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Preface

In a previous release of IBM® Tivoli® Decision Support for OS/390®, the System Performance Feature Reference was divided into two volumes. This book is Volume II.

This book provides reference information for the System Performance feature of Tivoli Decision Support for OS/390. It is a source of reference for:

- Installation and customization procedures for the System Performance feature
- Log records that the System Performance feature supports
- Record definitions that the System Performance feature uses to map performance data into Tivoli Decision Support for OS/390 DB2® tables
- DB2 tables that Tivoli Decision Support for OS/390 uses to store performance data
- Predefined reports that Tivoli Decision Support for OS/390 creates from performance data

You should use this book in conjunction with the System Performance Feature Guide.

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

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

The terms OPC and Tivoli Workload Scheduler for z/OS are used interchangeably throughout this book.

The terms IBM Tivoli Decision Support for OS/390 and Tivoli Decision Support for OS/390 and are used interchangeably throughout this book.

Who should read this book

System Performance Feature Reference Volume II is intended for those who analyze the performance of Multiple Virtual Storage (MVS), Virtual Machine (VM), and OS/2® systems, and for those who are responsible for establishing or meeting organization-wide service-level objectives for MVS, VM, or OS/2 systems. System Performance Feature Reference Volume II is intended for both Tivoli Decision Support for OS/390 administrators (primarily as a reference to table and column descriptions) and users with a variety of backgrounds who want to use Tivoli Decision Support for OS/390 to analyze MVS, VM, or OS/2 performance data.

The products monitored are listed in Table 1.

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</tr>
<tr>
<td>DB2</td>
<td>6.0, or later</td>
</tr>
<tr>
<td>DFSMS/MVS®</td>
<td>1.2, or later</td>
</tr>
<tr>
<td>DFSMS/OAM</td>
<td>1.5, or later</td>
</tr>
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</tr>
<tr>
<td>Domino™</td>
<td>5.0, or later</td>
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<tr>
<td>EREP</td>
<td>3.5</td>
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<tr>
<td>Internet Connection Secure Server</td>
<td>2.1</td>
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<td>IXFP</td>
<td>2.2, or later</td>
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<td>JES2/JES3</td>
<td>5.2, or later</td>
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<td>LINUX SUSE for OS/390</td>
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<td>LINUX SUSE</td>
<td>7.1</td>
</tr>
<tr>
<td>TurboLinux</td>
<td>6.5, or later</td>
</tr>
<tr>
<td>MQSeries®</td>
<td>2.1, or later</td>
</tr>
<tr>
<td>MQSeries for MVS/ESA™</td>
<td>2.1, or later</td>
</tr>
<tr>
<td>MVS</td>
<td>5.2, or later</td>
</tr>
<tr>
<td>MVS/DFP™</td>
<td>3.3, or later</td>
</tr>
<tr>
<td>NetView®</td>
<td>2.1, or later</td>
</tr>
<tr>
<td>OPC/ESA</td>
<td>2.3, or later</td>
</tr>
<tr>
<td>OS/390</td>
<td>2.10, or later</td>
</tr>
<tr>
<td>OS/390 Security Server</td>
<td>2.10, or later</td>
</tr>
<tr>
<td>RACF®</td>
<td>1.9, or later</td>
</tr>
<tr>
<td>RMF</td>
<td>5.2, or later</td>
</tr>
<tr>
<td>TCP/IP</td>
<td>3.3, or later, and OS/390 2.5</td>
</tr>
<tr>
<td>Tivoli Service Desk</td>
<td>4.2, or later</td>
</tr>
<tr>
<td>Tivoli Storage Manager for MVS and OS/390 (ADSM)</td>
<td>4.1, or later</td>
</tr>
<tr>
<td>Tivoli Workload Scheduler for z/OS</td>
<td>8.1, or later</td>
</tr>
<tr>
<td>VM/ESA®</td>
<td>1.2, or later</td>
</tr>
<tr>
<td>VM/XA SP</td>
<td>1.2, or later</td>
</tr>
<tr>
<td>VMPRF</td>
<td>4.1, or later</td>
</tr>
</tbody>
</table>

### What this book contains

This book contains the following sections:

- Parts I through XIII contain information about the following System Performance feature components:
  - Part 1, MQSeries for OS/390 component
  - Part 2, TCP/IP component
  - Part 3, Internet Connection Secure Server component for OS/390
  - Part 4, EREP component
  - Part 5, Tivoli Service Desk component
  - Part 6, IXFP component
  - Part 7, Message analysis/automation component
  - Part 8, TWS for z/OS (OPC) component
  - Part 9, RACF component
  - Part 10, VM accounting component
Part 11, VMPRF component
Part 12, LINUX component
Part 13, Domino component
Part 14, WebSphere component

Each part describes one component and provides some or all of the following information for that component:

- “Customization” describes the steps necessary to set up the component for your installation.
- “Data flow” describes the flow of data from log records to reports for the component.
- “Log and record definitions” lists the supported logs and the records used from the logs.
- “Data tables and lookup tables” describes the DB2 tables in the Tivoli Decision Support for OS/390 database provided with the component.
- “Reports” describes each report supplied with the component.

Part 15 contains a list of abbreviations, glossary, and index.

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, how to order Tivoli publications, and how to submit comments on Tivoli publications.

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.
Preface

- **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™).

- **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), Virtual Machine (VM), or OS/2 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), Virtual Machine (VM), or OS/2 performance data.

- **IBM® Online Library Omnibus Edition OS/390 Collection Kit, SK2T-6700 (available December 2001)**
  CD containing all OS/390 documentation.

- **IBM Online Library z/OS Software Products Collection Kit, SK3T-4270 (available March 2002)**
  CD containing all networking systems documentation.

The Tivoli Software Glossary includes definitions for many of the technical terms related to Tivoli software. The Tivoli Software Glossary is available, in English only, at the following Web site:

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

To use LookAt as a TSO/E command, you must have LookAt installed on your host system.

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/to/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 Accessibility Appendix in Administration_Guide.

Contacting software support

If you have a problem with any Tivoli product, refer to the following IBM Software Support Web site: [http://www.ibm.com/software/sysmgmt/products/support/](http://www.ibm.com/software/sysmgmt/products/support/)

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](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 you are in
- What information you must have before contacting IBM Software Support

Note: For Tivoli NetView for OS/390 customers only, additional support is available on the NETVIEW CFORUM (Customer Forum) through the IBMLink system. This forum is monitored by NetView developers who answer questions and provide guidance. When a problem with the code is found, you are asked to open an official problem management record (PMR) to get resolution.

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, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as Tip:, and Operating system considerations)
- Column headings in a table
- Keywords and parameters in text

*Italic*
Changes in this edition

The following changes appear in this edition of the System Performance Feature Reference vol.II:

• Part 14 describing the WebSphere component has been added.
• Information that describes the support for MQSeries Version 5.2 has been added to the MQSeries component of Volume II.
• New information that describes the support for Domino Release 5 has been included in Domino part of Volume II.
• New information about TWS for z/OS (OPC) has been added.
• Information that describes the support for OS/390 Version 2.9 and Version 2.10 has been added to the MVS and MVSPM components of Volume I.

Except for editorial changes, updates to this edition are marked with a vertical bar to the left of the change. For a complete list of the components described in Volume II, see “What this book contains” on page xiv.
## Part 1. MQSeries for OS/390 Component

### Chapter 1. Customization
- Make input data available

### Chapter 2. Data flow

### Chapter 3. Log and Record Definitions

### Chapter 4. Data tables
- MQS_ACCNT_CICS_T, _D, _M
- MQS_ACCNT_T, _D, _M
- MQS_ACCNT_IMS_T, _D, _M
- MQS_ACCNT_QUEUE_T, _D, _M
- MQS_ACCNT_TASK_T, _D, _M
- MQS_BUFFER_T, _D, _M
- MQS_COUPL_FAC_T, _D, _M
- MQS_DATA_T, _D, _M
- MQS_DB2_T, _D, _M
- MQS_LOCK_T, _D, _M
- MQS_LOGMGR_T, _D, _M
- MQS_MSG_T, _D, _M
- MQS_STORAGE_T, _D, _M

### Chapter 5. Reports
- MQSeries CICS Accounting, Daily
- MQSeries IMS Accounting, Daily
- MQSeries Accounting, Daily
- MQSeries Message Manager Statistics, Daily
- MQSeries Data Manager Statistics, Daily
- MQSeries Buffer Manager Statistics, Daily
- MQSeries Log Manager Statistics, Daily
**Chapter 1. Customization**

Before you can use the MQSeries component to collect data and create reports, you must customize the component by making input data available.

### Make input data available

Ensure that the appropriate SMF record types are written. Check that the CSQ6SYSP macro has the following two parameters set in the correct way:

- **SMFACCT**: Specifies whether SMF accounting data is collected when MQSeries is started. (SMF type 116)
- **SMFSTAT**: Specifies whether SMF statistics data is collected when MQSeries is started. (SMF type 115)

**Note:** COLLECT MQS is no longer supported. The COLLECT SMF collection process now includes the MQSeries SMF records types 115 and 116.
MQSeries customization
Chapter 2. Data flow

The MQSeries component collects records from the SMF data set and stores extracted and summarized data in the Tivoli Decision Support for OS/390 database. The reporting function extracts data from the database and creates the reports that you request through the reporting dialogs. Figure 1 shows an overview of the flow of data through the MQSeries component.

Figure 1. MQSeries component data flow
Chapter 3. Log and Record Definitions

The MQSeries component collects records from the system management facility (SMF) logs. MQSeries writes records that contain information about MQI requests, various object requests, buffer manager statistics, log manager data, DB2 manager data, coupling facility manager data, and accounting data at queue and thread level.

MQS_115_1
Contains system information related to the SMF logs and storage pools.

MQS_115_2
Contains MQSeries information about the number of messages, the MQSeries buffer, paging information, and statistics for lock manager, DB2 manager, and coupling facility manager.

MQS_116_0
Contains accounting data for MQSeries message manager.

MQS_116_1
Contains thread-level and queue-level accounting data for each task using MQSeries.

MQS_116_2
Contains additional queue-level accounting data (if the tasks used more queues than could fit in the MQS_116_1 record).
MQSeries log and record definitions
Chapter 4. Data tables

This chapter describes the data tables used by the MQSeries component.

**MQS_ACCNT_CICS_T, _D, _M**

These tables provide detailed, daily, and monthly accounting data for the CICS application environment. They contain data from SMF type 116.

The default retention periods for these tables are:
- MQS_ACCNT_CICS_T: 7 days
- MQS_ACCNT_CICS_D: 30 days
- MQS_ACCNT_CICS_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>SUBSYSTEM_NAME</td>
<td>CHAR(4)</td>
<td>The subsystem name.</td>
</tr>
<tr>
<td>USERID_MVS_JOB</td>
<td>CHAR(8)</td>
<td>The user ID associated with the MVS job.</td>
</tr>
<tr>
<td>CONNECT_NAME</td>
<td>CHAR(8)</td>
<td>The connection name.</td>
</tr>
<tr>
<td>USERID_TRANS</td>
<td>CHAR(8)</td>
<td>The user ID associated with the transaction.</td>
</tr>
<tr>
<td>CICS_THREAD_NR</td>
<td>CHAR(8)</td>
<td>The CICS thread number.</td>
</tr>
<tr>
<td>CICS_TRAN_NAME</td>
<td>CHAR(4)</td>
<td>The CICS transaction name.</td>
</tr>
<tr>
<td>CICS_TASK_NR</td>
<td>CHAR(8)</td>
<td>The CICS task number.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>INTEGER</td>
<td>The number of records read.</td>
</tr>
<tr>
<td>CONNECTION</td>
<td>CHAR(22)</td>
<td>The type of connecting system.</td>
</tr>
<tr>
<td>CPU_TIME_SEC</td>
<td>FLOAT</td>
<td>The CPU time used in seconds.</td>
</tr>
<tr>
<td>MQPUT_REQ_A</td>
<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length 0 through 99 bytes.</td>
</tr>
<tr>
<td>MQPUT_REQ_B</td>
<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length 100 through 999 bytes.</td>
</tr>
<tr>
<td>MQPUT_REQ_C</td>
<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length 1000 through 9999 bytes.</td>
</tr>
<tr>
<td>MQPUT_REQ_D</td>
<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length greater than or equal to 10000 bytes.</td>
</tr>
<tr>
<td>MQGET_REQ_A</td>
<td>INTEGER</td>
<td>The number of MQGET requests for messages of length 0 through 99 bytes.</td>
</tr>
<tr>
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<tr>
<td>MQGET_REQ_C</td>
<td>INTEGER</td>
<td>The number of MQGET requests for messages of length 1000 through 9999 bytes.</td>
</tr>
</tbody>
</table>
### MQSeries data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQGET_REQ_D</td>
<td>INTEGER</td>
<td>The number of MQGET requests for messages of length greater than or equal to 10000 bytes.</td>
</tr>
</tbody>
</table>
MQSeries data tables

MQS_ACCNT_T, _D, _M

These tables provide detailed, daily, and monthly accounting data for MVS batch or TSO environment. They contain data from SMF type 116.

