
<tr>
<td>NUMBER_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the NUMBER expression in the DRLEXPRESSIONS table. This is zero if no NUMBER expression is specified.</td>
</tr>
<tr>
<td>INSECTION_NO</td>
<td>SMALLINT</td>
<td>Number of the section that this section is contained in. This is zero if the section is not contained in another section.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>REPEATED</td>
<td>CHAR(1)</td>
<td>Shows whether the section is repeated. This is Y (the section is repeated) or N (the section is not repeated).</td>
</tr>
</tbody>
</table>

**DRLUPDATECOLS**

This system table contains one row for every column in each update definition, including GROUP BY, SET, and MERGE columns.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the update definition.</td>
</tr>
<tr>
<td>UPDATECOL_NO</td>
<td>SMALLINT</td>
<td>Sequence number of the column in the update definition.</td>
</tr>
<tr>
<td>COLUMN_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the column.</td>
</tr>
<tr>
<td>COLUMN_NO</td>
<td>SMALLINT</td>
<td>Number of the column in the table definition.</td>
</tr>
<tr>
<td>FUNCTION</td>
<td>CHAR(8)</td>
<td>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.</td>
</tr>
<tr>
<td>EXPRESSION_NO</td>
<td>SMALLINT</td>
<td>Number of the expression in the DRLEXPRESSIONS table.</td>
</tr>
<tr>
<td>COUNT_COLUMN</td>
<td>VARCHAR(18)</td>
<td>If the function is AVG or PERCENT, this contains the name of the column that contains the count of values.</td>
</tr>
<tr>
<td>PERCENTILE</td>
<td>SMALLINT</td>
<td>If the function is PERCENT, this contains the percentile value (1 - 99).</td>
</tr>
</tbody>
</table>

**DRLUPDATEDISTR**

This system table contains one row for every distributed field or column in each update definition.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the update definition.</td>
</tr>
<tr>
<td>DISTR_NO</td>
<td>SMALLINT</td>
<td>Field or column sequence number in the DISTIBUTE clause.</td>
</tr>
<tr>
<td>FIELD_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the field or column to be distributed.</td>
</tr>
</tbody>
</table>

**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.)

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the update definition.</td>
</tr>
<tr>
<td>LET_NO</td>
<td>SMALLINT</td>
<td>Sequence number of the identifier in the LET clause.</td>
</tr>
<tr>
<td>LET_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the identifier.</td>
</tr>
<tr>
<td>EXPRESSION_NO</td>
<td>SMALLINT</td>
<td>Number of the expression in the DRLEXPRESSIONS table.</td>
</tr>
</tbody>
</table>

**DRLUPDATES**

This system table contains one row for each update definition.
## System tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE_NAME</td>
<td>k VARCHAR(18)</td>
<td>Name of the update definition.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.</td>
</tr>
<tr>
<td>SOURCE_PREFIX</td>
<td>CHAR(8)</td>
<td>Prefix of the source table. This is blank if the source is a record.</td>
</tr>
<tr>
<td>SOURCE_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the source. This is a record name or a table name.</td>
</tr>
<tr>
<td>TARGET_PREFIX</td>
<td>CHAR(8)</td>
<td>Prefix of the target table.</td>
</tr>
<tr>
<td>TARGET_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the target table.</td>
</tr>
<tr>
<td>SECTION_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the repeated section, if any, that is used in the update definition.</td>
</tr>
<tr>
<td>CONDITION_NO</td>
<td>SMALLINT</td>
<td>Number of the WHERE condition in the DRLEXPRESSIONS table. This is zero if no WHERE condition is specified.</td>
</tr>
<tr>
<td>NLETS</td>
<td>SMALLINT</td>
<td>Number of identifiers specified in the LET clause.</td>
</tr>
<tr>
<td>NUPDATECOLS</td>
<td>SMALLINT</td>
<td>Number of columns in the GROUP BY, SET, and MERGE clauses.</td>
</tr>
<tr>
<td>SCHEDULE_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the APPLY SCHEDULE expression in the DRLEXPRESSIONS table. This is zero if APPLY SCHEDULE is not specified.</td>
</tr>
<tr>
<td>SCHEDULE_INTTYPE</td>
<td>VARCHAR(18)</td>
<td>Name of the source column or field that defines the interval type.</td>
</tr>
<tr>
<td>SCHEDULE_START</td>
<td>VARCHAR(18)</td>
<td>Name of the source column or field that defines the interval start timestamp.</td>
</tr>
<tr>
<td>SCHEDULE_END</td>
<td>VARCHAR(18)</td>
<td>Name of the source column or field that defines the interval end time stamp.</td>
</tr>
<tr>
<td>SCHEDULE_STATUS</td>
<td>VARCHAR(18)</td>
<td>Name of the identifier that contains the schedule status.</td>
</tr>
<tr>
<td>NDISTR_FIELDS</td>
<td>SMALLINT</td>
<td>Number of fields or columns that are distributed.</td>
</tr>
<tr>
<td>DISTR_BY_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the DISTRIBUTE BY expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified.</td>
</tr>
<tr>
<td>DISTR_FROM_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the DISTRIBUTE FROM expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified.</td>
</tr>
<tr>
<td>DISTR_TO_EXPR_NO</td>
<td>SMALLINT</td>
<td>Number of the DISTRIBUTE TO expression in the DRLEXPRESSIONS table. This is zero if DISTRIBUTE is not specified.</td>
</tr>
<tr>
<td>DISTR_TIMESTAMP</td>
<td>VARCHAR(18)</td>
<td>Name of the identifier that contains the distribution interval start timestamp.</td>
</tr>
<tr>
<td>DISTR_INTERVAL</td>
<td>VARCHAR(18)</td>
<td>Name of the identifier that contains the distribution interval length.</td>
</tr>
<tr>
<td>TIME_DEFINED</td>
<td>TIMESTAMP</td>
<td>Date and time when the update was defined.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who defined the update.</td>
</tr>
<tr>
<td>REMARKS</td>
<td>VARCHAR(254)</td>
<td>Description of the update definition, set by the COMMENT ON statement.</td>
</tr>
</tbody>
</table>
Dialog system tables

These tables contain definitions used by Tivoli Decision Support for OS/390 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 active, DRLCHARTS is also updated by the host exec DRLECHRT when a report is saved in the host ISPF dialog.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHART_NAME</td>
<td>CHAR(8)</td>
<td>ADMCFORM name. This is the same as the CHART column in the DRLREPORTS table.</td>
</tr>
<tr>
<td>TYPE</td>
<td>SMALLINT</td>
<td>This column shows a number identifying the chart type:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Line chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Surface chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3  Histogram</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41, 42, 43 Bar chart. The 4 indicates that this is a bar chart; 1, 2, or 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>indicates whether the bars are side by side (1), stacked (2), or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>overlaid (3).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5  Pie chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6  Venn diagram</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7  Polar chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8  Tower diagram</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9  Table. This is not used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 Combination chart.</td>
</tr>
<tr>
<td>VALUES</td>
<td>SMALLINT</td>
<td>This column contains one of the values 0, 1, 2, or 3. The column is valid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>only for chart types 4 (bar) and 5 (pie). For bar charts, the values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0  No values are shown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Values are shown at the top/end of the bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  Values are shown inside the bars</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3  Values are shown as in GDDM Version 1 Release 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For pie charts, the values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1  Values are shown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2  No values are shown</td>
</tr>
<tr>
<td>AXIS_ORIENT</td>
<td>SMALLINT</td>
<td>Axis orientation. This can be 1 or 2. 1 means vertical y-axis and bars.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 means horizontal y-axis and bars.</td>
</tr>
</tbody>
</table>
### System tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
</table>
| Y_DATA_TYPE | VARCHAR(50) | If the chart type is 10 (combination), this column shows the chart type for each data group:  
1 Line chart  
2 Surface chart  
3 Histogram  
41, 42, 43 Bar chart  
For example, 1, 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. |
| 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 Tivoli Decision Support for OS/390 component.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPONENT_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the component.</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>VARCHAR(50)</td>
<td>Description of the component that is shown in the dialog.</td>
</tr>
<tr>
<td>STATUS</td>
<td>CHAR(1)</td>
<td>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.</td>
</tr>
<tr>
<td>TIME_INSTALLED</td>
<td>TIMESTAMP</td>
<td>Date and time when the component was installed or defined.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user who installed or defined the component.</td>
</tr>
</tbody>
</table>

#### DRLCOMP_OBJECTS

This system table contains one row for every object in each component.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPONENT_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the component.</td>
</tr>
<tr>
<td>OBJECT_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the object.</td>
</tr>
<tr>
<td>OBJECT_TYPE</td>
<td>CHAR(8)</td>
<td>Type of object. This is LOG, RECORD, RECPROC, TABSPACE, LOOKUP, TABLE, UPDATE, REPORT, or REPGROUP.</td>
</tr>
<tr>
<td>MEMBER_NAME</td>
<td>CHAR(8)</td>
<td>Name of the member in the SDRLDEFS or SDLRxxx library where the object is defined.</td>
</tr>
<tr>
<td>PART_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the component part that the object belongs to, if any.</td>
</tr>
<tr>
<td>EXCLUDE_FLAG</td>
<td>CHAR(1)</td>
<td>Flag to determine if this object is excluded from installation of the component.</td>
</tr>
</tbody>
</table>

#### DRLCOMP_PARTS

This system table contains one row for every part in each component.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPONENT_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the component.</td>
</tr>
</tbody>
</table>
### System tables

#### DRLGROUPS
This system table contains one row for each defined report group.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP_NAME</td>
<td>VARCHAR(18)</td>
<td>Group ID.</td>
</tr>
<tr>
<td>GROUP_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the group. This is blank for a public group.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>VARCHAR(50)</td>
<td>Description of the group that is shown in the dialog.</td>
</tr>
<tr>
<td>TIME_CREATED</td>
<td>TIMESTAMP</td>
<td>Date and time when the group was defined.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who defined the group.</td>
</tr>
</tbody>
</table>

#### DRLGROUP_REPORTS
This system table contains one row for every report in each defined report group.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP_NAME</td>
<td>VARCHAR(18)</td>
<td>Group ID.</td>
</tr>
<tr>
<td>GROUP_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the group.</td>
</tr>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>ID of the report that belongs to the group.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report that belongs to the group.</td>
</tr>
</tbody>
</table>

#### DRLMIGRATION
This system table contains one row for each group of Tivoli Decision Support for OS/390 tables that are the target of migrated data from a group of SLR V3 tables.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE_NAME</td>
<td>VARCHAR(25)</td>
<td>Name of the Tivoli Decision Support for OS/390 tables.</td>
</tr>
<tr>
<td>DATA_BASE</td>
<td>CHAR(8)</td>
<td>Not used.</td>
</tr>
<tr>
<td>SLR_TABLES</td>
<td>VARCHAR(50)</td>
<td>SLR tables that the data is copied from.</td>
</tr>
<tr>
<td>UNLOAD_MEMBER1</td>
<td>CHAR(8)</td>
<td>Name of the first member that is run to unload data from SLR.</td>
</tr>
<tr>
<td>INSERT_MEMBER1</td>
<td>CHAR(8)</td>
<td>Name of the first member that is run to insert data into the Tivoli Decision Support for OS/390 table.</td>
</tr>
</tbody>
</table>
# System tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNLOAD_MEMBER2</td>
<td>CHAR(8)</td>
<td>Name of the second member that is run to unload data from SLR.</td>
</tr>
<tr>
<td>INSERT_MEMBER2</td>
<td>CHAR(8)</td>
<td>Name of the second member that is run to insert data into the Tivoli Decision Support for OS/390 table.</td>
</tr>
<tr>
<td>UNLOAD_MEMBER3</td>
<td>CHAR(8)</td>
<td>Name of the third member that is run to unload data from SLR.</td>
</tr>
<tr>
<td>INSERT_MEMBER3</td>
<td>CHAR(8)</td>
<td>Name of the third member that is run to insert data into the Tivoli Decision Support for OS/390 table.</td>
</tr>
<tr>
<td>LOGCOL_MEMBER</td>
<td>CHAR(8)</td>
<td>Name of a member that is run to post-process the result in the Tivoli Decision Support for OS/390 table.</td>
</tr>
</tbody>
</table>

## DRLREPORTS

This system table contains one row for each defined report.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>k</td>
<td>VARCHAR(18) Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>k</td>
<td>CHAR(8) Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>VERSION</td>
<td>VARCHAR(18)</td>
<td>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.<em>mm</em>, where <em>mm</em> is the Version, Release, Modification level of the object.</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>VARCHAR(50)</td>
<td>Description of the report that is shown in the dialog.</td>
</tr>
<tr>
<td>TYPE</td>
<td>CHAR(8)</td>
<td>Type of report. This is QUERY, TABDATA, or GRAPH.</td>
</tr>
<tr>
<td>BATCH</td>
<td>CHAR(1)</td>
<td>Y if the report should be produced in batch; N otherwise.</td>
</tr>
<tr>
<td>PRINT</td>
<td>CHAR(1)</td>
<td>Y if the report should be printed when produced in batch; N otherwise.</td>
</tr>
<tr>
<td>SAVE</td>
<td>CHAR(1)</td>
<td>Y if the report should be saved when produced in batch; N otherwise.</td>
</tr>
<tr>
<td>RUN_CYCLE</td>
<td>CHAR(8)</td>
<td>Batch run cycle for the report. This is DAILY, WEEKLY, or MONTHLY.</td>
</tr>
<tr>
<td>QUERY_PREFIX</td>
<td>CHAR(8)</td>
<td>Prefix of the QMF query that should be run when the report is produced.</td>
</tr>
<tr>
<td>QUERY</td>
<td>VARCHAR(18)</td>
<td>Name of the QMF query that should be run when the report is produced.</td>
</tr>
<tr>
<td>FORM_PREFIX</td>
<td>CHAR(8)</td>
<td>Prefix of the QMF form that should be used when the report is produced.</td>
</tr>
<tr>
<td>FORM</td>
<td>VARCHAR(18)</td>
<td>Name of the QMF form that should be used when the report is produced.</td>
</tr>
<tr>
<td>CHART</td>
<td>CHAR(8)</td>
<td>Name of the GDDM-ICU format to be used for the report. Blank means that the report is tabular.</td>
</tr>
<tr>
<td>FILE</td>
<td>CHAR(8)</td>
<td>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).</td>
</tr>
<tr>
<td>MACRO</td>
<td>CHAR(8)</td>
<td>Not used.</td>
</tr>
<tr>
<td>TABLE_NAME</td>
<td>VARCHAR(254)</td>
<td>Name of the table or tables on which the the report is bases. This is extracted from the query when the report is defined.</td>
</tr>
</tbody>
</table>
### System tables

#### DRLREPORT_ATTR

This system table contains one row for every attribute in each defined report.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>ATTRIBUTE_NO</td>
<td>SMALLINT</td>
<td>Attribute sequence number.</td>
</tr>
<tr>
<td>ATTRIBUTE</td>
<td>VARCHAR(18)</td>
<td>Attribute value.</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>COLUMN_NO</td>
<td>SMALLINT</td>
<td>Column number.</td>
</tr>
<tr>
<td>HEADING</td>
<td>VARCHAR(40)</td>
<td>Column heading.</td>
</tr>
<tr>
<td>USAGE</td>
<td>CHAR(7)</td>
<td>Usage code.</td>
</tr>
<tr>
<td>INDENT</td>
<td>SMALLINT</td>
<td>Column indentation.</td>
</tr>
<tr>
<td>WIDTH</td>
<td>SMALLINT</td>
<td>Column width.</td>
</tr>
<tr>
<td>EDIT</td>
<td>CHAR(5)</td>
<td>Edit code.</td>
</tr>
<tr>
<td>SEQ</td>
<td>SMALLINT</td>
<td>Column sequence number.</td>
</tr>
<tr>
<td>DEFINITION</td>
<td>VARCHAR(50)</td>
<td>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 &amp;n type, where n is an existing column number. The DEFINITION column is intended only for existing Tivoli Decision Support for OS/390 reports and is not used for user-defined reports.</td>
</tr>
</tbody>
</table>
### System tables

**DRLREPORT_QUERIES**

This system table contains one row for every query line in each defined report, if QMF is not used.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>LINE_NO</td>
<td>SMALLINT</td>
<td>Line number in the query.</td>
</tr>
<tr>
<td>QUERY_LINE</td>
<td>VARCHAR(80)</td>
<td>Query text.</td>
</tr>
</tbody>
</table>

**DRLREPORT_TEXT**

This system table is used for 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>TYPE</td>
<td>CHAR(8)</td>
<td>Text type. This is HEADING, FOOTING, DETAIL, FINAL or ROWS.</td>
</tr>
<tr>
<td>LINE_NO</td>
<td>SMALLINT</td>
<td>Line number for HEADING and FOOTING.</td>
</tr>
<tr>
<td>ALIGNMENT</td>
<td>CHAR(6)</td>
<td>Shows how the text should be aligned; left, center, or right.</td>
</tr>
<tr>
<td>TEXT</td>
<td>VARCHAR(55)</td>
<td>Text for one line of a report text (see TYPE above).</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPORT_NAME</td>
<td>VARCHAR(18)</td>
<td>Report ID.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the report. This is blank for a public report.</td>
</tr>
<tr>
<td>VARIABLE_NO</td>
<td>SMALLINT</td>
<td>Sequence number of the variable.</td>
</tr>
<tr>
<td>VARIABLE_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the variable.</td>
</tr>
<tr>
<td>EXPRESSION</td>
<td>VARCHAR(80)</td>
<td>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.</td>
</tr>
<tr>
<td>OPERATOR</td>
<td>CHAR(4)</td>
<td>Operator that is used when comparing the variable and the expression, if the variable is found in the query. This is =, &lt;=, &gt;=, IN, or LIKE.</td>
</tr>
<tr>
<td>DATA_TYPE</td>
<td>CHAR(8)</td>
<td>Data type of the variable, if specified. This is CHAR, NUMERIC, DATE, TIME, or TIMESTMP.</td>
</tr>
<tr>
<td>REQUIRED</td>
<td>CHAR(1)</td>
<td>Shows whether the variable must be given a value. This is Y for yes, or N or blank for no.</td>
</tr>
<tr>
<td>DEFAULT</td>
<td>VARCHAR(40)</td>
<td>Default value to use for the variable, if specified.</td>
</tr>
</tbody>
</table>
### Column name | Data type | Description
---|---|---
IN_HEADER | CHAR(1) | Variable to determine if the Tivoli Decision Support for OS/390 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEARCH_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the saved search.</td>
</tr>
<tr>
<td>SEARCH_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the saved search. This is blank for a public search.</td>
</tr>
<tr>
<td>ATTR_SET_NO</td>
<td>SMALLINT</td>
<td>Attribute set sequence number. The attribute sets are logically ORed together.</td>
</tr>
<tr>
<td>ATTRIBUTE_NO</td>
<td>SMALLINT</td>
<td>Attribute sequence number within the attribute set. The attributes within a set are logically ANDed together.</td>
</tr>
<tr>
<td>ATTRIBUTE</td>
<td>VARCHAR(18)</td>
<td>Attribute value. This can contain global search characters.</td>
</tr>
</tbody>
</table>

**DRLSEARCHES**

This system table contains one row for each saved report search.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEARCH_NAME</td>
<td>VARCHAR(18)</td>
<td>Name of the saved search.</td>
</tr>
<tr>
<td>SEARCH_OWNER</td>
<td>CHAR(8)</td>
<td>Owner of the saved search. This is blank for a public search.</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>VARCHAR(50)</td>
<td>Description of the search that is shown in the dialog.</td>
</tr>
<tr>
<td>NATTR_SETS</td>
<td>SMALLINT</td>
<td>Number of attribute sets used in the search.</td>
</tr>
<tr>
<td>REPORT_DESC</td>
<td>VARCHAR(50)</td>
<td>Report description used in the search. This can contain global search characters.</td>
</tr>
<tr>
<td>REPORT_TYPE</td>
<td>CHAR(8)</td>
<td>Report type specified in the search.</td>
</tr>
<tr>
<td>REPORT_OWNER</td>
<td>CHAR(8)</td>
<td>Report owner specified in the search.</td>
</tr>
<tr>
<td>TIME_CREATED</td>
<td>TIMESTAMP</td>
<td>Date and time when the search was saved.</td>
</tr>
<tr>
<td>CREATOR</td>
<td>CHAR(8)</td>
<td>ID of the user who saved the search.</td>
</tr>
</tbody>
</table>

**Views on DB2 and QMF tables**

These views on DB2 tables are required for users without access to the tables.

<table>
<thead>
<tr>
<th>View name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLCOLUMNS</td>
<td>This view is based on SYSIBM.SYSCOLUMNS in the DB2 catalog. It is used to get column names and comments.</td>
</tr>
<tr>
<td>DRLINDEXES</td>
<td>This table is based on SYSIBM.SYSINDEXES in the DB2 catalog. It is used to get table index information.</td>
</tr>
<tr>
<td>DRLINDEXPART</td>
<td>This view is based on SYSIBM.SYSINDEXPART in the DB2 catalog. It is used to get index partition information.</td>
</tr>
<tr>
<td>DRLKEYS</td>
<td>This view is based on SYSIBM.SYSKEYS in the DB2 catalog. It is used to get information on index keys.</td>
</tr>
</tbody>
</table>
### Views

<table>
<thead>
<tr>
<th>View name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLOBJECT_DATA</td>
<td>This view is based on Q.OBJECT_DATA, a QMF control table that contains information about QMF objects.</td>
</tr>
<tr>
<td>DRLTABAUTH</td>
<td>This view is based on SYSIBM.SYSTABAUTH in the DB2 catalog. It is used to get table privilege information.</td>
</tr>
<tr>
<td>DRLTABLEPART</td>
<td>This view is based on SYSIBM.SYSTABLEPART in the DB2 catalog. It is used to get tablespace information.</td>
</tr>
<tr>
<td>DRLTABLES</td>
<td>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.</td>
</tr>
<tr>
<td>DRLTABLESPACE</td>
<td>This view is based on SYSIBM.SYSTABLESPACE in the DB2 catalog. It is used to get a list of tablespaces.</td>
</tr>
<tr>
<td>DRLVIEWS</td>
<td>This view is based on SYSIBM.SYSVIEWS in the DB2 catalog. It is used to get view definitions.</td>
</tr>
</tbody>
</table>

### Views on Tivoli Decision Support for OS/390 system tables

These views on Tivoli Decision Support for OS/390 dialog system tables are required for users without access to the tables.

<table>
<thead>
<tr>
<th>View Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLUSER_GROUPREPS</td>
<td>This view is based on DRLGROUP_REPORTS. It allows a user to update only his own report groups.</td>
</tr>
<tr>
<td>DRLUSER_GROUPS</td>
<td>This view is based on DRLGROUPS. It allows a user to update only his own report groups.</td>
</tr>
<tr>
<td>DRLUSER_REPORTATTR</td>
<td>This view is based on DRLREPORT_ATTR. It allows a user to update only his own reports.</td>
</tr>
<tr>
<td>DRLUSER_REPORTS</td>
<td>This view is based on DRLREPORTS. It allows a user to update only his own reports.</td>
</tr>
<tr>
<td>DRLUSER_REPORTVARS</td>
<td>This view is based on DRLREPORT_VARS. It allows a user to update only his own reports.</td>
</tr>
<tr>
<td>DRLUSER_SEARCHATTR</td>
<td>This view is based on DRLSEARCH_ATTR. It allows a user to update only his own searches.</td>
</tr>
<tr>
<td>DRLUSER_SEARCHES</td>
<td>This view is based on DRLSEARCHES. It allows a user to update only his own searches.</td>
</tr>
<tr>
<td>DRLUSER_REPORTQRYXS</td>
<td>This view is based on DRLREPORT_QUERIES. It allows a user to update only his own reports.</td>
</tr>
<tr>
<td>DRLUSER_REPORTCOLS</td>
<td>This view is based on DRLREPORT_COLUMNS. It allows a user to update only his own reports.</td>
</tr>
<tr>
<td>DRLUSER_REPORTTEXT</td>
<td>This view is based on DRLREPORT_TEXT. It allows a user to update only his own reports.</td>
</tr>
</tbody>
</table>
Appendix B. Control tables and common tables

This appendix describes control tables and common tables. These tables are used by many Tivoli Decision Support for OS/390 components. The tables are provided with the Tivoli Decision Support for OS/390 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 alphabetic order, with any underscores ignored.

The tables appear in alphabetic 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 249](#)" 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 Tivoli Decision Support for OS/390 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAY_OF_WEEK</td>
<td>k</td>
<td>SMALLINT, Day of week number, 1 through 7 (Monday through Sunday).</td>
</tr>
<tr>
<td>DAY_TYPE</td>
<td>CHAR(8)</td>
<td>Day type for the day of week.</td>
</tr>
</tbody>
</table>

**Example of table contents:**

<table>
<thead>
<tr>
<th>DAY OF DAY WEEK TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MON</td>
</tr>
<tr>
<td>2 TUE</td>
</tr>
<tr>
<td>3 WED</td>
</tr>
<tr>
<td>4 THU</td>
</tr>
<tr>
<td>5 FRI</td>
</tr>
<tr>
<td>6 SAT</td>
</tr>
<tr>
<td>7 SUN</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERIOD_PLAN_ID</td>
<td>CHAR(8)</td>
<td>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.</td>
</tr>
<tr>
<td>DAY_TYPE</td>
<td>CHAR(8)</td>
<td>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.</td>
</tr>
<tr>
<td>START_TIME</td>
<td>TIME</td>
<td>Time when the period starts.</td>
</tr>
<tr>
<td>END_TIME</td>
<td>TIME</td>
<td>Time when the period ends.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period.</td>
</tr>
</tbody>
</table>

Example of table contents:

<table>
<thead>
<tr>
<th>PERIOD_PLAN_ID</th>
<th>DAY</th>
<th>START_TIME</th>
<th>END_TIME</th>
<th>PERIOD_NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>MON</td>
<td>00.00.00</td>
<td>08.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>MON</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td>PRIME</td>
</tr>
<tr>
<td>%</td>
<td>MON</td>
<td>17.00.00</td>
<td>24.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>TUE</td>
<td>00.00.00</td>
<td>08.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>TUE</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td>PRIME</td>
</tr>
<tr>
<td>%</td>
<td>TUE</td>
<td>17.00.00</td>
<td>24.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>WED</td>
<td>00.00.00</td>
<td>08.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>WED</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td>PRIME</td>
</tr>
<tr>
<td>%</td>
<td>WED</td>
<td>17.00.00</td>
<td>24.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>THU</td>
<td>00.00.00</td>
<td>08.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>THU</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td>PRIME</td>
</tr>
<tr>
<td>%</td>
<td>THU</td>
<td>17.00.00</td>
<td>24.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>FRI</td>
<td>00.00.00</td>
<td>08.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>FRI</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td>PRIME</td>
</tr>
<tr>
<td>%</td>
<td>FRI</td>
<td>17.00.00</td>
<td>24.00.00</td>
<td>NIGHT</td>
</tr>
<tr>
<td>%</td>
<td>SAT</td>
<td>00.00.00</td>
<td>24.00.00</td>
<td>WEEKEND</td>
</tr>
<tr>
<td>%</td>
<td>SUN</td>
<td>00.00.00</td>
<td>24.00.00</td>
<td>WEEKEND</td>
</tr>
<tr>
<td>%</td>
<td>HOLIDAY</td>
<td>00.00.00</td>
<td>24.00.00</td>
<td>HOLIDAY</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEDULE_NAME</td>
<td>CHAR(8)</td>
<td>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.</td>
</tr>
<tr>
<td>DAY_TYPE</td>
<td>CHAR(8)</td>
<td>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.</td>
</tr>
<tr>
<td>START_TIME</td>
<td>TIME</td>
<td>Time when the schedule starts.</td>
</tr>
<tr>
<td>END_TIME</td>
<td>TIME</td>
<td>Time when the schedule ends.</td>
</tr>
</tbody>
</table>

**Example of table contents:**

<table>
<thead>
<tr>
<th>SCHEDULE NAME</th>
<th>DAY</th>
<th>START TIME</th>
<th>END TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANDARD Mon</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Tue</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Wed</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Thu</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Fri</td>
<td>08.00.00</td>
<td>17.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Sat</td>
<td>00.00.00</td>
<td>00.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD Sun</td>
<td>00.00.00</td>
<td>00.00.00</td>
<td></td>
</tr>
<tr>
<td>STANDARD HOLIDAY</td>
<td>00.00.00</td>
<td>00.00.00</td>
<td></td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>DATE</td>
<td>Date to be defined as special day.</td>
</tr>
<tr>
<td>DAY_TYPE</td>
<td>CHAR(8)</td>
<td>Day type for the date; for example, HOLIDAY.</td>
</tr>
</tbody>
</table>

**Example of table contents:**

<table>
<thead>
<tr>
<th>DAY</th>
<th>DATE</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOLIDAY</td>
<td>1999-12-25</td>
<td>HOLIDAY</td>
</tr>
<tr>
<td>HOLIDAY</td>
<td>2000-01-01</td>
<td>HOLIDAY</td>
</tr>
</tbody>
</table>
**CICS control tables**

The CICS control tables are created during installation of the Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 IBM: CICS Performance Feature Guide and Reference.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>K CHAR(4)</td>
<td>MVS system ID. From SMFMNSID (V3) or SMFSID (V2).</td>
</tr>
<tr>
<td>CICS_SYSTEM_ID</td>
<td>K CHAR(8)</td>
<td>CICS generic ID. This is the VTAM® application identifier for the CICS system that produced the dictionary. From SMFMNPRN (V3) or SMFSPSRN (V2).</td>
</tr>
<tr>
<td>CLASS</td>
<td>K SMALLINT</td>
<td>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).</td>
</tr>
<tr>
<td>VERSION</td>
<td>K SMALLINT</td>
<td>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).</td>
</tr>
<tr>
<td>FIELD_NO</td>
<td>K SMALLINT</td>
<td>Assigned connector for this dictionary entry (CMODCONN). This is also the index to the dictionary entry array.</td>
</tr>
<tr>
<td>DICT_ENTRY_ID</td>
<td>CHAR(12)</td>
<td>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.</td>
</tr>
<tr>
<td>OUTPUT_LENGTH</td>
<td>SMALLINT</td>
<td>Field length for matching DICT_ENTRY_ID in CICS_FIELD. It is used for building the output record.</td>
</tr>
<tr>
<td>OUTPUT_OFFSET</td>
<td>SMALLINT</td>
<td>Field offset for matching DICT_ENTRY_ID in CICS_FIELD. It is used for building the output record.</td>
</tr>
<tr>
<td>USED</td>
<td>CHAR(8)</td>
<td>A flag indicating (if = Y) that this dictionary entry has been updated with field length and offset data from a matching DICT_ENTRY_ID in CICS_FIELD.</td>
</tr>
</tbody>
</table>

**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.” For more information, refer to the CICS Performance Feature Guide and Reference.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASS</td>
<td>K SMALLINT</td>
<td>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).</td>
</tr>
<tr>
<td>DICT_ENTRY_ID</td>
<td>K CHAR(12)</td>
<td>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.</td>
</tr>
<tr>
<td>OUTPUT_LENGTH</td>
<td>SMALLINT</td>
<td>This is the field length that is used to build the output record.</td>
</tr>
</tbody>
</table>
## Control tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTPUT_OFFSET</td>
<td>INTEGER</td>
<td>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.</td>
</tr>
</tbody>
</table>
Common data tables

These tables are ordinary data tables that are used by many components. They are provided with the Tivoli Decision Support for OS/390 base, but not created until the installation of the first component that uses them.