The default retention periods for these tables are:
- MQS_ACCNT_T: 7 days
- MQS_ACCNT_D: 30 days
- MQS_ACCNT_M: 765 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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>k CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>SUBSYTEM_NAME</td>
<td>k CHAR(4)</td>
<td>The subsystem name.</td>
</tr>
<tr>
<td>USERID_MVS_JOB</td>
<td>k CHAR(8)</td>
<td>The user ID associated with the MVS job.</td>
</tr>
<tr>
<td>CONNECT_NAME</td>
<td>k CHAR(8)</td>
<td>Connection name.</td>
</tr>
<tr>
<td>USERID_TRANS</td>
<td>k CHAR(8)</td>
<td>The user ID associated with the transaction.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>INTEGER</td>
<td>The number of records read.</td>
</tr>
<tr>
<td>CONNECTION</td>
<td>CHAR(22)</td>
<td>The type of connecting system.</td>
</tr>
<tr>
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<td>FLOAT</td>
<td>The CPU time used in seconds.</td>
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<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length 0 through 99 bytes.</td>
</tr>
<tr>
<td>MQPUT_REQ_B</td>
<td>INTEGER</td>
<td>The number of MQPUT requests for messages of length 100 through 999 bytes.</td>
</tr>
</tbody>
</table>
| MQPUT_REQ_C        | INTEGER   | The number of MQPUT requests for messages of length 1000 through 9999 bytes.
| MQPUT_REQ_D        | INTEGER   | The number of MQPUT requests for messages of length greater than or equal to 10000 bytes. |
| MQGET_REQ_A        | INTEGER   | The number of MQGET requests for messages of length 0 through 99 bytes.    |
| MQGET_REQ_B        | INTEGER   | The number of MQGET requests for messages of length 100 through 999 bytes. |
| MQGET_REQ_C        | INTEGER   | The number of MQGET requests for messages of length 1000 through 9999 bytes. |
| MQGET_REQ_D        | INTEGER   | The number of MQGET requests for messages of length greater than or equal to 10000 bytes. |
MQSeries data tables

MQS_ACCNT_IMS_T, _D, _M

These tables provide detailed, daily, and monthly accounting data for MVS batch or TSO environment. They contain data from SMF type 116.

The default retention periods for these tables are:
- MQS_ACCNT_IMS_T: 7 days
- MQS_ACCNT_IMS_D: 30 days
- MQS_ACCNT_IMS_M: 765 days

<table>
<thead>
<tr>
<th>Column name</th>
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<tr>
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<td>The connection name.</td>
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<tr>
<td>USERID_TRANS</td>
<td>CHAR(8)</td>
<td>The user ID associated with the transaction.</td>
</tr>
<tr>
<td>ACCOUNT_TOKEN</td>
<td>CHAR(22)</td>
<td>The accounting token.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>INTEGER</td>
<td>The number of records read.</td>
</tr>
<tr>
<td>IMS_PST_REG_ID</td>
<td>CHAR(4)</td>
<td>The IMS partition specification table region identifier.</td>
</tr>
<tr>
<td>IMS_PSB_NAME</td>
<td>CHAR(8)</td>
<td>The IMS program specification block name.</td>
</tr>
<tr>
<td>CONNECTION</td>
<td>CHAR(22)</td>
<td>The type of connecting system.</td>
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<td>INTEGER</td>
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</tr>
</tbody>
</table>
These tables provide detailed, daily, and monthly accounting data. They contain data from SMF type 116, subtypes 1 and 2.

The default retention periods for these tables are:
- MQS_ACCNT_QUEUE_T: 7 days
- MQS_ACCNT_QUEUE_D: 30 days
- MQS_ACCNT_QUEUE_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>CONNECTION_NAME</td>
<td>CHAR(8)</td>
<td>Name of the connection.</td>
</tr>
<tr>
<td>ORIG_PRIM_AUTHID</td>
<td>CHAR(8)</td>
<td>Original primary authorization ID.</td>
</tr>
<tr>
<td>RRS_CONN_NETW_ID</td>
<td>CHAR(17)</td>
<td>Network ID for RRS connections.</td>
</tr>
<tr>
<td>MMOVER_CHAN_NAME</td>
<td>CHAR(20)</td>
<td>Channel name for MVS mover.</td>
</tr>
<tr>
<td>MMOVER_LCONN_NAME</td>
<td>CHAR(48)</td>
<td>Long connection name for MVS mover.</td>
</tr>
<tr>
<td>PRIMARY_AUTHID</td>
<td>CHAR(8)</td>
<td>Primary authorization ID.</td>
</tr>
<tr>
<td>CORRELATOR_ID</td>
<td>CHAR(16)</td>
<td>Correlator ID.</td>
</tr>
<tr>
<td>MQOPEN_QUEUE_NAME</td>
<td>CHAR(48)</td>
<td>Queue name as specified in OD of MQOPEN request.</td>
</tr>
<tr>
<td>QUEUE_BASE_NAME</td>
<td>CHAR(48)</td>
<td>Base queue name to which OBJNAME resolved.</td>
</tr>
<tr>
<td>TASK_CONNECTED</td>
<td>CHAR(18)</td>
<td>The connection type for this task:</td>
</tr>
<tr>
<td>QUEUE_TYPE</td>
<td>INTEGER</td>
<td>Type of queue:</td>
</tr>
<tr>
<td>QUEUE_QSGDISP</td>
<td>INTEGER</td>
<td>The QSGDISP of the queue.</td>
</tr>
<tr>
<td>MQCLOS_CALLS</td>
<td>INTEGER</td>
<td>Number of MQCLOSE requests that were processed.</td>
</tr>
<tr>
<td>MQCLOS_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQCLOSE requests.</td>
</tr>
<tr>
<td>MQCLOS_ELAPS_TIME</td>
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<td>Total elapsed time that was spent performing MQCLOSE requests.</td>
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<tr>
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</tr>
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</tr>
<tr>
<td>Column name</td>
<td>Data type</td>
<td>Description</td>
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<tr>
<td>---------------------</td>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>MQOPEN_ELAPS_TIME</td>
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<td>Total elapsed time that was spent performing MQOPEN requests.</td>
</tr>
<tr>
<td>MQGET_CALLS</td>
<td>INTEGER</td>
<td>Number of MQGET requests that were processed.</td>
</tr>
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<td>MQGET_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQGET requests.</td>
</tr>
<tr>
<td>MQGET_ELAPS_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent performing MQGET requests.</td>
</tr>
<tr>
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<td>INTEGER</td>
<td>Number of MQGET BROWSE ANY requests.</td>
</tr>
<tr>
<td>MQGET_BROWSE_SPEC</td>
<td>INTEGER</td>
<td>Number of MQGET BROWSE SPEC requests.</td>
</tr>
<tr>
<td>MQGET_DESTRU_ANY</td>
<td>INTEGER</td>
<td>Number of MQGET DESTRUCTIVE ANY requests.</td>
</tr>
<tr>
<td>MQGET_DESTRU_SPEC</td>
<td>INTEGER</td>
<td>Number of MQGET DESTRUCTIVE SPECIFIC requests.</td>
</tr>
<tr>
<td>MQGET_UNACCOUNTABLE</td>
<td>INTEGER</td>
<td>Number of undeterminable MQGET requests.</td>
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<td>FLOAT</td>
<td>Elapsed time waiting for log writes during MQGET.</td>
</tr>
<tr>
<td>MQGET_WRLOG_REQS</td>
<td>INTEGER</td>
<td>Number of log writes during MQGET.</td>
</tr>
<tr>
<td>MQGET_RDPGS_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time waiting for pageset reads during MQGET.</td>
</tr>
<tr>
<td>MQGET_RDPGS_REQS</td>
<td>INTEGER</td>
<td>Number of pageset reads during MQGET.</td>
</tr>
<tr>
<td>MQGET_SUSP_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time suspended waiting for MQGET.</td>
</tr>
<tr>
<td>MQGET_SUSPENDS</td>
<td>INTEGER</td>
<td>Number of times suspended during MQGET.</td>
</tr>
<tr>
<td>MQGET_PAGES_SKIP</td>
<td>INTEGER</td>
<td>Number of pages skipped during MQGET.</td>
</tr>
<tr>
<td>MQGET_MSGS_SKIP</td>
<td>INTEGER</td>
<td>Number of messages skipped during MQGET.</td>
</tr>
<tr>
<td>MQGET_MSG_PERSIS</td>
<td>INTEGER</td>
<td>Number of persistent messages got by MQGET.</td>
</tr>
<tr>
<td>MQGET_EX_MSGS_PRC</td>
<td>INTEGER</td>
<td>Number of expired messages that were processed during MQGETs.</td>
</tr>
<tr>
<td>MQPUT_CALLS</td>
<td>INTEGER</td>
<td>Number of MQPUT requests that were processed.</td>
</tr>
<tr>
<td>MQPUT_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQPUT requests.</td>
</tr>
<tr>
<td>MQPUT_ELAPS_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent performing MQPUT requests.</td>
</tr>
<tr>
<td>MQPUT_MSG_PERSIS</td>
<td>INTEGER</td>
<td>Number of persistent messages got by MQPUT.</td>
</tr>
<tr>
<td>MQPUT_WRLOG_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time waiting for log writes during MQPUT.</td>
</tr>
<tr>
<td>MQPUT_WRLOG_REQS</td>
<td>INTEGER</td>
<td>Number of log writes during MQPUT.</td>
</tr>
<tr>
<td>MQPUT_SUSP_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time suspended during MQPUT.</td>
</tr>
<tr>
<td>MQPUT_SUSPENDS</td>
<td>INTEGER</td>
<td>Number of times suspended during MQPUT.</td>
</tr>
<tr>
<td>MQPUT_PGSSUSP_TME</td>
<td>FLOAT</td>
<td>Elapsed time suspended on pageset during MQPUT.</td>
</tr>
<tr>
<td>MQPUT_PGSET_REQS</td>
<td>INTEGER</td>
<td>Number of pageset requests during MQPUT.</td>
</tr>
<tr>
<td>MQPUT1_CALLS</td>
<td>INTEGER</td>
<td>Number of MQPUT1 requests that were processed.</td>
</tr>
<tr>
<td>MQPUT1_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQPUT1 requests.</td>
</tr>
<tr>
<td>MQPUT1_ELAPS_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent performing MQPUT1 requests.</td>
</tr>
<tr>
<td>MQPUT1_MSG_PERSIS</td>
<td>INTEGER</td>
<td>Number of persistent messages got by MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_WRLOG_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time waiting for log writes during MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_WRLOG_REQS</td>
<td>INTEGER</td>
<td>Number of log writes during MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_SUSP_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time suspended during MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_SUSPENDS</td>
<td>INTEGER</td>
<td>Number of times suspended during MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_PGSSUSP_TME</td>
<td>FLOAT</td>
<td>Elapsed time suspended on pageset during MQPUT1.</td>
</tr>
<tr>
<td>MQPUT1_PGSET_REQS</td>
<td>INTEGER</td>
<td>Number of pageset requests during MQPUT1.</td>
</tr>
<tr>
<td>MQINQ_CALLS</td>
<td>INTEGER</td>
<td>Number of MQINQ requests that were processed.</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>MQINQ_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQINQ requests.</td>
</tr>
<tr>
<td>MQINQ_ELAPS_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent performing MQINQ requests.</td>
</tr>
<tr>
<td>MQSET_CALLS</td>
<td>INTEGER</td>
<td>Number of MQSET requests that were processed.</td>
</tr>
<tr>
<td>MQSET_CPU_TIME</td>
<td>FLOAT</td>
<td>Total CPU time that was spent performing MQSET requests.</td>
</tr>
<tr>
<td>MQSET_ELAPS_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent performing MQSET requests.</td>
</tr>
<tr>
<td>MQSET_WRLOG_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time waiting for log writes during MQSET.</td>
</tr>
<tr>
<td>MQSET_WRLOG_REQS</td>
<td>INTEGER</td>
<td>Number of log writes during MQSET.</td>
</tr>
<tr>
<td>MQPUT1_BYTES_WRIT</td>
<td>FLOAT</td>
<td>Total number of bytes written during MQPUT1.</td>
</tr>
<tr>
<td>MQGET_BYTES_READ</td>
<td>FLOAT</td>
<td>Total number of data bytes read during MQGET.</td>
</tr>
<tr>
<td>MQPUT_SUCCESSFUL</td>
<td>INTEGER</td>
<td>Total number of successful puts.</td>
</tr>
<tr>
<td>MQGET_SUCCESSFUL</td>
<td>INTEGER</td>
<td>Total number of successful gets.</td>
</tr>
<tr>
<td>GENERATED_MSGS</td>
<td>INTEGER</td>
<td>Number of generated messages.</td>
</tr>
<tr>
<td>MQGET_MSG_SIZ_MAX</td>
<td>INTEGER</td>
<td>Maximum message size retrieved by MQGET.</td>
</tr>
<tr>
<td>MQGET_MSG_SIZ_MIN</td>
<td>INTEGER</td>
<td>Minimum message size retrieved by MQGET.</td>
</tr>
<tr>
<td>MQPUT_MSG_SIZ_MAX</td>
<td>INTEGER</td>
<td>Maximum message size written by MQPUT.</td>
</tr>
<tr>
<td>MQPUT_MSG_SIZ_MIN</td>
<td>INTEGER</td>
<td>Minimum message size written by MQPUT.</td>
</tr>
<tr>
<td>MSG_LATENCY_MAX</td>
<td>FLOAT</td>
<td>The elapsed time of a retrieved message that has spent the maximum time on the queue.</td>
</tr>
<tr>
<td>MSG_LATENCY_MIN</td>
<td>FLOAT</td>
<td>The elapsed time of a retrieved message that has spent the minimum time on the queue.</td>
</tr>
<tr>
<td>MSG_LATENCY_TOT</td>
<td>FLOAT</td>
<td>The total time spent on the queue of all the retrieved messages.</td>
</tr>
<tr>
<td>QUEUE_CUR_HANDLES</td>
<td>INTEGER</td>
<td>The current number of handles resolving to this OBJNAME/BASENAME queue.</td>
</tr>
<tr>
<td>QUEUE_CALLS_TOT</td>
<td>INTEGER</td>
<td>Total number of API calls resolving to this queue.</td>
</tr>
</tbody>
</table>
MQSeries data tables

MQS_ACCNT_TASK_T, _D, _M

These tables provide detailed, daily, and monthly accounting data for each task. They contain data from SMF type 116, subtype 1.

The default retention periods for these tables are:
- MQS_ACCNT_TASK_T: 7 days
- MQS_ACCNT_TASK_D: 30 days
- MQS_ACCNT_TASK_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>CONNECTION_NAME</td>
<td>CHAR(8)</td>
<td>Name of the connection.</td>
</tr>
<tr>
<td>ORIG_PRIM_AUTHID</td>
<td>CHAR(8)</td>
<td>Original primary authorization ID.</td>
</tr>
<tr>
<td>RRS_CONN_NETW_ID</td>
<td>CHAR(17)</td>
<td>Network ID for RRS connections.</td>
</tr>
<tr>
<td>MMOVER_CHAN_NAME</td>
<td>CHAR(20)</td>
<td>Channel name for MVS mover.</td>
</tr>
<tr>
<td>MMOVER_LCONN_NAME</td>
<td>CHAR(48)</td>
<td>Long connection name for MVS mover.</td>
</tr>
<tr>
<td>PRIMARY_AUTHID</td>
<td>CHAR(8)</td>
<td>Primary authorization ID.</td>
</tr>
<tr>
<td>CORRELATOR_ID</td>
<td>CHAR(16)</td>
<td>Correlator ID.</td>
</tr>
</tbody>
</table>
| TASK_CONNECTED       | CHAR(18)  | The connection type for this task. Values are:
|                      |           | 0 - Internal task
|                      |           | 1 - CICS Attach
|                      |           | 2 - MVS/TSO Attach
|                      |           | 3 - IMS Control region
|                      |           | 4 - IMS MPP region
|                      |           | 5 - Command Server
|                      |           | 6 - MVS Mover
|                      |           | 7 - RRS Stub
|                      |           | 8 - IGQ agent
<p>| TASK_BACKOU_CPUTM    | FLOAT     | Total CPU time that was spent processing backout requests. |
| TASK_BACKOU_ETIME    | FLOAT     | Total elapsed time that was spent processing backout requests. |
| TASK_BACKOU_NUM      | INTEGER   | Number of backout requests. |
| TASK_COMMIT_CPUTM    | FLOAT     | Total CPU time that was spent processing commit requests. |
| TASK_COMMIT_ETIME    | FLOAT     | Total elapsed time that was spent processing commit requests. |
| TASK_COMMIT_NUM      | INTEGER   | Number of commit requests. |
| TASK_DB2_ETME_SRV    | FLOAT     | Elapsed time spent by DB2SRVxx task executing DB2 request. |
| TASK_DB2_ETME_THR    | FLOAT     | Elapsed time spent in DB2 resource manager under the threads TCB (including time spent switched to server TCB). |
| TASK_DB2_ET_SR_MX    | FLOAT     | Maximum STCK elapsed time seen for WTASDBES. |
| TASK_DB2_ET_TH_MX    | FLOAT     | Maximum STCK elapsed time seen for WTASDBET. |
| TASK_DB2_REQUESTS    | INTEGER   | Number of requests to the DB2 resource manager for this thread. |
| TASK_DB2_TCB_THR     | FLOAT     | Thread TCB only time. (THR time - SRV time). |</p>
<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASK_GET_PAGS_NEW</td>
<td>INTEGER</td>
<td>Number of new pages that were retrieved.</td>
</tr>
<tr>
<td>TASK_GET_PAGS_OLD</td>
<td>INTEGER</td>
<td>Number of old pages that were retrieved.</td>
</tr>
<tr>
<td>TASK_IXLLSTE_CALL</td>
<td>INTEGER</td>
<td>Number of IXLLSTE calls.</td>
</tr>
<tr>
<td>TASK_IXLLSTM_CALL</td>
<td>INTEGER</td>
<td>Number of IXLLSTM calls.</td>
</tr>
<tr>
<td>TASK_IXLLSTE_ETME</td>
<td>FLOAT</td>
<td>STCK differential time spent executing IXLLSTE calls.</td>
</tr>
<tr>
<td>TASK_IXLLSTM_ETME</td>
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<td>STCK differential time spent executing IXLLSTM calls.</td>
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<td>TASK_IXLLSTE_REDR</td>
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<td>Number of IXLLSTE redrives.</td>
</tr>
<tr>
<td>TASK_IXLLSTM_REDR</td>
<td>INTEGER</td>
<td>Number of IXLLSTM redrives.</td>
</tr>
<tr>
<td>TASK_LOGWRI_BYTES</td>
<td>INTEGER</td>
<td>Number of bytes written to log.</td>
</tr>
<tr>
<td>TASK_LOGWRI_ETIME</td>
<td>FLOAT</td>
<td>Elapsed time that was spent waiting for log writes.</td>
</tr>
<tr>
<td>TASK_LOGWRI_NUM</td>
<td>INTEGER</td>
<td>Number of log writes.</td>
</tr>
<tr>
<td>TASK_LTC1_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 01.</td>
</tr>
<tr>
<td>TASK_LTC2_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 02.</td>
</tr>
<tr>
<td>TASK_LTC3_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 03.</td>
</tr>
<tr>
<td>TASK_LTC4_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 04.</td>
</tr>
<tr>
<td>TASK_LTC5_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 05.</td>
</tr>
<tr>
<td>TASK_LTC6_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 06.</td>
</tr>
<tr>
<td>TASK_LTC7_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 07.</td>
</tr>
<tr>
<td>TASK_LTC8_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 08.</td>
</tr>
<tr>
<td>TASK_LTC9_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 09.</td>
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<tr>
<td>TASK_LTC10_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 10.</td>
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<tr>
<td>TASK_LTC11_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 11.</td>
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<tr>
<td>TASK_LTC12_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 12.</td>
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<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 13.</td>
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<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 14.</td>
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<tr>
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<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 15.</td>
</tr>
<tr>
<td>TASK_LTC16_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 16.</td>
</tr>
<tr>
<td>TASK_LTC17_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 17.</td>
</tr>
<tr>
<td>TASK_LTC18_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 18.</td>
</tr>
<tr>
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<td>Number of times that a wait occurred for latch class 19.</td>
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<td>Number of times that a wait occurred for latch class 20.</td>
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<td>Number of times that a wait occurred for latch class 21.</td>
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<tr>
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<td>Number of times that a wait occurred for latch class 22.</td>
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<td>Number of times that a wait occurred for latch class 23.</td>
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<td>Number of times that a wait occurred for latch class 24.</td>
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<td>Number of times that a wait occurred for latch class 26.</td>
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<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 27.</td>
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<tr>
<td>TASK_LTC28_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 28.</td>
</tr>
<tr>
<td>TASK_LTC29_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 29.</td>
</tr>
<tr>
<td>TASK_LTC30_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 30.</td>
</tr>
</tbody>
</table>
MQSeries data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASK_LTCH31_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 31.</td>
</tr>
<tr>
<td>TASK_LTCH32_W_NUM</td>
<td>INTEGER</td>
<td>Number of times that a wait occurred for latch class 32.</td>
</tr>
<tr>
<td>TASK_LTCH_NUM_MAX</td>
<td>INTEGER</td>
<td>The latch class for which the longest waiting elapsed time occurred.</td>
</tr>
<tr>
<td>TASK_LTCH01_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 01.</td>
</tr>
<tr>
<td>TASK_LTCH02_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 02.</td>
</tr>
<tr>
<td>TASK_LTCH03_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 03.</td>
</tr>
<tr>
<td>TASK_LTCH04_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 04.</td>
</tr>
<tr>
<td>TASK_LTCH05_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 05.</td>
</tr>
<tr>
<td>TASK_LTCH06_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 06.</td>
</tr>
<tr>
<td>TASK_LTCH07_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 07.</td>
</tr>
<tr>
<td>TASK_LTCH08_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 08.</td>
</tr>
<tr>
<td>TASK_LTCH09_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 09.</td>
</tr>
<tr>
<td>TASK_LTCH10_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 10.</td>
</tr>
<tr>
<td>TASK_LTCH11_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 11.</td>
</tr>
<tr>
<td>TASK_LTCH12_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 12.</td>
</tr>
<tr>
<td>TASK_LTCH13_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 13.</td>
</tr>
<tr>
<td>TASK_LTCH14_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 14.</td>
</tr>
<tr>
<td>TASK_LTCH15_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 15.</td>
</tr>
<tr>
<td>TASK_LTCH16_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 16.</td>
</tr>
<tr>
<td>TASK_LTCH17_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 17.</td>
</tr>
<tr>
<td>TASK_LTCH18_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 18.</td>
</tr>
<tr>
<td>TASK_LTCH19_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 19.</td>
</tr>
<tr>
<td>TASK_LTCH20_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 20.</td>
</tr>
<tr>
<td>TASK_LTCH21_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 21.</td>
</tr>
<tr>
<td>TASK_LTCH22_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 22.</td>
</tr>
<tr>
<td>TASK_LTCH23_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 23.</td>
</tr>
<tr>
<td>TASK_LTCH24_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 24.</td>
</tr>
<tr>
<td>TASK_LTCH25_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 25.</td>
</tr>
<tr>
<td>TASK_LTCH26_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 26.</td>
</tr>
<tr>
<td>TASK_LTCH27_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 27.</td>
</tr>
<tr>
<td>TASK_LTCH28_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 28.</td>
</tr>
<tr>
<td>TASK_LTCH29_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 29.</td>
</tr>
<tr>
<td>TASK_LTCH30_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 30.</td>
</tr>
<tr>
<td>TASK_LTCH31_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 31.</td>
</tr>
<tr>
<td>TASK_LTCH32_WTIME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for latch class 32.</td>
</tr>
<tr>
<td>TASK_LWR_FDSD_WTM_MAX</td>
<td>FLOAT</td>
<td>Maximum elapsed time spent waiting on a latch class.</td>
</tr>
<tr>
<td>TASK_LWR_FDSD_NUM</td>
<td>INTEGER</td>
<td>Number of log forces.</td>
</tr>
<tr>
<td>TASK_LWR_FDSD_TME</td>
<td>FLOAT</td>
<td>Elapsed time spent waiting for log to be forced.</td>
</tr>
<tr>
<td>TASK_OTHCAL_CPUTM</td>
<td>FLOAT</td>
<td>Total CPU time that was spent processing Other requests.</td>
</tr>
<tr>
<td>TASK_OTHCAL_ETIME</td>
<td>FLOAT</td>
<td>Total elapsed time that was spent processing Other requests.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TASK_OTHCAL_NUM</td>
<td>INTEGER</td>
<td>Number of Other requests.</td>
</tr>
<tr>
<td>TASK_SUSPENDED</td>
<td>INTEGER</td>
<td>Number of times that a task was suspended.</td>
</tr>
<tr>
<td>TASK_SUSPEN_TIME</td>
<td>FLOAT</td>
<td>Total elapsed time that a task was suspended.</td>
</tr>
</tbody>
</table>
MQSeries data tables

MQS_BUFFER_T, _D, _M

These tables provide detailed, daily, and monthly statistics data for buffer manager. They contain data from SMF type 115 and subtype 1.