Naming standard for common data tables

Names of Tivoli Decision Support for OS/390 common data tables are in this format:

\[ \text{content}_\text{suffix} \]

where:
- \( \text{content} \) is a description (for example, AVAILABLE for system and resource availability data).
- \( \text{suffix} \) indicates the summarization level of the data in the table (for example, AVAILABLE\_D for availability data summarized by day).

A common table name can have these summarization-level suffixes:
- \( \_\text{T} \) The table holds nonsummarized data (\textit{timestamped} data).
- \( \_\text{D} \) The table holds data summarized by \textit{day}.
- \( \_\text{W} \) The table holds data summarized by \textit{week}.
- \( \_\text{M} \) The table holds data summarized by \textit{month}.

**AVAILABLE\_D, \_W, \_M**

These tables provide daily, weekly, and monthly statistics on the availability of systems and subsystems. They contain consolidated data from the AVAILABLE\_T table.

The default retention periods for these tables are:
- AVAILABLE\_D \hspace{1em} 90 days
- AVAILABLE\_W \hspace{1em} 400 days
- AVAILABLE\_M \hspace{1em} 800 days

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date that the availability data applies to. For the _W table, this is the date of the first day of the week. For the _M table, this is the date of the first day of the month.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>System ID such as an MVS or VM system ID.</td>
</tr>
<tr>
<td>AREA</td>
<td>k CHAR(8)</td>
<td>Major area the resource is related to, such as MVS or NETWORK.</td>
</tr>
<tr>
<td>RESOURCE_TYPE</td>
<td>k CHAR(8)</td>
<td>Resource type.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>k CHAR(8)</td>
<td>Resource name.</td>
</tr>
<tr>
<td>RESOURCE_GROUP</td>
<td>k CHAR(8)</td>
<td>Resource group.</td>
</tr>
<tr>
<td>AVAILABLE_OBJ_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Availability objective for the resource, in percent. This is from the column AVAILABLE_OBJ_PCT in the AVAILABLE_PARM lookup table. This value should be compared with the actual availability, which is calculated as: 100*UP_IN_SCHEDULE/SCHEDULE_HOURS.</td>
</tr>
<tr>
<td>MEASURED_HOURS</td>
<td>FLOAT</td>
<td>Number of hours measured.</td>
</tr>
<tr>
<td>SCHEDULE_DAYS</td>
<td>SMALLINT</td>
<td>Number of days during the week or month that the resource was scheduled to be up. This column is only present in the _W and _M tables.</td>
</tr>
<tr>
<td>SCHEDULE_HOURS</td>
<td>FLOAT</td>
<td>Number of hours the resource was scheduled to be up.</td>
</tr>
</tbody>
</table>
### Common tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STARTS</td>
<td>SMALLINT</td>
<td>Number of times the resource was started.</td>
</tr>
<tr>
<td>STARTS_IN_SCHEDULE</td>
<td>SMALLINT</td>
<td>Number of times the resource was started within the schedule.</td>
</tr>
<tr>
<td>STOPS</td>
<td>SMALLINT</td>
<td>Number of times the resource was stopped.</td>
</tr>
<tr>
<td>STOPS_IN_SCHEDULE</td>
<td>SMALLINT</td>
<td>Number of times the resource was stopped within the schedule.</td>
</tr>
<tr>
<td>UP_HOURS</td>
<td>FLOAT</td>
<td>Number of hours the resource was up.</td>
</tr>
<tr>
<td>UP_IN_SCHEDULE</td>
<td>FLOAT</td>
<td>Number of hours the resource was up within the schedule.</td>
</tr>
</tbody>
</table>

#### 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>System ID such as an MVS or VM system ID.</td>
</tr>
<tr>
<td>AREA</td>
<td>k CHAR(8)</td>
<td>Major area the resource is related to, such as MVS or NETWORK.</td>
</tr>
<tr>
<td>RESOURCE_TYPE</td>
<td>k CHAR(8)</td>
<td>Resource type.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>k CHAR(8)</td>
<td>Resource name.</td>
</tr>
<tr>
<td>RESOURCE_GROUP</td>
<td>k CHAR(8)</td>
<td>Resource group.</td>
</tr>
</tbody>
</table>
| INTERVAL_TYPE           | k CHAR(3)  | Interval type. Possible values are: ===, |==, ==|, |=|, XXX, |XX, XX|, |X|, and blank, where:  
                          |            | = Indicates that the resource is up (available)                           |
                          |            | X Indicates that the resource is down                                      |
                          |            | | Indicates an interval start or end                                        |
                          |            | blank 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date when the exception occurred.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the exception occurred.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>System where the exception occurred.</td>
</tr>
</tbody>
</table>
### Common lookup tables

These tables are ordinary lookup tables that are used by many components. They are provided with the Tivoli Decision Support for OS/390 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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>System ID associated with the resource. This can contain global search characters.</td>
</tr>
<tr>
<td>AREA</td>
<td>k CHAR(8)</td>
<td>Major area that the resource is related to, such as MVS or NETWORK. This can contain global search characters.</td>
</tr>
<tr>
<td>RESOURCE_TYPE</td>
<td>k CHAR(8)</td>
<td>Resource type. This can contain global search characters.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>k CHAR(8)</td>
<td>Resource name. This can contain global search characters.</td>
</tr>
<tr>
<td>RESOURCE_GROUP</td>
<td>k CHAR(8)</td>
<td>Resource group. This can contain global search characters.</td>
</tr>
<tr>
<td>AVAIL_OBJ_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Availability objective for the resource, in percent.</td>
</tr>
<tr>
<td>SCHEDULE_NAME</td>
<td>CHAR(8)</td>
<td>Schedule name to use for the resource.</td>
</tr>
</tbody>
</table>

#### Example of table contents:

- **AVAILABILITY_PARM**
  
<table>
<thead>
<tr>
<th>SYSTEM_ID</th>
<th>AREA</th>
<th>RESOURCE_TYPE</th>
<th>RESOURCE_NAME</th>
<th>RESOURCE_GROUP</th>
<th>SCHEDULE_NAME</th>
<th>AVAIL_OBJ_PCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>----------</td>
<td>------</td>
<td>----------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>----------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>System ID such as an MVS or VM system ID. This can contain global search characters.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>k CHAR(8)</td>
<td>Subsystem ID such as TSO or a CICS* system ID. This can contain global search characters. This is not used in the predefined tables.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>k CHAR(8)</td>
<td>User ID of the user to be grouped. This can contain global search characters.</td>
</tr>
<tr>
<td>DEPARTMENT</td>
<td>CHAR(8)</td>
<td>Department that the user belongs to. This is not used in the predefined tables.</td>
</tr>
<tr>
<td>DIVISION</td>
<td>CHAR(8)</td>
<td>Division that the user belongs to. This is not used in the predefined tables.</td>
</tr>
<tr>
<td>GROUP_NAME</td>
<td>CHAR(8)</td>
<td>Name of the group that the user belongs to.</td>
</tr>
</tbody>
</table>

Example of table contents:

```
<table>
<thead>
<tr>
<th>SYSTEM_ID</th>
<th>SUBSYSTEM_ID</th>
<th>USER_ID</th>
<th>DIVISION</th>
<th>DEPARTMENT</th>
<th>GROUP_NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>*</td>
<td>USER1</td>
<td></td>
<td></td>
<td>GROUP1</td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>USER2</td>
<td></td>
<td></td>
<td>GROUP2</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
```
Appendix C. Sample components

This appendix describes the Sample component, the only component shipped with the Tivoli Decision Support for OS/390 base product. Two sample components are provided:

- Sample Component
- Sample Interval Job/Step Accounting Component

Sample Component

You can use the Sample component for testing the installation of the base product or to demonstrate Tivoli Decision Support for OS/390.

The sample component consists of:

- A sample log and record definition
- Three sample tables with update definitions
- Three sample reports
- A log data set with sample data that can be collected

Figure 131 on page 254 shows an overview of the flow of data from the sample log data set, DRLSAMPL (in the DRL160.SDRLDEFS library), through the Sample component of Tivoli Decision Support for OS/390, and finally into reports.
Sample component

Log data from MVS

Sample log data set

Records

SAMPLE_01

Data tables

SAMPLE_H

SAMPLE_M

Lookup and control tables

SAMPLE_USER

Reports

Figure 131. Sample data flow

SAMPLE_H, _M data tables

These tables provide hourly and monthly sample data.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date. For the _M table, this is the date of the first day of the month. From S01DATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time rounded down to the nearest hour. This applies only to the _H table. From S01TIME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System ID. From S01SYST.</td>
</tr>
<tr>
<td>DEPARTMENT_NAME</td>
<td>k CHAR(8)</td>
<td>Department name. From DEPARTMENT_NAME in the SAMPLE_USER lookup table. This is derived using field S01USER from the record as key.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>k CHAR(8)</td>
<td>User ID. From S01USER.</td>
</tr>
<tr>
<td>CPU_SECONDS</td>
<td>FLOAT</td>
<td>Total processor time, in seconds. Calculated as the sum of S01CPU/100.0.</td>
</tr>
<tr>
<td>PAGES_PRINTED</td>
<td>INTEGER</td>
<td>Number of pages printed. This is the sum of S01PRNT.</td>
</tr>
<tr>
<td>RESPONSE_SECONDS</td>
<td>INTEGER</td>
<td>Total response time, in seconds. This is the sum of S01RESP.</td>
</tr>
<tr>
<td>TRANSACTIONS</td>
<td>INTEGER</td>
<td>Number of transactions. This is the sum of S01TRNS.</td>
</tr>
</tbody>
</table>
**SAMPLE_USER lookup table**

This lookup table assigns department names to users.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USER_ID (k)</td>
<td>CHAR(8)</td>
<td>User ID</td>
</tr>
<tr>
<td>DEPARTMENT_NAME</td>
<td>CHAR(8)</td>
<td>Department name</td>
</tr>
</tbody>
</table>

**Example of table contents**

<table>
<thead>
<tr>
<th>USER</th>
<th>DEPARTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAMS</td>
<td>Appl Dev</td>
</tr>
<tr>
<td>GEYER</td>
<td>Finance</td>
</tr>
<tr>
<td>GOUNOT</td>
<td>Retail</td>
</tr>
<tr>
<td>HAAS</td>
<td>Finance</td>
</tr>
<tr>
<td>JONES</td>
<td>Appl Dev</td>
</tr>
<tr>
<td>KWAN</td>
<td>Marketing</td>
</tr>
<tr>
<td>LEE</td>
<td>Manufact</td>
</tr>
<tr>
<td>LUTZ</td>
<td>Manufact</td>
</tr>
<tr>
<td>MARINO</td>
<td>Retail</td>
</tr>
<tr>
<td>MEHTA</td>
<td>Manufact</td>
</tr>
<tr>
<td>PARKER</td>
<td>Finance</td>
</tr>
<tr>
<td>PEREZ</td>
<td>Retail</td>
</tr>
</tbody>
</table>

**Sample Interval Job/Step Accounting Component**

You can use the Sample Interval Job/Step Accounting Component as it is, or as a starting point to develop your own job/step accounting/performance component, by using the SMF 30 Interval records for long running jobs. The type 30 record can be used with subtype selectivity function. There are six subtype records available, which provide address space level accounting information.

The SMF 30 subtypes are:

- **Subtype 1**  
  Job start or start of other work unit

- **Subtype 2**  
  Activity since previous interval ended

- **Subtype 3**  
  Activity for the last interval before step termination

- **Subtype 4**  
  Step total

- **Subtype 5**  
  Job termination or termination of other work unit

- **Subtype 6**  
  System address space

A brief explanation of the SMF 30 record subtypes flow follows:

- A work unit (such as a TSO/E session, APPC/MVS transaction program, started task, or batch job) starts. This subtype 1 record identifies the work unit but contains no resource data.

- An SMF interval ends, if you requested interval accounting. If this is the first interval since the work unit started, then this subtype 2 record contains the total resources used from the start of the work unit until the end of the current interval. For other intervals, this subtype 2 record contains the total resources used from the end of the previous interval until the end of the current interval. For system address spaces that do not go through full function start, SMF
generates a subtype 6 record that contains the total resources used since the start of the address space. Note that the data in the subtype 6 record is cumulative, unlike the subtype 2 record.

- A work unit (such as a TSO/E session, APPC/MVS transaction program, started task, or batch job) completes. If you requested interval accounting, SMF generates a subtype 3 record that contains the total resources used from the end of the previous recording interval until the end of the work unit.
- For a job step, SMF generates a subtype 4 record that contains the total resources used from the time when the job step started until the time when the job step completed. If you requested interval recording, then this subtype 4 record generally contains the accumulated totals of the data in the interval subtype 2 and subtype 3 records that were generated for the step.
- For a job, SMF generates a subtype 5 record that contains the total resources used from the time when the job started until the time when the job completed. This subtype 5 record generally contains the accumulated totals of the data in the step total subtype 4 records that were generated for the job.

The Sample Interval Job/Step Accounting Component consists of:
- Log and Record definitions
- Six sample tables with the corresponding update definitions
- A sample table view
- Two sample reports

Figure 132 on page 257 shows an overview of the flow of data from the SMF log, through the Sample Interval Job/Step Accounting Component of Tivoli Decision Support for OS/390, and finally into reports.
Note: Most of the fields present in the tables listed above are updated from different SMF 30 record subtypes; some table columns might not be filled in, if the needed SMF 30 record subtype is not present in the collected log or if it does not contain the needed data section.

**SMF30_JOBADDR_T, _H, _D, _M Data Tables**

These tables provide timely, hourly, daily and monthly SMF 30 Interval sample data. The default retention periods for these tables are:

- **SMF30_JOBADDR_T**: 7 days
- **SMF30_JOBADDR_H**: 7 days
- **SMF30_JOBADDR_D**: 15 days
- **SMF30_JOBADDR_M**: 365 days

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date when the activity occurred. It is the date that the reader recognized the JOB card (for this job), in the form 0cyydddF. From SMF30RSD.</td>
</tr>
</tbody>
</table>
### Sample component

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the activity occurred. It is the time since midnight, that the reader recognized the JOB card (for this job). From SMF30RSD. It only applies to the _T and _H tables.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMF30SID.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>CHAR(8)</td>
<td>Name of job. From SMF30JBN.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF30SID, SMF30IDT, SMF30IST, SMF30DTE, and SMF30TME as parameters in the PERIOD function. It is key field in the _T table only.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR</td>
<td>Name of the subsystem. From SMF30WID. It is key field in the _H, _D, _M tables only.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD1</td>
<td>CHAR(16)</td>
<td>First accounting field. 1st accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD2</td>
<td>CHAR(16)</td>
<td>Second accounting field. 2nd accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD3</td>
<td>CHAR(16)</td>
<td>Third accounting field. 3rd accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD4</td>
<td>CHAR(16)</td>
<td>Fourth accounting field. 4th accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD5</td>
<td>CHAR(16)</td>
<td>Fifth accounting field. 5th accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>ACCOUNT_FIELD6</td>
<td>CHAR(16)</td>
<td>Sixth accounting field. 6th accounting section SMF30ACT. It only applies to the _T table.</td>
</tr>
<tr>
<td>BLOCKS_IN_AUX</td>
<td>FLOAT</td>
<td>Number of blocks that were paged in from auxiliary storage. This is the sum of SMF30KIA.</td>
</tr>
<tr>
<td>BLOCKS_IN_ES</td>
<td>FLOAT</td>
<td>Number of blocks that were paged in from expanded storage. This is the sum of SMF30KIE.</td>
</tr>
<tr>
<td>BLOCKS_OUT_AUX</td>
<td>FLOAT</td>
<td>Number of blocks that were paged out to auxiliary storage. This is the sum of SMF30KOA.</td>
</tr>
<tr>
<td>BLOCKS_OUT_ES</td>
<td>FLOAT</td>
<td>Number of blocks that were paged out to expanded storage. This is the sum of SMF30KOE.</td>
</tr>
<tr>
<td>BLOCKS_TRANSFERRED</td>
<td>FLOAT</td>
<td>Total number of blocks transferred. This is the accumulated EXCP counts. This is the sum of SMF30TEP.</td>
</tr>
<tr>
<td>BYTES_RCV</td>
<td>FLOAT</td>
<td>Amount of data received by the transaction program, in bytes. This is the sum of SMF30DAR.</td>
</tr>
<tr>
<td>BYTES_SENT</td>
<td>FLOAT</td>
<td>Amount of data sent by the transaction program, in bytes. This is the sum of SMF30DAT.</td>
</tr>
<tr>
<td>CARDS_READ</td>
<td>FLOAT</td>
<td>Number of card-image records in DD DATA and DD * data sets read by the reader. This is the sum of SMF30INP.</td>
</tr>
<tr>
<td>CONNECT_INVALID</td>
<td>CHAR(1)</td>
<td>Indicates that the device connect time (CONNECT_MSEC) might be incorrect. This is set to 1 if the device connect time might be incorrect. This is the maximum of bit 0 in SMF30DCF.</td>
</tr>
<tr>
<td>CONNECT_MSEC</td>
<td>FLOAT</td>
<td>Total device connect time for the address space, in milliseconds. This is the sum of SMF30TCN.</td>
</tr>
<tr>
<td>CONVERS_ACTIVE</td>
<td>FLOAT</td>
<td>Number of active conversations. This is the sum of SMF30TAC.</td>
</tr>
<tr>
<td>CONVERS_ALLOC</td>
<td>FLOAT</td>
<td>Number of conversations allocated. This is the sum of SMF30CNA.</td>
</tr>
<tr>
<td>CONVERS_TOT</td>
<td>FLOAT</td>
<td>Total number of conversations associated with the transaction program ID, both currently active and de-allocated. This is the sum of SMF30CN.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CPU_HYPER_SECONDS</td>
<td>FLOAT</td>
<td>Processor time used to support data transfer to and from a hyperspace backed by expanded storage, in seconds. Calculated as the sum of SMF30HPT/100 for records where bit 0 or bit 10 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>CPU_INTR_SECONDS</td>
<td>FLOAT</td>
<td>Processor time used to process I/O interrupts, in seconds. Calculated as the sum of SMF30IIIP/100 for records where bit 0 or bit 9 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>CPU_PAGE_SECONDS</td>
<td>FLOAT</td>
<td>Number of processor page seconds for the address space, in page second units. Calculated as the sum of SMF30PSC*0.001.</td>
</tr>
<tr>
<td>CPU_RCT_SECONDS</td>
<td>FLOAT</td>
<td>Processor time used by the region control task, in seconds. Calculated as the sum of SMF30RCT/100 for records where bit 0 or bit 11 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>CPU_TOTAL_SECONDS</td>
<td>FLOAT</td>
<td>Total processor time, in seconds. This is the sum of all valid processor times.</td>
</tr>
<tr>
<td>CS_FRAME_SECONDS</td>
<td>FLOAT</td>
<td>Active frame time for frames in central storage, in seconds. Calculated as the sum of SMF30RES<em>SMF30PSC</em>1024/(SMF30CPT*10 000 000).</td>
</tr>
<tr>
<td>DASD_BLOCKS</td>
<td>FLOAT</td>
<td>Number of blocks transferred to and from disk devices. This is the sum of SMF30BLK, where SMF30DEV = X′20′.</td>
</tr>
<tr>
<td>DIVISION_ID</td>
<td>CHAR(4)</td>
<td>Division id from SMF30_SYSID_LK lookup. It only applies to the _T table.</td>
</tr>
<tr>
<td>ENCLAVE_ACTIVE_SEC</td>
<td>FLOAT</td>
<td>Enclave transaction active time, in seconds. This is the sum of SMF30ETA.</td>
</tr>
<tr>
<td>ENCLAVE_SECONDS</td>
<td>FLOAT</td>
<td>CPU time used by enclaves, in seconds. This value is also included in TCB_STEP_SECONDS. Calculated as the sum of SMF30ENC/100 for records where bit 0 or bit 13 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>ICSF_INSTRUCTIONS</td>
<td>FLOAT</td>
<td>Integrated Cryptographic Service Facility/MVS (ICSF/MVS) service count. This is the number of cryptographic instructions executed on behalf of caller (within caller’s address space). Calculated as the sum of SMF30CSC.</td>
</tr>
<tr>
<td>JOB_CLASS</td>
<td>CHAR(1)</td>
<td>Job Class. From SMF30CLS. Blank if SMF30WID is STC or ASCH or OMVS. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_CPU_SECONDS</td>
<td>FLOAT</td>
<td>Job CPU consumption. It is evaluated as sum of; SMF30ICU, SMF30ISB,SMF30CPT, SMF30TFL, SMF30IIIP, SMF30RCT, SMF30HPT. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DASD_BLOCKS</td>
<td>INTEGER</td>
<td>Count of blocks issued for the DASD against the data set. From SMF30BLK. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DASD_TRKS_IN</td>
<td>INTEGER</td>
<td>Number of tracks allocated on the DASD. From field SMF14NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DASD_TRKS_OUT</td>
<td>INTEGER</td>
<td>Number of tracks allocated on the DASD. From field SMF15NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DASD_TRKS_REL</td>
<td>INTEGER</td>
<td>Number of tracks released by the DADSM routine. From field SMF15NTR. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DURATION_SECS</td>
<td>INTEGER</td>
<td>Job duration in seconds. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_DURATION_TIME</td>
<td>TIME</td>
<td>Job duration. Evaluated as job end-start. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_END_CHECK</td>
<td>CHAR(1)</td>
<td>It is used to specify whether SMF30 sub 5 record (job termination) has been processed for this address space. It is Y if subtype 5 has been processed; otherwise it is set to N.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>JOB_END_DATE</td>
<td>DATE</td>
<td>Date that the record was moved to the SMF buffer. From field SMF30DTE. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_END_TIME</td>
<td>TIME</td>
<td>Time that the record was moved to the SMF buffer. From field SMF30TME. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_INIT_CHECK</td>
<td>CHAR(1)</td>
<td>It is used to specify whether SMF30 sub 1 record (job initiation) has been processed for this address space. It is Y if subtype 1 has been processed, otherwise it is set with the first subtype processed, It is defaulted to N.</td>
</tr>
<tr>
<td>JOB_IO_COUNT</td>
<td>INTEGER</td>
<td>Total blocks transferred. From SMF30TEP. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOBS_LINED_PRINTED</td>
<td>INTEGER</td>
<td>Number of logical records written by the writer, by form number and class (this field includes JOBLOG information and data set copies). From SMF6NLR. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_NUMBER</td>
<td>CHAR</td>
<td>JES job identifier. FROM FMF30JNM. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_PAGES_PRINTED</td>
<td>INTEGER</td>
<td>Approximate page count (printer only). From SMF6PGE. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_RETURN_CODE</td>
<td>INTEGER</td>
<td>Job Completion Code. From SMF30SCC. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_START_DATE</td>
<td>DATE</td>
<td>Date that the initiator selected this step or job. From first job field SMF30STD. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_START_TIME</td>
<td>TIME</td>
<td>Date that the initiator selected this step or job. From first job field SMF30ST. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TAPE_BLOCKS</td>
<td>INTEGER</td>
<td>Count of blocks issued for the tape against the data set. From SMF30BLK. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TAPE_MOUNTS</td>
<td>INTEGER</td>
<td>Number of specific and non-specific tape mounts. From field SMF30PTM and SMF30TPR. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TEMP_TRKS_IN</td>
<td>INTEGER</td>
<td>Temporary number of input tracks allocated on the DASD. From field SMF14NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TEMP_TRKS_OUT</td>
<td>INTEGER</td>
<td>Temporary number of input tracks allocated on the DASD. From field SMF14NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TEMP_TRKS_REL</td>
<td>INTEGER</td>
<td>Number of temporary tracks released by the DADSM routine. From field SMF15NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Middle SMF interval time. Calculated from SMF30IS, SMF30ET, SMF30IT, SMF30IST.</td>
</tr>
<tr>
<td>JOB_VIO_TRKS_IN</td>
<td>INTEGER</td>
<td>Number of output tracks allocated for VIO dataset access. From field SMF14NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_VIO_TRKS_OUT</td>
<td>INTEGER</td>
<td>Number of output tracks allocated for VIO dataset access. From field SMF15NTA. It only applies to the _T table.</td>
</tr>
<tr>
<td>JOB_VSAM_TRKS_IN</td>
<td>INTEGER</td>
<td>VSAM input allocated tracks. Evaluated as difference of SMF64TCC and SMF64FCC.</td>
</tr>
<tr>
<td>JOB_VSAM_TRKS_OUT</td>
<td>INTEGER</td>
<td>VSAM output allocated tracks. Evaluated as difference of SMF64TCC and SMF64FCC.</td>
</tr>
<tr>
<td>PA_GT16MB_BYTES</td>
<td>FLOAT</td>
<td>Maximum private area size above 16 megabytes, in bytes. This is the maximum of SMF30ERG.</td>
</tr>
<tr>
<td>PA_LT16MB_BYTES</td>
<td>FLOAT</td>
<td>Maximum private area size below 16 megabytes, in bytes. This is the maximum of SMF30RGB.</td>
</tr>
<tr>
<td>PAGEINS</td>
<td>FLOAT</td>
<td>Number of pages that were paged in from auxiliary storage. This is the sum of SMF30PGL.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PAGEINS_BLK_AUX</td>
<td>FLOAT</td>
<td>Number of blocked pages that were paged in from auxiliary storage. This is the sum of SMF30BIA.</td>
</tr>
<tr>
<td>PAGEINS_BLK_ES</td>
<td>FLOAT</td>
<td>Number of blocked pages that were paged in from expanded storage. This is the sum of SMF30BIE.</td>
</tr>
<tr>
<td>PAGEINS_COMMON</td>
<td>FLOAT</td>
<td>Number of common area page-ins (LPA + CSA). This is the sum of SMF30CP1.</td>
</tr>
<tr>
<td>PAGEINS_HYPER</td>
<td>FLOAT</td>
<td>Number of hyperspace page-ins from auxiliary to processor storage. This is the sum of SMF30HPI.</td>
</tr>
<tr>
<td>PAGEINS_LPA</td>
<td>FLOAT</td>
<td>Number of LPA page-ins. This is the sum of SMF30PL1.</td>
</tr>
<tr>
<td>PAGEINS_SHARED</td>
<td>FLOAT</td>
<td>Number of IARVSERV shared pages that were paged in from auxiliary storage in this address space. This is the sum of SMF30PAl.</td>
</tr>
<tr>
<td>PAGEINS_SHARED_ES</td>
<td>FLOAT</td>
<td>Number of IARVSERV shared pages that were paged in from expanded storage in this address space. This is the sum of SMF30PE1.</td>
</tr>
<tr>
<td>PAGEINS_UNBLK_ES</td>
<td>FLOAT</td>
<td>Number of unblocked pages that were paged in from expanded storage. This is the sum of SMF30PIE.</td>
</tr>
<tr>
<td>PAGEINS_VIO</td>
<td>FLOAT</td>
<td>Number of VIO page-ins. This is the sum of SMF30VPI.</td>
</tr>
<tr>
<td>PAGEOUTS</td>
<td>FLOAT</td>
<td>Number of pages that were paged out to auxiliary storage. This is the sum of SMF30PGO.</td>
</tr>
<tr>
<td>PAGEOUTS_BLK_AUX</td>
<td>FLOAT</td>
<td>Number of blocked pages that were paged out to auxiliary storage. This is the sum of SMF30BOA.</td>
</tr>
<tr>
<td>PAGEOUTS_BLK_ES</td>
<td>FLOAT</td>
<td>Number of blocked pages that were paged out to expanded storage. This is the sum of SMF30BOE.</td>
</tr>
<tr>
<td>PAGEOUTS_HYPER</td>
<td>FLOAT</td>
<td>Number of hyperspace page-outs from processor to auxiliary storage. This is the sum of SMF30HPO.</td>
</tr>
<tr>
<td>PAGEOUTS_UNBLK_ES</td>
<td>FLOAT</td>
<td>Number of unblocked pages that were paged in from expanded storage. This is the sum of SMF30PIE.</td>
</tr>
<tr>
<td>PAGEOUTS_VIO</td>
<td>FLOAT</td>
<td>Number of VIO page-outs. This is the sum of SMF30VPO.</td>
</tr>
<tr>
<td>PAGES_STOLEN</td>
<td>FLOAT</td>
<td>Number of pages stolen from the address space. This is the sum of SMF30PST.</td>
</tr>
<tr>
<td>PAGES_SWAPPED_IN</td>
<td>FLOAT</td>
<td>Number of pages swapped in. This is the sum of SMF30PSI.</td>
</tr>
<tr>
<td>PAGES_SWAPPED_OUT</td>
<td>FLOAT</td>
<td>Number of pages swapped out. This is the sum of SMF30PSO.</td>
</tr>
<tr>
<td>PERF_GROUP_NO</td>
<td>CHAR(3)</td>
<td>Job performance group number. This field applies only when the system is running in workload management compatibility mode. This field is zero if the system is running in work management goal mode. From SMF30PGN.</td>
</tr>
<tr>
<td>RACF_USER_ID</td>
<td>CHAR(8)</td>
<td>RACF user ID. If empty, RACF is not active.</td>
</tr>
<tr>
<td>RECEIVE_CALLS</td>
<td>FLOAT</td>
<td>Number of times the transaction program issued a receive call. This is the sum of SMF30REC.</td>
</tr>
<tr>
<td>REGION_SIZE_MAX_KB</td>
<td>FLOAT</td>
<td>Maximum region size established, in kilobytes. This is the maximum of SMF30RGN.</td>
</tr>
<tr>
<td>REPORT_CLASS</td>
<td>CHAR(8)</td>
<td>Report class name. This field is blank when in workload management compatibility mode. FROM SMF30RCN.</td>
</tr>
<tr>
<td>SEND_CALLS</td>
<td>FLOAT</td>
<td>Number of times the transaction program issued a send call. This is the sum of SMF30SEN.</td>
</tr>
<tr>
<td>SERVICE_CLASS</td>
<td>CHAR(8)</td>
<td>Service class name. This field is blank when in workload management compatibility mode. From SMF30SCN.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SERVICE_UNITS_CPU</td>
<td>FLOAT</td>
<td>Processor service units. This is the sum of SMF30CSU.</td>
</tr>
<tr>
<td>SERVICE_UNITS_ENCL</td>
<td>FLOAT</td>
<td>Enclave CPU service units. This is the sum of SMF30ESU.</td>
</tr>
<tr>
<td>SERVICE_UNITS_IO</td>
<td>FLOAT</td>
<td>I/O service units. This is the sum of SMF30IO.</td>
</tr>
<tr>
<td>SERVICE_UNITS_MSO</td>
<td>FLOAT</td>
<td>MSO service units. This is the sum of SMF30MSO.</td>
</tr>
<tr>
<td>SERVICE_UNITS_SRB</td>
<td>FLOAT</td>
<td>SRB service units. This is the sum of SMF30SRB.</td>
</tr>
<tr>
<td>SERVICE_UNITS_TOT</td>
<td>FLOAT</td>
<td>Total service units. This is the sum of SMF30SRV.</td>
</tr>
<tr>
<td>SHARED_PAGE_SEC</td>
<td>FLOAT</td>
<td>Number of CPU page seconds for the IARV/SERV shared central storage frames in use by this address space, in page second units. This is the sum of SMF30PSF*0.001.</td>
</tr>
<tr>
<td>SRB_INIT_SECONDS</td>
<td>FLOAT</td>
<td>Initiator processor time under SRB, in seconds. Calculated as the sum of SMF30ISB/100 for records where bit 0 or bit 5 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>SRB_PREEMP_SECONDS</td>
<td>FLOAT</td>
<td>Additional CPU time accumulated by the preemtable SRBs and client SRBs for this job, in seconds. This value is also included in the value in TCB_STEP_SECONDS. Calculated as the sum of SMF30ASR/100 for records where bit 0 or bit 12 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>SRB_STEP_SECONDS</td>
<td>FLOAT</td>
<td>Step processor time under SRB, in seconds. Calculated as the sum of SMF30CPS/100 for records where bit 0 or bit 2 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>STOR_PRIV_BOT KB</td>
<td>INTEGER</td>
<td>Largest amount of storage used from the bottom of the private area, in kilobytes. This is the maximum of SMF30PRV.</td>
</tr>
<tr>
<td>STOR_PRIV_TOP KB</td>
<td>INTEGER</td>
<td>Largest amount of storage used from the top of the private area, in kilobytes. This is the maximum of SMF30SYS.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR</td>
<td>Name of the subsystem. From SMF30WID.</td>
</tr>
<tr>
<td>SWAP_SEQUENCES</td>
<td>FLOAT</td>
<td>Number of address space swap sequences. This is the sum of SMF30NSW.</td>
</tr>
<tr>
<td>TAPE_BLOCKS</td>
<td>FLOAT</td>
<td>Number of blocks transferred to and from tape devices. This is the sum of SMF30BLK, where SMF30DEV = X’80’.</td>
</tr>
<tr>
<td>TCB_INIT_SECONDS</td>
<td>FLOAT</td>
<td>Initiator processor time under TCB, in seconds. Calculated as the sum of SMF30ICU/100 for records where bit 0 or bit 6 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>TCB_STEP_SECONDS</td>
<td>FLOAT</td>
<td>Step processor time under TCB, in seconds. Calculated as the sum of SMF30CPT/100 for records where bit 0 or bit 1 of SMF30TFL is 0.</td>
</tr>
<tr>
<td>TGET_COUNT</td>
<td>FLOAT</td>
<td>Number of TGETs for a TSO session. This is the sum of SMF30TGT.</td>
</tr>
<tr>
<td>TPUT_COUNT</td>
<td>FLOAT</td>
<td>Number of TPUTs for a TSO session. This is the sum of SMF30TPT.</td>
</tr>
<tr>
<td>TRAN_ACTIVE_SEC</td>
<td>FLOAT</td>
<td>SRM transaction active time, in seconds. Calculated as the sum of SMF30AT*0.001 024.</td>
</tr>
<tr>
<td>TRAN_PROGRAMS</td>
<td>FLOAT</td>
<td>Number of APPC/MVS transaction programs scheduled by the APPC/MVS transaction scheduler (ASCH). This is the sum of SMF30ATR.</td>
</tr>
<tr>
<td>TRAN_RESIDENT_SEC</td>
<td>FLOAT</td>
<td>SRM transaction residency time, in seconds. Calculated as the sum of SMF30RES*0.001 024.</td>
</tr>
<tr>
<td>TRANSACTIONS</td>
<td>FLOAT</td>
<td>Number of SRM transactions. This is the sum of SMF30TRS.</td>
</tr>
<tr>
<td>TRANSACTIONS_ENCL</td>
<td>FLOAT</td>
<td>Enclave transaction count. This is the sum of SMF30ETC.</td>
</tr>
</tbody>
</table>
The table provides timely, SMF 30 interval sample data. The default retention period for this table is:

**SMF30_JOBSTEP_T** 15 days

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date when the activity occurred. It is the date that the reader recognized the JOB card (for this job), in the form 0cyydddF. From SMF30RSD.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the activity occurred. It is the time since midnight, that the reader recognized the JOB card (for this job). From SMF30RSD.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>k CHAR(8)</td>
<td>Name of job. From SMF30JBN.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMF30SID.</td>
</tr>
<tr>
<td>STEP_NUMBER</td>
<td>k SMALLINT</td>
<td>Step Number. From SMF30STN.</td>
</tr>
<tr>
<td>END_MARGIN</td>
<td>TIME</td>
<td>Time delta SLA end criteria met or missed.</td>
</tr>
<tr>
<td>END_MARGIN_SIGN</td>
<td>CHAR(1)</td>
<td>End margin sign + or -, before or after.</td>
</tr>
<tr>
<td>JOB_NUMBER</td>
<td>CHAR(8)</td>
<td>Job Number. From SMF30JNM.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF30SID, SMF30STD, SMF30IST, SMF30DTE, and SMF30TME as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>PROC_STEP_NAME</td>
<td>CHAR(8)</td>
<td>The name of the step that invoked the procedure. From SMF30PSN.</td>
</tr>
<tr>
<td>PROGRAM_NAME</td>
<td>CHAR(8)</td>
<td>Program name. From SMF30PGM.</td>
</tr>
<tr>
<td>RACF_USER_ID</td>
<td>CHAR(8)</td>
<td>RACF user id. From SMF30RUD.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SLA_DESCRIPTION</td>
<td>CHAR(16)</td>
<td>Service Level Agreement Description. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>SLA_DURATION_TIME</td>
<td>TIME</td>
<td>SLA Expected Duration Time.</td>
</tr>
<tr>
<td>SLA_END_TIME</td>
<td>TIME</td>
<td>SLA Expected End Time.</td>
</tr>
<tr>
<td>SLA_GROUP_NAME</td>
<td>CHAR(16)</td>
<td>Service Level Agreement Group Name. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>SLA_LEVEL_NUMBER</td>
<td>SMALLINT</td>
<td>Service Level Agreement Level Number. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>SLA_MET</td>
<td>CHAR(1)</td>
<td>SLA Flag; Y to indicate the SLA has been meet. N if not, blank otherwise.</td>
</tr>
<tr>
<td>SLA_START_TIME</td>
<td>TIME</td>
<td>SLA Expected Start Time.</td>
</tr>
<tr>
<td>SLA_THRESHOLD</td>
<td>CHAR(2)</td>
<td>SLA compliance value blank=OK, CO-concerned, CR-critical.</td>
</tr>
<tr>
<td>SLA_TYPE</td>
<td>CHAR(1)</td>
<td>SLA base type: T=Clock-time D=duration.</td>
</tr>
<tr>
<td>START_MARGIN</td>
<td>TIME</td>
<td>Time delta SLA start criteria met or missed.</td>
</tr>
<tr>
<td>START_MARGIN_SIGN</td>
<td>CHAR(1)</td>
<td>Start margin sign + or -, before or after.</td>
</tr>
<tr>
<td>STEP_CPU_SECONDS</td>
<td>FLOAT</td>
<td>Step CPU consumption in seconds.</td>
</tr>
<tr>
<td>STEP_DASD_BLOCKS</td>
<td>INTEGER</td>
<td>Number of blocks transferred to and from disk devices for the current step.</td>
</tr>
<tr>
<td>STEP_DURATION_SEC</td>
<td>INTEGER</td>
<td>Step duration in seconds.</td>
</tr>
<tr>
<td>STEP_DURATION_TIME</td>
<td>TIME</td>
<td>Step duration time. SMF30SIT-SMF30TME.</td>
</tr>
<tr>
<td>STEP_END_DATE</td>
<td>DATE</td>
<td>Date the record was moved to the SMF buffer. From SMF30DTE.</td>
</tr>
<tr>
<td>STEP_END_TIME</td>
<td>TIME</td>
<td>Time the record was moved to the SMF buffer. From SMF30TME.</td>
</tr>
<tr>
<td>STEP_IO_COUNT</td>
<td>INTEGER</td>
<td>Step Total blocks transferred. From SMF30TEP.</td>
</tr>
<tr>
<td>STEP_NAME</td>
<td>CHAR(8)</td>
<td>Step name. From SMF30STM.</td>
</tr>
<tr>
<td>STEP_RETURN_CODE</td>
<td>SMALLINT</td>
<td>Step completion code. From SMF30SCC.</td>
</tr>
<tr>
<td>STEP_START_DATE</td>
<td>DATE</td>
<td>Initiator start date. From SMF30STD.</td>
</tr>
<tr>
<td>STEP_START_TIME</td>
<td>TIME</td>
<td>Initiator start time. From SMF30SIT.</td>
</tr>
<tr>
<td>STEP_TAPE_BLOCKS</td>
<td>INTEGER</td>
<td>Number of blocks transferred to and from tape devices for the current step.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR</td>
<td>Name of the subsystem. From SMF30WID.</td>
</tr>
</tbody>
</table>

### SMF30_STEP_SLA_LK Lookup Table

This lookup table contains the Service Level Agreement (SLA) time(s) for client SLA reporting.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMF30SIT.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>k CHAR(8)</td>
<td>Name of job. From SMF30JBN.</td>
</tr>
<tr>
<td>PROC_STEP_NAME</td>
<td>k CHAR(8)</td>
<td>The name of the step that invoked the procedure. From SMF30PSN.</td>
</tr>
<tr>
<td>STEP_NAME</td>
<td>k CHAR(8)</td>
<td>Step name. From SMF30STM.</td>
</tr>
<tr>
<td>SLA_GROUP_NAME</td>
<td>CHAR(16)</td>
<td>Service Level Agreement Group Name. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SLA_DESCRIPTION</td>
<td>CHAR(16)</td>
<td>Service Level Agreement Description. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>SLA_LEVEL_NUMBER</td>
<td>INTEGER</td>
<td>Service Level Agreement Level Number. From SMF30_STEP_SLA_LK lookup table.</td>
</tr>
<tr>
<td>SLA_TYPE</td>
<td>CHAR(1)</td>
<td>SLA base type: T=clock-time D=duration.</td>
</tr>
<tr>
<td>SLA_START_TIME</td>
<td>TIME</td>
<td>SLA Expected Start Time.</td>
</tr>
<tr>
<td>SLA_END_TIME</td>
<td>TIME</td>
<td>SLA Expected End Time.</td>
</tr>
<tr>
<td>SLA_CONCERNED_TIME</td>
<td>TIME</td>
<td>Time delta to consider Concerned the SLA.</td>
</tr>
<tr>
<td>SLA_CRITICAL_TIME</td>
<td>TIME</td>
<td>Time delta to consider Critical the SLA.</td>
</tr>
<tr>
<td>SLA_DURATION_TIME</td>
<td>TIME</td>
<td>SLA Expected Duration Time.</td>
</tr>
<tr>
<td>SLA_DOCUMENT</td>
<td>VARCHAR(100)</td>
<td>SLA Documentation</td>
</tr>
</tbody>
</table>

**SMF30_SYSID_LK Lookup Table**

This table converts the system ID of the data into valid accounting information.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS_ID</td>
<td>k CHAR(4)</td>
<td>System ID associated with the resource.</td>
</tr>
<tr>
<td>DIVISION_ID</td>
<td>CHAR(4)</td>
<td>Division ID to associate with the resource used.</td>
</tr>
</tbody>
</table>

**SMF30_JOBSTEP_TV View**

This view provides timely job step accounting statistics. It contains step data from SMF type 30 subtype 4 records and it contains address spaces data from SMF type 30, subtypes 2 and 3. It is based on SMF30JOBSTEP_T, SMF30JOBADDR_T, SMF30_STEP_SLA_LK tables.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k DATE</td>
<td>Date when the activity occurred. It is the date that the reader recognized the JOB card (for this job), in the form 0cyyddF. From SMF30RSD.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the activity occurred. It is the time since midnight, that the reader recognized the JOB card (for this job). From SMF30RSD.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMF30SID.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>k CHAR(8)</td>
<td>Name of job. From SMF30JBN.</td>
</tr>
</tbody>
</table>

**Note:** In addition to the key columns described here, this view also contains the data columns described in SMF30JOBSTEP_T, (in topic zzz), SMF30JOBADDR_T (in topic www), SMF30_STEP_SLA_LK (in topic yyy).
Sample component

Sample Components reports

In the report descriptions that follow, this information is included:

<table>
<thead>
<tr>
<th>Heading</th>
<th>The title of the report.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>A brief introduction to the purpose of the report.</td>
</tr>
<tr>
<td>Report ID</td>
<td>Tivoli Decision Support for OS/390 assigns each report a unique report identifier. Each report ID consists of SAMPLE and a sequential number, such as SAMPLE01.</td>
</tr>
<tr>
<td>Report group</td>
<td>To make it easier to find reports, Tivoli Decision Support for OS/390 organizes reports into report groups, which correspond to feature components. Sample component reports belong to the Sample report group.</td>
</tr>
<tr>
<td>Source</td>
<td>Each Sample report contains information adapted from either the SAMPLE_H or SAMPLE_M source tables.</td>
</tr>
<tr>
<td>Attributes</td>
<td>Attributes are keys that you can use to search for a particular report. The Sample component reports each have one attribute, Sample.</td>
</tr>
<tr>
<td>Variables</td>
<td>Each report has several variables associated with it. When you select a report to display, Tivoli Decision Support for OS/390 prompts you for the variables listed in the description.</td>
</tr>
<tr>
<td>Example report</td>
<td>Each example illustrates a typical report.</td>
</tr>
<tr>
<td>Column descriptions</td>
<td>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.</td>
</tr>
</tbody>
</table>
Sample Component reports
Sample component

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

![Sample Report 1](image)

*Figure 133. Sample Report 1*

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

<table>
<thead>
<tr>
<th>Month start date</th>
<th>Department name</th>
<th>User ID</th>
<th>Transactions</th>
<th>Average response seconds</th>
<th>CPU seconds</th>
<th>Pages printed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>Appl Dev</td>
<td>ADAMS</td>
<td>1109</td>
<td>3.84</td>
<td>244.13</td>
<td>821</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JONES</td>
<td>1138</td>
<td>3.40</td>
<td>228.79</td>
<td>1055</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SMITH</td>
<td>870</td>
<td>4.27</td>
<td>183.03</td>
<td>864</td>
</tr>
<tr>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>Geyer</td>
<td>509</td>
<td>4.29</td>
<td>115.97</td>
<td>529</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haas</td>
<td>786</td>
<td>3.56</td>
<td>137.48</td>
<td>648</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parker</td>
<td>462</td>
<td>6.79</td>
<td>171.51</td>
<td>704</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spencer</td>
<td>800</td>
<td>3.33</td>
<td>172.82</td>
<td>640</td>
</tr>
<tr>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tivoli</td>
<td>Decision Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 134. 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:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>SAMPLE03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Sample Reports</td>
</tr>
<tr>
<td>Source</td>
<td>SAMPLE_M</td>
</tr>
<tr>
<td>Chart format</td>
<td>DRLGHORB</td>
</tr>
<tr>
<td>Attributes</td>
<td>Sample</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date, System_ID</td>
</tr>
</tbody>
</table>

![Sample Report 3](image)

*Figure 135. Sample Report 3*

The report contains this information:

- **Horizontal axis**: Processor time, in seconds
- **Vertical axis**: Department name
Sample Interval Job/Step Accounting Component reports

Report 1: Job Daily Resource Consumption
This report shows the daily CPU resource consumed by each job and RACF ID.

This information identifies the report:
Report ID: JOBAS1
Report group: JOB30R
Source: SMF30_JOBADDR_D
Chart format: DRLGSURF
Attributes: Sample, MVS, Batch, TSO, Address_Space
Variables: From_Date, To_Date, MVS_System_ID, Subsystem_ID, Job_Name

The columns in this report contain this information:

Date: Date when the activity occurred. It is the date that the reader recognized the JOB card (for this job).

MVS_System_ID: MVS system ID. This is the SMF system ID.

Subsystem_ID: Name of the MVS subsystem.

Job_Name: Name of job.

Service_Units_CPU: CPU service units.

Service_Units_SRB: SRB service units.

Service_Units_IO: I/O service units.

Service_Units_MSO: MSO service units.

Figure 136. Sample Interval Job/Step Accounting sample Report JOBAS1
RACF_User_ID

RACF user ID (if RACF is active).

Report 2: Job Step Duration and CPU Consumption

This report shows the timely Job Step Duration and CPU Consumption.

This information identifies the report:

Report ID: JOBST1
Report group: JOB30R
Source: SMF30_JOBADDR_D
Chart format: DRLGSURF
Attributes: Sample, MVS, Batch, TSO, Address_Space
Variables: From_Date, To_Date, From_Time, To_Time, MVS_System_ID, Subsystem_ID, Job_Name

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>ID</th>
<th>SYSTEM</th>
<th>SUBSYSTEM</th>
<th>JOB</th>
<th>DURATION</th>
<th>SECS</th>
<th>STEP</th>
<th>SLA</th>
<th>MET</th>
<th>NAME</th>
<th>STEP</th>
<th>DURAT.</th>
<th>CPU</th>
<th>SECS</th>
</tr>
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<tbody>
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<td>2003-02-11 16:46.11</td>
<td>1</td>
<td>ESJ4</td>
<td>JES2</td>
<td>TDSINSTL</td>
<td>668</td>
<td>1</td>
<td>SCAN</td>
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<td>1.550E+00</td>
<td>2</td>
<td>RUNLOG</td>
<td>625</td>
<td>4.303E+01</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>RUNLOG</td>
<td>625</td>
<td>4.303E+01</td>
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<td>RUNRDEF</td>
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<td>1.100E-01</td>
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<td>COPYMSG</td>
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<td>3.550E+00</td>
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</tr>
</tbody>
</table>

Figure 137. Sample Interval Job/Step Accounting sample Report JOBST1

The columns in this report contain this information:

**Date**
Date when the activity occurred. It is the date that the reader recognized the JOB card (for this job).

**Time**
Time when the activity occurred. It is the time that the reader recognized the JOB card (for this job).

**MVS_System_ID**
MVS system ID. This is the SMF system ID.

**Subsystem_ID**
Name of the MVS subsystem.

**Job_Name**
Name of job.

**Job_Duration_Secs**
Job duration in seconds.

**Job_CPU_Seconds**
Job total CPU consumption.

**Step_Number**
Step Number.

**Step_Name**
Step Name.

**SLA_Met**
Flag to indicate if the SLA has been meet.

**Proc_Step_Name**
The name of the step that invoked the procedure.
**Step_Duration_Sec**
Step duration in seconds.

**Step_CPU_SecondsTerm**
Step CPU consumption in seconds.
Sample component
Appendix D. Record definitions supplied with Tivoli Decision Support for OS/390

In addition to the records used by the components, the Tivoli Decision Support for OS/390 base product contains definitions of many records. This appendix lists all the records defined by the base product, except for those built by Tivoli Decision Support for OS/390 exits and utilities.

SMF records

For a description of these records, refer to the MVS/ESA SPL: System Management Facilities or the MVS/ESA System Management Facilities.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
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<tbody>
<tr>
<td>SMF_000</td>
<td>DRLRS000</td>
<td>IPL</td>
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<tr>
<td>SMF_002</td>
<td>DRLRS002</td>
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<td>SMF_003</td>
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<td>SMF_004</td>
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<td>Step termination</td>
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<tr>
<td>SMF_005</td>
<td>DRLRS005</td>
<td>Job termination</td>
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<tr>
<td>SMF_006</td>
<td>DRLRS006</td>
<td>JES2/JES3/PSF/External writer</td>
</tr>
<tr>
<td>SMF_007</td>
<td>DRLRS007</td>
<td>Data lost</td>
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<tr>
<td>SMF_008</td>
<td>DRLRS008</td>
<td>I/O configuration</td>
</tr>
<tr>
<td>SMF_009</td>
<td>DRLRS009</td>
<td>VARY device ONLINE</td>
</tr>
<tr>
<td>SMF_010</td>
<td>DRLRS010</td>
<td>Allocation recovery</td>
</tr>
<tr>
<td>SMF_011</td>
<td>DRLRS011</td>
<td>VARY device OFFLINE</td>
</tr>
<tr>
<td>SMF_014</td>
<td>DRLRS014</td>
<td>INPUT or RDBACK data set activity</td>
</tr>
<tr>
<td>SMF_015</td>
<td>DRLRS015</td>
<td>OUTPUT, UPDAT, INOUT, or OUTIN data set activity</td>
</tr>
<tr>
<td>SMF_016</td>
<td>DRLRS016</td>
<td>DFSORT statistics</td>
</tr>
<tr>
<td>SMF_017</td>
<td>DRLRS017</td>
<td>Scratch data set status</td>
</tr>
<tr>
<td>SMF_018</td>
<td>DRLRS018</td>
<td>Rename data set status</td>
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<td>SMF_019</td>
<td>DRLRS019</td>
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<td>SMF_020</td>
<td>DRLRS020</td>
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<td>SMF_021</td>
<td>DRLRS021</td>
<td>Error statistics by volume</td>
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<td>SMF_022</td>
<td>DRLRS022</td>
<td>Configuration</td>
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<td>SMF_023</td>
<td>DRLRS023</td>
<td>SMF status</td>
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<tr>
<td>SMF_024</td>
<td>DRLRS024</td>
<td>JES2 spool offload</td>
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<tr>
<td>SMF_025</td>
<td>DRLRS025</td>
<td>JES3 device allocation</td>
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<tr>
<td>SMF_026</td>
<td>DRLRS026</td>
<td>JES2/JES3 job purge</td>
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<tr>
<td>SMF_028</td>
<td>DRLRS028</td>
<td>NPM statistics. SMF_028 maps all subtypes of SMF type 28. To improve performance, the subtypes used by Tivoli Decision Support for OS/390 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.</td>
</tr>
</tbody>
</table>
## Record definitions

<table>
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<th>Description</th>
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<td>DRLRSNTR</td>
<td>NPM NTRI statistics</td>
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<td>SMF_028_TRANSIT</td>
<td>DRLRSNTT</td>
<td>NPM transit time statistics</td>
</tr>
<tr>
<td>SMF_028_TRANS_SUM</td>
<td>DRLRSNT1</td>
<td>NPM Transit Time summary statistics</td>
</tr>
<tr>
<td>SMF_028_X25</td>
<td>DRLRSX25</td>
<td>NPM X25 statistics</td>
</tr>
<tr>
<td>SMF_028_PU</td>
<td>DRLRSNPU</td>
<td>NPM PU statistics</td>
</tr>
<tr>
<td>SMF_028_NPM</td>
<td>DRLRSNPM</td>
<td>NPM internal statistics</td>
</tr>
<tr>
<td>SMF_028_LINE</td>
<td>DRLRSNLI</td>
<td>NPM line statistics</td>
</tr>
<tr>
<td>SMF_028_NEO</td>
<td>DRLRSNEO</td>
<td>NPM NEO statistics</td>
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<tr>
<td>SMF_028_NCP</td>
<td>DRLRSNCP</td>
<td>NPM NCP statistics</td>
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<tr>
<td>SMF_028_LAN</td>
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<td>NPM LAN statistics</td>
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<td>SMF_028_VTAM</td>
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<td>NPM VTAM statistics</td>
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<td>DRLRS031</td>
<td>TIOC initialization</td>
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<td>TSO user work accounting</td>
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<td>DRLRS033</td>
<td>APPC/MVS TP accounting</td>
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<td>SMF_035</td>
<td>DRLRS035</td>
<td>LOGOFF</td>
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<td>SMF_036</td>
<td>DRLRS036</td>
<td>ICF catalog</td>
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<td>NetView Hardware Monitor</td>
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<td>Network configuration (VPD)</td>
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<td>SMF_039_8</td>
<td>DRLRS039</td>
<td>NetView Session Monitor, SMF 39, subtype 8</td>
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<td>DRLRS041</td>
<td>Data-in-virtual Access/Unaccess</td>
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<td>DRLRS042</td>
<td>DFP SMS configuration statistics</td>
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<td>DFSMS Data Set statistics</td>
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<td>ADSTAR Distributed Storage Manager (ADSM) server statistics</td>
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<td>DFP Extended Remote Copy (XRC) session statistics</td>
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<td>DRLRS043</td>
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<td>DRLRS045</td>
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<td>JES2 SIGNOFF/stop line (BSC only)</td>
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<td>JES3 SIGNOFF/stop line/LOGOFF</td>
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<td>JES2 LOGON/start line (SNA only)</td>
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<td>JES2 LOGOFF/start line (SNA only)</td>
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<td>VSAM volume data set updated</td>
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<td>RMF enqueue activity</td>
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<td>RMF virtual storage activity</td>
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<td>SMF_083</td>
<td>DRLRS083</td>
<td>RACF audit record for data sets</td>
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<td>JMF - FCT analysis</td>
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<td>JMF - FCT summary and highlights</td>
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<td>JMF - spool data management</td>
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<td>SMF_084_4</td>
<td>DRLRS084</td>
<td>JMF - resqueue cellpool, JCT and control block utilization</td>
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<td>JMF - job analysis</td>
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<td>JMF - JES3 hot spot analysis</td>
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<td>JMF - JES internal reader DSP analysis</td>
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<td>JMF - JES3 SSI response time analysis</td>
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<td>JMF - JES3 SSI destination queue analysis</td>
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<td>DRLRS094</td>
<td>3494, 3495 Tape library data server statistics</td>
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<td>DB2 statistics, dynamic ZPARMs</td>
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<td>DB2 accounting, Packages extension</td>
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<td>DRLRS102</td>
<td>DB2 system initialization parameters</td>
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<td>SMF_110_0_V2</td>
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<td>CICS/ESA and CICS/TS statistics record</td>
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<td>SMF_118_1</td>
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<td>TCP/IP API calls record</td>
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<td>SMF_118_3</td>
<td>DRLRS118</td>
<td>TCP/IP FTP client calls record</td>
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<td>SMF_118_4</td>
<td>DRLRS118</td>
<td>TCP/IP TELNET client calls record</td>
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<td>TCP/IP TELNET server record</td>
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<td>TCP/IP general statistics record</td>
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<td>SMF_118_70</td>
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<td>TCP/IP FTP server record</td>
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<td>IXP channel interface statistics</td>
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<td>IXP functional device performance</td>
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<td>IXP device module performance</td>
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<td>IXP deleted data space release</td>
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<td>IXP snapshot event data</td>
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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.