The default retention periods for these tables are:
- MQS_BUFFER_T: 7 days
- MQS_BUFFER_D: 30 days
- MQS_BUFFER_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>BUFFER_POOL_ID</td>
<td>INTEGER</td>
<td>The Buffer pool identifier (0000-0003).</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>INTEGER</td>
<td>The number of records read.</td>
</tr>
<tr>
<td>AVG_NR_BUF</td>
<td>FLOAT</td>
<td>The average number of buffers in this buffer pool.</td>
</tr>
<tr>
<td>LOWEST_NR_BUF</td>
<td>INTEGER</td>
<td>The lowest number of available buffers.</td>
</tr>
<tr>
<td>AVG_AVAIL_NR_BUF</td>
<td>FLOAT</td>
<td>The average number of available buffers.</td>
</tr>
<tr>
<td>PAGE_GETREQ_CUR</td>
<td>INTEGER</td>
<td>The number of page get requests where the current page contents are required.</td>
</tr>
<tr>
<td>PAGE_GETREQ_NEW</td>
<td>INTEGER</td>
<td>The number of get requests for a new or empty page.</td>
</tr>
<tr>
<td>PAGE_READ_DASD</td>
<td>INTEGER</td>
<td>The number of page read from DASD operations.</td>
</tr>
<tr>
<td>PAGE_UPDATES</td>
<td>INTEGER</td>
<td>The number of page updates.</td>
</tr>
<tr>
<td>PAGE_WRITE_DASD</td>
<td>INTEGER</td>
<td>The number of pages written to DASD.</td>
</tr>
<tr>
<td>PAGE_WRITE_OPER</td>
<td>INTEGER</td>
<td>The number of page write operations.</td>
</tr>
<tr>
<td>SYNCH_PAG_WRT_OP</td>
<td>INTEGER</td>
<td>The number of synchronous page write operations.</td>
</tr>
<tr>
<td>ASYNCH_WRT_OPER</td>
<td>INTEGER</td>
<td>The number of times that the asynchronous write processor was started.</td>
</tr>
<tr>
<td>SYNCH_PAGE_OPER</td>
<td>INTEGER</td>
<td>The number of times that the synchronous page processor was started because the synchronous write threshold was reached.</td>
</tr>
<tr>
<td>PAG_GETREQ_NOTFND</td>
<td>INTEGER</td>
<td>The number of times that a page get request did not find the page already in the buffer pool.</td>
</tr>
<tr>
<td>HASH_CHAIN_CHG</td>
<td>INTEGER</td>
<td>The number of times that the hash chain has been changed during a buffer steal.</td>
</tr>
<tr>
<td>NO_AVAIL_BUF</td>
<td>INTEGER</td>
<td>The number of times that NO available buffers were found.</td>
</tr>
</tbody>
</table>
**MQS_COUPL_FAC_T, _D, _M**

These tables provide detailed, daily, and monthly statistics data for coupling facility manager. They contain data from SMF type 115, subtype 2.

The default retention periods for these tables are:
- MQS_COUPL_FAC_T: 7 days
- MQS_COUPL_FAC_D: 30 days
- MQS_COUPL_FAC_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>MQCPL_FULL_CNT</td>
<td>INTEGER</td>
<td>Number of ‘structure fulls’.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTE_CNT</td>
<td>INTEGER</td>
<td>Number of IXLLSTE calls.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTM_CNT</td>
<td>INTEGER</td>
<td>Number of IXLLSTM calls.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTE_RED</td>
<td>INTEGER</td>
<td>Number of IXLLSTE redrives.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTM_RED</td>
<td>INTEGER</td>
<td>Number of IXLLSTM redrives.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTE_TM</td>
<td>FLOAT</td>
<td>Time spent doing IXLLSTE calls.</td>
</tr>
<tr>
<td>MQCPL_IXLLSTM_TM</td>
<td>FLOAT</td>
<td>Time spent doing IXLLSTM calls.</td>
</tr>
<tr>
<td>MQCPL_MAX_ELE_US</td>
<td>INTEGER</td>
<td>Maximum number of elements in use.</td>
</tr>
<tr>
<td>MQCPL_MAX_ENT_US</td>
<td>INTEGER</td>
<td>Maximum number of entries in use.</td>
</tr>
<tr>
<td>MQCPL_STRUCT_CNT</td>
<td>INTEGER</td>
<td>Number of structures.</td>
</tr>
</tbody>
</table>
MQSeries data tables

MQS_DATA_T, _D, _M

These tables provide detailed, daily, and monthly statistics data for data manager. They contain data from SMF type 115, subtype 2.

The default retention periods for these tables are:
- MQS_DATA_T: 7 days
- MQS_DATA_D: 30 days
- MQS_DATA_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>ENUM_SEL_REQ</td>
<td>INTEGER</td>
<td>The number of Enumerate/Select requests.</td>
</tr>
<tr>
<td>MSG_CNT_REQ</td>
<td>INTEGER</td>
<td>The number of message count requests.</td>
</tr>
<tr>
<td>MSG_GET_OFF_DISK</td>
<td>INTEGER</td>
<td>The number of Gets that obtained messages from the disk.</td>
</tr>
<tr>
<td>MSG_GET_REQ</td>
<td>INTEGER</td>
<td>The number of message get requests.</td>
</tr>
<tr>
<td>MSG_PUT_REQ</td>
<td>INTEGER</td>
<td>The number of message put requests.</td>
</tr>
<tr>
<td>MSG_READ_BP</td>
<td>INTEGER</td>
<td>The number of Reads that obtained messages from the buffer pool.</td>
</tr>
<tr>
<td>OBJ_CREATE_REQ</td>
<td>INTEGER</td>
<td>The number of Object_Create requests.</td>
</tr>
<tr>
<td>OBJ_PUT_REQ</td>
<td>INTEGER</td>
<td>The number of Object_Put requests.</td>
</tr>
<tr>
<td>OBJ_DELETE_REQ</td>
<td>INTEGER</td>
<td>The number of Object_Delete requests.</td>
</tr>
<tr>
<td>OBJ_GET_REQ</td>
<td>INTEGER</td>
<td>The number of Object_Get requests.</td>
</tr>
<tr>
<td>OBJ_LOCATE_REQ</td>
<td>INTEGER</td>
<td>The number of Object_Locate requests.</td>
</tr>
<tr>
<td>READ_AHEAD_BPOOL</td>
<td>INTEGER</td>
<td>The number of Read aheads from the buffer pool.</td>
</tr>
<tr>
<td>READ_AHEAD_IO</td>
<td>INTEGER</td>
<td>The number of Read aheads during I/O.</td>
</tr>
<tr>
<td>REL_BRW_LOCK_REQ</td>
<td>INTEGER</td>
<td>The number of Release_Browse_Lock requests.</td>
</tr>
<tr>
<td>STGCLASS_CHG_REQ</td>
<td>INTEGER</td>
<td>The number of Stgclas requests.</td>
</tr>
</tbody>
</table>
These tables provide detailed, daily, and monthly statistics for DB2 manager. They contain data from SMF type 115, subtype 2.

The default retention periods for these tables are:
- MQS_DB2_T: 7 days
- MQS_DB2_D: 30 days
- MQS_DB2_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>MQDB2_ABND_CNT</td>
<td>INTEGER</td>
<td>Number of DB2SRV task abends.</td>
</tr>
<tr>
<td>MQDB2_ACT_TASK</td>
<td>INTEGER</td>
<td>Number of active server tasks.</td>
</tr>
<tr>
<td>MQDB2_CONN_CNT</td>
<td>INTEGER</td>
<td>Number of connect requests.</td>
</tr>
<tr>
<td>MQDB2_DEAD_CNT</td>
<td>INTEGER</td>
<td>Number of deadlock timeouts.</td>
</tr>
<tr>
<td>MQDB2_DELE_CNT</td>
<td>INTEGER</td>
<td>Number of delete requests.</td>
</tr>
<tr>
<td>MQDB2_DEL_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_DEL_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_DEL_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread delete.</td>
</tr>
<tr>
<td>MQDB2_DEL_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread delete.</td>
</tr>
<tr>
<td>MQDB2_DHIG_MAX</td>
<td>INTEGER</td>
<td>Maximum request queue depth.</td>
</tr>
<tr>
<td>MQDB2_DISC_CNT</td>
<td>INTEGER</td>
<td>Number of disconnect requests.</td>
</tr>
<tr>
<td>MQDB2_LIST_CNT</td>
<td>INTEGER</td>
<td>Number of list requests.</td>
</tr>
<tr>
<td>MQDB2_LIST_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL list.</td>
</tr>
<tr>
<td>MQDB2_LIST_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL list.</td>
</tr>
<tr>
<td>MQDB2_LIST_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread list.</td>
</tr>
<tr>
<td>MQDB2_LIST_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread list.</td>
</tr>
<tr>
<td>MQDB2_NUM_TASK</td>
<td>INTEGER</td>
<td>Number of server tasks.</td>
</tr>
<tr>
<td>MQDB2_READ_CNT</td>
<td>INTEGER</td>
<td>Number of read requests.</td>
</tr>
<tr>
<td>MQDB2_READ_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL read.</td>
</tr>
<tr>
<td>MQDB2_READ_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL read.</td>
</tr>
<tr>
<td>MQDB2_READ_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread read.</td>
</tr>
<tr>
<td>MQDB2_READ_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread read.</td>
</tr>
<tr>
<td>MQDB2_REQU_CNT</td>
<td>INTEGER</td>
<td>Number of request requeues.</td>
</tr>
<tr>
<td>MQDB2_SCSD_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_SCSD_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_SCSD_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread delete.</td>
</tr>
<tr>
<td>MQDB2_SCSD_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread delete.</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>MQDB2_SCSI_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL insert.</td>
</tr>
<tr>
<td>MQDB2_SCSI_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL insert.</td>
</tr>
<tr>
<td>MQDB2_SCSI_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread insert.</td>
</tr>
<tr>
<td>MQDB2_SCSI_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread insert.</td>
</tr>
<tr>
<td>MQDB2_SCSS_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL select.</td>
</tr>
<tr>
<td>MQDB2_SCSS_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL select.</td>
</tr>
<tr>
<td>MQDB2_SCSS_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread select.</td>
</tr>
<tr>
<td>MQDB2_SCSS_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread select.</td>
</tr>
<tr>
<td>MQDB2_SCST_BUF_FUL</td>
<td>INTEGER</td>
<td>SCST - Number of times that the buffer was too small.</td>
</tr>
<tr>
<td>MQDB2_SCST_DEL</td>
<td>INTEGER</td>
<td>SCST deletes - Shared Channel Status.</td>
</tr>
<tr>
<td>MQDB2_SCST_INS</td>
<td>INTEGER</td>
<td>SCST inserts - Shared Channel Status.</td>
</tr>
<tr>
<td>MQDB2_SCST_MAX_ROW</td>
<td>INTEGER</td>
<td>SCST - Maximum number of rows on query.</td>
</tr>
<tr>
<td>MQDB2_SCST_SEL</td>
<td>INTEGER</td>
<td>SCST selects - Shared Channel Status.</td>
</tr>
<tr>
<td>MQDB2_SCST_UPD</td>
<td>INTEGER</td>
<td>SCST updates - Shared Channel Status.</td>
</tr>
<tr>
<td>MQDB2_SCSU_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL update.</td>
</tr>
<tr>
<td>MQDB2_SCSU_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL update.</td>
</tr>
<tr>
<td>MQDB2_SCSU_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread update.</td>
</tr>
<tr>
<td>MQDB2_SCSU_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread update.</td>
</tr>
<tr>
<td>MQDB2_SSKD_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_SSKD_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL delete.</td>
</tr>
<tr>
<td>MQDB2_SSKD_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread delete.</td>
</tr>
<tr>
<td>MQDB2_SSKD_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread delete.</td>
</tr>
<tr>
<td>MQDB2_SSKI_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL insert.</td>
</tr>
<tr>
<td>MQDB2_SSKI_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL insert.</td>
</tr>
<tr>
<td>MQDB2_SSKI_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread insert.</td>
</tr>
<tr>
<td>MQDB2_SSKI_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread insert.</td>
</tr>
<tr>
<td>MQDB2_SSKS_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL select.</td>
</tr>
<tr>
<td>MQDB2_SSKS_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL select.</td>
</tr>
<tr>
<td>MQDB2_SSKS_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread select.</td>
</tr>
<tr>
<td>MQDB2_SSKS_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread select.</td>
</tr>
<tr>
<td>MQDB2_SSKT_DEL</td>
<td>INTEGER</td>
<td>SSKT deletes - Shared Sync Key.</td>
</tr>
<tr>
<td>MQDB2_SSKT_INS</td>
<td>INTEGER</td>
<td>SSKT inserts - Shared Sync Key.</td>
</tr>
<tr>
<td>MQDB2_SSKT_SEL</td>
<td>INTEGER</td>
<td>SSKT selects - Shared Sync Key.</td>
</tr>
<tr>
<td>MQDB2_UPDT_CNT</td>
<td>INTEGER</td>
<td>Number of update requests.</td>
</tr>
<tr>
<td>MQDB2_UPDT_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL update.</td>
</tr>
<tr>
<td>MQDB2_UPDT_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL update.</td>
</tr>
<tr>
<td>MQDB2_UPDT_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread update.</td>
</tr>
<tr>
<td>MQDB2_UPDT_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread update.</td>
</tr>
<tr>
<td>MQDB2_WRIT_CNT</td>
<td>INTEGER</td>
<td>Number of write requests.</td>
</tr>
<tr>
<td>MQDB2_WRIT_SQL_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - SQL write.</td>
</tr>
<tr>
<td>MQDB2_WRIT_SQL_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - SQL write.</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>MQDB2_WRT_THR_CUM</td>
<td>FLOAT</td>
<td>Cumulative Store Clock differential - Thread write.</td>
</tr>
<tr>
<td>MQDB2_WRT_THR_MAX</td>
<td>FLOAT</td>
<td>Maximum Store Clock differential - Thread write.</td>
</tr>
</tbody>
</table>
MQSeries data tables

**MQS_LOCK_T, _D, _M**

These tables provide detailed, daily, and monthly statistics data for lock manager. They contain data from SMF type 115, subtype 2.

The default retention periods for these tables are:
- MQS_LOCK_T: 7 days
- MQS_LOCK_D: 30 days
- MQS_LOCK_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>MQLCK_GET</td>
<td>INTEGER</td>
<td>Number of Get Lock requests.</td>
</tr>
<tr>
<td>MQLCK_HELD</td>
<td>INTEGER</td>
<td>Number of times that lock held.</td>
</tr>
<tr>
<td>MQLCK_RELEASE</td>
<td>INTEGER</td>
<td>Number of Release Lock requests.</td>
</tr>
</tbody>
</table>
MQS_LOGMGR_T, _D, _M

These tables provide detailed, daily, and monthly statistics data for log manager. They contain data from SMF type 115, subtype 1.

The default retention periods for these tables are:
- MQS_LOGMGR_T: 7 days
- MQS_LOGMGR_D: 30 days
- MQS_LOGMGR_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>ACTIVE_CI_CREATED</td>
<td>INTEGER</td>
<td>The number of active log control intervals that were created.</td>
</tr>
<tr>
<td>ALLOC_ARCH_LOG_RD</td>
<td>INTEGER</td>
<td>The number of times that an archive log data set was allocated for a read request.</td>
</tr>
<tr>
<td>ALLOC_ARCH_LOG_WR</td>
<td>INTEGER</td>
<td>The number of times that an archive log data set was allocated for a write request.</td>
</tr>
<tr>
<td>BSDS_ACCESS_REQ</td>
<td>INTEGER</td>
<td>Total number of bootstrap data set (BSDS) access requests.</td>
</tr>
<tr>
<td>CALLS_WRITTEN</td>
<td>INTEGER</td>
<td>The number of calls made that wrote to active log buffers.</td>
</tr>
<tr>
<td>CHKPOINT_INVOKED</td>
<td>INTEGER</td>
<td>The number of times that checkpoint was invoked.</td>
</tr>
<tr>
<td>CI_OFFLOADED</td>
<td>INTEGER</td>
<td>Count of control intervals offloaded to the archive data set.</td>
</tr>
<tr>
<td>DUAL_LOG_REWRITE</td>
<td>INTEGER</td>
<td>Number of serial log-write requests for control interval rewrite when dual logging.</td>
</tr>
<tr>
<td>LAHEAD_TAP_ATTEMPT</td>
<td>INTEGER</td>
<td>Number of look-ahead tape volume mounts attempted this field together with the field QISTLAMS, shows how many times look-ahead mounting failed, thus negating potential significant performance gains (new).</td>
</tr>
<tr>
<td>LAHEAD_TAP_FAILED</td>
<td>INTEGER</td>
<td>Number of look-ahead tape volume mounts that failed. MQSeries 5.2 or later.</td>
</tr>
<tr>
<td>LOG_CIS_WRITE</td>
<td>INTEGER</td>
<td>Total number of log control intervals written.</td>
</tr>
<tr>
<td>LOG_REQ_SUS</td>
<td>INTEGER</td>
<td>Number of times that a log request resulted in a SUSPEND for a log write to occur.</td>
</tr>
<tr>
<td>LOG_REQ_WRITE</td>
<td>INTEGER</td>
<td>Total number of log-write I/O requests.</td>
</tr>
<tr>
<td>LOGWRITE_REQ_PAGED</td>
<td>INTEGER</td>
<td>Number of times that a log-write buffer had to be paged-in before it could be used.</td>
</tr>
<tr>
<td>LOGWRITE_REQ_SCHED</td>
<td>INTEGER</td>
<td>Number of times that a log-write request was scheduled because the log-write threshold was reached.</td>
</tr>
<tr>
<td>MSG_GET_REQ</td>
<td>INTEGER</td>
<td>The number of message get requests.</td>
</tr>
<tr>
<td>MSG_PUT_REQ</td>
<td>INTEGER</td>
<td>The number of message put requests.</td>
</tr>
<tr>
<td>READ_REQ_ACTIVE</td>
<td>INTEGER</td>
<td>Number of read log requests satisfied from the active log data set.</td>
</tr>
<tr>
<td>READ_REQ_ARCHIVE</td>
<td>INTEGER</td>
<td>Number of read log requests satisfied from an archive log data set.</td>
</tr>
</tbody>
</table>
MQSeries data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>READ_REQ_BUF</td>
<td>INTEGER</td>
<td>Number of read log requests satisfied from in the storage buffers.</td>
</tr>
<tr>
<td>READ_REQ_DELAYED</td>
<td>INTEGER</td>
<td>Number of read log requests that were delayed because the MAXALLC parameter in CSQ6LOGP limited the number of archive log data sets that could be used.</td>
</tr>
<tr>
<td>READ_REQ_UNAVAIL</td>
<td>INTEGER</td>
<td>Number of read accesses that were delayed due to an unavailable resource.</td>
</tr>
<tr>
<td>WAIT_COUNT_NO_BUF</td>
<td>INTEGER</td>
<td>Wait count for unavailable buffers. Number of times that a task was suspended because all the buffers were waiting to be written.</td>
</tr>
<tr>
<td>WRITE_COUNT_FORCE</td>
<td>INTEGER</td>
<td>Write_request count - Force. Tasks are suspended until all the log records for this unit of recovery are written to the active log data set.</td>
</tr>
<tr>
<td>WRITE_REQ_WAIT</td>
<td>INTEGER</td>
<td>Write_request count - Wait. Tasks are suspended until the write to active log is complete.</td>
</tr>
<tr>
<td>WRITE_REQ_NO_WAIT</td>
<td>INTEGER</td>
<td>Write_request count - No wait. Tasks are not suspended.</td>
</tr>
</tbody>
</table>
MQS_MSG_T, _D, _M

These tables provide detailed, daily, and monthly statistics data for message manager. They contain data from SMF type 115 and subtype 2.

The default retention periods for these tables are:
- MQS_MSG_T: 7 days
- MQS_MSG_D: 30 days
- MQS_MSG_M: 765 days

<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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>MQOPEN_REQ</td>
<td>INTEGER</td>
<td>The number of MQOPEN requests.</td>
</tr>
<tr>
<td>MQCLOSE_REQ</td>
<td>INTEGER</td>
<td>The number of MQCLOSE requests.</td>
</tr>
<tr>
<td>MQGET_REQ</td>
<td>INTEGER</td>
<td>The number of MQGET requests.</td>
</tr>
<tr>
<td>MQPUT_REQ</td>
<td>INTEGER</td>
<td>The number of MQPUT requests.</td>
</tr>
<tr>
<td>MQPUT1_REQ</td>
<td>INTEGER</td>
<td>The number of MQPUT1 requests.</td>
</tr>
<tr>
<td>MQINQ_REQ</td>
<td>INTEGER</td>
<td>The number of MQINQ requests.</td>
</tr>
<tr>
<td>MQSET_REQ</td>
<td>INTEGER</td>
<td>The number of MQSET requests.</td>
</tr>
<tr>
<td>CLOSE_HANDLE_REQ</td>
<td>INTEGER</td>
<td>The number of close handle requests.</td>
</tr>
</tbody>
</table>
These tables provide detailed, daily, and monthly statistics data for storage manager. They contain data from SMF type 115, subtype 1.

The default retention periods for these tables are:
- MQS_STORAGE_T: 7 days
- MQS_STORAGE_D: 30 days
- MQS_STORAGE_M: 765 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>The date when the record was written. From DTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>The time when the record was written. From TME. Applies only to _T.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>The name of the period.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>The definition of the MVS subsystem on which the records were collected.</td>
</tr>
<tr>
<td>MQSERIES_SUB_ID</td>
<td>k CHAR(4)</td>
<td>The MQSeries subsystem ID.</td>
</tr>
<tr>
<td>F_POOLS_CREATED</td>
<td>INTEGER</td>
<td>Number of fixed pools that were created.</td>
</tr>
<tr>
<td>F_POOLS_DEALLOC</td>
<td>INTEGER</td>
<td>Number of fixed pools that were deallocated.</td>
</tr>
<tr>
<td>F_POOL_SEG_CONTR</td>
<td>INTEGER</td>
<td>Number of fixed pool segments that were contracted.</td>
</tr>
<tr>
<td>F_POOL_SEG_EXPAND</td>
<td>INTEGER</td>
<td>Number of fixed pool segments that were expanded.</td>
</tr>
<tr>
<td>F_POOL_SEG_FREED</td>
<td>INTEGER</td>
<td>Number of fixed pool segments that were freed.</td>
</tr>
<tr>
<td>FREEM_DEALLOC_STO</td>
<td>INTEGER</td>
<td>Number of FREEMAINs that were issued to deallocate storage other than fixed and variable blocks.</td>
</tr>
<tr>
<td>GETM_ALLOC_STOR</td>
<td>INTEGER</td>
<td>Number of GETMAINs that were issued to allocate storage other than fixed and variable blocks.</td>
</tr>
<tr>
<td>GM_FRM_NONZERO_RC</td>
<td>INTEGER</td>
<td>Number of nonzero return codes that were issued by GETMAIN, or FREEMAIN, or both.</td>
</tr>
<tr>
<td>SH_ON_STOR_ABENDS</td>
<td>INTEGER</td>
<td>Count of abends that were issued for short-on-storage.</td>
</tr>
<tr>
<td>SH_ON_STOR_BIT_ON</td>
<td>INTEGER</td>
<td>Count of setting short-on-storage bit to On.</td>
</tr>
<tr>
<td>SH_ON_STOR_CNTR</td>
<td>INTEGER</td>
<td>Number of short-on-storage contractions that were issued by CSQSCTL.</td>
</tr>
<tr>
<td>V_POOLS_CREATED</td>
<td>INTEGER</td>
<td>Number of variable pools that were created.</td>
</tr>
<tr>
<td>V_POOLS_DEALLOC</td>
<td>INTEGER</td>
<td>Number of variable pools that were deallocated.</td>
</tr>
<tr>
<td>V_POOL_SEG_CONTR</td>
<td>INTEGER</td>
<td>Number of variable pool segments that were contracted.</td>
</tr>
<tr>
<td>V_POOL_SEG_EXPAND</td>
<td>INTEGER</td>
<td>Number of variable pool segments that were expanded.</td>
</tr>
<tr>
<td>V_POOL_SEG_FREED</td>
<td>INTEGER</td>
<td>Number of variable pool segments that were freed.</td>
</tr>
</tbody>
</table>
Chapter 5. Reports

This chapter describes the reports provided with the MQSeries component.