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<thead>
<tr>
<th>Record name</th>
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<tr>
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<td>Cache RMF Reporter, 3990 model 03 (245)</td>
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<tr>
<td>SMF_CACHE_06</td>
<td>DRLRS245</td>
<td>Cache RMF Reporter, 3990 model 06 (245)</td>
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<tr>
<td>SMF_CACHE_13</td>
<td>DRLRS245</td>
<td>Cache RMF Reporter, 3880 model 13 (245)</td>
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<td>SMF_CACHE_23</td>
<td>DRLRS245</td>
<td>Cache RMF Reporter, 3880 model 23 (245)</td>
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<tr>
<td>SMF_FTP</td>
<td>DRLRSFFTP</td>
<td>NetView File Transfer Program (FTP) log record (252)</td>
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### DFSHS/RMM records

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<td>DRLRRMMV</td>
<td>Extract file volume record</td>
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<tr>
<td>DFRMM_RACK</td>
<td>DRLRRMMR</td>
<td>Extract file rack number record</td>
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<tr>
<td>DFRMM_SLBIN</td>
<td>DRLRRMMS</td>
<td>Extract file storage location bin record</td>
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<tr>
<td>DFRMM_PRODUCT</td>
<td>DRLRRMMP</td>
<td>Extract file product record</td>
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<td>DFRMM_VRS</td>
<td>DRLRRMMK</td>
<td>Extract file VRS record</td>
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<tr>
<td>DFRMM_OWNER</td>
<td>DRLRRMMO</td>
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<tr>
<td>DFRMM_DATASET</td>
<td>DRLRRMMD</td>
<td>Extract file dataset record</td>
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### IMS SLDS records

These records come from the IMS recovery log.

As no reliable release indicators exist in the IMS records, one log definition exists for each IMS release supported. The log and record names contain Vinm where nn is the IMS Version and release; 51 for IMS 5.1, 61 for IMS 6.1, 71 for IMS 7.1, and 81 for IMS 8.1.

The records are described in IMS mapping macros.
<table>
<thead>
<tr>
<th>Record name</th>
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</thead>
<tbody>
<tr>
<td>IMS_Vnn0_01</td>
<td>DRLRInnS</td>
<td>Message Queue record (message received from a CNT)</td>
</tr>
<tr>
<td>IMS_Vnn0_02</td>
<td>DRLRInnS</td>
<td>IMS command record</td>
</tr>
<tr>
<td>IMS_Vnn0_03</td>
<td>DRLRInnS</td>
<td>Message Queue record (message received from an SMB or IMS)</td>
</tr>
<tr>
<td>IMS_Vnn0_06</td>
<td>DRLRInnS</td>
<td>IMS event accounting record</td>
</tr>
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<td>IMS_Vnn0_07</td>
<td>DRLRInnS</td>
<td>Program termination accounting record</td>
</tr>
<tr>
<td>IMS_Vnn0_08</td>
<td>DRLRInnS</td>
<td>Program schedule record</td>
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<tr>
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<td>Security violation record</td>
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<tr>
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<td>Start of conversation record</td>
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<tr>
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<td>End of conversation record</td>
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<td>SPA insert record</td>
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<td>Sign on/off record</td>
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<tr>
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<td>Extended checkpoint record</td>
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<td>Database open record</td>
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<td>Database close record</td>
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<td>Message queue reject record</td>
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<td>Message queue DRRN free record</td>
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<td>Message queue cancel record</td>
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<td>Message queue enqueue record</td>
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<td>Message queue dequeue record</td>
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<td>Message queue syncpoint fail record</td>
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<td>Program/Database start/stop record</td>
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### Record definitions

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<th>Member name</th>
<th>Description</th>
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<td>Fast path DEDB area dataset open record</td>
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<td>DRLRInnS</td>
<td>Fast path DEDB area dataset close record</td>
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<td>EMH FP syncpoint failure record</td>
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<td>Fast Path database update (utilities) record</td>
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</tr>
<tr>
<td>IMS_Vnn0_7203</td>
<td>DRLRInnS</td>
<td>ETO user modify record</td>
</tr>
<tr>
<td>IMS_Vnn0_7204</td>
<td>DRLRInnS</td>
<td>ETO lterm addition record</td>
</tr>
</tbody>
</table>

### DCOLLECT records

These records are produced by the DFP DCOLLECT utility.

For a description of these records, refer to the DFSMS/MVS® V1R1: Access Method Services for the Integrated Catalog Facility, special supplement for DCOLLECT.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCOLLECT_A</td>
<td>DRLRDCOA</td>
<td>VSAM base cluster association name</td>
</tr>
<tr>
<td>DCOLLECT_AG</td>
<td>DRLRDCAG</td>
<td>Aggregate Group information</td>
</tr>
<tr>
<td>DCOLLECT_B</td>
<td>DRLRDCOB</td>
<td>Data set backup version information</td>
</tr>
<tr>
<td>DCOLLECT_BC</td>
<td>DRLRDCBC</td>
<td>Base Configuration information</td>
</tr>
<tr>
<td>DCOLLECT_C</td>
<td>DRLRDCOC</td>
<td>DASD capacity planning information</td>
</tr>
<tr>
<td>DCOLLECT_D</td>
<td>DRLRDCOD</td>
<td>Active data set information</td>
</tr>
<tr>
<td>DCOLLECT_DC</td>
<td>DRLRDCDC.</td>
<td>Data Class construct information</td>
</tr>
<tr>
<td>DCOLLECT_DR</td>
<td>DRLRDCDR.</td>
<td>Optical Drive information</td>
</tr>
<tr>
<td>DCOLLECT_LB</td>
<td>DRLRDCLB.</td>
<td>Optical Library information</td>
</tr>
<tr>
<td>DCOLLECT_M</td>
<td>DRLRDCOM</td>
<td>Migration data set information</td>
</tr>
<tr>
<td>DCOLLECT_MC</td>
<td>DRLRDCMC</td>
<td>Management Class construct information</td>
</tr>
<tr>
<td>Record name</td>
<td>Member name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>DCOLLECT_SC</td>
<td>DRLRDCSC</td>
<td>Storage Class construct information</td>
</tr>
<tr>
<td>DCOLLECT_SG</td>
<td>DRLRDCSG</td>
<td>Storage Group construct information</td>
</tr>
<tr>
<td>DCOLLECT_T</td>
<td>DRLRDCOT</td>
<td>Tape capacity planning information</td>
</tr>
<tr>
<td>DCOLLECT_V</td>
<td>DRLRDCOV</td>
<td>Volume information</td>
</tr>
<tr>
<td>DCOLLECT_VL</td>
<td>DRLRDCVL</td>
<td>SMS Volume information</td>
</tr>
</tbody>
</table>

**EREP records**

For a description of these records, refer to the *Environmental Record Editing and Printing Program (ERE) User’s Guide and Reference*.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EREP_30</td>
<td>DRLRE030</td>
<td>DASD long outboard record</td>
</tr>
<tr>
<td>EREP_36</td>
<td>DRLER036</td>
<td>VTAM long outboard record</td>
</tr>
<tr>
<td>EREP_50</td>
<td>DRLER050</td>
<td>IPL system initialization record</td>
</tr>
</tbody>
</table>

**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*.

**Note**: Operations Planning and Control (OPC) is now known as Tivoli Workload Scheduler for z/OS.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPC_03_P</td>
<td>DRLROP03</td>
<td>OPC current plan operation</td>
</tr>
<tr>
<td>OPC_03_C</td>
<td>DRLROP03</td>
<td>OPC current plan occurrence</td>
</tr>
<tr>
<td>OPC_04</td>
<td>DRLROP04</td>
<td>OPC current plan job name table</td>
</tr>
<tr>
<td>OPC_23</td>
<td>DRLROP23</td>
<td>OPC operation event</td>
</tr>
<tr>
<td>OPC_24</td>
<td>DRLROP24</td>
<td>OPC MCP event</td>
</tr>
<tr>
<td>OPC_27</td>
<td>DRLROP27</td>
<td>OPC missed feedback</td>
</tr>
<tr>
<td>OPC_29</td>
<td>DRLROP29</td>
<td>OPC auto tracked event</td>
</tr>
</tbody>
</table>

**VM accounting records**

Refer to *VM/ESA®: CP Planning and Administration* for a description of these records.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMACCT_01</td>
<td>DRLRVA01</td>
<td>Virtual machine resource use</td>
</tr>
<tr>
<td>VMACCT_02</td>
<td>DRLRVA02</td>
<td>Dedicated devices</td>
</tr>
<tr>
<td>VMACCT_03</td>
<td>DRLRVA03</td>
<td>Temporary disk space</td>
</tr>
<tr>
<td>VMACCT_04</td>
<td>DRLRVA04</td>
<td>LOGON or AUTOLOG with invalid password</td>
</tr>
</tbody>
</table>
### Record definitions

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMACCT_05</td>
<td>DRLRVA05</td>
<td>Successful LINK to protected minidisk</td>
</tr>
<tr>
<td>VMACCT_06</td>
<td>DRLRVA06</td>
<td>LINK with invalid password</td>
</tr>
<tr>
<td>VMACCT_07</td>
<td>DRLRVA07</td>
<td>Log off from VSCS-controlled device</td>
</tr>
<tr>
<td>VMACCT_08</td>
<td>DRLRVA08</td>
<td>Disconnect or log off</td>
</tr>
</tbody>
</table>

### VMPRF records

For a description of these records, refer to the *VMPRF User’s Guide and Reference*.

<table>
<thead>
<tr>
<th>Record name</th>
<th>Member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMPRF_01</td>
<td>DRLRVM01</td>
<td>VMPRF system data</td>
</tr>
<tr>
<td>VMPRF_02</td>
<td>DRLRVM02</td>
<td>VMPRF processor data</td>
</tr>
<tr>
<td>VMPRF_11</td>
<td>DRLRVM11</td>
<td>VMPRF configuration data</td>
</tr>
<tr>
<td>VMPRF_41</td>
<td>DRLRVM41</td>
<td>VMPRF user data</td>
</tr>
<tr>
<td>VMPRF_42</td>
<td>DRLRVM42</td>
<td>VMPRF user class data</td>
</tr>
<tr>
<td>VMPRF_43</td>
<td>DRLRVM43</td>
<td>VMPRF summarized user data</td>
</tr>
<tr>
<td>VMPRF_61</td>
<td>DRLRVM61</td>
<td>VMPRF DASD data</td>
</tr>
<tr>
<td>VMPRF_64</td>
<td>DRLRVM64</td>
<td>VMPRF summarized DASD data</td>
</tr>
</tbody>
</table>
Appendix E. Naming convention for Tivoli Decision Support for OS/390 definition members

This appendix describes the naming convention for members of the DRL160.SDRLDEFS and DRL160.SDRLRENU libraries.

Naming convention for members of DRL160.SDRLDEFS

The naming convention for the Tivoli Decision Support for OS/390 definitions library is:

<table>
<thead>
<tr>
<th>Naming convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLBxxxx</td>
<td>Log data manager collect statements</td>
</tr>
<tr>
<td>DRLIxxxx</td>
<td>Component definitions (SQL statements that are executed when the system tables are created or updated)</td>
</tr>
<tr>
<td>DRLLxxxx</td>
<td>Log definitions</td>
</tr>
</tbody>
</table>
| DRLRxxxx          | Record definitions [Appendix D, “Record definitions supplied with Tivoli Decision Support for OS/390,” on page 275 describes record definitions.]
| DRLSxxxx          | Tablespace definitions |
| DRLTxxxx          | Table and update definitions |
| DRLUxxxx          | Update definitions (when separate from tables) |
| DRLVxxxx          | View definitions |
| DRLWxxxx          | Migration definitions |

Naming convention for members of DRL160.SDRLRENU

The naming convention for the Tivoli Decision Support for OS/390 (predefined) reports definitions library, SDRLRENU (or SDRLRJPN), is:

<table>
<thead>
<tr>
<th>Naming convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLOxxxx</td>
<td>Report definitions</td>
</tr>
<tr>
<td>DRLQxxxx</td>
<td>SQL queries</td>
</tr>
<tr>
<td>DRLFxxxx</td>
<td>QMF forms</td>
</tr>
</tbody>
</table>
Definition member naming convention
Appendix F. Migrating from SLR version 3.3

The administration dialog supports these methods for migrating data from Service Level Reporter (SLR) Version 3.3 to Tivoli Decision Support for OS/390:

- Migrate data from SLR V3 starter set tables to predefined Tivoli Decision Support for OS/390 DB2 tables
- Migrate user-defined SLR V3 tables to Tivoli Decision Support for OS/390 definitions and tables, and copy the data
- Migrate user-defined SLR V3 reports to Tivoli Decision Support for OS/390

This appendix describes procedures for these migration types, and shows how to set parameters for them.

Considerations when migrating from SLR to Tivoli Decision Support for OS/390

Before you start migrating tables and reports from SLR, you need to determine:

- The scope: which tables and reports should be migrated. This of course depends on business needs; what kind of information you need to report on, and how much historical data you need to see trends. But what you select to migrate also affects the amount of tailoring you must do after migration. For example, if you migrate SLR reports only, you have to modify the resulting queries so that they match Tivoli Decision Support for OS/390 tables. If you migrate SLR tables, and then the corresponding SLR reports, the amount of tailoring is reduced.

- Education needs: how much information you need to give users about the new tables and reports. Do they differ from the SLR information users are accustomed to?

This appendix gives you some reference information to help you understand the differences between SLR and Tivoli Decision Support for OS/390. The converted definitions do not support all SLR functions. You must manually check, and in some cases modify, the converted definitions, to get the results that you expect.

For more information about these differences and how to plan for migration, contact your IBM representative.
Setting migration parameters

Before you migrate predefined or user-defined tables or user-defined reports, you must set migration parameters. To set migration parameters with the administration dialog:

1. From the Tivoli Decision Support for OS/390 Administration window, select 1, System.
   
   Tivoli Decision Support for OS/390 displays the System window.

2. From the System window, select 4, Migration.
   
   Tivoli Decision Support for OS/390 displays the Migration window (Figure 138).

3. Select one of the following. Then press Enter.
   
   1. Migration parameters for table migration
   2. Copy SLR V3 data to predefined tables
   3. Convert SLR V3 tables and copy data
   4. Migration parameters for report migration
   5. Convert SLR V3 reports to Tivoli Decision Support for OS/390 reports

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

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

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

   Figure 138. Migration window

3. Select option 1, Migration parameters for table migration ("Setting migration parameters for tables" on page 289) or option 4, Migration parameters for report migration ("Setting migration parameters for reports" on page 290).
Setting migration parameters for tables

To set or change migration parameters for table migration:

1. From the Migration window, select 1, Migration parameters for table migration. Tivoli Decision Support for OS/390 displays the Migration parameters for table migration window [Figure 139].

2. Type the required library information, and press Enter. Tivoli Decision Support for OS/390 returns to the Migration window.

---

**Figure 139. Migration Parameters for Table Migration window**

- Mainfile: SLR.V3R3M0.SYSTEMDB
- Load libraries: SLR.LOCAL.SLRSAMP, SLR.V3R3M0.SLRSAMP
- Link libraries: SLR.LOCAL.LINKLIB, SLR.V3R3M0.LINKLIB
- ASM library: SLR.V3R3M0.SLRASM

F1=Help F2=Split F9=Swap F12=Cancel
Setting migration parameters for reports

To set or change migration parameters for report migration:

1. From the Migration window, select 4, Migration parameters for report migration.

   Tivoli Decision Support for OS/390 displays the Migration parameters for report migration window [Figure 140].

   ![Migration Parameters for Report Migration](image)

   **Figure 140. Migration Parameters for Reports window**

   - Report database: SLR.V3R3MO.REPORTDB
   - Load libraries: SLR.LOCAL.SLRSAMP
   - SLR.V3R3MO.SLRSAMP
   - Link libraries: SLR.LOCAL.LINKLIB
   - SLR.V3R3MO.LINKLIB
   - ASM libraries: SLR.LOCAL.SLRASM
   - SLR.V3R3MO.SLRASM
   - CLIST libraries: SLR.LOCAL.SLRCLIST
   - SLR.V3R3MO.SLRCLIST
   - SLRTABL libraries: SLR.LOCAL.SLRTABL
   - SLR.V3R3MO.SLRTABL

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

2. Type the required library information, and press Enter.

   **Note:** The libraries should be concatenated, as in the example in [Figure 140], with the local (user) libraries first, followed by the SLR product libraries.

   Tivoli Decision Support for OS/390 returns to the Migration window.
Migrating SLR V3 data to Tivoli Decision Support for OS/390 predefined tables

Tivoli Decision Support for OS/390 issues SLR commands and SQL statements that copy data from several starter set tables in SLR V3 to predefined Tivoli Decision Support for OS/390 tables. This migration occurs in two steps:

1. Tivoli Decision Support for OS/390 unloads data from the SLR V3 database to an IXF data set.
2. Tivoli Decision Support for OS/390 loads the IXF data into its DB2 database.

**Note:** If you are using Tivoli Decision Support for OS/390 without QMF, a special IXF format is used. This IXF format can only be used for migration of SLR tables to Tivoli Decision Support for OS/390.

Tivoli Decision Support for OS/390 defines a series of possible migrations, each involving one or more SLR V3 tables as source input and one or more Tivoli Decision Support for OS/390 tables as the target destination of the migrated data. Tivoli Decision Support for OS/390 migrates starter-set SLR V3 tables that usually have data accumulated over weeks and months.

**Notes:**

1. In some cases, monthly SLR data is copied to weekly Tivoli Decision Support for OS/390 tables, or weekly data is summarized in monthly tables. Both these cases give incorrect data but allow you to see the long trends.
2. Sometimes the SLR key columns or total patterns are unavailable to the Tivoli Decision Support for OS/390 tables. Tivoli Decision Support for OS/390 inserts an asterisk (*) in the Tivoli Decision Support for OS/390 column to indicate this situation. If a key column has a missing value in SLR (usually an error situation), Tivoli Decision Support for OS/390 replaces it with a hyphen (–). Rows where time keys are missing are skipped.

Tivoli Decision Support for OS/390 also migrates SLR V3 parameter tables to Tivoli Decision Support for OS/390 lookup tables.

Before you migrate SLR V3 data to a predefined table in a Tivoli Decision Support for OS/390 component, you must install the component so the table exists. If you do not have the Tivoli Decision Support for OS/390 target table (because you do not have the feature), or if you have modified an SLR starter-set table that you plan to migrate, migrate the tables as user-defined tables. (See [“Migrating SLR V3 tables to Tivoli Decision Support for OS/390 user-defined tables” on page 294](#) for the procedure.)

To migrate network data tables, you need the SLR Network Reporter feature. The SLR tables NR_RESOURCE, NR_SYNONYM, and NR_AVAILCON can be migrated to the Tivoli Decision Support for OS/390 table NW_RESOURCE by exporting the data from SLR and importing it into Tivoli Decision Support for OS/390 using the SLR and Tivoli Decision Support for OS/390 network administration dialogs. Refer to *Network Performance Feature Installation and Administration* for information about importing data in external data file format.
You can migrate data to these Tivoli Decision Support for OS/390 tables:

<table>
<thead>
<tr>
<th>Tivoli Decision Support for OS/390 Feature</th>
<th>Target Tivoli Decision Support for OS/390 Table</th>
<th>Source SLR V3 tables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various</td>
<td>AVAILABILITY_M</td>
<td>AVAILSTAT</td>
</tr>
<tr>
<td>Various</td>
<td>AVAILABILITY_W/M</td>
<td>NR_AVAILS</td>
</tr>
<tr>
<td>CICS Performance</td>
<td>CICS_M_GLOBAL_D</td>
<td>CICSSYSTAT</td>
</tr>
<tr>
<td>CICS Performance</td>
<td>CICS_TRANSACTION_W</td>
<td>CICSTRANSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_APPL_DIST_W</td>
<td>DB2DISTSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_APPLICATION_W</td>
<td>DB2CAPASUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_TRAN_DIST_W</td>
<td>DB2DISTSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_TRANSACTION_W</td>
<td>DB2ACCTSUM1/DB2ACCTSUM2</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_USER_AP_DIST_W</td>
<td>DB2DISTSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_USER_APPL_W</td>
<td>DB2CAPASUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_USER_DIST_W</td>
<td>DB2DISTSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DB2_USER_TRAN_W</td>
<td>DB2ACCTSUM1/DB2ACCTSUM2</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_ACTIVITY_M</td>
<td>HSM_BKUP_ACT, HSM_MIGR_ACT</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_BACKUP_D/M</td>
<td>HSM_BCKUPSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_DASD_CAP_D/M</td>
<td>HSM_DASD_SUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_DATASET_D/M</td>
<td>DASD_DSNSTAT</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_DS_OWNER</td>
<td>DASD_DSNPARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_LAST_RUN</td>
<td>DASD_CNTLPARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_MIGRATE_DAYS</td>
<td>DASD_MGTPARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_MIGRATION_D/M</td>
<td>HSM_MIGR_SUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_TAPE_CAP_D/M</td>
<td>HSM_TAPE_SUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>DFSMS_VOLUME_D/M</td>
<td>DASD_VOLSTAT</td>
</tr>
<tr>
<td>System Performance</td>
<td>EREP_CPU_PARM</td>
<td>LR_CPU_PARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>EREP_DASD_GROUP</td>
<td>LR_DASD_PARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>EREP_DASD_M</td>
<td>LR_DASD_SUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>EREP_VTAM_M</td>
<td>LR_VTAM_SUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>MSG_SYSLOG_M</td>
<td>MSGSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>MSG_SYSLOG_TYPE</td>
<td>MSGPARM</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$ADDRDISTR_M</td>
<td>ADDRDISTR</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$ADDRS$PACE_M</td>
<td>ADDRSTAT, JOBSTAT, TSOSTAT</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$COMP$CODE_M</td>
<td>COMPCODE</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$IP$L_T</td>
<td>IPLLOG</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$PRINTER_M</td>
<td>PRINTLOAD</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$PROGRAM_M</td>
<td>PGMSTAT</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$SYSTEM_M</td>
<td>PAGESUM/CPULOAD/WORKLOAD, CPULOAD/IPLSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$TAPE_M</td>
<td>TAPESTAT</td>
</tr>
<tr>
<td>System Performance</td>
<td>MV$WORKLOAD$M</td>
<td>WORKLOAD</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_ALERT_BASIC_W</td>
<td>NR_ALERTS</td>
</tr>
<tr>
<td>Tivoli Decision Support for OS/390 Feature</td>
<td>Target Tivoli Decision Support for OS/390 Table</td>
<td>Source SLR V3 tables</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_ALERT_GENERIC_W</td>
<td>NR_GENAHEADTS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_LINE_UTIL_W</td>
<td>NR_LINEUTIS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NCP_UTIL_W</td>
<td>NR_NCPUTIS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NEO_UTIL_W</td>
<td>NR_NEOS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NPM_TRANSIT_W/M</td>
<td>NR_NPMRESPS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NPM_UTIL_W</td>
<td>NR_NPMUTIS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NTRIL_UTIL_W</td>
<td>NR_NTRILOGS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_NTRIP_UTIL_W</td>
<td>NR_NTRIPHYS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_PU_UTIL_W</td>
<td>NR_PUUTIS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_RTM_RESPONSE_W/M</td>
<td>NR_NVRESPS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_SESSION_FAIL_W</td>
<td>NR_SESSFS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_SM_UTIL_W</td>
<td>NR_NVSMUTIS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_X25LN_UTIL_W</td>
<td>NR_X25LNKS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_X25NI_UTIL_W</td>
<td>NR_NPSIVCS</td>
</tr>
<tr>
<td>Network Performance</td>
<td>NW_X25PU_UTIL_W</td>
<td>NR_X25PUS</td>
</tr>
<tr>
<td>System Performance</td>
<td>VMACCT_SESSION_M</td>
<td>VMSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>VMPRF_DASD_M</td>
<td>VMPRFDASDSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>VMPRF_PROCESSOR_M</td>
<td>VMPRFPROCSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>VMPRF_SYSTEM_M</td>
<td>VMPRFSYSSUM</td>
</tr>
<tr>
<td>System Performance</td>
<td>VMPRF_USER_M</td>
<td>VMPRFUSERSUM</td>
</tr>
</tbody>
</table>

To migrate SLR V3 data to predefined Tivoli Decision Support for OS/390 tables:
1. From the Migration window, select 2, Copy SLR V3 data to predefined tables. Tivoli Decision Support for OS/390 displays the Predefined Tables window [Figure 141 on page 294].
Migrating from SLR version 3.3

Other Utilities Help  
                                                           Administration
Select  System
                              Migration
Predefined Tables

Select one or more tables. Then press Enter to create JCL.

/  Tivoli Decision Support for OS/390 Tables  SLR V3 Tables
   AVAILABLE_M  AVAILSTAT
   AVAILABLE_M/W  NR_AVAILS
   CICS_M_GLOBAL_D  CICSSYSSTAT
   CICS_TRANSACTION_W  CICSTransum
   DB2_APPLICATION_W  DB2OPTSUM
   DB2_APPLICATION_M  DB2CAPASUM
   DB2_TRAN_DIST_W  DB2OPTSUM

Command ===>  F1=Help   F2=Split   F6=Migr all   F7=Bkwd   F8=Fwd
F9=Swap   F12=Cancel

Figure 141. Predefined Tables window

Note: When SLR V3 tables are separated by a slash (/), Tivoli Decision Support for OS/390 combines their data before copying it to target Tivoli Decision Support for OS/390 tables. SLR V3 tables separated by commas imply a sequence; Tivoli Decision Support for OS/390 copies the data from one table to target tables and then copies source data from the next.

2. To migrate SLR V3 data to selected Tivoli Decision Support for OS/390 tables, select one or more tables and press Enter. To migrate SLR V3 data to all eligible Tivoli Decision Support for OS/390 tables, press F6. Tivoli Decision Support for OS/390 creates JCL for migrating the data in batch. It accesses the ISPF editor where you can edit and submit the JCL.

DRLWXXX definition members define data migration routes from SLR V3 starter-set-table data to specific Tivoli Decision Support for OS/390 predefined tables. To see which table columns are involved in each defined migration, refer to the prologues of DRLWXXX definition members that are listed in the JCL.

3. Type submit on the command line and press Enter to submit the job.
4. After submitting the job, press F3 to return to the Predefined Tables window.

When using the table you might notice that the default values provided were not sufficient, and you need to modify columns. For information about how to edit the table, refer to “Editing the contents of a table” on page 166.

Migrating SLR V3 tables to Tivoli Decision Support for OS/390 user-defined tables

You can use Tivoli Decision Support for OS/390 to convert any SLR V3 table to a Tivoli Decision Support for OS/390 user-defined table by converting SLR V3 table definition macros. Inputs to the conversion are SLR table definition macros for the log, summary, and (optionally) parameter tables.

Tivoli Decision Support for OS/390 creates a record definition from the log table, a DB2 table and a Tivoli Decision Support for OS/390 update definition from the
summary table (the log and parameter tables are also used for building the update definition), and DB2 lookup tables from the parameter tables. Tivoli Decision Support for OS/390 then unloads data from the SLR V3 table and loads it in the Tivoli Decision Support for OS/390 table.

To convert user-defined tables:
1. From the Migration window, select 3, Convert SLR V3 tables and copy data. Tivoli Decision Support for OS/390 displays the SLR V3 Table Conversion window [Figure 142].

![Figure 142. SLR V3 Table Conversion window]

2. Type the required information in the fields. In the SLR table fields, type the names of the SLR table definition modules (DREGxxxx) for the log and summary tables, and optionally, type the names of one to three parameter tables.
   In the Tivoli Decision Support for OS/390 log name field, type the name of the log type (such as SMF) from which SLR V3 collected data.
   In the tablespace name field, type the name of the tablespace where the Tivoli Decision Support for OS/390 tables are to be created.
3. Press Enter. Tivoli Decision Support for OS/390 creates the JCL and accesses the ISPF editor so you can edit the job.
4. Edit the JCL and submit the job. “Editing the migration job for Tivoli Decision Support for OS/390 user-defined tables” on page 296 describes how to edit the migration job.
5. Press F3. Tivoli Decision Support for OS/390 returns to the SLR V3 Table Conversion window.
Editing the migration job for Tivoli Decision Support for OS/390 user-defined tables

The migration job contains these steps:

1. Build Tivoli Decision Support for OS/390 and SQL statements to create:
   - A Tivoli Decision Support for OS/390 log definition with the name you supplied in the SLR V3 Table Conversion window
   - A Tivoli Decision Support for OS/390 record definition with a name derived from the SLR log table
   - DB2 table definitions for the SLR parameter tables
   - A DB2 table definition for the SLR summary table with an index and comments
   - A Tivoli Decision Support for OS/390 update definition

   These statements are saved in the local definitions library, member MIGExxxx, where xxxx is the suffix of the SLR summary table member (DREGxxxx).

2. Run the Tivoli Decision Support for OS/390 log collector to execute the statements built in step 1.

3. Run SLR to unload the summary table in IXF format.

4. Build an SQL statement for copying data from a temporary table created from the IXF file to the table created in step 2.

   Tivoli Decision Support for OS/390 saves the statement in member MIGELOAD in the local definitions library.

5. Run the DRLEMIGR exec to import the data from the IXF file into the temporary table, and execute the SQL statement built in step 4.

6. Delete the temporary IXF file.

Because the Tivoli Decision Support for OS/390 migration function cannot handle all SLR table definition options, several modifications to the job might be required before you can submit it. The next two sections describe potential changes.

Job step 1

- If the log definition already exists, you can delete the DEFINE LOG statement.
- If a definition of the record used is supplied with Tivoli Decision Support for OS/390, remove the DEFINE RECORD statement and copy in the Tivoli Decision Support for OS/390 record definition instead. You also must change the update definition to refer to fields defined by the Tivoli Decision Support for OS/390 record definition.

Note: If the record is used for other Tivoli Decision Support for OS/390 tables, you must use the Tivoli Decision Support for OS/390 record because each record type can be mapped by only one record definition.

- In SLR, all numeric columns are long floating-point. You can change the column types to INTEGER or SMALLINT in the SQL table definition if you know that they contain integer data.
- Tivoli Decision Support for OS/390 creates only one table definition, which contains all the key columns in the SLR table. You can create tables for other summarization levels (for daily or monthly data, for example) using the administration dialog, after you have migrated this data.
- Tivoli Decision Support for OS/390 copies the lowest total pattern, which are rows where all keys are not totals (TOT). If you want to migrate totals, create table definitions for other summary levels and change the migration job accordingly.
Migrating from SLR version 3.3

- If the table is large, you must increase the space allocated for the DB2 index. Specify the value in kilobytes with the PRIQTY and SECQTY options on the CREATE INDEX statement.
- If COMPCOL macros appear in the SLR log table, Tivoli Decision Support for OS/390 cannot calculate the correct expressions in the update definition. Tivoli Decision Support for OS/390 uses W_www variables to show such expressions. If the COMPCOL is calculated in multiple steps or calculated from other COMPCOLs, the expression shown here is incomplete. You must refer to the SLR macros to see the complete calculation.