MQSeries CICS Accounting, Daily

This report shows the daily accounting data for CICS environment.

The following information identifies the report:

- **Report ID:** MQS01
- **Report group:** MQSeries Statistic and Accounting Reports
- **Source:** MQS_ACCNT_CICS_T
- **Attributes:** MQS, CICS, ACCOUNTING, MQPUT, MQGET, DAILY
- **Variables:** DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries CICS Accounting, Daily
System: MVS
Date: 2000-02-13

<table>
<thead>
<tr>
<th>MQSeries Id</th>
<th>Job_Id</th>
<th>Connect name</th>
<th>Transaction_Id</th>
<th>Transaction_Name</th>
<th>CPU_seconds</th>
<th>MQPUT_total</th>
<th>MQGET_total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICA</td>
<td>PAICE</td>
<td>IYAYECIC PAICE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IYAYECIC</td>
<td>CICSUSER</td>
<td>CICSUSER CKTI</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IYAYECIC</td>
<td>CICSUSER</td>
<td>GP19</td>
<td>2</td>
<td>0</td>
<td>828</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IYAYECIC</td>
<td>CICSUSER</td>
<td>PP15</td>
<td>2</td>
<td>833</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 2. Example of an MQSeries CICS Accounting, Daily Report

The report contains the following information:

- **Date** The date (daily) of the measurement.
- **Job_Id** User ID associated with the MVS job.
- **Connect name** Connection name
- **Transaction_Id** User ID associated with the transaction.
- **Transaction_Name** CICS transaction name
- **CPU_seconds** Total number of CPU seconds per the day specified.
- **MQPUT_total** Total number of MQPUT requests per the day specified.
- **MQGET_total** Total number of MQGET requests per the day specified.
MQSeries reports

MQSeries IMS Accounting, Daily

This report shows the daily accounting data for IMS environment.

The following information identifies the report:

**Report ID:** MQS02

**Report group:** MQSeries Statistic and Accounting Reports

**Source:** MQS_ACCNT_IMS_T

**Attributes:** MQS, IMS, ACCOUNTING, MQPUT, MQGET, DAILY

**Variables:** DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries Accounting, Daily

System: 'MVSY'

Date: 2000-02-14

<table>
<thead>
<tr>
<th>MQSeries Id</th>
<th>Job Id</th>
<th>Connect_name</th>
<th>Transact_Id</th>
<th>Account_token</th>
<th>IMS_PST_id</th>
<th>IMS_PSB_name</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICA</td>
<td>VICACHIN</td>
<td>VICACHIN</td>
<td>XXXX YYYY</td>
<td></td>
<td>YYYY</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. Example of part of an MQSeries IMS Accounting, Daily Report

The report contains the following information:

**Date**

The date (daily) of the measurement.

**Job_Id**

User ID associated with the MVS job.

**Connect_name**

Connection name

**Transact_Id**

User ID associated with the transaction.

**Account_token**

Accounting token

**IMS_PST_id**

IMS partition specification table (PST) region identifier

**IMS_PSB_name**

IMS program specification block (PSB) name

**CPU_seconds**

Total number of CPU seconds per the day specified.

**MQPUT_total**

Total number of MQPUT requests per the day specified.

**MQGET_total**

Total number of MQGET requests per the day specified.
MQSeries Accounting, Daily

This report shows the daily accounting data for MVS environment.

The following information identifies the report:

**Report ID:** MQS03

**Report group:** MQSeries Statistic and Accounting Reports

**Source:** MQS_ACCNT_T

**Attributes:** MQS, ACCOUNTING, MQPUT, MQGET, DAILY

**Variables:** DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries IMS Accounting, Daily
System: 'MVSY'
Date: 2000-02-14

<table>
<thead>
<tr>
<th>MQSeries Id</th>
<th>Job Id</th>
<th>Connect name</th>
<th>Transact_Id</th>
<th>CPU_seconds</th>
<th>MQPUT_total</th>
<th>MQGET_total</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICA</td>
<td>VICACHIN</td>
<td>VICACHIN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PAICE</td>
<td>IYAYECIC</td>
<td>PAICE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>*</td>
<td>VICACHIN</td>
<td>*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PAICE</td>
<td>PAICEM2</td>
<td>PAICE</td>
<td>2</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IYAYECIC</td>
<td>CICSUSER</td>
<td>4</td>
<td>833</td>
<td>828</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PAICEM2</td>
<td>PAICE</td>
<td>11</td>
<td>4000</td>
<td>4000</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. Example of an MQSeries MVS Accounting, Daily Report

The report contains the following information:

**Date**

The date (daily) of the measurement.

**Job_Id**

User ID associated with the MVS job.

**Connect_name**

Connection name

**Transact_Id**

User ID associated with the transaction.

**CPU_seconds**

Total number of CPU seconds per the day specified.

**MQPUT_total**

Total number of MQPUT requests per the day specified.

**MQGET_total**

Total number of MQGET requests per the day specified.
MQSeries reports

MQSeries Message Manager Statistics, Daily

This report shows the daily message manager statistics.

The following information identifies the report:

Report ID: MQS04
Report group: MQSeries Statistic and Accounting Reports
Source: MQS_MSG_D
Attributes: MQS, STATISTICS, MQI, DAILY
Variables: DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries Message Manager Statistics Daily
System: 'MVSY'
Date: 2000-02-14

<table>
<thead>
<tr>
<th>MQSeries Id</th>
<th>MQOPEN_requests</th>
<th>MQCLOSE_requests</th>
<th>MQGET_requests</th>
<th>MQPUT_requests</th>
<th>MQPUT1_requests</th>
<th>MQINQ_requests</th>
<th>MQSET_requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICA</td>
<td>297984</td>
<td>298008</td>
<td>185580</td>
<td>184998</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: MQS04

Figure 5. Example of an MQSeries Message Manager Statistics, Daily Report

The report contains the following information:

**Date**

The date (daily) of the measurement.

**MQOPEN_requests**

Total number of MQOPEN requests per the day specified.

**MQCLOSE_requests**

Total number of MQCLOSE requests per the day specified.

**MQGET_requests**

Total number of MQGET requests per the day specified.

**MQPUT_requests**

Total number of MQPUT requests per the day specified.

**MQPUT1_requests**

Total number of MQPUT1 requests per the day specified.

**MQINQ_requests**

Total number of MQINQ requests per the day specified.

**MQSET_requests**

Total number of MQSET requests per the day specified.

**Close_handle_requests**

Total number of close handle requests per the day specified.
MQSeries Data Manager Statistics, Daily

This report shows the daily data manager statistics.

The following information identifies the report:

Report ID: MQS05
Report group: MQSeries Statistic and Accounting Reports
Source: MQS_DATA_D
Attributes: MQS, STATISTICS, DAILY
Variables: DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries Data Manager Statistics, Daily
System: 'MV41'
Date: 1999-12-21

<table>
<thead>
<tr>
<th>MQSeries_Id</th>
<th>Object_create</th>
<th>Object_put</th>
<th>Object_delete</th>
<th>Object_get</th>
<th>Object_locate</th>
<th>Stgclass_change</th>
<th>Number_message_get_request</th>
<th>Number_message_put_request</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>120</td>
<td>0</td>
<td>62</td>
<td>62</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: MQS05

Figure 6. Example of an MQSeries Data Manager Statistics, Daily Report

The report contains the following information:

- **MQSeries_Id**: The MQSeries subsystem ID.
- **Object_create**: Total number of object create requests per the day specified.
- **Object_put**: Total number of object put requests per the day specified.
- **Object_delete**: Total number of object delete requests per the day specified.
- **Object_get**: Total number of object get requests per the day specified.
- **Object_locate**: Total number of object locate requests per the day specified.
- **Stgclass_change**: Total number of stgclass change requests per the day specified.
- **Number_message_get_request**: Total number of message get requests per the day specified.
Number_message_put_request

Total number of message put requests per the day specified.
MQSeries Buffer Manager Statistics, Daily

This report shows the daily buffer manager statistics.

The following information identifies the report:

- **Report ID**: MQS06
- **Report group**: MQSeries Statistic and Accounting Reports
- **Source**: MQS_BUFFER_D
- **Attributes**: MQS, STATISTICS, DAILY
- **Variables**: DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

The report contains the following information:

- **Date**: The date (daily) of the measurement.
- **Buffer_Pool_id**: Buffer pool identifier (0-3)
- **Average_number_buffer**: Average number of buffers in this buffer pool during the day.
- **Average_avail_buffer**: Average number of buffer available in this buffer pool during the day.
- **Getpage_new_requests**: Total number of get requests for a new, or empty, page. No read operation is necessary.
- **Getpage_current_requests**: Total number of page get requests where the current page contents are required. This may involve a read DASD operation if the page is not currently in the buffer pool.
- **Getpage_notfnd_requests**: Total number of times a page get request did not find the page already in the buffer pool.
- **Synch_page_write**: Total number of times the synchronous write processor was started.
- **Asynch_page_write**: Total number of times the asynchronous write processor was started.
- **Times_buffer_unavail**: Total number of times that no available buffers were found.

![MQSeries Buffer Manager Statistics]

System: 'MVSY'
Date: 2000-02-14

<table>
<thead>
<tr>
<th>MQSeries Pool_id</th>
<th>Buffer Pool_id</th>
<th>Average number buffer</th>
<th>Average avail buffer</th>
<th>Getpage new requests</th>
<th>Getpage current requests</th>
<th>Getpage notfnd requests</th>
<th>Synch page write</th>
</tr>
</thead>
<tbody>
<tr>
<td>VICA</td>
<td>0</td>
<td>10000</td>
<td>9977</td>
<td>0</td>
<td>603384</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>10000</td>
<td>5318</td>
<td>142620</td>
<td>968868</td>
<td>42468</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>100000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 7. Example of an MQSeries Buffer Manager Statistics, Daily Report
MQSeries reports

MQSeries Log Manager Statistics, Daily

This report shows the daily log manager statistics.

The following information identifies the report:

Report ID: MQS07
Report group: MQSeries Statistic and Accounting Reports
Source: MQS_LOG_D
Attributes: MQS, STATISTICS, DAILY
Variables: DATE, MVS_SYSTEM_ID CHAR, MQSERIES_SUB_ID

MQSeries Log Manager Statistics, Daily
System: 'MV41'
Date: 1999-12-21

<table>
<thead>
<tr>
<th>MQSeries_Id</th>
<th>Log_write_requests</th>
<th>Log_read_requests</th>
<th>Wait_count</th>
<th>Read_archive</th>
<th>Number_of_checkpoint_invoked</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MQ08</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MQ08</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: MQS07

Figure 8. Example of an MQSeries Log Manager Statistics, Daily Report

The report contains the following information:

MQSeries_Id  The MQSeries subsystem ID.
Log_write_requests  Total number of log write requests.
Log_read_requests  Total number of log read requests.
Wait_count  Total number of wait requests. Tasks are suspended until the write to active log is complete.
Read_archive  Total number of read log requests satisfied from an archive log dataset.
Number_of_checkpoint_invoked  Total number of times that checkpoint was invoked.
Part 2. TCP/IP component

Chapter 6. Customization
Make input data available
Telnet server
FTP server
Review the DRLJCOLL job

Chapter 7. Data flow

Chapter 8. Log and record definitions

Chapter 9. Data tables
TCP_API_CALLS_H, _D, _W
TCP_FTP_CLIENT_T, _H, _D, _W
TCP_FTP_SERVER_T, _H, _D, _W
TCP_GEN_ICMP_H, _D, _W
TCP_GEN_IP_H, _D, _W
TCP_GEN_TCP_H, _D, _W
TCP_GEN_UDP_H, _D, _W
TCP_TN3270_CLNT_T, _H, _D, _W
TCP_TN3270_SERV_T, _H, _D, _W
TCP_TNSERV_LOGN_H

Chapter 10. Reports
TCP/IP TELNET Server Active Logon by Hour report
TCP/IP TELNET Server Bytes Traffic report
TCP/IP TELNET AVG Connection Time to Application report
TCP/IP FTP Transmission report
TCP/IP IP TCPIPSTATISTICS hourly report
TCP/IP IP TCPIPSTATISTICS Error report
TCP/IP TCP TCPIPSTATISTICS report
TCP/IP UDP TCPIPSTATISTICS report
TCP/IP ICMP TCPIPSTATISTICS Input report
TCP/IP ICMP TCPIPSTATISTICS Output report
TCP/IP IP TCPIPSTATISTICS daily report
Chapter 6. Customization

Before you can use the TCP/IP component to collect data, you must customize the component by making input data available.

Make input data available

This section describes the SMF records for the Telnet and FTP servers, API calls, and FTP and Telnet client calls. The EZASMF76 macro in the TCP/IP SEZAMAC library can be used to map the TCP/IP SMF records. EZASMF76 produces assembler level DSECTs for the Telnet (Server and Client), FTP (Server and Client), and API SMF records.

To create the Telnet SMF Record layout, code:
EZASMF76 TELNET=YES

To create the FTP SMF Record layout, code:
EZASMF76 FTP=YES

To create the API SMF Record layout, code:
EZASMF76 API=YES

To have all possible records created, use the SMFCONFIG statement to log the use of TCP by applications using SMF log records. Code the SMFCONFIG statement as follows:
SMFCONFIG TCPINIT TCPTERM FTPCLIENT TN3270CLIENT.TCPIPSTATISTICS

You can log Telnet and FTP activity, and TCP API activity.

Telnet server

The TCP/IP server provides services to many clients and, therefore, the system administrator needs access to information about the operation of the clients to resolve any problems and to manage the system. SMF provides logging records for such management purposes. TCP/IP SMF records are independent of the IP connection. They are created for both offload host connections and regular host connections.

Use the SMF parameters, coded as SMFINIT STD and SMFTERM STD, in the TELNETPARMS statement to configure the Telnet server to write SMF records. If SMF parameters are not coded in the TELNETPARMS statement, no SMF records will be written by the Telnet server.

FTP server

If you want the FTP server to write type 118 (X’76’) SMF records, code the SMF subtype statement SMF STD in the FTP.DATA data set. If the SMF subtype statement is not coded in the FTP.DATA data set, no SMF records are written by the FTP server.
Review the DRLJCOLL job

To obtain the collect JCL:
1. Select 2, Tivoli Decision Support for OS/390 Administration from the Primary Menu.
2. Select 3, Logs.
3. Select SMF from the list of logs.
4. Select the Utilities pull-down and press Enter.
5. Select 1, Collect.
6. Type your installation-specific information in the displayed window and press Enter.

-OR-

7. Before running the Tivoli Decision Support for OS/390 Collect job, update the DRLJCOLL job (a member in the DRL160.SDRLCNTL library) to include the collection of TCP/IP log data sets. Follow the instructions in the comments section of this job to modify the appropriate JCL statements.
Chapter 7. Data flow

The TCP/IP component collects records from the SMF data set and stores extracted and summarized data in the Tivoli Decision Support for OS/390 database. The reporting function extracts data from the database and creates reports that you request through the reporting dialogs.

Figure 9 shows an overview of the flow of data from the TCPIP, through the TCP/IP component of Tivoli Decision Support for OS/390, and finally into usable reports.
Chapter 8. Log and record definitions

The TCP/IP component collects records from the system management facilities (SMF) log. The TCP/IP component processes these records from the SMF log data set:

<table>
<thead>
<tr>
<th>SMF record type</th>
<th>Subtype</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>118</td>
<td>1</td>
<td>SMF_118_1</td>
<td>TCP/IP API INIT calls for sockets</td>
</tr>
<tr>
<td>118</td>
<td>2</td>
<td>SMF_118_1</td>
<td>TCP/IP API TERM calls for sockets</td>
</tr>
<tr>
<td>118</td>
<td>3</td>
<td>SMF_118_3</td>
<td>TCP/IP FTP CLIENT calls</td>
</tr>
<tr>
<td>118</td>
<td>4</td>
<td>SMF_118_4</td>
<td>TCP/IP TELNET CLIENT calls</td>
</tr>
<tr>
<td>118</td>
<td>5</td>
<td>SMF_118_5</td>
<td>TCP/IP General statistics</td>
</tr>
<tr>
<td>118</td>
<td>20</td>
<td>SMF_118_20</td>
<td>TCP/IP TELNET SERVER INIT calls</td>
</tr>
<tr>
<td>118</td>
<td>21</td>
<td>SMF_118_21</td>
<td>TCP/IP TELNET SERVER TERM calls</td>
</tr>
<tr>
<td>118</td>
<td>70</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - append</td>
</tr>
<tr>
<td>118</td>
<td>71</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - delete</td>
</tr>
<tr>
<td>118</td>
<td>72</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - log failed</td>
</tr>
<tr>
<td>118</td>
<td>73</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - rename</td>
</tr>
<tr>
<td>118</td>
<td>74</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - retrieve</td>
</tr>
<tr>
<td>118</td>
<td>75</td>
<td>SMF_118_70</td>
<td>TCP/IP FTP SERVER - store</td>
</tr>
</tbody>
</table>
TCP/IP log and record definitions
Chapter 9. Data tables

This chapter describes the data tables used by the TCP/IP component.

**TCP_API_CALLS_H, _D, _W**

This table provides hourly, daily and weekly API CALLS statistics for TCP/IP for MVS. The default retention periods for these tables are:

- TCP_API_CALLS_H: 7 days
- TCP_API_CALLS_D: 30 days
- TCP_API_CALLS_W: 375 days

<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 when the statistics record was written to SMF. From SMFAPIDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SMFAPITME. Applies only to _H.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMAPISID.</td>
</tr>
<tr>
<td>SUB_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMAPISSI.</td>
</tr>
<tr>
<td>LOCAL_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Fullword local ID address. From SMAPILIP.</td>
</tr>
<tr>
<td>LOCAL_PORT</td>
<td>INTEGER</td>
<td>Local Port number. From SMAPILPN.</td>
</tr>
<tr>
<td>FOREIGN_IP_ADDRESS</td>
<td>CHAR(16)</td>
<td>Foreign IP address. From SMAPIFIP.</td>
</tr>
<tr>
<td>FOREIGN_PORT</td>
<td>INTEGER</td>
<td>Foreign Port number. From SMAPIFFPN.</td>
</tr>
<tr>
<td>CONNECTION_STAT</td>
<td>CHAR(4)</td>
<td>Status of the connection, INIT or TERM. From SMAPISTS.</td>
</tr>
<tr>
<td>BYTES_IN</td>
<td>FLOAT</td>
<td>Bytes in. This is valid only for TERMINATION. From SMAPIBIN.</td>
</tr>
<tr>
<td>BYTES_OUT</td>
<td>FLOAT</td>
<td>Bytes out. This is valid only for TERMINATION. From SMAPIBOU.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>CHAR(8)</td>
<td>Job name. For interactive TSO API is the user TSO userid. For batch-submitted jobs: the name of the job card. For started procs: the name of the procedure. From SMAPIJNM.</td>
</tr>
<tr>
<td>JOB_ID</td>
<td>CHAR(8)</td>
<td>Job ID. The JES job identifier. From SMAPIJID.</td>
</tr>
<tr>
<td>JOB_START_TIME</td>
<td>TIME</td>
<td>Job start time. From SMAPISTT.</td>
</tr>
<tr>
<td>JOB_DATE</td>
<td>DATE</td>
<td>Date, for HPNS application only, when the job was started by the JES. It is in the form 0CYYDDDFF, where C is 0 for 19yy and 1 for 20yy. From SMAPISTD.</td>
</tr>
</tbody>
</table>
## TCP/IP data tables

### TCP_FTP_CLIENT_T, _H, _D, _W

This table provides detailed, hourly, daily and weekly FTP Client statistics for TCP/IP for MVS. The default retention periods for these tables are:

- TCP_FTP_CLIENT_T: 1 day
- TCP_FTP_CLIENT_H: 7 days
- TCP_FTP_CLIENT_D: 30 days
- TCP_FTP_CLIENT_W: 375 days

<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 when the statistics record was written to SMF. From SFTPCDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SFTPCTME. Applies only to _H and _T.</td>
</tr>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time when the record was written to SMF. SFTPCDTE and SFTPCTME. Applies only to _T.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SFTPSCSID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SFTPPSSID.</td>
</tr>
<tr>
<td>LOCAL_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Fullword local ID address. From SFTPCLI.</td>
</tr>
<tr>
<td>LOCAL_PORT</td>
<td>INTEGER</td>
<td>Local Port number. From SFTPCLPN.</td>
</tr>
<tr>
<td>FOREIGN_IP_ADDRESS</td>
<td>CHAR(16)</td>
<td>Foreign IP address. From SFTPCFIP.</td>
</tr>
<tr>
<td>FOREIGN_PORT</td>
<td>INTEGER</td>
<td>Foreign Port number. From SFTPCFPN.</td>
</tr>
<tr>
<td>FTP_SUBCOMMAND</td>
<td>CHAR(4)</td>
<td>FTP subcommand (for example RETR, STOR, APPE, REN, MDIR, DELE). From SFTPCSC.</td>
</tr>
<tr>
<td>REMOTE_ID</td>
<td>CHAR(8)</td>
<td>Remote userid. From SFTPCREU.</td>
</tr>
<tr>
<td>DATA_FORMAT</td>
<td>CHAR(1)</td>
<td>Data format. A-ASCII, E_EBCDIC, and so on. From SFTPCDTF.</td>
</tr>
<tr>
<td>TRANSFER_FORMAT</td>
<td>CHAR(1)</td>
<td>Mode (S-Stream, B-Block, C-Compressed). From SFTPCSTRF.</td>
</tr>
<tr>
<td>DATASET_TYPE</td>
<td>CHAR(1)</td>
<td>Data Set Type (P-PDS, Blank-Sequential). From SFTPCDSO.</td>
</tr>
<tr>
<td>START_TRANS_TIME</td>
<td>TIME</td>
<td>Start Time of Transmission. From SFTPCSTT.</td>
</tr>
<tr>
<td>END_TRANS_TIME</td>
<td>TIME</td>
<td>End Time of Transmission. From SFTPCETT.</td>
</tr>
<tr>
<td>BYTE_COUNT</td>
<td>FLOAT</td>
<td>Byte count of transmission. From SFTPCBYS.</td>
</tr>
<tr>
<td>FTP_ID</td>
<td>CHAR(1)</td>
<td>FTP ID. This will be a C for client. From SFTPCID.</td>
</tr>
<tr>
<td>LOCAL_DS_NAME</td>
<td>CHAR(44)</td>
<td>Local dataset name. From SFTPCDSN.</td>
</tr>
<tr>
<td>LOCAL_DIRECTORY</td>
<td>CHAR(44)</td>
<td>Local directory, except for REN, where it is the TO argument. From SFTPCDIR</td>
</tr>
<tr>
<td>FTP_USER_ID</td>
<td>CHAR(8)</td>
<td>User ID of the user of FTP. From SFTPCUSR.</td>
</tr>
<tr>
<td>HOST_ID</td>
<td>CHAR(8)</td>
<td>Host ID. From SFTPCID.</td>
</tr>
</tbody>
</table>
This table provides detailed, hourly, daily and weekly FTP Server statistics for TCP/IP for MVS. The default retention periods for these tables are:
- TCP_FTP_SERVER_T: 1 days
- TCP_FTP_SERVER_H: 7 days
- TCP_FTP_SERVER_D: 30 days
- TCP_FTP_SERVER_W: 375 days