If you use a predefined Tivoli Decision Support for OS/390 record definition, you must change the update definition so it refers to the field names in the Tivoli Decision Support for OS/390 record instead of column names in the SLR V3 log table.

**Job steps 3 and 4**

If you change the table structure in job step 1, change the SLR commands in job step 3 and the SQL insert statement in job step 4.

---

**Migrating SLR record build exits**

SLR record build exits are similar to Tivoli Decision Support for OS/390 record and log procedures. There are differences in call types and return codes. Refer to the Language Guide and Reference for information about log and record procedures.

---

**Migrating reports**

You can use the Tivoli Decision Support for OS/390 administration dialog to help you migrate user-defined SLR V3 reports to Tivoli Decision Support for OS/390.

The reports are migrated from SLR ISPF tables (SLRTABL) or from SLR report command source data sets. During migration, QMF queries and forms are created, as well as Tivoli Decision Support for OS/390 report definitions that are used to create Tivoli Decision Support for OS/390 report groups and reports.

The reports are migrated group by group.

**Note:** If you are migrating user-defined SLR reports (SLRTABL input), we recommend that you put the user-defined reports in an SLR report group of their own, and use the new SLR report group when migrating.

Before you can start migrating reports, you must define migration parameters. See “Setting migration parameters” on page 288 for more information.

To migrate SLR V3 reports to Tivoli Decision Support for OS/390 reports:

1. From the Tivoli Decision Support for OS/390 Administration window, select 1, System.
   
   Tivoli Decision Support for OS/390 displays the System window.

2. From the System window, select 4, Migration.

4. The queries and forms created are in QMF format, but you can use them if you are using the reporting dialog without QMF (just as you can use the predefined Tivoli Decision Support for OS/390 reports, which are also created using QMF).
Tivoli Decision Support for OS/390 displays the Migration window.

3. From the Migration window, select 5, Convert SLR V3 reports to Tivoli Decision Support for OS/390 reports.

```
Other Utilities Help

Administration

Convert SLR VR3 Reports to Tivoli Decision Support for OS/390 Reports

Type information. Then press Enter to create JCL.

SLR report group name ... BATCHREP1

SLR report command input ... 2 1. From SLR ISPF Table (SLRTABL)
                            2. From SLR report command source

SLR report command source SLR.LOCAL.RESOURCE

Tivoli Decision Support for OS/390 report library PR.LOCAL.REPORTS

Member name for Tivoli Decision Support for OS/390 report definition ... PRDEF1

Member name prefix for QUERY and FORM. ............... SLR

Report attributes ............... BATCH ABEND SLR

Tivoli Decision Support for OS/390 Report group definition
ID ......................... BATCHREP1
Description ............... SLR BATCH REPORTS

Tivoli Decision Support for OS/390 Report definition
Sequence number ... 001

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

Figure 143. Convert SLR V3 reports to Tivoli Decision Support for OS/390 reports window

Tivoli Decision Support for OS/390 displays the Convert SLR V3 reports window in the Tivoli Decision Support for OS/390 reports window [Figure 143].

4. Type information in the fields, and press Enter.

**Note:** Make a note of the data set name specified as Tivoli Decision Support for OS/390 report library and the member name specified as Member name for Tivoli Decision Support for OS/390 report definitions. These names are used later on when you run the report definition statements to create the report groups and reports.

Tivoli Decision Support for OS/390 creates the JCL that is used to generate SQL queries and QMF forms for the reports and also Tivoli Decision Support for OS/390 report definition statements. Tivoli Decision Support for OS/390 accesses the ISPF editor where you can review and submit the JCL.

An online cross-reference list, containing cross-references between some SLR tables and columns and their corresponding Tivoli Decision Support for OS/390 tables and columns, is available from IBM. This cross-reference list helps match SLR table and column names with Tivoli Decision Support for
OS/390 table and columns names, mainly for monthly tables. Contact your IBM representative to get the cross-reference list for SLR to Tivoli Decision Support for OS/390 report migration.

If you are using the cross-reference list, you need to modify two steps in this JCL by removing the comments for the DD DSN=USERID.ERMT.SLR2EPDM statement, and changing it to the name of the data set where the cross-reference list is stored.

```plaintext
//***************************************************************
//* CROSSREF DATA SET FROM TOOLS DISK                         *
//* DD-NAME MUST BE CRS *                                     *
//***************************************************************
//* CRS DD DSN=USERID.ERMT.SLR2EPDM,                         *
//* DISP=SHR                                                 *
//***************************************************************
```

*Figure 144. Statements for the cross-reference list*

5. Submit the JCL by typing **SUBMIT** on the command line.

6. After submitting the job, press F3 to return to the Convert SLR V3 Reports to Tivoli Decision Support for OS/390 Reports window where you can select to migrate another report group.

**Note:** When migrating the new report group, remember to:

- Change the Member name for Tivoli Decision Support for OS/390 report definitions field. Duplicate members are overwritten.
- Increment the sequence number for the Tivoli Decision Support for OS/390 report definitions if you are migrating from an SLR report command source data set.

The value shown in this field is the starting value for the last migration. If you started with sequence number 100 that time and 20 reports were created, the numbers 100 through 119 have been used, and you must start with 120 this time to avoid duplication.

**Checking the output**

In the data set you specified as Tivoli Decision Support for OS/390 report library, you now have report definitions, queries, and forms. Before you can run the report definitions to create report groups and reports, you need to go through the generated queries searching for duplicate columns and so on. If you change a query, you must also check the corresponding form so that it matches the query.

The following example shows how the report commands for an SLR report are converted to a Tivoli Decision Support for OS/390 query and form. It shows the results you get if you migrate directly and the results you get if you use IBM’s cross-reference list for SLR to Tivoli Decision Support for OS/390 report migration when migrating.

1. The original SLR report commands are shown in *Figure 145 on page 300*.
Migrating from SLR version 3.3

2. If you ran the report migration without applying the cross-reference list, the resulting query can look like the example in Figure 146.

```
--
-- Created 00/08/08 20:27
-- PGMSTAT_01 MOST CPU CONSUMING PROGRAMS - PRIME SHIFT
--
SELECT
  PGMNAME, --
  SYSID, --
  SUM(TOT_CPU), --
  SUM(NSTEPS), --
  SUM(TOT_CPU)/SUM(NSTEPS) , -- COL= AVG_CPU
  SUM(NABEND), --
  ((SUM(S_LOST_CPU)*FLOAT(100))/FLOAT(60))/SUM(TOT_CPU) , -- COL= LOST
  DATE -- COL= MONTH
FROM &PREFIX.PGMSTAT
WHERE
  MONTH = &MO.
  AND SYS ^= TOT
  PERIOD = P1
  AND DATE = &DATE.
GROUP BY PGMNAME, SYSID, DATE
ORDER BY 3 DESC
```

Figure 146. The original SLR report commands

As you can see, the SLR report commands have been translated to SQL statements, and expressions have been created. Time key columns have been translated to DATE or TIME columns. The column names are still SLR's and need to be changed, unless you have migrated the SLR table, too.

3. Review the query, and make any modifications. If you have migrated the SLR table, you need to make only a few modifications. For example:

`PERIOD = P1`

must be changed to

`PERIOD = &PERIOD.`

If you have not migrated the SLR table, you must compare the columns in the SLR table with the columns in the Tivoli Decision Support for OS/390 table (in this example, MVS_PROGRAM_M). For example, SLR's SYSID must be changed to MVS_SYSTEM_ID.

The comments on the right-hand side of the query show information from the SLR report commands.
4. If you used the cross-reference list, the query might look like the example in Figure 147.

```sql
SELECT PROGRAM_NAME, MVS_SYSTEM_ID, SUM(CPU_TOTAL_SECONDS/FLOAT(60)), SUM(STEPS_TOTAL), SUM(CPU_TOTAL_SECONDS/FLOAT(60))/SUM(STEPS_TOTAL) , -- COL= AVG_CPU
SUM(CPU_LOST_SECONDS)/FLOAT(60))/SUM(CPU_TOTAL_SECONDS/FLOAT(60))/SUM(STEPS_TOTAL) , -- COL= LOST_CPU
FROM &PREFIX.MVS_PROGRAM_M
WHERE
  MONTH = &MO.
  AND SYS ^= TOT
GROUP BY PROGRAM_NAME,
  MVS_SYSTEM_ID,
  DATE
ORDER BY 3 DESC
```

**Figure 147. Generated Tivoli Decision Support for OS/390 with cross-reference listing applied**

In this example, SLR report commands have been translated to SQL statements. In addition, the rows marked with *E* show columns that have been translated from SLR to Tivoli Decision Support for OS/390.

The comments on the right-hand side of the query show information from the SLR report commands.

5. Review the query and make any modifications.

For example, you must verify that all column names correspond to Tivoli Decision Support for OS/390 column names. In this example, note these lines:

```
  PERIOD = P1
  AND DATE = &DATE.
```

For example, `PERIOD = P1`

must be changed to

```
  PERIOD_NAME = &PERIOD_NAME.
```

to match the Tivoli Decision Support for OS/390 table `MVS_PROGRAM_M`. Note that long calculations are split over several lines to avoid truncation in QMF.

6. The report migration aid also produces a form. Note these items:
Migrating from SLR version 3.3

- The report description from SLR is inserted as &REPORT_TITLE. TITLE3 in the SLR commands is inserted as the second line of the report title, and the final line, in this case, contains the date.
- The column names shown on the form and on the report, are the original column names from SLR.
- If you change the number of columns in the query, you must modify the form accordingly.

You can edit the form member directly, but this is not recommended as the layout is quite complex. See Figure 148.

Figure 148. The form generated

7. Once you have run the report definition statements to generate the report groups and reports, the form can be edited from the reporting dialog, using QMF or Tivoli Decision Support for OS/390's built-in report generator. (For information about how to run the report definition statements, see “Running the report definition statements” on page 303.)

In QMF, the form might look like the example in Figure 149.

Figure 149. The form in QMF
Running the report definition statements

When you have modified the query and form, you are ready to run the report definition statements. You can do this in batch or from the reporting dialog.

For information about running report definition statements in batch with the DRLJRDEF job, refer to the IBM Tivoli Decision Support: Language Guide and Reference.

The report definition statement member for each group contains DEFINE GROUP, DROP REPORT, and DEFINE REPORT statements. This happens when you run the report definition statements:

- The report group is defined. (If you have selected a report group that already exists, the output contains a message stating that the group already exists, but the job continues.)
- If reports with the same names as the reports you are migrating already exist in Tivoli Decision Support for OS/390, these reports are dropped.
- Finally, the reports are defined.

To run the report definition statements from the reporting dialog:

1. Select option 5, Process Tivoli Decision Support for OS/390 statements, from the Other pull-down.
   Fill in the fields as shown in the example in Figure 150.
   The Input data set name is a combination of the Tivoli Decision Support for OS/390 report library and Member name for Tivoli Decision Support for OS/390 report definitions fields in the Convert SLR V3 Report to Tivoli Decision Support for OS/390 Reports window, Figure 143 on page 298.

2. Press F5 to process the report definition statements. (For more information about the report definition language and statements, see IBM Tivoli Decision Support: Language Guide and Reference.)
   Tivoli Decision Support for OS/390 defines the report group and the reports it contains. You can now use the dialog to work with the reports.
Migrating from SLR version 3.3

Note: If you change the queries, forms, or report definitions by editing the members in the data set (PR.LOCAL.REPORTS in our example), you must run the report definition statements again to make the changes take effect. See “Running the report definition statements” on page 303.

Alternatively, you can modify the reports and forms with the reporting dialog, after the reports have been defined.

Report migration reference information

[Figure 151] shows how Tivoli Decision Support for OS/390 constructs reports. Each Tivoli Decision Support for OS/390 report uses an SQL query to select data for the report. All Tivoli Decision Support for OS/390 predefined reports use QMF queries written in SQL. All Tivoli Decision Support for OS/390 predefined reports use QMF forms when they are installed, even if QMF is not used in your installation. Graphic reports must also use a GDDM/ICU format.

Figure 151. Tivoli Decision Support for OS/390 report creation
For more information about defining QMF queries and forms and GDDM/ICU formats, refer to these books:

- *Tivoli Decision Support for OS/390 IBM: Guide to the Reporting Dialog*
- *QMF Learner’s Guide*
- *QMF Reference*

SLR commands generally correspond to SQL query statements. However, some SLR commands, such as SET TITLE, correspond to options defined in a QMF form rather than a query. The form also defines items that are fixed in SLR tables, such as column headers and the number of significant figures shown in the columns. GDDM/ICU formats work the same way for Tivoli Decision Support for OS/390 as they do for SLR.

For example, if SLR commands are:

```
REPORT TABLE1
  SELECT COLUMNS (COL1 COL2)
  SELECT ROWS (COL3=X)
  SORT SEQ (COL1 DESC)
  PRINT TABLE
ENDREP
```

the corresponding SQL query is:

```
SELECT COL1, COL2
FROM TABLE1
WHERE COL3 = >char<X/char<
ORDER BY COL1 DESC
```

If no specific columns are selected in SLR, the generated SQL statement selects all columns in the table. Another thing to note about column selection is that time key columns are converted to DATE and/or TIME columns in Tivoli Decision Support for OS/390.

The SLR command SELECT ROWS corresponds to the SQL WHERE statement. A direct conversion is not possible because some functions, like totals and time key columns, are unique to SLR. This table shows which conversions are made:

<table>
<thead>
<tr>
<th>SLR Command</th>
<th>SQL Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL1=TOT</td>
<td>Not converted</td>
</tr>
<tr>
<td>COL1~TOT</td>
<td>Not converted</td>
</tr>
<tr>
<td>YEAR=&amp;YR. and MONTH=&amp;MO.</td>
<td>WHERE DATE=&amp;DATE</td>
</tr>
<tr>
<td>NUMCOL1=10 AND CHARCOL1=C</td>
<td>WHERE NUMCOL1=10 AND CHARCOL1='C'</td>
</tr>
</tbody>
</table>

The SLR SORT command is converted to SQL’s ORDER BY.

An important difference between SLR and Tivoli Decision Support for OS/390 is that Tivoli Decision Support for OS/390 tables do not have total patterns. Instead, there are separate tables for hourly, daily, monthly, and other periodic summaries. Other summaries are produced at report time.

For example, if SLR commands are:

```
REPORT TABLE2
  SELECT COLUMNS (KEYCOL1 DATACOL1)
  SELECT ROWS (KEYCOL2=TOT)
  PRINT TABLE
ENDREP
```

the corresponding SQL query is:
SELECT KEYCOL1, SUM(DATACOL1)  
FROM TABLE2  
GROUP BY KEYCOL1

Including both detail and total rows in the report corresponds to defining a break in the QMF form. For example, if the SLR report looks like this:

<table>
<thead>
<tr>
<th>KEYCOL1</th>
<th>DATACOL1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*******</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
</tr>
<tr>
<td>TOT</td>
<td>9</td>
</tr>
</tbody>
</table>

You use the BREAK1 usage code for KEYCOL1 and SUM for DATACOL1 in the QMF form.

The report migration program reads the SLR view definition source to determine how virtual columns (DATACOLs) are calculated. These columns are handled just like COMPCOLs in tables. DATACOLs with PERCENT(COL1) BY(COL2) show the usage code TPCT for column COL1 on a QMF form.

SLR LOOKUP commands in views, and an ACCESS command with 2 or more tables in views generate a comment statement in the SQL query:

\(<\text{CHECK}\>\  \text{ACCESS} \ no\_of\_tables \  \text{LOOKUP} \ no\_of\_lookup\)

See “Views” on page 307 for information about how to resolve this restriction with manual tailoring.

The SLR PRINT MATRIX command corresponds to the ACROSS usage code on the QMF form. For example, if the SLR command is:

PRINT MATRIX VERTICAL(COL1) HORIZONTAL(COL2) DATA(COL3)

the corresponding QMF form is:

<table>
<thead>
<tr>
<th>Column</th>
<th>Usage code</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL1</td>
<td>GROUP</td>
</tr>
<tr>
<td>COL2</td>
<td>ACROSS</td>
</tr>
<tr>
<td>COL3</td>
<td>SUM</td>
</tr>
</tbody>
</table>

Another difference between SLR tables and SQL is that SLR tables can have virtual columns (COMPCOLs) that are computed as a report is produced. In SQL, these columns must be created in the query (or in a view). For example:

SELECT COL1, COL2+COL3, COL4/COL5  
FROM TABLE1

Selecting a reporting period relative to the current date is available in both SLR and SQL. For example, to get data from yesterday using this SLR command:

SELECT ROWS(DAY=*-1)

you would use this SQL condition:

WHERE DATE = CURRENT DATE - 1 DAY
Graphic reports

The SLR commands PRINT GRAPH and PRINT CHART correspond to the QMF command DISPLAY CHART except that you do not specify X-axis and Y-axis columns in QMF. QMF uses the first column as the horizontal axis and the remaining columns as the vertical axis.

For example, if the SLR command is:

```slr
PRINT CHART X(COL1) Y(COL2) FORMAT(BAR)
```

the corresponding QMF command is:

```qmf
DISPLAY CHART (ICUFORM=BAR
```

When you use the Tivoli Decision Support for OS/390 reporting dialog, you do not have to use the DISPLAY CHART command, the dialog performs this task for graphic reports.

The SLR command:

```slr
PRINT CHART X(COL1) Y(COL3) SAMEPAGE(COL2)
```

corresponds to using the GROUP, ACROSS, and SUM usage codes in the same way as for PRINT MATRIX in "Migrating reports" on page 297.

**Note:** The PRINT CHART NEWPAGE and PRINT DISTRIBUTION functions are not available in Tivoli Decision Support for OS/390.

Views

Views are not needed as often in Tivoli Decision Support for OS/390 as in SLR because data from more than one table can be combined in a report.

For example, if SLR commands are:

```slr
VIEW V1
  ACCESS(T1 T2)
  ...
END
REPORT V1
  ...
END
```

the corresponding SQL query can be:

```sql
SELECT T1.C1, C2, C3
FROM T1, T2
WHERE T1.C1 = T2.C1
  ...
```
Common problems when you combine (join) tables like this in SQL are:

- When two tables are combined in SLR, you get all values from both tables. In SQL, you get only common rows.

For example, if two tables (T1 and T2) contain this information:

<table>
<thead>
<tr>
<th>T1</th>
<th>C1</th>
<th>C2</th>
<th>T2</th>
<th>C1</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td></td>
<td>A</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>C</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a view in SLR creates this table:

<table>
<thead>
<tr>
<th>C1</th>
<th>C2</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

and an SQL join creates this table because it selects common rows only:

<table>
<thead>
<tr>
<th>C1</th>
<th>C2</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

- When key columns differ in SQL, you get larger values than you expect.

For example, if T1 and T2 have the common key C1 but C2 and C4 are different:

<table>
<thead>
<tr>
<th>T1</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>T2</th>
<th>C1</th>
<th>C4</th>
<th>C5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>X</td>
<td>Y</td>
<td>2</td>
<td>A</td>
<td>Z</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>X</td>
<td>Y</td>
<td>1</td>
<td>B</td>
<td>W</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

SLR can combine these tables in a view to get the total of C3 and C5 for different values of C1.

Using SQL:

```sql
SELECT T1.C1, SUM(C3), SUM(C5)
FROM T1, T2
WHERE T1.C1 = T2.C1
GROUP BY T1.C1
```

you would expect to get:

<table>
<thead>
<tr>
<th>C1</th>
<th>C3</th>
<th>C5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

but you actually get all values doubled:

<table>
<thead>
<tr>
<th>C1</th>
<th>C3</th>
<th>C5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

because SQL is creating a cross-product that produces all possible combinations of the two tables. (It combines the first row in T1 with the first and second in T2 and so on.)
One way to solve these problems is with an SQL union:

```sql
SELECT C1, C3, 0
FROM T1
UNION
SELECT C1, 0, C5
FROM T2
ORDER BY C1
```

and then use the GROUP and SUM usage codes in the QMF form.

For more information about QMF, SQL, or Tivoli Decision Support for OS/390 reporting, refer to these books:

- QMF Learner’s Guide
- DB2 SQL Reference
- Tivoli Decision Support for OS/390 IBM: Guide to the Reporting Dialog
Migrating from SLR version 3.3
Appendix G. Using the REXX-SQL interface

This appendix contains General-use Programming Interface and Associated Guidance Information.

Tivoli Decision Support for OS/390 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 appendix, refer to the IBM DATABASE 2: 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:

```plaintext
CALL DRL1SQLX 'INIT'

sql-statement

'TERM'

CALL DRL1SQLX
```

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 DRL1SQL 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 DRL1SQLX sql_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 Tivoli Decision Support for OS/390 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 an initial value of 5000. Pick an SQLMAX limit that protects you from runaway queries.
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 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.
**REXX-SQL interface**

- `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
/**REXX**************************************************************/
/* Execute an SQL SELECT statement and display output */
/*********************************************************************************/
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
End

If res.name.0 > 0 Then /* number of columns */

/*********************************************************************************/
/* Display column names and values for all rows */
/*********************************************************************************/
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 152. Example of REXX-SQL interface call
```
# Appendix H. Administration dialog options and commands

This appendix describes actions you can access from primary windows in the Tivoli Decision Support for OS/390 administration dialog. These actions include dialog window pull-downs and commands you issue from the command line. These sections describe the actions:

- “Tivoli Decision Support for OS/390 dialog options”
- “Tivoli Decision Support for OS/390 commands” on page 320

## Tivoli Decision Support for OS/390 dialog options

These figures list menu bar options for the Tivoli Decision Support for OS/390 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.

### Tivoli Decision Support for OS/390 Primary Menu window

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dialog parameters</td>
<td>See “Dialog parameters and descriptions” on page 334.</td>
</tr>
<tr>
<td>Reporting dialog defaults</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Help</td>
<td></td>
</tr>
<tr>
<td>Using help</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>General help</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Keys help</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Online books</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Search information</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Product information</td>
<td>Displays Tivoli Decision Support for OS/390 copyright and release information.</td>
</tr>
</tbody>
</table>

### Administration window

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMF</td>
<td>Refer to the Guide to the Reporting Dialog for more information. If your installation does not use QMF, this item is not selectable.</td>
</tr>
<tr>
<td>DB2I</td>
<td>See “Using available tools to work with the Tivoli Decision Support for OS/390 database” on page 92.</td>
</tr>
<tr>
<td>ISPF/PDF</td>
<td>Displays the ISPF/PDF primary menu.</td>
</tr>
<tr>
<td>BookManager</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
</tbody>
</table>
Administration dialog options

Process Tivoli Decision Support for OS/390 statements
See “Using log collector language to add the field definition” on page 62.

Messages
Refer to the Guide to the Reporting Dialog for more information.

Exit
Returns to the previous window.

Utilities

Network
Refer to the Tivoli Decision Support for OS/390 IBM: Network Performance Feature Installation and Administration.

Generate problem records
See “Administering problem records” on page 102.

Help

Using help
Refer to the Guide to the Reporting Dialog for more information.

General help
Refer to the Guide to the Reporting Dialog for more information.

Keys help
Refer to the Guide to the Reporting Dialog for more information.

Online books
Refer to the Guide to the Reporting Dialog for more information.

Search information
Refer to the Guide to the Reporting Dialog for more information.

Product information
Displays Tivoli Decision Support for OS/390 copyright and release information.

Components window

Component

New
See “Creating a component” on page 140.

Open component
See “Viewing objects in a component” on page 137.

Install
See “Installing a component” on page 108.

Deinstall
See “Deinstalling a component” on page 115.

Delete
See “Deleting a component” on page 139.

Print list
See “Printing a list of Tivoli Decision Support for OS/390 tables” on page 197 for a description of a similar action, printing a list of tables.

Show user objects
See “Controlling objects that you have modified” on page 117.

Show excluded
See “Controlling objects that you have modified” on page 117.

Exit
Saves changes and returns to the previous window.

Space

Tablespaces
See “Installing a component” on page 108.
Indexes

See “Installing a component” on page 108

Other

QMF

Refer to the Guide to the Reporting Dialog for more information. If your installation does not use QMF, this item is not selectable.

DB2I

See “Using available tools to work with the Tivoli Decision Support for OS/390 database” on page 92.

ISPF/PDF

Displays the ISPF/PDF primary menu.

BookManager

Refer to the Guide to the Reporting Dialog for more information.

Process Tivoli Decision Support for OS/390 statements

See “Using log collector language to add the field definition” on page 62.

Messages

Refer to the Guide to the Reporting Dialog for more information.

Help

Using help

Refer to the Guide to the Reporting Dialog for more information.

General help

Refer to the Guide to the Reporting Dialog for more information.

Keys help

Refer to the Guide to the Reporting Dialog for more information.

Online books

Refer to the Guide to the Reporting Dialog for more information.

Search information

Refer to the Guide to the Reporting Dialog for more information.

Product information

Displays Tivoli Decision Support for OS/390 copyright and release information.

Logs window

Log

New

See “Creating a log definition” on page 153.

Open log definition

See “Viewing and modifying a log definition” on page 152.

Open record definitions

See “Viewing and modifying a record definition” on page 155.

Open collected log data sets

See “Viewing a list of log data sets collected” on page 144.

Open Log Data Manager

See Chapter 8, “Working with the log data manager option,” on page 207.

Delete

See “Deleting a log definition” on page 153.

Save definition

See “Saving a table definition in a data set” on page 198 for a description of a similar action, saving definitions for tables.
Administration dialog options

Print list
See “Printing a list of Tivoli Decision Support for OS/390 tables” on page 197 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 146.

Display log
See “Displaying the contents of a log” on page 148.

Show log statistics
See “Displaying log statistics” on page 148.

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 the Reporting Dialog for more information. If your installation does not use QMF, this item is not selectable.

DB2I
See “Using available tools to work with the Tivoli Decision Support for OS/390 database” on page 92.

ISPF/PDF
Displays the ISPF/PDF primary menu.

BookManager
Refer to the Guide to the Reporting Dialog for more information.

Process Tivoli Decision Support for OS/390 statements
See “Using log collector language to add the field definition” on page 62.

Messages
Refer to the Guide to the Reporting Dialog for more information.

Help

Using help
Refer to the Guide to the Reporting Dialog for more information.

General help
Refer to the Guide to the Reporting Dialog for more information.

Keys help
Refer to the Guide to the Reporting Dialog for more information.

Online books
Refer to the Guide to the Reporting Dialog for more information.

Search information
Refer to the Guide to the Reporting Dialog for more information.

Product information
Displays Tivoli Decision Support for OS/390 copyright and release information.

Tables window

Table
### Administration dialog options

**New**  
See “Creating a table” on page 198.

**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 185.

**Open purge conditions**  
See “Displaying and editing the purge condition of a table” on page 191.

**Open tablespace**  
See “Displaying and modifying a table or indexspace” on page 192.

**Delete**  
See “Deleting a table or view” on page 200.

**Save definition**  
See “Saving a table definition in a data set” on page 198.

**Print list**  
See “Printing a list of Tivoli Decision Support for OS/390 tables” on page 197.

**Exit**  
Saves changes and returns to the previous window.

#### Maintenance

**Tablespace**  
See “Displaying and modifying a table or indexspace” on page 192.

**Index and indexspace**  
See “Displaying and modifying a table or indexspace” on page 192.

#### Utilities

**Display**  
See “Displaying the contents of a table” on page 165.

**Show size**  
See “Showing the size of a table” on page 168.

**Import**  
See “Importing the contents of an IXF file to a table” on page 172. If your installation does not use QMF, this item is not selectable.

**Export**  
See “Exporting table data to an IXF file” on page 173. If your installation does not use QMF, this item is not selectable.

**Grant**  
See “Administering user access to tables” on page 204.

**Revoke**  
See “Administering user access to tables” on page 204.

**Document**  
See “Documenting a table” on page 205.

**Recalculate**  
See “Recalculating the contents of a table” on page 170.

**Purge**  
See “Purging a table” on page 173.

**Unload**  
See “Unloading and loading tables” on page 173.

**Load**  
See “Unloading and loading tables” on page 173.

#### Edit
### Administration dialog options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add rows</td>
<td>See “Editing the contents of a table” on page 166. If your installation does not use QMF, this item is not selectable.</td>
</tr>
<tr>
<td>Change rows</td>
<td>See “Editing the contents of a table” on page 166. If your installation does not use QMF, this item is not selectable.</td>
</tr>
<tr>
<td>ISPF editor</td>
<td>See “Editing the contents of a table” on page 166.</td>
</tr>
<tr>
<td>View All</td>
<td>See “Listing a subset of tables in the Tables window” on page 198.</td>
</tr>
<tr>
<td>View Some</td>
<td>See “Listing a subset of tables in the Tables window” on page 198.</td>
</tr>
<tr>
<td>Other QMF</td>
<td>Refer to the Guide to the Reporting Dialog for more information. If your installation does not use QMF, this item is not selectable.</td>
</tr>
<tr>
<td>DB2I</td>
<td>See “Using available tools to work with the Tivoli Decision Support for OS/390 database” on page 92.</td>
</tr>
<tr>
<td>ISPF/PDF</td>
<td>Displays the ISPF/PDF primary menu.</td>
</tr>
<tr>
<td>BookManager</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Process</td>
<td>See “Using log collector language to add the field definition” on page 62.</td>
</tr>
<tr>
<td>Messages</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Help Using</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>General help</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Keys help</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Online books</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Search</td>
<td>Refer to the Guide to the Reporting Dialog for more information.</td>
</tr>
<tr>
<td>Product</td>
<td>Displays Tivoli Decision Support for OS/390 copyright and release information.</td>
</tr>
</tbody>
</table>

### Tivoli Decision Support for OS/390 commands

You can immediately execute an action anywhere in a Tivoli Decision Support for OS/390 dialog by typing these commands on the command line (uppercase letters show the abbreviation for the command):
Administration dialog commands

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 Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 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), Tivoli Decision Support for OS/390 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.

Tivoli Decision Support for OS/390 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.
INFO Calls BookManager and displays the Topics in Online Books window.
INFO SEarch Calls BookManager and displays the BookManager Set Up Search window.
INFO SEarch argument Calls BookManager and searches for argument. If you omit argument, this command calls BookManager to display the Set Up Search pop-up.

ISPF Displays the ISPF primary menu.
LOCate argument In a Tivoli Decision Support for OS/390 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 | DES Sorts a Tivoli Decision Support for OS/390 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
### Administration dialog commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYStem (see Note)</td>
<td>Displays the System window.</td>
</tr>
<tr>
<td>TABle (see Note)</td>
<td>Displays the Tables window.</td>
</tr>
</tbody>
</table>

**Note:** This command is not available in end-user mode from the reporting dialog.

the column instead of the name. The first column after the selection field column on the left is column 1.)
Appendix I. Installation reference

This appendix describes dialog parameters that are set initially by member DRLEINI1 in the DRL160.SDRLEXEC library and read from the user.DRLFPROF data set. Tivoli Decision Support for OS/390 initializes a new user’s first dialog session with parameter settings from user.DRLFPROF. From that point forward, a user’s dialog parameters are in personal storage in member DRLPROF in the library allocated to the ISPPROF ddname, which is usually tsoprefix.ISPF.PROFILE. If DRLPROF 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 Tivoli Decision Support for OS/390.

“Step 4: Prepare the dialog and update the dialog profile” on page 28 describes the installation step where user.DRLFPROF is customized for your site. It refers to this appendix for descriptions of:

- "DRLFPROF user-modifiable area" on page 324
- "Overview of the Dialog Parameters window" on page 331
- "Dialog parameters and descriptions" on page 334
- "Allocation overview" on page 344
This section lists the user-modifiable area of DRLFPROF. Before modifying this data set to reflect values in use at your site, allocate the user. DRLFPROF data set and copy there the DRLFPROF from the SDRLCNTL library. For a description of the fields in this data set, see "Dialog parameters and descriptions" on page 334.

Note: DRLFPROF is case sensitive, so you must enter parameters exactly as they are shown.

Figure 153. DRLFPROF—the dialog initialization data set (Part 1 of 8)
/* The following variables are set each time a user starts the * /
/* dialog * /
/*---------------------------------------------------------------*/
/* BookManager datasets */
/*---------------------------------------------------------------*/
bkmgr_mlib  = "" /* BookManager message library */
bkmgr_plib  = "" /* BookManager panel library */
bkmgr_tlib  = "" /* BookManager tables library */
bookshlf_ds = "" /* Bookshelf dataset */
/*---------------------------------------------------------------*/
dsnsufx    = "SDRLDEFS" /* Definition dataset suffix */
execsfx    = "SDRLEXEC" /* Exec dataset suffix */
loadsfx    = "SDRLLOAD" /* Load dataset suffix */
skelsfx    = "SDRLSKEL" /* Skeleton dataset suffix */
/*---------------------------------------------------------------*/
/* One of the following data set suffixes is appended to form */
/* language dependent data set names for the variable below */
/* Change the national language library suffix by changing */
/* the englsfx variable for English and jpnlsfx for Japanese. */
/* Change the national language code by changing the value */
/* of the DEF_DIALLANG variable */
/* def_diallang = 1 use ENGLISH language */
/* def_diallang = 3 use JAPANESE language */
/* In the DRLEIN1 the def_nislang is set to: */
/* englsfx if def_diallang = 1 */
/* jpnlsfx if def_diallang = 3 */
/* So the names of the libraries will be built as follows: */
/* For example: */
/* If def_nislang = "ENU" ==> panel library ==> SDRLPENU */
/* If def_nislang = "JPN" ==> panel library ==> SDRLPJPN */
/* */
/*---------------------------------------------------------------*/
englsfx    = "ENU" /* English default libr suffix */
jpnlsfx    = "JPN" /* Jap. default library suffix */
def_diallang = 1 /* Def. dialog lang is English */
repsufx    = "SDRLR" /* Report dataset suffix */
plibsfx    = "SDRLP" /* Panel library suffix */
messsfx    = "SDRLM" /* Message library suffix */
formsfx    = "SDRLF" /* FORM library suffix */
tabsfx     = "SDRLT" /* TABLES library suf */

Figure 154. DRLFPROF —the dialog initialization dat set (PART 2 of 8)
Installation reference

/*-----------------------------*/
* One of the following data set suffixes is appended to form */
* language dependent data set names for the variable below */
*----------------------------------------------------------------*
* Change the national language qmf library suffix by changing */
* the eng_qmf_sfx variable for English and jpn_qmf_sfx for */
* for Japanese. */
* English = E */
* Japanese = K */
* The national language code is set in the DEF_DIAALLANG variable*/
* def_diallang = 1 use ENGLISH language */
* def_diallang = 3 use JAPANESE language */
* In the DRLEINII the DEF_QMFLANG is set to: */
* eng_qmf_sfx if def_diallang = 1 */
* jpn_qmf_sfx if def_diallang = 3 */
* For example: */
* def_qmflang = "E" ==> CLIST library ==> DSQCLSTE */
*----------------------------------------------------------------*
* eng_qmf_sfx = "E" /* English default library suffix */
* jpn_qmf_sfx = "K" /* Jap. default library suffix */
*----------------------------------------------------------------*

Figure 155. DRLFPROF —the dialog initialization data set (PART 3 of 8)
Installation reference

/* Change the following QMF language_dependent identifiers to */
/* reflect values in use at your site. P.R. uses these values to */
/* dynamically allocate QMF and make it available for P.R. users. */
/* Note: You can use QMF library suffixes if your site follows the */
/* recommended naming standard for QMF data sets. */
/* Otherwise, use fully-qualified names to identify QMF data sets. */
/* Change <qmndef> variable to "DATASET" to use fully-qualified */
/* data set names; retain the value "SUFFIX" to use the standard */
/* QMF naming convention. */
/* Note: P.R. adds a 1-char language ID to each value below if you */
/* use "SUFFIX" but does not if you use "DATASET". */
/*---------------------------------------------------------------*/
qmndef = "SUFFIX" /* QMF library suffixes are used */
/* Change this var. to "DATASET" */
/* If you define fully qualified */
/* dataset names below */
qmfc = "DSQCLST" /* QMF CLIST library suffix */
/* or fully qualified dataset name */
/* of QMF CLIST library */
qmfc = "DSQCLST" /* ENG. QMF CLIST library suffix */
/* or fully qualified dataset name */
/* of QMF CLIST library */
qmfe = "DSQEXEC" /* QMF EXEC library suffix */
/* or fully qualified dataset name */
/* of QMF EXEC library */
qmfe = "DSQEXEC" /* ENG. QMF EXEC library suffix */
/* or fully qualified dataset name */
/* of QMF EXEC library */
qmfp = "DSQPLIB" /* QMF Panel library suffix */
/* or fully qualified dataset name */
/* of QMF Panel library */
qmfn = "DSQMLIB" /* QMF Message library suffix */
/* or fully qualified dataset name */
/* of QMF Message library */
qmfs = "DSQSLIB" /* QMF Skeleton library suffix */
/* or fully qualified dataset name */
/* of QMF Skeleton library */
qmfm = "DSQMAP" /* ADMGGMAP library suffix */
/* or fully qualified dataset name */
/* of ADMGGMAP library */
qmfp = "DSQPNL" /* QMF Help Panel library suffix */
/* or fully qualified VSAM dataset */
/* name of QMF DSQPNLx libr */
dspnl = "DSQPLIB" /* DDname of QMF DSQPNLx library */
qmft = "" /* QMF Tables library suf. */
/*---------------------------------------------------------------*/

Figure 156. DRLFPROF — the dialog initialization data set (PART 4 of 8)
/* Change the following QMF identifiers to reflect values in use at */
/* your site. P.R. uses these values to dynamically allocate QMF */
/* and make it available for P.R. users. */
/* Note: You can use QMF library suffixes if your site follows the */
/* recommended naming standard for QMF data sets. Otherwise use */
/* fully-qualified names to identify QMF data sets. */
/* Change <qmndef> variable to "DATASET" to use fully-qualified */
/* data set names; retain the value "SUFFIX" to use the standard */
/* QMF naming convention. */
/*-----------------------------------------------------------------------------------*/
qmfload = "DSQLOAD" /* QMF Load library suffix or */
/* fully qualified dataset name */
/* of QMF Load library */
qmfchart = "DSQCHART" /* ADMCFORM library suffix */
/* or fully qualified dataset name */
/* of ADMCFORM library */
qmfdsdum = "DUMMY" /* QMF DSQUDUMP,default=DUMMY */
/* or fully qualified dataset name */
/* to be allocated to DSQUDUMP */
qmfdebug = "DUMMY" /* QMF DSQDEBUG,default=DUMMY */
/* or fully qualified dataset name */
/* to be allocated to DSQDEBUG */
dsunit = "SYSDA" /* disk unit */
/*-----------------------------------------------------------------------------------*/

Figure 157. DRLFPROF—the dialog initialization data set (PART 5 of 8)
/* Change the following DB2 identifiers to reflect values in use at */
/* your site. P.R. uses these values to dynamically allocate DB2 */
/* and make it available for P.R. users. */
/* Note: You can use DB2 library suffixes if your site follows the */
/* recommended naming standard for DB2 data sets. Otherwise use */
/* fully-qualified names to identify DB2 data sets. */
/* Change <db2def> variable to "DATASET" to use fully-qualified */
/* data set names; retain the value "SUFFIX" to use the standard */
/* DB2 naming convention. */
/*------------------------------------------------------------------*/
db2ver = "6" /* DB2 version no */
db2rel = "1" /* DB2 release no */
db2def = "SUFFIX" /* DB2 library suffixes are used */
/* Change this var. to "DATASET" */
/* If you define fully qualified */
/* dataset names below */
db2llib = "RUNLIB.LOAD" /* DB2 Runlib Load library name */
/* or fully qualified dataset name */
/* of DB2 Runlib Load library */
db2load = "DSNLOAD" /*DB2 Load library suffix */
/* or fully qualified dataset name */
/* of DB2 Load library */
db2clst = "DSNCLIST" /* DB2 Clist library suffix */
/* or fully qualified dataset name */
/* of DB2 CLIST library */
db2mlib = "DSNSPFM" /* DB2 Message library suffix */
/* or fully qualified dataset name */
/* of DB2 Message library */
db2plib = "DSNSPFP" /* DB2 Panel library suffix */
/* or fully qualified dataset name */
/* of DB2 Panel library */
db2plib2 = "" /* DB2 Panel lib sufx */
db2pl12e = "SDSNPFPF" /* English lib sufx */
db2pl12k = "SDSNPFPK" /* Japanese lib sufx */
/*------------------------------------------------------------------*/
gdmlload = "SYS1.GDMLLOAD" /* GDML load library */
admsymb1 = "SYS1.GDMSYM" /* GDML symbol library */
admdefs = "SYS1.GDMNICK" /* GDML nickname library */
/*------------------------------------------------------------------*/

Figure 158. DRLFPROF — the dialog initialization data set (PART 6 of 8)
/* Specify the full name of the GDDM Master Print Queue Dsn in */
/* the following variable. If supplied, it overrides any value */
/* specified for TSOPRNT in the GDDM external defaults file. */
/* The value (if supplied) causes an ADMPRNTQ DD statement to */
/* be added to the batch jcl for graphic reports. */
/*----------------------------------------------------------------------------*/
admprntq = "" /* GDDM Mstr Prt QDS */
/*----------------------------------------------------------------------------*/
/* Change the following SLR V3 identifiers to reflect values in */
/* use at your site. P.R. uses these values during migration */
/* of SLR V3 data. */
/*----------------------------------------------------------------------------*/
def_mainfile = "SLR.V3R3M0.SYSTEMDB"
def_loadlib1 = "SLR.LOCAL.SLRSAMP"
def_loadlib2 = "SLR.V3R3M0.SLRSAMP"
def_loadlib3 = ""
def_loadlib4 = ""
def_linklib1 = "SLR.LOCAL.LINKLIB"
def_linklib2 = "SLR.V3R3M0.LINKLIB"
def_asmlib = "SLR.V3R3M0.SLRASM"
/*----------------------------------------------------------------------------*/
/* Change the following Information/Management identifiers */
/* to reflect values in use at your site. */
/* P.R. uses these values when generating problem records */
/* in the Info/Man database. */
/*----------------------------------------------------------------------------*/
def_gesssn = 'BLGES00' /* Session member */
def_geprivcl = 'MASTER' /* Privilege Class */
/*----------------------------------------------------------------------------*/
/* Change the following variables if you do not plan to use the */
/* the JAVA GUI Viewer, or if you don't use QMF or GDDM. */
/* With VIEWER="YES" you will be able to run your own reports */
/* any time in the future on the JAVA GUI Viewer. */
/* Reports , when VIEWER="NO" & QMFUSE="YES" occupy less DB2 */
/* DB2 space. */
/*----------------------------------------------------------------------------*/
viewer = "YES" /* If VIEWER is used */
qmfuse = "YES" /* "YES" = QMF used, */
/* "NO" = QMF is not used */
gddmuse = "YES" /* "YES" = GDDM used, */
/* "NO" = GDDM is not used */
/* Note: GDDM must be used if */
/* QMF is used. */
qmfprint = "YES" /* "YES" = dsqprint dataset */
/* */
/* "NO" = dsqprint SYSOUT */

Figure 159. DRLFPROF (PART 7 of 8)—the dialog initialization data set
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 162 on page 333.
Dialog Parameters when QMF is used

Figure 161 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. Tivoli Decision Support for OS/390 users can change the personal settings that control their dialog sessions. For a description of the fields in this window, see “Dialog parameters and descriptions” on page 334.

Figure 161. Dialog Parameters window—when QMF is used
Dialog Parameters when QMF is not used

Figure 162 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. Tivoli Decision Support for OS/390 users can change personal settings that control their dialog sessions. For a description of the fields in this window, see “Dialog parameters and descriptions” on page 334.

Figure 162. Dialog Parameters window—when QMF is not used
Installation reference

Dialog parameters and descriptions

Most variable names in user.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 Tivoli Decision Support for OS/390 uses the values to allocate libraries or control other dialog functions. It also describes variables and fields that do not have exact equivalents.

"DRLFPROF user-modifiable area" on page 324 shows the user-modifiable area of the file that is processed at the product startup. The "Overview of the Dialog Parameters window" on page 331 shows the Dialog Parameters window. "Allocation overview" on page 344 describes the data sets allocated by Tivoli Decision Support for OS/390.

<table>
<thead>
<tr>
<th>user.DRLFPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>def_db2subs</td>
<td>DB2 subsystem name</td>
<td>DSN</td>
<td></td>
</tr>
<tr>
<td>This field can be 4 alphanumeric characters. The first character must be alphabetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not change the value to name another DB2 subsystem to which you might have access. Tivoli Decision Support for OS/390 must use the DB2 subsystem that contains its system, control, and data tables.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_dbname</td>
<td>Database name</td>
<td>DRLDB</td>
<td></td>
</tr>
<tr>
<td>This 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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default database is DRLDB. If this value is something other than DRLDB, it is likely the default value for your site.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not change this name to identify another DB2 database to which you have access. You must use the DB2 database that contains Tivoli Decision Support for OS/390.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_storgrp</td>
<td>Storage group default</td>
<td>DRLSG</td>
<td></td>
</tr>
<tr>
<td>This field can be 8 alphanumeric characters. The first character must be alphabetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default is DRLSG. If the value of the field is something other than DRLSG, it was changed during installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not change the value of this field to another storage group to which you might have access; Tivoli Decision Support for OS/390 uses the value of this field to create new tables.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_syspref</td>
<td>Prefix for system tables</td>
<td>DRLSYS</td>
<td></td>
</tr>
<tr>
<td>This field can be 8 alphanumeric characters. The first character must be alphabetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default is DRLSYS. If the value is something other than DRLSYS, it was changed during installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not change this value; Tivoli Decision Support for OS/390 uses this value to access its system tables.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_oidtbpfx</td>
<td>Prefix for all other tables</td>
<td>DRL</td>
<td></td>
</tr>
<tr>
<td>user.DRLPROF variable name</td>
<td>Dialog Parameters field name</td>
<td>Default value</td>
<td>Your value</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>The prefix of Tivoli Decision Support for OS/390 data tables in the DB2 database.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid values are determined at installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This required field can be 8 alphanumeric characters. The first character must be alphabetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default is DRL. If the value is something other than DRL, it was changed during installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_tsbpool</strong></td>
<td>Buffer pool for data</td>
<td>BP0</td>
<td></td>
</tr>
<tr>
<td>The default buffer pool for Tivoli Decision Support for OS/390 tables. This field can have values from BP0 to BP49, from BP8K0 to BP8K9 (DB2 V6 or later), from BP16K0 to BP16K9 (DB2 V6 or later), 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 (new with DB2 V6) hold 8-KB pages. The buffer pools BP16K0, BP16K1, ..., BP16K9 (new with DB2 V6) hold 16-KB pages. The buffer pools BP32K, BP32K1, ..., BP32K9 hold 32-KB pages.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_ixbpool</strong></td>
<td>Buffer pool for indexes</td>
<td>BP0</td>
<td></td>
</tr>
<tr>
<td>The default buffer pool for Tivoli Decision Support for OS/390 indexes. This field can have values from BP0 to BP49 (The buffer pool for indexes must identify a 4-KB buffer pool).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_iidusr</strong></td>
<td>Users to grant access to</td>
<td>DRLUSER</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You must specify a value for at least one of the fields.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each user ID or group ID can be 8 alphanumeric characters. The first character must not be numeric.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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 Tivoli Decision Support for OS/390 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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can grant users access to the tables and views of a component by listing them here before you install the component.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_sqlusr</strong></td>
<td>SQL ID to use (in QMF)</td>
<td>DRLUSER</td>
<td></td>
</tr>
<tr>
<td>This field is used only if your installation uses QMF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The DB2 primary or secondary authorization ID to which you are connected. Tivoli Decision Support for OS/390 uses the value of this field in the SET CURRENT SQLID as it starts QMF. The ID must have DB2 authorization to Tivoli Decision Support for OS/390 tables and views.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This required field can be up to 8 alphanumeric characters. The first character must be alphabetic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default is DRLUSER. If the value is something other than DRLUSER, it was changed during installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can change this value to your user ID if you have DB2 authorization to Tivoli Decision Support for OS/390 tables and views.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_qmflng</strong></td>
<td>QMF language</td>
<td>PROMPTED</td>
<td></td>
</tr>
<tr>
<td>The QMF language for creating reports and queries, either SQL (structured query language) or PROMPTED QUERY.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROMPTED QUERY is the default QMF language for Tivoli Decision Support for OS/390.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This is a required field, if your installation uses QMF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_qmfprt</strong></td>
<td>SYSOUT class (in QMF)</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>The SYSOUT class for report data sets that QMF generates, or for output that QMF routes to a printer. The default value is Q.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This is a required field, if your installation uses QMF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>def_printer</strong></td>
<td>Default printer</td>
<td>blank</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Installation reference**

<table>
<thead>
<tr>
<th>user.DRLPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The GDDM nickname of a printer to use for printing graphic reports. The printer should be one capable of printing GDDM-based graphics.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The printer name must be defined in the GDDM nicknames file, allocated to the ADMDEFS ddname. Refer to QMF: Reference and GDDM User's Guide for more information about defining GDDM nicknames.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_drlprt</td>
<td>Batch print SYSOUT class</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>This field is used only if your installation does not use QMF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A valid SYSOUT class for printing tabular reports in batch. Valid values are A-Z, 0-9, and *.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_pagelen</td>
<td>Printer line count per page</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>This field is used only if your installation does not use QMF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The number of report lines that should be printed on each page when you print tabular reports online and in batch.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_drlmax</td>
<td>SQLMAX value</td>
<td>5000</td>
<td></td>
</tr>
<tr>
<td>The maximum number of rows for any single retrieval from a Tivoli Decision Support for OS/390 table when using a Tivoli Decision Support for OS/390-DB2 interface for such functions as listing tables, reports, or log definitions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The value of this required field is the maximum allowed size of the Tivoli Decision Support for OS/390 DB2 table to be retrieved. The default value is 5000 rows of data.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_rptdialg</td>
<td>Reporting dialog mode</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>The dialog mode for using the reporting dialog. Any option you save applies to future sessions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can choose administrator mode to access reports belonging to all users if you have a Tivoli Decision Support for OS/390 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).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type 1 to use end user mode or 2 to specify administrator mode. If you leave the field blank, the default is end user mode.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>Dialog language</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>The language in which Tivoli Decision Support for OS/390 displays all its windows.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tivoli Decision Support for OS/390 supports those languages listed in the window. Choose the language your site has installed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you leave this field blank, Tivoli Decision Support for OS/390 displays its windows in English.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any changes you make to this field become effective in your next dialog session, when Tivoli Decision Support for OS/390 allocates its libraries.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_db2dsspfx</td>
<td>DB2 data sets-prefix</td>
<td>DSN610</td>
<td></td>
</tr>
<tr>
<td>The prefix to which Tivoli Decision Support for OS/390 appends DB2 data set names as it performs tasks.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This field is required if db2def is SUFFIX. If db2def is DATASET, this field is ignored.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This field can be 35 alphanumeric characters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default is DSN610. If the value of this field is something other than DSN610, it was changed during installation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any changes you make to this field become effective in your next session, when Tivoli Decision Support for OS/390 allocates DB2 libraries and data sets.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2 data sets-suffix</td>
<td>def_db2dssfx</td>
<td>blank</td>
<td></td>
</tr>
</tbody>
</table>
The suffix that Tivoli Decision Support for OS/390 appends as the low-level qualifier for DB2 data sets that Tivoli Decision Support for OS/390 uses. Most sites do not use a DB2 data set suffix, but this depends on your DB2 naming conventions.

This field can be used if `db2def` is `SUFFIX`. If `db2def` is `DATASET`, this field is ignored.

This field can be used to qualify data sets that you create; this is not its purpose. Use it to identify DB2 modules only.

Any changes you make to this field are not effective until your next invocation of the dialog, when Tivoli Decision Support for OS/390 has a chance to reallocate DB2 libraries and data.

<table>
<thead>
<tr>
<th>def_qmfdspfx</th>
<th>QMF data sets prefix</th>
<th>QMF311</th>
</tr>
</thead>
<tbody>
<tr>
<td>This field is used only if your installation uses QMF. The prefix to which Tivoli Decision Support for OS/390 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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If `qmfdif` is `SUFFIX`, this field is required. If `qmfdif` is `DATASET`, this field is ignored.

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.

The default is QMF311. If the value is something other than QMF311, it was changed during installation.

Do not use this value to identify your personal QMF data sets. Tivoli Decision Support for OS/390 uses this value for all QMF data sets.

Any changes you make to this field become effective in your next session, when Tivoli Decision Support for OS/390 allocates its libraries.

<table>
<thead>
<tr>
<th>def_dsnpref</th>
<th>Tivoli Decision Support for OS/390 data sets prefix</th>
<th>DRL160</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prefix of Tivoli Decision Support for OS/390 libraries.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This required 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.

The default is DRL160. If the value of this field is something other than DRL160, it was changed during installation.

Any changes you make to this field become effective in your next session, when Tivoli Decision Support for OS/390 allocates its libraries.

<table>
<thead>
<tr>
<th>No equivalent</th>
<th>Temporary data sets prefix</th>
<th>user ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prefix for any temporary data sets you create while using Tivoli Decision Support for OS/390.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This required 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.

The default value is your user ID or the TSO_prefix.user ID.

<table>
<thead>
<tr>
<th>def_dslnocdn</th>
<th>Local definitions data set</th>
<th>DRL_LOCAL.DEFS</th>
</tr>
</thead>
</table>
Installation reference

<table>
<thead>
<tr>
<th>user.DRLPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
</table>
| The partitioned data set (PDS) that contains definitions of Tivoli Decision Support for OS/390 objects you have created. The value of this field depends on naming conventions that apply to Tivoli Decision Support for OS/390. The members of this PDS contain definition statements that define new objects to Tivoli Decision Support for OS/390. Tivoli Decision Support for OS/390 uses the value of this field to locate local definition members. 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. 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 Tivoli Decision Support for OS/390 administrator sets. Any changes you make to this field are not effective until you start the dialog again, when Tivoli Decision Support for OS/390 reallocates local definition data sets.
| def_usrlocdn | Local User alter/definitions data set | DRL.LOCAL.USER.DEFS | |
| The partitioned data set (PDS) that contains definitions of Tivoli Decision Support for OS/390 objects you have modified. The value of this field depends on naming conventions that apply to Tivoli Decision Support for OS/390. The members of this PDS contain definition statements that define user modified objects to Tivoli Decision Support for OS/390. This PDS also contains members with alter statements built by the update processor on the definitions contained in the same PDS. Tivoli Decision Support for OS/390 uses the value of this field to locate local user definition members. 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. 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 Tivoli Decision Support for OS/390 administrator sets. Any changes you make to this field are not effective until you start the dialog again, when Tivoli Decision Support for OS/390 reallocates local definition data sets.
| 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 | |
| Use this field to identify a PDS that contains messages generated by users during communication with Tivoli Decision Support for OS/390 administrators. The value of this field depends on naming conventions that your Tivoli Decision Support for OS/390 administrator has established. This required field can be up to 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. Any changes you make to this field are not effective until you start the dialog again, when Tivoli Decision Support for OS/390 reallocates the message data set.
| def_dsnrprtp | Saved reports data set | DRL.LOCAL.REPORTS | |
| The PDS where Tivoli Decision Support for OS/390 saves your tabular reports. This optional field can be up to 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. The default PDS is DRL.LOCAL.REPORTS.
<p>| def_dsnchrts | Saved charts data set | DRL.LOCAL.CHARTS | |</p>
<table>
<thead>
<tr>
<th>User.DRLFPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The PDS where Tivoli Decision Support for OS/390 saves the graphic reports you choose to save.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This optional field can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The default PDS is DRL.LOCAL.ADMGDF.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>Job statement information (required for batch jobs)</td>
<td>Sample job card in which Tivoli Decision Support for OS/390 dynamically substitutes the user ID.</td>
<td></td>
</tr>
<tr>
<td>The job statement information to be used for batch jobs that the dialogs create for you.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You must use correct JCL in the job statement. Tivoli Decision Support for OS/390 does not validate job statement information.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can specify up to four card images in these job statement fields.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The first &quot;//&quot; card image should contain the job name. Press Enter to save any job statements for all future sessions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bkmg.mlib</td>
<td>N/A</td>
<td>EOY.SEOYMENU</td>
<td></td>
</tr>
<tr>
<td>The BookManager message library.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bkmg.plib</td>
<td>N/A</td>
<td>EOY.SEOYPENU</td>
<td></td>
</tr>
<tr>
<td>The BookManager panel library.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bkmg.tlib</td>
<td>N/A</td>
<td>EOY.SEOYTENU</td>
<td></td>
</tr>
<tr>
<td>The BookManager tables library.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dr1sh00</td>
<td>N/A</td>
<td>IBMK.DRL1SH00. BK SHELF</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 BookManager bookshelf that contains the names of Tivoli Decision Support for OS/390 online books. Change this to reflect the name used in your installation. For example, you might have to increment the 00 in DRL1SH00 because you have installed a newer version of the online books and bookshelf.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you do not plan to use BookManager, change the value of this field to blank.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dnsufx</td>
<td>N/A</td>
<td>SDRLDEFS</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 definitions data set suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>execsf</td>
<td>N/A</td>
<td>SDRLEXEC</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 exec data set suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>loadsf</td>
<td>N/A</td>
<td>SDRLOAD</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 load library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>skelsf</td>
<td>N/A</td>
<td>SDRSKEL</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 skeleton data set suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eng_lib_sfx</td>
<td>N/A</td>
<td>ENU</td>
<td></td>
</tr>
<tr>
<td>The English library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>jpn_lib_sfx</td>
<td>N/A</td>
<td>JPN</td>
<td></td>
</tr>
<tr>
<td>The Japanese library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_nslang</td>
<td>N/A</td>
<td>eng_lib_sfx</td>
<td></td>
</tr>
<tr>
<td>The national language library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>repnsufx</td>
<td>N/A</td>
<td>“SDRLR”+def_nslang</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 report definitions library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>plibsfx</td>
<td>N/A</td>
<td>“SDRLP”+def_nslang</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 panel library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>messsf</td>
<td>N/A</td>
<td>“SDRLM”+def_nslang</td>
<td></td>
</tr>
<tr>
<td>The Tivoli Decision Support for OS/390 message library suffix.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>formsfx</td>
<td>N/A</td>
<td>“SDRLF”+def_nslang</td>
<td></td>
</tr>
</tbody>
</table>
### Installation reference

<table>
<thead>
<tr>
<th>user.DRLPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Tivoli Decision Support for OS/390 GDDM formats library suffix.</td>
<td>N/A</td>
<td>eng_qmf_sfx</td>
<td></td>
</tr>
<tr>
<td>The English library suffix.</td>
<td>N/A</td>
<td>jpn_qmf_sfx</td>
<td></td>
</tr>
<tr>
<td>The Kanji-Japanese library suffix.</td>
<td>N/A</td>
<td>def_qmflang</td>
<td>eng_qmf_sfx</td>
</tr>
<tr>
<td>The national language default library suffix.</td>
<td>N/A</td>
<td>qmfdfl</td>
<td>suffix</td>
</tr>
<tr>
<td>The method of describing QMF library names to Tivoli Decision Support for OS/390, either SUFFIX or DATASET.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If qmfdfl is SUFFIX (the default), Tivoli Decision Support for OS/390 implements the QMF library naming standard, requiring a prefix for QMF data sets (def_qmfdspx) and a suffix (described below). Tivoli Decision Support for OS/390 appends each suffix to the QMF prefix to identify QMF libraries, which it then allocates.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If qmfdfl is DATASET, Tivoli Decision Support for OS/390 does not use a prefix or suffix and you must specify fully-qualified data set names for the QMF library variables described below.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In either case, Tivoli Decision Support for OS/390 uses the next several variables to allocate QMF libraries.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcflb</td>
<td>N/A</td>
<td>DSQCLST+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF CLIST library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcfsleb</td>
<td>N/A</td>
<td>DSQCLST+eng_qmf_sfx</td>
<td></td>
</tr>
<tr>
<td>The English QMF CLIST library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx. Tivoli Decision Support for OS/390 requires this library even though you might be using another language.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcfelb</td>
<td>N/A</td>
<td>DSQEXEC+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF EXEC library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcfslebe</td>
<td>N/A</td>
<td>DSQEXEC+eng_qmf_sfx</td>
<td></td>
</tr>
<tr>
<td>The English QMF EXEC library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx. Tivoli Decision Support for OS/390 requires this library even though you might be using another language.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcflb</td>
<td>N/A</td>
<td>DSQPLIB+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF panel library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcfslib</td>
<td>N/A</td>
<td>DSQMLIB+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF message library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcflb</td>
<td>N/A</td>
<td>DSQSLIB+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF skeleton library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcmap</td>
<td>N/A</td>
<td>DSQMAP+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The ADMGCMAP library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfcfln</td>
<td>N/A</td>
<td>DSQPNL+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>The QMF panel library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspx.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dsqpln</td>
<td>N/A</td>
<td>DSQPNL+def_qmflang</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The variables listed above are used to allocate QMF libraries to the Tivoli Decision Support for OS/390 environment.
<table>
<thead>
<tr>
<th>user.DRLFPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The QMF load library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspfx.</td>
<td>qmchart</td>
<td>N/A</td>
<td>DSQCHART</td>
</tr>
<tr>
<td>The ADMCFORM library, which (depending on the value of qmfdfl), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_qmfdspfx.</td>
<td>qmdsdsfum</td>
<td>N/A</td>
<td>DUMMY</td>
</tr>
<tr>
<td>The fully-qualified name of the data set to be allocated to ddname DSQUDUMP, or DUMMY.</td>
<td>qmfddebug</td>
<td>N/A</td>
<td>DUMMY</td>
</tr>
<tr>
<td>The fully-qualified name of the data set to be allocated to ddname DSQDEBUG, or DUMMY.</td>
<td>dsmutit</td>
<td>N/A</td>
<td>SYSDA</td>
</tr>
<tr>
<td>The disk unit.</td>
<td>dbver</td>
<td>N/A</td>
<td>2</td>
</tr>
<tr>
<td>The version of DB2.</td>
<td>db2rel</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>The release of DB2.</td>
<td>db2def</td>
<td>N/A</td>
<td>SUFFIX</td>
</tr>
<tr>
<td>The method of describing DB2 library names to Tivoli Decision Support for OS/390, either SUFFIX or DATASET.</td>
<td>If db2def is SUFFIX (the default), Tivoli Decision Support for OS/390 implements the DB2 library naming standard, requiring a prefix for DB2 data sets (def_db2dssfx), a library name, and an optional suffix (def_db2dssfx).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If db2def is DATASET, Tivoli Decision Support for OS/390 does not use a prefix or a suffix and you must specify fully-qualified data set names for the DB2 library variables described below.</td>
<td>In either case, Tivoli Decision Support for OS/390 uses the next several variables to allocate DB2 libraries.</td>
<td>db2lib</td>
<td>N/A</td>
</tr>
<tr>
<td>The DB2 runlib load library name, which (depending on the value of db2def), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_db2dssfx before appending def_db2dssfx.</td>
<td>db2load</td>
<td>N/A</td>
<td>DSNLOAD</td>
</tr>
<tr>
<td>The DB2 load library, which (depending on the value of db2def), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_db2dssfx before appending def_db2dssfx.</td>
<td>db2c1st</td>
<td>N/A</td>
<td>DSNCLIST</td>
</tr>
<tr>
<td>The DB2 CLIST library, which (depending on the value of db2def), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_db2dssfx before appending def_db2dssfx.</td>
<td>db2m1lib</td>
<td>N/A</td>
<td>DSNSPFM</td>
</tr>
<tr>
<td>The DB2 message library, which (depending on the value of db2def), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_db2dssfx before appending def_db2dssfx.</td>
<td>db2plib</td>
<td>N/A</td>
<td>DSNSPFP</td>
</tr>
<tr>
<td>The DB2 panel library, which (depending on the value of db2def), is the fully-qualified name or is a value that Tivoli Decision Support for OS/390 appends to def_db2dssfx before appending def_db2dssfx.</td>
<td>gddmload</td>
<td>N/A</td>
<td>SYS1.GDDMLOAD</td>
</tr>
<tr>
<td>The GDDM load library.</td>
<td>admddmsymb</td>
<td>N/A</td>
<td>SYS1.GDDMSYM</td>
</tr>
<tr>
<td>The GDDM symbols library.</td>
<td>admdddefs</td>
<td>N/A</td>
<td>SYS1.GDDMNICK</td>
</tr>
<tr>
<td>The GDDM nicknames library.</td>
<td>admddmpntq</td>
<td>N/A</td>
<td>None</td>
</tr>
<tr>
<td>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, Tivoli Decision Support for OS/390 adds an ADMPRNTQ DD statement to the batch JCL for graphic reports.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appendix I. Installation reference 341
### Installation reference

<table>
<thead>
<tr>
<th>user.DRLFPROF variable name</th>
<th>Dialog Parameters field name</th>
<th>Default value</th>
<th>Your value</th>
</tr>
</thead>
<tbody>
<tr>
<td>def_mainfile</td>
<td>N/A</td>
<td>SLR.V3R3M0.SYSTEMDB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The SLR V3 database library name. This field is required for migration jobs initiated through the administration dialog. It can be up to 54 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_loadlib1</td>
<td>N/A</td>
<td>SLR.LOCAL.SLRsamp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of a data set containing SLR V3 load modules and table definitions. The library identified by this field is the first load library that Tivoli Decision Support for OS/390 searches. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_loadlib2</td>
<td>N/A</td>
<td>SLR.V3R3M0.SLRsamp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of a data set containing SLR V3 load modules and table definitions. The library identified by this field is the second load library Tivoli Decision Support for OS/390 searches. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_loadlib3</td>
<td>N/A</td>
<td>blank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of a data set containing SLR V3 load modules and table definitions. The library identified by this field is the third load library Tivoli Decision Support for OS/390 searches. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_loadlib4</td>
<td>N/A</td>
<td>blank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of a data set containing SLR V3 load modules and table definitions. The library identified by this field is the fourth load library Tivoli Decision Support for OS/390 searches. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_linklib1</td>
<td>N/A</td>
<td>SLR.LOCAL.LINKLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of the link library that contains the SLR V3 load modules. The library identified by this field is the first link library Tivoli Decision Support for OS/390 searches and is required. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_linklib2</td>
<td>N/A</td>
<td>SLR.V3R3M0.LINKLIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of the link library that contains the SLR V3 load modules. The library identified by this field is the second link library Tivoli Decision Support for OS/390 searches. It is optional. It can be up to 44 alphanumeric characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_asmlib</td>
<td>N/A</td>
<td>SLR.V3R3M0.SLRASM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The name of the SLR V3 assembler library that contains SLR V3 starter-set table definitions in source format. The field is required for migrations that create Tivoli Decision Support for OS/390 tables, record definitions, and update definitions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_geapplid</td>
<td>N/A</td>
<td>zuser</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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 Tivoli Decision Support for OS/390 user.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>def_geprivcl</td>
<td>N/A</td>
<td>MASTER</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The privilege class specified in an Information/Management group record.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIEWER</td>
<td>N/A</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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 Tivoli Decision Support for OS/390 to use YES.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>qmfuse</td>
<td>N/A</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specifies if QMF is used with Tivoli Decision Support for OS/390 in your installation. Any other value than YES or NO causes Performance Reporter to use YES.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gddmuse</td>
<td>N/A</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specifies if GDDM is used with Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390 to use YES.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decese</td>
<td>N/A</td>
<td>PERIOD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When generating tabular reports without QMF, Tivoli Decision Support for OS/390 uses period as decimal separator and comma as thousands separator. You can exchange the decimal and thousands separators by specifying decese=&quot;COMMA&quot;. In that case, period is used as thousands separator. Any other value of decese causes Tivoli Decision Support for OS/390 to use period as a decimal separator.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>subhdrv</td>
<td>N/A</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>user.DRFLPROF variable name</td>
<td>Dialog Parameters field name</td>
<td>Default value</td>
<td>Your value</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------</td>
<td>---------------</td>
<td>------------</td>
</tr>
</tbody>
</table>
| This value is used only for QMF (where qmfuse='YES'). Specify Y if you want Tivoli Decision Support for OS/390 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 DRLA170.  
**Note:** Replacing empty variables increases the time taken to generate a report.  
Specify N to leave the empty variable in the report. |
## Allocation overview

<table>
<thead>
<tr>
<th>Library type or data set ddname</th>
<th>Library or data set</th>
<th>Allocated by (EPDM exec)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following libraries as a user starts a Tivoli Decision Support for OS/390 dialog:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISPIPLIB</td>
<td>• Tivoli Decision Support for OS/390 panel library</td>
<td>DRLEINII</td>
</tr>
<tr>
<td></td>
<td>• QMF panel library</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DB2 panel library</td>
<td></td>
</tr>
<tr>
<td>ISPTLIB</td>
<td>• Tivoli Decision Support for OS/390 tables library</td>
<td>DRLEINII</td>
</tr>
<tr>
<td></td>
<td>• QMF tables library</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• BookManager tables library</td>
<td></td>
</tr>
<tr>
<td>ISPMPLIB</td>
<td>• Tivoli Decision Support for OS/390 message library</td>
<td>DRLEINII</td>
</tr>
<tr>
<td></td>
<td>• QMF message library</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DB2 message library</td>
<td></td>
</tr>
<tr>
<td>ISPLLIB</td>
<td>• Tivoli Decision Support for OS/390 load library</td>
<td>DRLEINII</td>
</tr>
<tr>
<td></td>
<td>• QMF load library</td>
<td></td>
</tr>
<tr>
<td>ISPSLIB</td>
<td>• Tivoli Decision Support for OS/390 skeleton library</td>
<td>DRLEINII</td>
</tr>
<tr>
<td></td>
<td>• QMF skeleton library</td>
<td></td>
</tr>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following data sets as a user starts a Tivoli Decision Support for OS/390 dialog:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLTABL</td>
<td>Userprefix.DRLTABL (for values in query variables)</td>
<td>DRLEINII</td>
</tr>
<tr>
<td>ADMGDF</td>
<td>Saved charts data set</td>
<td>DRLEINII</td>
</tr>
<tr>
<td>DRLMSGDD</td>
<td>Tivoli Decision Support for OS/390 user message data set (drlmsgs)</td>
<td>DRLEINII</td>
</tr>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following libraries as a user starts a Tivoli Decision Support for OS/390 function that uses QMF:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYSPROC</td>
<td>QMF CLIST library (def_qmfdspfx.qmfclib+E)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>SYSEXEC</td>
<td>QMF exec library (def_qmfdspfx.qmfelib+E)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>ADMGGMAP</td>
<td>DSQMAP library (def_qmfdspfx.qmfmap)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>ADMCFORM</td>
<td>Saved forms data set + DSQCHART library (dsnpref.formsfx + def_qmfdspfx.qmfchart)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQUCFRM</td>
<td>Saved forms data set</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQPNLE</td>
<td>QMF panel library</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQPRINT</td>
<td>QMF sysout class (qmfprrt)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQSPILL</td>
<td>NEW DELETE (temporary file allocation)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQEDIT</td>
<td>NEW DELETE (temporary file allocation)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQDEBUG</td>
<td>QMFdebug</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td>DSQUDUMP</td>
<td>(qmfdsdum)</td>
<td>DRLEQMF</td>
</tr>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following library as a user starts a Tivoli Decision Support for OS/390 function that uses GDDM:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADMSYMFBL</td>
<td>GDDM symbols data set</td>
<td>DRLEINII</td>
</tr>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following libraries when a table or report is displayed without QMF:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRLTAB</td>
<td>Userprefix.DRLTAB (for table display)</td>
<td>DRLEADIT</td>
</tr>
<tr>
<td>DRLREP</td>
<td>Userprefix.DRLREP (for report display)</td>
<td>DRLERDIR</td>
</tr>
<tr>
<td><strong>Tivoli Decision Support for OS/390 allocates the following library as a user starts DB2 Interactive (DB2I) from Tivoli Decision Support for OS/390:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library type or data set ddname</td>
<td>Library or data set</td>
<td>Allocated by (EPDM exec)</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>SYSPROC</td>
<td>DB2 CLIST library (db2dspfx.db2clst)</td>
<td>DRLEDDB2I</td>
</tr>
</tbody>
</table>
Installation reference
Appendix J. Migrating Components from Earlier Releases

This appendix contains the following information about batch jobs to run before or after migration to Tivoli Decision Support for OS/390 1.6.0:

- Jobs you must run before migrating from 1.4.0.
- Jobs you must run before migrating from 1.5.0.
- Jobs you must run before migrating from an earlier release of Tivoli Decision Support for OS/390 to restructure the OS/400 component.
- Jobs you must run before migrating from 1.5.1.
- A job you can run before or after migrating to Tivoli Decision Support for OS/390 1.6.0 if you want to change the bufferpool used by a component.
- Jobs you must run after migrating from earlier releases of Tivoli Decision Support for OS/390 to 1.6 if you want to restructure existing tables.

This appendix contains the following information about component objects that have been modified by IBM for migration to Tivoli Decision Support for OS/390 1.5.0 and 1.5.1:

- Component objects modified for migration from 1.4.0.
- Component objects modified for migration from 1.5.0.
- Component objects modified for migration from 1.5.1.
- Component objects modified for migration to the restructured table design.

This appendix also contains information about the following:

- OS/400 component objects to be deleted because they are redundant in Tivoli Decision Support for OS/390 1.6.0.
Jobs you must run before migrating from 1.4.0

The following jobs change the column types for some tables.

Each job:
- Backs up data into COPY_tables
- Drops the original tables
- Redefines tables and updates
- Copies data back into redefined tables
- Drops COPY_tables

For details, see the comments in the jobs.

CICS Performance feature statistics component migration jobs

If you have not previously installed the PTFs for APAR PQ23555, run the following jobs:
- DRLJC804
- DRLJC805

CICS Performance feature unit-of-work component migration jobs

If you have not previously installed the PTFs for APAR PQ23555, run the following job:
- DRLJC901

CICS Partitioning feature statistics component migration jobs

To migrate the tables for the CICS Partitioning feature statistics component, run the following jobs:
- DRLJS2P4
- DRLJS1P2

CICS Partitioning feature unit-of-work component migration job

To migrate the tables for the CICS Partitioning feature unit-of-work component, run the following job:
- DRLJC9P1

DB2 component migration job

From Tivoli Decision Support for OS/390 1.5.0 onwards, the column PKG_WAIT_SEC is deleted from the following tables:
- &PREFIX.DB2_PACKAGE_D
- &PREFIX.DB2_PACKAGE_W

To make this change to your existing tables, run the following job:
- DRLJD2PU

Distributed Monitor component (Sentry) migration job

If you have not previously installed the PTFs for APAR PQ26686, run the following job:
- DRLJXSEL
This job erases the following incorrect line from lookup table
SENTRY_MONITOR_UN:
'\%\%', 'Unknown', 112

**MVS component migration jobs**

If you have not previously installed the PTFs for APAR PQ23943, run the following job:

DRLJMVAP

To enable improved reporting of CPU utilization for systems running in LPAR mode, run the following job:

DRLJMVLP

**MVS Performance Management component migration jobs**

With APAR OW37565, RMF has improved reporting of CPU utilization for systems running in LPAR mode. IBM S/390 Generation 6 Enterprise Servers (and some models of Generation 5) provide new capabilities for configuring their processors either as general purpose processors (CP) or as integrated coupling facilities (ICF).

If you have not previously installed the PTFs for APAR PQ21623, run the following job to improve reporting of CPU utilization:

DRLJMPLP

If you have not previously installed the PTFs for APAR PQ27741, run the following job:

DRLJMPST

If you have not previously installed the PTFs for APAR PQ26336, run the following job:

DRLJMPV2

**RAFBATCH and RAFJOBLOG tables migration job**

If you have not previously installed the PTFs for APAR PQ47390, run the following job:

DRLJMPST

**Resource Accounting component migration job**

To migrate the Resource Accounting component, run the following job:

DRLJACCP

**TWS for z/OS-OPC component migration job**

Run the following job:

- DRLJOPC

This job updates the DRLCOMPONENTS system table to change the old OPC name into the new one: ‘TWS for z/OS - OPC Component’

**IMS component migration job**

Run the following job:

- DRLJMICO
Migrating Components from Earlier Releases

This job updates the DRLCOMP_OBJECTS, DRLCOMP_PARTS and DRLCOMPONENTS system tables to remove all the references to the IMS 3.1 and IMS 4.1 objects no longer supported. After running this job you will no longer be able to use and collect IMS 3.1 and 4.1 log records.

**Migrate MVS availability from MVS component into MVS availability component job**

Run the following job:
- DRLJMVAV

This job deletes all the references to availability objects for the MVS component from the DRLCOMP_OBJECTS system table. The new component 'MVS Availability component' will contain these objects when, after running this job, you update the system tables according to Step 6: Create or update system tables” on page 34 to migrate your environment.

**DFSMS component migration job**

Run the following job:
- DRLJDFVS

This job changes the DRLCOMP_OBJECTS system table to modify the object type of DFSMS_VOL_STORGRP from table to lookup.

**Jobs you must run to restructure and migrate the OS/400 component**

From Tivoli Decision Support for OS/390 1.5.0 onwards, OS/400 components have a lighter structure, compared with earlier releases.

**OS/400 component restructuring job**

Before installing or reinstalling OS/400 components, you **must** run the following job, even if there are **no** OS/400 components installed on your system:

- DRLJ4MIG

This job:
- Drops all Log, Record and Update definitions that were related to different versions of the same OS/400 file type. If you attempt to drop objects that were not active in the old version, this step ends with RC=8. Ignore this.
- Delete the entries of the redundant objects from the system tables. If you attempt to delete non-existent entries from the system tables, this step ends with RC=4 due to an SQLCODE=100. Ignore this.

**OS/400 component migration job**

To migrate the OS/400 Configuration Component table definitions and data, run the following job:

- DRLJ4CON

This job:
- Drops the OS400_CONFIG table, which contains data captured on OS/400 V3R1M0 or other earlier releases that are no longer supported. To keep the data, unload it into a backup table before you run the job. If you attempt to drop a non-existing table, this step ends with RC=8 due to an SQLCODE=-204. Ignore this.
• Rename the OS400_CONFIG_V3R6 table, which contains data captured from OS/400 V3R2M0 and later, to OS400_CONFIG.
  - Upgrade the OS400_CONFIG_V3R6 table to the latest maintenance level. If you attempt to add already existing columns to the table, this step ends with RC=8 due to an SQLCODE=-612. Ignore this.
  - Define the new OS400_CONFIG table. This step may end with RC=8. Ignore this if it is due to any error related to any object other than OS400_CONFIG table.
  - Copy data from OS400_CONFIG_V3R6 to OS400_CONFIG. This step may end with RC=4 due to an SQLCODE=100 (OS400_CONFIG_V3R6 table empty). Ignore this.
  - Drop the original OS400_CONFIG_V3R6 table if the data was copied successfully.
• Drop any reports that query the old table.

### Jobs you must run to restructure tablespaces for CICS, IMS and MVS components

The following jobs migrate the CICS, IMS and MVS components to the restructured tablespace design. Run these jobs after migrating to Tivoli Decision Support for OS/390 1.5.0 or 1.5.1 from an earlier release.

Each job:
- Creates an image copy of the old tablespace
- Backs up data into a sequential dataset
- Drops the original tables
- Redefines tables and updates
- Copies data into redefined tables

See the comments in the jobs for more details.

#### MVS Performance Management component migration job

Run the following job to migrate the MVS Performance Management component:

DRLJMMMP

#### MVS component migration job

Run the following job to migrate the MVS component:

DRLJMMVS

#### CICS component migration jobs

Run the following jobs to migrate the CICS component:

DRLJMC10
DRLJMC20
DRLJMC30
DRLJMC40
DRLJMC50
DRLJMC60
DRLJMC70
DRLJMC80
DRLJMC90
Migrating Components from Earlier Releases

DRLJMCA0
DRLJMCB0
DRLJMSC0
DRLJMCU0
IMS Collect component migration jobs

Run the following jobs to migrate the IMS Collect component:

- DRLJMIT0
- DRLJMIY0
- DRLJMIA0
- DRLJMIS0

Job you must run to change the bufferpool

In earlier releases of Tivoli Decision Support for OS/390, all tablespaces and indexes had to use the DB2 default bufferpool, BP0.

From Tivoli Decision Support for OS/390 1.5.0 onwards, both SQL CREATE TABLESPACE and SQL CREATE INDEX statements include a BUFFERPOOL clause. One or more bufferpools for tablespaces and indexes can be specified in the administration dialog parameters. To change the bufferpool for existing tablespaces and indexes of a component from the DB2 default bufferpool to a specific bufferpool, run the following job before or after migration to Tivoli Decision Support for OS/390 1.5.0 or 1.5.1:

- DRLJBMIG

Customize the following parameters for your environment:

- Component name
- Bufferpool for indexes
- Bufferpool for tablespaces
- DB2 system name
- Tivoli Decision Support for OS/390 system tables prefix
- Tivoli Decision Support for OS/390 other table prefix
- Tivoli Decision Support for OS/390 database name

The job:

- Executes for each tablespace and index of the specified component an SQL ALTER statement to change the bufferpool.
- Writes these SQL statements and their SQL codes to the dataset allocated to DRLOUT DD.
Jobs you must run before migrating from 1.5.0

The following jobs change the column types for some tables.

Each job:
- Backs up data into COPY_tables
- Drops the original tables
- Redefines tables and updates
- Copies data back into redefined tables
- Drops COPY_tables

For details, see the comments in the jobs.

**IXFP_SUBSYSTEM_H, _D, _M tables migration job**
If you have not previously installed the PTFs for APAR PQ49127, run the following job:
DRLJIXSU

**MVS component migration job**
If you have not previously installed the PTFs for APAR PQ49860, to migrate the tables for the MVS component, run the following job:
DRLJMMVS

**RAFBATCH and RAFJOBLOG tables migration job**
If you have not previously installed the PTFs for APAR PQ47390, run the following job:
DRLJMRAF

**MVS performance Management component migration job**
If you have not previously installed the PTFs for APAR PQ67941 run the following job:
- DRLJMPRR

This job changes the column types for MVSPM_RAID_RANK_H table.

**Migrate NPM/IP from NPM Transit Time component into NPM/IP component job**
After you have installed the Network NPM/IP component, run the following job:
- DRLJNWIP

This job moves the NPM/IP tables into a new tablesape.

**RACF component migration job**
If you have not previously installed the PTFs for APAR PQ63801 run the following job:
- DRLJRORS

This job updates the DRLCOMP_OBJECTS system table to change the member name of the update definitions RACF_OMVS_SEC_80 and RACF_OMVS_SEC_80X from DRLTROCS to DRLTROSC.
TWS for z/OS-OPC component migration job

Run the following job:

- DRIJOPC

This job updates the DRLCOMPONENTS system table to change the old OPC name into the new one: 'TWS for z/OS - OPC Component'

IMS component migration job

Run the following job:

- DRIJMIC0

This job updates the DRLCOMP_OBJECTS, DRLCOMP_PARTS and DRLCOMPONENTS system tables to remove all the references to the IMS 3.1 and IMS 4.1 objects no longer supported. After running this job you will no longer be able to use and collect IMS 3.1 and 4.1 log records.

Migrate MVS availability from MVS component into MVS availability component job

Run the following job:

- DRIJMVAV

This job deletes all the references to availability objects for the MVS component from the DRLCOMP_OBJECTS system table. The new component 'MVS Availability component' will contain these objects when, after running this job, you update the system tables according to "Step 6: Create or update system tables" on page 34 to migrate your environment.

DFSMS component migration job

Run the following job:

- DRIJDFVS

This job changes the DRLCOMP_OBJECTS system table to modify the object type of DFSMS_VOL_STORGRP from table to lookup.

Jobs you must run before migrating from 1.5.1

RACF component migration job

If you have not previously installed the PTFs for APAR PQ63801 run the following job:

- DRIJRORS

This job updates the DRLCOMP_OBJECTS system table to change the member name of the update definitions RACF_OMVS_SEC_80 and RACF_OMVS_SEC_80X from DRLTRORS to DRLTROSC.

MVS performance Management component migration job

If you have not previously installed the PTFs for APAR PQ67941 run the following job:

- DRIJMPRR
This job changes the column types for MVSPM_RAID_RANK_H table. It:

- Backs up data into COPY_table
- Drops the original table
- Redefines the table
- Copies data back into the redefined table
- Drops COPY_tables

**TWS for z/OS-OPC component migration job**

Run the following job:

- DRLJOPC

This job updates the DRLCOMPONENTS system table to change the old OPC name into the new one: 'TWS for z/OS - OPC Component'

**IMS component migration job**

Run the following job:

- DRLJMIC0

This job updates the DRLCOMP_OBJECTS, DRLCOMP_PARTS and DRLCOMPONENTS system tables to remove all the references to the IMS 3.1 and IMS 4.1 objects no longer supported. After running this job you will no longer be able to use and collect IMS 3.1 and 4.1 log records.

**Migrate MVS availability from MVS component into MVS availability component job**

Run the following job:

- DRLJMVAV

This job deletes all the references to availability objects for the MVS component from the DRLCOMP_OBJECTS system table.

The new component 'MVS Availability component' will contain these objects when, after running this job, you update the system tables according to "Step 6: Create or update system tables" on page 34 to migrate your environment.

**Migrate NPM/IP from NPM Transit Time component into NPM/IP component job**

After you have installed the Network NPM/IP component, run the following job:

- DRLJNWIP

This job moves the NPM/IP tables into a new tablespace. It

- Backs up data into COPY_table
- Drops the original table
- Redefines the table
- Copies data back into the redefined table
- Drops COPY_tables

**DFSMS component migration job**

Run the following job:

- DRLJDFVS
This job changes the DRLCOMP_OBJECTS system table to modify the object type of DFSMS_VOL_STORGRP from table to lookup.
Component objects modified for migration from 1.4.0 to 1.6.0

Component objects belonging to these Tivoli Decision Support for OS/390 features are affected by the migration from Tivoli Decision Support for OS/390 1.4.0 to 1.5.0:
- Accounting feature objects modified by migration from 1.4.0
- CICS Partitioning feature objects modified by migration from 1.4.0
- CICS Performance feature objects modified by migration from 1.4.0
- Distributed Monitoring component (Sentry) objects modified by migration from 1.4.0
- IMS Performance feature object modified by migration from 1.4.0.
- Network Performance feature objects modified by migration from 1.4.0
- System Performance feature objects modified by migration from 1.4.0
- Workstation Performance feature objects modified by migration from 1.4.0

Accounting feature objects modified by migration from 1.4.0

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<th>Object and member name</th>
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CICS Partitioning feature objects modified by migration from 1.4.0

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## Migrating Components from Earlier Releases

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### CICS Performance feature objects modified by migration from 1.4.0

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### Distributed Monitoring component (Sentry) objects modified by migration from 1.4.0

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### IMS feature objects modified by migration from 1.4.0

Modify the IMS feature objects according to the following table, then use the DRLJIMSM JCL in the TivoliDecision Support for OS/390 SDRLCNTL library to update the Tivoli Decision Support for OS/390 system tables. Customize the job for your installation and migration needs and run it before the migration takes place.

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## Network Performance feature objects modified by migration from 1.4.0

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| Network Session Failure Component          | Record      | SMF_039_1_TO_7         DRLRS039  
|                                             | Table       | NW_SESSION_FAIL_D       DRLTNSSF  
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| Network NV/SM Internal Utilization Component| Table       | NW_SM_UTIL_H            DRLTNMSM  
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MQS_116 DRLRS116  
MQS_118_1 DRLRS118 |
| MQSeries                                   | Table definition | MQS_DATA_T DRLTMQST  
MQS_DATA_D DRLTMQST  
MQS_DATA_M DRLTMQST  
MQS_LOGMGR_T DRLTMQSY  
MQS_LOGMGR_D DRLTMQSY  
MQS_LOGMGR_M DRLTMQSY |
| MQSeries                                   | Update definition | MQS_DATA_T DRLTMQST  
MQS_DATA_D DRLTMQST  
MQS_DATA_M DRLTMQST  
MQS_LOGMGR_T DRLTMQSY  
MQS_LOGMGR_D DRLTMQSY  
MQS_LOGMGR_M DRLTMQSY |
| MQSeries                                   | Report definition | MQS01 DRLOMQ5  
MQS02 DRLOMQ5  
MQS03 DRLOMQ5  
MQS04 DRLOMQ5  
MQS05 DRLOMQ5  
MQS06 DRLOMQ5  
MQS07 DRLOMQ5 |
| DFSMS                                      | Record definition | SMF_085 DRLS085 |
| SMF                                         | Record definition | SMF_080 DRLRS080  
SMF_081 DRLRS081 |
| RACF                                        | Table definition | RACF_EVENT_CODE DRLTRAEV |
| RACF                                        | Record definition | RACF06 DRLORACF |
| OPC                                         | Record definition | OPC_04 DRLROP04  
OPC_03_P DRLROP03  
OPC_03_C DRLROP03  
OPC_23 DRLROP23  
OPC_24 DRLROP24  
OPC_27 DRLROP27  
OPC_29 DRLROP29 |
| OPC                                         | Report definition | OPC04 DRLLOPC |
| OPC                                         | Update definition | OPC_AUTO_EVENT_D DRLTOPA  
OPC_MISSED_FB_D DRLTOPA  
OPC_MCP_D DRLTOPMP  
OPC_OPER_EVENT_T DRLTOPOE  
OPC_CURR_PLAN_D_3P DRLTOSC  
OPC_AUTO_EVENT_M DRLTOPA  
OPC_MCP_M DRLTOPMP  
OPC_MISSED_FB_M DRLTOPM  
OPC_OPER_EVENT_D DRLTOPOE  
OPC_OPER_EVENT_M DRLTOPOE  
OPC_CURRENT_PLAN_D DRLTOPSC  
OPC_CURRENT_PLAN_M DRLTOPSC |
## Migrating Components from Earlier Releases

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**Workstation Performance feature objects modified by migration from 1.4.0**

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Component objects modified for migration from 1.5.0 to 1.6.0

Component objects belonging to these Tivoli Decision Support for OS/390 features are affected by the migration from Tivoli Decision Support for OS/390 1.5.0 to 1.6.0:

- CICS Partitioning feature objects modified by migration from 1.5.0
- CICS Performance feature objects modified by migration from 1.5.0
- Network Performance feature objects modified by migration from 1.5.0
- System Performance feature objects modified by migration from 1.5.0

CICS Partitioning feature objects modified by migration from 1.5.0

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CICS Performance feature objects modified by migration from 1.5.0

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| CICS Statistics                            | Update definition | CICS_S_GLOBAL_48 DRLTC801  
CICS_S_TRAN_T_11 DRLTC803  
CICS_S_LSR_POOL393 DRLTC804  
CICS_S_TRANSIENT_G DRLTC806  
CICS_S_TCPIP_T DRLTC830  
CICS_S_TCPIP_D DRLTC830  
CICS_S_INTER_54 DRLTC808 |

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| IMS                                        | Table definition | IMS_APPLICATION_H DRLTIMSA  
IMS_APPLICATION_W DRLTIMSA  
IMS_TRANSACTION_H DRLTMSR  
IMS_TRANSACTION_D DRLTMSR  
IMS_TRANSACTION_W DRLTMSR  
IMS_USER_TRAN_H DRLTIMST  
IMS_USER_TRAN_D DRLTIMST  
IMS_USER_TRAN_W DRLTIMST  
IMS_USER_APPL_D DRLTIMST  
IMS_USER_APPL_W DRLTIMST  
IMS_SYSTEM_Q DRLTMSY  
IMS_SYSTEM_D DRLTMSY |
| IMS                                        | Update definition | IMS_APPLICATION_W DRLUIMSA  
IMS_TRANSACTION_D DRLUIMSR  
IMS_TRANSACTION_W DRLUIMSR  
IMS_USER_TRAN_D DRLUIMST  
IMS_USER_TRAN_W DRLUIMST  
IMS_USER_APPL_D DRLUIMST  
IMS_USER_APPL_W DRLUIMST  
IMS_SYSTEM_D DRLUIMSY  
IMSV610APPLICATION DRLU61A  
IMSV610TRANSACTION DRLU61R  
IMSV610USERTRANH DRLU61T  
IMSV610SYSTEMQ DRLU61Y  
IMSV710APPLICATION DRLU71A  
IMSV710TRANSACTION DRLU71R  
IMSV710USERTRANH DRLU71T  
IMSV710SYSTEMQ DRLU71Y |
| IMS                                        | Record definition | IMS_V610_R2 DRLRI61C  
IMS_V610_01 DRLRI61S  
IMS_V610_03 DRLRI61S  
IMS_V710_R2 DRLRI71C  
IMS_V710_01 DRLRI71S  
IMS_V710_03 DRLRI71S |
| IMS                                        | Table definition | IMS_TRANSACTION_H DRLTMSR  
IMS_TRANSACTION_D DRLTMSR  
IMS_TRANSACTION_W DRLTMSR  
IMS_SYSTEM_Q DRLTMSY  
IMS_SYSTEM_D DRLTMSY |
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| OS/400 Performance                         | Record definition | OS400_PM_DISK DRLR4PDS |

### Component objects modified for migration from 1.5.1 to 1.6.0

Component objects belonging to these Tivoli Decision Support for OS/390 features are affected by the migration from Tivoli Decision Support for OS/390 1.5.1 to 1.6.0:

- Network Performance feature objects modified by migration from 1.5.1
- System Performance feature objects modified by migration from 1.5.1

### Network Performance feature objects modified by migration from 1.5.1

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Appendix J. Migrating components 391
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# System Performance feature objects modified by migration from 1.5.1

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Migrating Components from Earlier Releases

Tivoli Decision Support for OS/390 objects modified by the migration to the restructured tablespace design

Component objects belonging to these Tivoli Decision Support for OS/390 features are affected by the migration to the restructured tablespace design.

- CICS Performance feature objects
- IMS Collect objects
- System Performance feature objects

**CICS Performance feature objects**

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**Actions required to migrate modified objects**

| Object type                  | Save actions                                                                                                                                                                                                                                                                                                                                                     | Merge actions                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Record definition (see Note 1 on page 404) | 1. Select 3, Logs from the Tivoli Decision Support for OS/390 Administration window, and press Enter.  
2. Select the log in which the record definition is defined, and press Enter.  
3. Select the record definition you want to save.  
4. Select 6, Save Definition from the Record pull-down, and press Enter.  
5. Type the name of the data set where you want to save the record definition, and press Enter. | To reintroduce your changes into the newly migrated component:  
1. Take a copy of the record definition provided in the new Tivoli Decision Support for OS/390 release or modification level. The new record definition is in the DRL160.SDRLDEFS data set. To find the appropriate member name, see "Component objects modified for migration from 1.4.0 to 1.6.0" on page 358 as applicable.  
2. Copy your previously saved changes into the copy of the OBJECT definition. Update the variable VERSION to some value other than IBM.nnn. OR create alter statements for your modifications using the update processor. This can be run from the user modified members panel that is displayed during each component installation process.  
3. Run the saved update definitions OR run the ALTER statements produced by the update processor. You can do this in batch or from Tivoli Decision Support for OS/390 administration Dialog. See Note 2. |
| Update definition (see Note 1 on page 404) | 1. Select 4, Tables from the Tivoli Decision Support for OS/390 Administration window, and press Enter.  
2. Select the table for the associated update definition that you want to save, and press F5 (Updates).  
3. Select the update definition you want to save, and press F10 (Save def).  
4. Type the name of the data set where you want to save the update definition. Press Enter. | To reintroduce your changes into the newly migrated component:  
1. Take a copy of the update definition provided in the new Tivoli Decision Support for OS/390 release or modification level. The new update definition is in the data set DRL160.SDRLDEFS.  
2. Copy your previously saved changes into the copy of the OBJECT definition. Update the variable VERSION to some value other than IBM.nnn. OR create alter statements for your modifications using the update processor. This can be run from the user modified members panel that is displayed during each component installation process.  
3. Run the saved update definitions OR run the ALTER statements produced by the update processor. You can do this in batch or from Tivoli Decision Support for OS/390 administration Dialog. See Note 2. |
| Table definition (see Note 3) | Save actions are usually not required.                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                          |
| Index definition (see Note 1 on page 404) | Save actions are usually not required. However, if you want to reintroduce changes you have made:  
1. Select 4, Tables from the Tivoli Decision Support for OS/390 Administration window, and press Enter.  
2. Select the table for the associated index definition.  
3. Select 7, Save definition from the Table pull-down, and press Enter.  
4. Type the name of the data set where you want to save the table and index definition. Press Enter. | To reintroduce your changes into the newly migrated component:  
1. Take a copy of the index definition provided in the new Tivoli Decision Support for OS/390 release or modification level. The new index definition is in the data set DRL160.SDRLDEFS.  
2. Copy your previously saved changes into the copy of the index definition.  
3. Run the saved index definition. You can do this in batch or from the Tivoli Decision Support for OS/390 administration dialog. See Note 2 on page 404.  
Note: You can also use the Tivoli Decision Support for OS/390 administration dialog to first delete, and then define a new index. |

**Note:** You can also use the Tivoli Decision Support for OS/390 administration dialog to first delete, and then define a new index.
## Migrating Components from Earlier Releases

<table>
<thead>
<tr>
<th>Object type</th>
<th>Save actions</th>
<th>Merge actions</th>
</tr>
</thead>
</table>
| View definition (see Note 3) | 1. Select 4, Tables from the Tivoli Decision Support for OS/390 Administration window, and press Enter.  
2. Select the view that you want to save.  
3. Select 7, Save Definition from the Table pull-down, and press Enter.  
4. Type the name of the data set where you want to save the view definition, and press Enter. | To reintroduce your changes into the newly migrated component:  
1. Take a copy of the view definition provided in the new Tivoli Decision Support for OS/390 release or modification level. The new view definition is in the data set DRL.160.SDRLDEFS.  
2. Copy your previously saved changes into the copy of the view definition.  
3. Run the saved view definition. You can do this in batch or from the Tivoli Decision Support for OS/390 administration dialog. See Note 2. |
| Report definition         | If you have performed your own modifications to predefined Tivoli Decision Support for OS/390 reports and have retained the original report ID, you can perform one of these options. **Option 1 (recommended) - Change report ID of modified version** For each report that you want to save, perform the following:  
1. Select the report from the Tivoli Decision Support for OS/390 Reports window.  
2. Select 1, New from the Report pull-down, and press Enter.  
3. Press F3 (Exit) to leave the QMF query.  
4. Type your own unique names for the report ID, query name, and form name in the Report Definition window. Press Enter. The report is saved with the new name.  
**Note:** If you are not using QMF, type only the report ID in the Report Definition window. | No merge action is required. Your saved reports are still available after you have reinstalled the new Tivoli Decision Support for OS/390 component. |

### Notes:

1. This object is dropped before it is redefined. You **must** save your own modified version before reinstalling the Tivoli Decision Support for OS/390 component.

2. To run the definition statements from the Tivoli Decision Support for OS/390 administration dialog, select 5, Process Tivoli Decision Support for OS/390 statements from the Other pull-down. Fill in the fields as shown in Figure 163 on page 405. Press F5 (Execute) to process the definition statements.

3. Any existing version of this object is **not** overwritten by a new IBM definition. However, tables might be altered, that is, one or more columns might be added.
### Process Tivoli Decision Support for OS/390 Statements window

<table>
<thead>
<tr>
<th>Report</th>
<th>Batch</th>
<th>Group</th>
<th>Search</th>
<th>Options</th>
<th>Other</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Process Tivoli Decision Support for OS/390 Statements**

Type in the data set name. Then press Enter to edit the statements.

**Input data set name**: MY.LOCAL.DEFS(MYSAVE)

**Type of statements**
- 1. Log collector
- 2. Report definition

**Show input statements**
- 1. Yes
- 2. No

**Trace SQL calls**
- 1. Yes
- 2. No

**F1=Help**  **F2=Split**  **F5=Execute**  **F9=Swap**  **F12=Cancel**

---

**Figure 163. Process Tivoli Decision Support for OS/390 Statements window**
Appendix K. Administration reports

This appendix describes the administration reports that are created when you create or update the Tivoli Decision Support for OS/390 system tables. The reports listed in this appendix are the following:

- 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

PRA001 - Indexspace cross-reference

The PRA001 report provides a cross-reference between indexspaces and indexes that are present in the Tivoli Decision Support for OS/390 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 indexspace, or accept the default setting to obtain a complete cross reference between index and indexspace names for all indexspaces.
Figure 164 shows part of a PRA001 report.

INDEXSPACE cross-reference

<table>
<thead>
<tr>
<th>Indexspace Name</th>
<th>Index Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLLOGSI</td>
<td>DRLLOGSIX</td>
</tr>
<tr>
<td>DRLCOMPR</td>
<td>DRLCOMP_PART_IX</td>
</tr>
<tr>
<td>DRLCOMPO</td>
<td>DRLCOMPONENT_IX</td>
</tr>
<tr>
<td>DRLRECOR</td>
<td>DRLRECORDSIX</td>
</tr>
<tr>
<td>DRLFIELD</td>
<td>DRLFIELDSIX</td>
</tr>
<tr>
<td>DRLSECTI</td>
<td>DRLSECTIONSIX</td>
</tr>
<tr>
<td>DLRPROC</td>
<td>DLRPROCINPUTIX</td>
</tr>
<tr>
<td>DLRIMX$</td>
<td>DLRRECPROCSIX</td>
</tr>
<tr>
<td>DRLUPDAT</td>
<td>DRLUPDATESIX</td>
</tr>
<tr>
<td>DRLUPDCO</td>
<td>DRLUPDCOLSIX</td>
</tr>
<tr>
<td>DRLUPDLE</td>
<td>DRLUPDLETSIX</td>
</tr>
<tr>
<td>DRLPURGE</td>
<td>DRLPURGEIX</td>
</tr>
<tr>
<td>DRLUPDIS</td>
<td>DRLUPDISTRIX</td>
</tr>
<tr>
<td>DRLLOGDA</td>
<td>DRLLOGDATASEXSIX</td>
</tr>
<tr>
<td>DRLEXPRI</td>
<td>DRLEXPRIX</td>
</tr>
<tr>
<td>DAYROFRW</td>
<td>DAY_OF_WEEK_IX</td>
</tr>
<tr>
<td>SPECIALR</td>
<td>SPECIAL_DAY_IX</td>
</tr>
<tr>
<td>DRLCIFBM</td>
<td>DRLCOMP_OBJ_IX</td>
</tr>
<tr>
<td>DRLREPORT</td>
<td>DRLREPORTS_IX</td>
</tr>
<tr>
<td>DRLREPRV</td>
<td>DRLREP_VAR_IX</td>
</tr>
<tr>
<td>DRLREPRA</td>
<td>DRLREP_ATTR_IX</td>
</tr>
<tr>
<td>DRLREPQ</td>
<td>DRLREP_QRY_IX</td>
</tr>
<tr>
<td>DRLREPRC</td>
<td>DRLREP_COL_IX</td>
</tr>
<tr>
<td>DRLREPR    T</td>
<td>DRLREP_TEXT_IX</td>
</tr>
<tr>
<td>DRLGROUP</td>
<td>DRLGROUP_IX</td>
</tr>
<tr>
<td>DRLGRPPR</td>
<td>DRLGRP_REP_IX</td>
</tr>
<tr>
<td>DRLSEARCH</td>
<td>DRLSEARCH_IX</td>
</tr>
</tbody>
</table>

Figure 164. Part of an Indexspace Cross-reference Report

The columns in this report contain this information:

INDEXSPACE NAME  The name of the indexspace whose index name has been extracted. This is either the name associated with a single indexspace or the complete cross reference between index and indexspace names for all indexes.

INDEX NAME  The name of the index associated with the indexspace.

For information about:

- The DRLINDEXES system table, see “Views on DB2 and QMF tables” on page 241
- How to run reports, see “Administering reports” on page 94
- How to display or modify tables or indexspaces, see “Displaying and modifying a table or indexspace” on page 192
PRA002 - Actual tablespace 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**: TABLESPACE,SPACE,ADMINISTRATION,DB2
- **Variables**: TABLESPACE_NAME. Optional. You can select the space allocated to a single tablespace, or accept the default to obtain complete information for all the Tablespace present.

Figure 165 shows part of a PRA002 report.

ACTUAL TABLESPACE SPACE allocation

<table>
<thead>
<tr>
<th>Tablespace Name</th>
<th>SPACE Allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLSADSM</td>
<td>1584</td>
</tr>
<tr>
<td>DRLSCI08</td>
<td>10080</td>
</tr>
<tr>
<td>DRLSCOM</td>
<td>20160</td>
</tr>
<tr>
<td>DRLSCS01</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS02</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS03</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS04</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS05</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS06</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS07</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS08</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS09</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS10</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS11</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS12</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS13</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS14</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS15</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS16</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS17</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS18</td>
<td>1056</td>
</tr>
<tr>
<td>DRLSCS19</td>
<td>1056</td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

Figure 165. Part of an Actual Tablespace Allocation Report
The columns in this report contain this information:

**Tablespace Name**
- The name of the tablespace 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 241
- How to run reports, see "Administering reports" on page 94
- How to display or modify tables or indexspaces, see "Displaying and modifying a table or indexspace" on page 192
- The SYSTABLESPACE table, refer to the DB2 for OS/390 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**: DRLPURGCOND
- **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 166] shows part of a PRA003 report.
The columns in this report contain this information:

<table>
<thead>
<tr>
<th>TABLE NAME</th>
<th>PURGE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP_GEN_IP_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_TCP_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_API_CALLS_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_API_CALLS_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_UDP_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_ICMP_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_IP_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_TCP_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_UDP_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_ICMP_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_IP_W</td>
<td>DATE &lt; CURRENT DATE - 365 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_TCP_W</td>
<td>DATE &lt; CURRENT DATE - 365 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_UDP_W</td>
<td>DATE &lt; CURRENT DATE - 365 DAYS</td>
</tr>
<tr>
<td>TCP_GEN_ICMP_W</td>
<td>DATE &lt; CURRENT DATE - 365 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_CLIENT_T</td>
<td>DATE &lt; CURRENT DATE - 1 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_CLIENT_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_CLIENT_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_CLIENT_W</td>
<td>DATE &lt; CURRENT DATE - 375 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_SERVER_T</td>
<td>DATE &lt; CURRENT DATE - 1 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_SERVER_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_SERVER_D</td>
<td>DATE &lt; CURRENT DATE - 30 DAYS</td>
</tr>
<tr>
<td>TCP_FTP_SERVER_W</td>
<td>DATE &lt; CURRENT DATE - 375 DAYS</td>
</tr>
<tr>
<td>TCP_TN3270_CLNT_T</td>
<td>DATE &lt; CURRENT DATE - 1 DAYS</td>
</tr>
<tr>
<td>TCP_TN3270_CLNT_H</td>
<td>DATE &lt; CURRENT DATE - 7 DAYS</td>
</tr>
</tbody>
</table>

Figure 166. Part of a Table Purge Condition Report

For information about:
- The DRLPURGCOND system table, see “Views on DB2 and QMF tables” on page 241
- How to run reports, see “Administering reports” on page 94
- How to display or edit purge conditions, see “Displaying and editing the purge condition of a table” on page 191

PRA004 - List columns for a requested table with comments

This report shows the column remarks for the selected table.

This information identifies the report:

- **Report ID**: PRA004
- **Report group**: ADMIN
- **Reports Source**: DRLCOLUMNS
- **Attributes**: COMMENT,PURGE,ADMINISTRATION,DB2, TABLE
- **Variables**: Tablename.
**Administration reports**

List columns for a requested table with comments

<table>
<thead>
<tr>
<th>KEYS</th>
<th>KEYSEQ</th>
<th>NAME</th>
<th>COLTYPE</th>
<th>LENGTH</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>7</td>
<td>CORRELATION_ID</td>
<td>CHAR</td>
<td>12</td>
<td>Correl. ID value. From QWHCCV.</td>
</tr>
<tr>
<td>K</td>
<td>10</td>
<td>DB2_PLAN</td>
<td>CHAR</td>
<td>8</td>
<td>Plan name. From QWHCPLAN.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>BP32_DYN_PREFETCH</td>
<td>FLOAT</td>
<td>4</td>
<td>Num. of DYNAMIC PREFETCH requests</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>BP32_EXPANSIONS</td>
<td>FLOAT</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support: PRA005

**Figure 167. Example of List columns for a requested table with comment**

The report contains this 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

<table>
<thead>
<tr>
<th>NAME</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICS_DICTIONARY</td>
<td>CICS dictionary records. Used and maintained by the recordproc that</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CICS_FIELD</td>
<td>CICS dictionary fields. Used to update the dictionary blocks in</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>DAY_OF_WEEK</td>
<td>This control table defines the day type to be returned by the</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>DB2_APPL_DIST_H</td>
<td>This table provides hourly statistics on DDF distributed address</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support: PRA005

**Figure 168. Example of List all tables with comment**

The report contains this 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, 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:
The columns in this report contain the following information:

<table>
<thead>
<tr>
<th>Component_Name</th>
<th>Object_Type</th>
<th>Object_Name</th>
<th>Member_Name</th>
<th>Part_Name</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSM</td>
<td>LOG</td>
<td>SMF</td>
<td>DRLLSMF</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td>CICSMON</td>
<td>LOG</td>
<td>SMF</td>
<td>DRLLSMF</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td></td>
<td>RECORD</td>
<td>SMF_110_1</td>
<td>DRLR5110</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td></td>
<td>REPORT</td>
<td>CICSANO5</td>
<td>DRLCIO107</td>
<td>7 CMF GLOB &amp; ACCT</td>
<td>PN86655</td>
</tr>
<tr>
<td></td>
<td>REPORT</td>
<td>CICSANO7</td>
<td>DRLCIO107</td>
<td>7 CMF GLOB &amp; ACCT</td>
<td>PN86655</td>
</tr>
<tr>
<td></td>
<td>UPDATE</td>
<td>CICS_TRAN_USR_H</td>
<td>DRLTCIR 1 CMF BASIC ALTERED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CICSMP</td>
<td>LOG</td>
<td>SMF</td>
<td>DRLLSMF</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td></td>
<td>RECORD</td>
<td>SMF_110_1</td>
<td>DRLR5110</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td>CICSSTAP</td>
<td>LOG</td>
<td>SMF</td>
<td>DRLLSMF</td>
<td>-</td>
<td>FLAG</td>
</tr>
<tr>
<td></td>
<td>RECORD</td>
<td>SMF_110_2</td>
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<td></td>
<td>CICS_TCPIP_TP</td>
<td>DRLTS3P7  -</td>
<td>P003356</td>
<td></td>
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</tbody>
</table>

The columns in this report contain 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 Tivoli Decision Support for OS/390 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 241.
- How to run reports, see “Administering reports” on page 94.
Administration reports
Appendix L. Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. These are the major accessibility features you can use with Tivoli Decision Support for OS/390 when accessing it via the IBM Personal Communications terminal emulator:

- You can operate all features using the keyboard instead of the mouse.
- You can read text through interaction with assistive technology.
- You can use system settings for font, size, and color for all user interface controls.
- You can magnify what is displayed on your screen.
## Appendix M. List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AP</td>
<td>Assist Processor</td>
</tr>
<tr>
<td>APPC</td>
<td>Advanced program-to-program communication</td>
</tr>
<tr>
<td>APPN</td>
<td>Advanced peer to peer networking</td>
</tr>
<tr>
<td>BCDS</td>
<td>backup control data set</td>
</tr>
<tr>
<td>CAF</td>
<td>DB2 call attachment facility</td>
</tr>
<tr>
<td>CAM</td>
<td>Cryptographic Asynchronous Message Processor</td>
</tr>
<tr>
<td>CF</td>
<td>Coupling Facility</td>
</tr>
<tr>
<td>CICS/ESA</td>
<td>Customer Information Control System/ Enterprise System Architecture</td>
</tr>
<tr>
<td>CMS</td>
<td>Conversational Monitor System</td>
</tr>
<tr>
<td>CPC</td>
<td>Central Processor Complex</td>
</tr>
<tr>
<td>CPI-C</td>
<td>Common program interface for communications</td>
</tr>
<tr>
<td>CPU</td>
<td>central processing unit</td>
</tr>
<tr>
<td>DASD</td>
<td>direct access storage device</td>
</tr>
<tr>
<td>DB2</td>
<td>DATABASE 2</td>
</tr>
<tr>
<td>DCF</td>
<td>Document Composition Facility</td>
</tr>
<tr>
<td>DES</td>
<td>Data Encryption Standard</td>
</tr>
<tr>
<td>DFHSM</td>
<td>Data Facility Hierarchical Storage Manager</td>
</tr>
<tr>
<td>DFP</td>
<td>Data Facility Product</td>
</tr>
<tr>
<td>DFSMS</td>
<td>Data Facility Storage Management Subsystem</td>
</tr>
<tr>
<td>ERDS</td>
<td>error recording data set</td>
</tr>
<tr>
<td>EREP</td>
<td>Environmental Record and Editing Printing</td>
</tr>
<tr>
<td>GDDM</td>
<td>Graphical Data Display Manager</td>
</tr>
<tr>
<td>GDDM-PGF</td>
<td>GDDM-Presentation Graphics Facility</td>
</tr>
<tr>
<td>I/O</td>
<td>input/output</td>
</tr>
<tr>
<td>ICF</td>
<td>integrated control facility</td>
</tr>
<tr>
<td>ICU</td>
<td>GDDM-PGF interactive chart utility</td>
</tr>
<tr>
<td>IMS</td>
<td>Information Management System</td>
</tr>
<tr>
<td>ISPF</td>
<td>Interactive System Productivity Facility</td>
</tr>
<tr>
<td>IXF</td>
<td>Integration Exchange Format</td>
</tr>
<tr>
<td>JCL</td>
<td>job control language</td>
</tr>
<tr>
<td>JES</td>
<td>job entry subsystem</td>
</tr>
<tr>
<td>KSDS</td>
<td>key-sequenced data set</td>
</tr>
<tr>
<td>MAC</td>
<td>Message Authentication Codes</td>
</tr>
<tr>
<td>MCDS</td>
<td>migration control data set</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
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<tr>
<td>MVS</td>
<td>Multiple Virtual Storage</td>
</tr>
<tr>
<td>NPM/IP</td>
<td>NetView Performance Monitor for IP</td>
</tr>
<tr>
<td>OPC</td>
<td>Operation Planning and Control</td>
</tr>
<tr>
<td>OTMA</td>
<td>Open transaction manager access</td>
</tr>
<tr>
<td>PAV</td>
<td>Parallel Access Volumes</td>
</tr>
<tr>
<td>PIN</td>
<td>Personal Identification Number</td>
</tr>
<tr>
<td>PR/SM</td>
<td>Processor Resource/System Manager</td>
</tr>
<tr>
<td>QMF</td>
<td>Query Management Facility</td>
</tr>
<tr>
<td>RACF</td>
<td>Resource Access Control Facility</td>
</tr>
<tr>
<td>REXX</td>
<td>Restructured Extended Executor language</td>
</tr>
<tr>
<td>RMF</td>
<td>Resource Management Facility</td>
</tr>
<tr>
<td>SLR</td>
<td>Service Level Reporter</td>
</tr>
<tr>
<td>SMF</td>
<td>system management facilities</td>
</tr>
<tr>
<td>SMP/E</td>
<td>System Modification Program Extended</td>
</tr>
<tr>
<td>SQ</td>
<td>Shared queue IMS</td>
</tr>
<tr>
<td>SQLDA</td>
<td>SQL descriptor area (SQLDA)</td>
</tr>
<tr>
<td>TCB</td>
<td>Task Control Block</td>
</tr>
<tr>
<td>TSO/E</td>
<td>Time Sharing Option Extensions</td>
</tr>
<tr>
<td>TVC</td>
<td>Tape Volume Cache</td>
</tr>
<tr>
<td>TWS</td>
<td>Tivoli Workload Scheduler</td>
</tr>
<tr>
<td>VM</td>
<td>Virtual Machine</td>
</tr>
<tr>
<td>VMPRF</td>
<td>VM Performance Reporting Facility</td>
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<tr>
<td>VM/ESA</td>
<td>Virtual Machine/Enterprise System Architecture</td>
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<td>VM/XA</td>
<td>Virtual Machine/Extended Architecture</td>
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<tr>
<td>VTS</td>
<td>Virtual Tape Server</td>
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<td>WLM</td>
<td>Workload Manager</td>
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Glossary

A

administration. A Tivoli Decision Support for OS/390 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 Tivoli Decision Support for OS/390.

C

collect. A process used by Tivoli Decision Support for OS/390 to read data from input log data sets, interpret records in the data set, and store the data in DB2 tables in the Tivoli Decision Support for OS/390 database.

component. An optionally installable part of a Tivoli Decision Support for OS/390 feature.

control table. A predefined Tivoli Decision Support for OS/390 table that controls results returned by some log collector functions.

D

data table. A Tivoli Decision Support for OS/390 table that contains performance data used to create reports.

deinstall. An administration dialog option to remove a component from the list of installed components. This action involves deleting from Tivoli Decision Support for OS/390 system tables all definitions that the component uses.

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.

L

log collector. A Tivoli Decision Support for OS/390 program that processes log data sets and provides other Tivoli Decision Support for OS/390 services.

log collector language. Tivoli Decision Support for OS/390 statements used to supply definitions to and invoke services of the log collector.

log data set. Any sequential data set that is used as input to Tivoli Decision Support for OS/390.

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 expression. An expression that specifies how a value is obtained from a lookup table.

lookup table. A Tivoli Decision Support for OS/390 DB2 table that contains grouping, translation, or substitution information.

P

purge condition. Instruction for purging old data from the database.

R

record definition. The description of a record type contained in the log data sets used by Tivoli Decision Support for OS/390, 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.

repeated section. A section of a record that occurs more than once, with each occurrence adjacent to the previous one.

report definition language. Tivoli Decision Support for OS/390 statements used to define reports and report groups.

report group. A collection of Tivoli Decision Support for OS/390 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.

resource information. Environment information that describes the elements in a network.
S

section. A structure within a record that contains one or more fields and may contain other sections.

source. In an update definition, the record or DB2 table that contains the data used to update a Tivoli Decision Support for OS/390 DB2 table.

system table. A DB2 table that stores information that controls log collector processing, Tivoli Decision Support for OS/390 dialogs, and reporting.

T

target. In an update definition, the DB2 table in which Tivoli Decision Support for OS/390 stores data from the source record or table.

Tivoli Decision Support for OS/390 database. A set of DB2 tables that includes data tables, lookup tables, system tables, and control tables.

U

update definitions. 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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