<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 when the statistics record was written to SMF. From SFTPSDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SFTPSTME. Applies only to _H and _T.</td>
</tr>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time when the record was written to SMF. SFTPSDTE and SFTPSTME. Applies only to _T.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SFTPSSID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SFTPSSSI.</td>
</tr>
<tr>
<td>FULL_LOC_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Fullword local ID address. From SFTPSLIP.</td>
</tr>
<tr>
<td>LOCAL_PORT_ID</td>
<td>INTEGER</td>
<td>Local port number. From SFTPSLPN.</td>
</tr>
<tr>
<td>FTP_COMMAND</td>
<td>CHAR(4)</td>
<td>FTP subcommand (for example STOR, REN, DELE). From SFTPSCMD.</td>
</tr>
<tr>
<td>FTP_FILE</td>
<td>CHAR(4)</td>
<td>FTP file type (SEQ, JES, SQL). From SFTPSFTY.</td>
</tr>
<tr>
<td>LOCAL_USERID</td>
<td>CHAR(8)</td>
<td>Local User ID. From SFTPSLUI.</td>
</tr>
<tr>
<td>DATA_FORMAT</td>
<td>CHAR(1)</td>
<td>Data Format (A-ASCII, E-EBCDIC, and so on) From SFTPSDTF.</td>
</tr>
<tr>
<td>MODE</td>
<td>CHAR(1)</td>
<td>Mode (S-Stream, B-Block, C-Compressed) From SFTPSMOD</td>
</tr>
<tr>
<td>STRUCTURE</td>
<td>CHAR(1)</td>
<td>Structure (F-File) From SFTPSSTR</td>
</tr>
<tr>
<td>DATASET_TYPE</td>
<td>CHAR(1)</td>
<td>Data Set Type (P-Partitioned, Blank-Sequential). From SFTPSSDTY</td>
</tr>
<tr>
<td>START_TRANS_TIME</td>
<td>TIME</td>
<td>Start Time of Transmission. From SFTPSSSTT</td>
</tr>
<tr>
<td>END_TRANS_TIME</td>
<td>TIME</td>
<td>End Time of Transmission. From SFTPSENT.</td>
</tr>
<tr>
<td>BYTE_COUNT</td>
<td>REAL</td>
<td>Byte count of transmission. From SFTPSBYT.</td>
</tr>
<tr>
<td>FTP_ID</td>
<td>CHAR(1)</td>
<td>FTP ID (S-Server). From SFTPSPFID.</td>
</tr>
<tr>
<td>MEMBER_PDS_NAME</td>
<td>CHAR(8)</td>
<td>Member name for PDS. From SFTPSMN.</td>
</tr>
<tr>
<td>SECOND_DS_NAME</td>
<td>CHAR(44)</td>
<td>Second data set name, if needed (for example, Rename). From SFTPSSDS</td>
</tr>
<tr>
<td>SECOND_MEMBER_NAME</td>
<td>CHAR(8)</td>
<td>Second member name, if needed (for example, Rename). From SFTPSSMN.</td>
</tr>
<tr>
<td>STARTED_TASK_QUAL</td>
<td>CHAR(8)</td>
<td>Started Task Qualifier. From SFTPSSSTQ.</td>
</tr>
<tr>
<td>TCPIP_HOST_NAME</td>
<td>CHAR(8)</td>
<td>TCP/IP host name. From SFTPSPHNM.</td>
</tr>
<tr>
<td>FULL_Rem_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Remote Port Number. From SFTPSPRN.</td>
</tr>
<tr>
<td>REMOTE_PORT_IP</td>
<td>INTEGER</td>
<td>Remote Port Number. From SFTPSPRN.</td>
</tr>
<tr>
<td>LAST_DS_NAME</td>
<td>CHAR(44)</td>
<td>Last DS Name. From SFTPSLIN.</td>
</tr>
</tbody>
</table>
TCP/IP data tables

**TCP_GEN_ICMP_H, _D, _W**

This table provides hourly, daily and weekly TCP/IP statistics for the ICMP section information in TCP/IP for OS/390. The default retention periods for these tables are:

- **TCP_GEN_ICMP_H**: 7 days
- **TCP_GEN_ICMP_D**: 30 days
- **TCP_GEN_ICMP_W**: 375 days

<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 when the statistics record was written to SMF. From SMFHDDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SMFHDTME. Applies only to the _H table.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMFHDSID</td>
</tr>
<tr>
<td>SUB_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMFHDSII.</td>
</tr>
<tr>
<td>TCPIP_PROCNAME</td>
<td>CHAR(8)</td>
<td>TCP/IP Procname. From SMSUPRNM.</td>
</tr>
<tr>
<td>TCPIP_ASID</td>
<td>REAL</td>
<td>TCP/IP Asid. From SMSUASID.</td>
</tr>
<tr>
<td>TCPIP_START_TOD</td>
<td>TIMESTAMP</td>
<td>TCP/IP Startup TOD. From SMSUTOD.</td>
</tr>
<tr>
<td>TCPIP_IDENT_REC</td>
<td>CHAR(20)</td>
<td>TCP/IP SMF reason. X'10' Last SMF record/shutdown. X'20' Last SMF record/End stats. X'40' SMF Interval record. X'80' First SMF record. From SMSUREAS.</td>
</tr>
<tr>
<td>ICMP_INMSGS</td>
<td>REAL</td>
<td>In ICMP messages. From ICMPINMS.</td>
</tr>
<tr>
<td>ICMP_INMSGS_ERRS</td>
<td>REAL</td>
<td>In ICMP messages error. From ICMPINER.</td>
</tr>
<tr>
<td>ICMP_INDEST_UNRCH</td>
<td>REAL</td>
<td>In Destination unreachable. From ICMPINTE.</td>
</tr>
<tr>
<td>ICMP_INTM_EXCMSGS</td>
<td>REAL</td>
<td>In Time Exceed messages. From ICMPINPP.</td>
</tr>
<tr>
<td>ICMP_INPAR_PRBMSGS</td>
<td>REAL</td>
<td>In Parameter Problem messages. From ICMPINPP.</td>
</tr>
<tr>
<td>ICMP_INSRC_QUENCHHS</td>
<td>REAL</td>
<td>In Source Quench messages. From ICMPINSQ.</td>
</tr>
<tr>
<td>ICMP_INREDIRECTS</td>
<td>REAL</td>
<td>In Redirect messages. From ICMPINRE.</td>
</tr>
<tr>
<td>ICMP_INECHO</td>
<td>REAL</td>
<td>In Echo Request messages. From ICMPINEC.</td>
</tr>
<tr>
<td>ICMP_INECHOS_REPS</td>
<td>REAL</td>
<td>In Echo Reply messages. From ICMPIECR.</td>
</tr>
<tr>
<td>ICMP_INTIMESTAMP</td>
<td>REAL</td>
<td>In Timestamp messages. From ICMPINTM.</td>
</tr>
<tr>
<td>ICMP_INTMSTAMPREPRE</td>
<td>REAL</td>
<td>In Timestamp Reply messages. From ICMPINTR.</td>
</tr>
<tr>
<td>ICMP_INADDRMSKS</td>
<td>REAL</td>
<td>In Address Mask Request messages. From ICMPIAM.</td>
</tr>
<tr>
<td>ICMP_INADDRMSKREPS</td>
<td>REAL</td>
<td>In Address Mask Reply messages. From ICMPIAMR.</td>
</tr>
<tr>
<td>ICMP_OUTMSGS</td>
<td>REAL</td>
<td>Out ICMP messages. From ICMPOMSG.</td>
</tr>
<tr>
<td>ICMP_OUTMSGS_ERRS</td>
<td>REAL</td>
<td>Out ICMP messages error. From ICMPOERR.</td>
</tr>
<tr>
<td>ICMP_OUTDEST_UNRCH</td>
<td>REAL</td>
<td>Out Destination unreachable. From ICMPODUN.</td>
</tr>
<tr>
<td>ICMP_OUTTM_EXCMSGS</td>
<td>REAL</td>
<td>Out Time Exceed messages. From ICMPOTEX.</td>
</tr>
<tr>
<td>ICMP_OUTPAR_PRBMSG</td>
<td>REAL</td>
<td>Out Parameter Problem messages. From ICMPOPP.</td>
</tr>
<tr>
<td>ICMP_OUTSRC_QUENCH</td>
<td>REAL</td>
<td>Out Source Quench messages. From ICMPQSQ.</td>
</tr>
<tr>
<td>ICMP_OUTREDIRECTS</td>
<td>REAL</td>
<td>Out Redirect messages. From ICMPORED.</td>
</tr>
<tr>
<td>ICMP_OUTECHOS</td>
<td>REAL</td>
<td>Out Echo Request messages. From ICMPOECH.</td>
</tr>
<tr>
<td>ICMP_OUTECHOS_REPS</td>
<td>REAL</td>
<td>Out Echo Reply messages. From ICMPOECHR.</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>ICMP_OUTTIMESTAMP</td>
<td>REAL</td>
<td>Out Timestamp Request messages. From ICMPOTIM.</td>
</tr>
<tr>
<td>ICMP_OUTTMSTEMPREP</td>
<td>REAL</td>
<td>Out Timestamp Reply messages. From ICMPOTMR.</td>
</tr>
<tr>
<td>ICMP_OUTADDRMASKS</td>
<td>REAL</td>
<td>Out Address Mask Request messages. From ICMPOAM.</td>
</tr>
<tr>
<td>ICMP_OUTADDRMSKREP</td>
<td>REAL</td>
<td>Out Address Mask Reply messages. From ICMPOAMR.</td>
</tr>
</tbody>
</table>
TCP/IP data tables

**TCP_GEN_IP_H, _D, _W**

This table provides hourly, daily and weekly TCP/IP statistics for the IP section information in TCP/IP for OS/390. The default retention periods for these tables are:
- TCP_GEN_IP_H: 7 days
- TCP_GEN_IP_D: 30 days
- TCP_GEN_IP_W: 375 days

<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 when the statistics record was written to SMF. From SMFHDDE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SMFHDTME. Applies only to the _H table.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMFHDSID</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMFHDSSI.</td>
</tr>
<tr>
<td>TCP/IP_PROCNAME</td>
<td>CHAR(8)</td>
<td>TCP/IP Procname. From SMSUPRNM.</td>
</tr>
<tr>
<td>TCP/IP_ASID</td>
<td>REAL</td>
<td>TCP/IP ASID. From SMSUASID.</td>
</tr>
<tr>
<td>TCP/IP_START_TOD</td>
<td>TIMESTAMP</td>
<td>TCP/IP Startup TOD. From SMSUTOD.</td>
</tr>
<tr>
<td>TCP/IP_IDENT_REC</td>
<td>CHAR(20)</td>
<td>TCP/IP SMF reason. X'10' Last SMF record/shutdown. X'20' Last SMF record/End stats. X'40' SMF Interval record. X'80' First SMF record. From SMSUREAS.</td>
</tr>
<tr>
<td>IPTOT_REC_DATAGR</td>
<td>REAL</td>
<td>Total received datagrams. From IMIRECV.</td>
</tr>
<tr>
<td>IPTOT_DISC_DATAGR</td>
<td>REAL</td>
<td>Total discarded datagrams. From IMIHDRER.</td>
</tr>
<tr>
<td>IPTOT_DISC_ADDR</td>
<td>REAL</td>
<td>Total discarded: address errors. From IMIADRER.</td>
</tr>
<tr>
<td>IPTOT_ATT_FWDTRGL</td>
<td>REAL</td>
<td>Total attempts to forward datagrams. From IMIFWDDG.</td>
</tr>
<tr>
<td>IPTOT_DISC_UNPR</td>
<td>REAL</td>
<td>Total discarded: unknown protocol. From IMIUNPRT.</td>
</tr>
<tr>
<td>IPTOT_DISC_OTHER</td>
<td>REAL</td>
<td>Total discarded: other. From IMDISC.</td>
</tr>
<tr>
<td>IPTOT_DELIV_DATA</td>
<td>REAL</td>
<td>Total delivered datagrams. From IMIDELVR.</td>
</tr>
<tr>
<td>IPTOT_SENT_DATA</td>
<td>REAL</td>
<td>Total sent datagrams. From IMIREQST.</td>
</tr>
<tr>
<td>IPTOT_SENT_DISC</td>
<td>REAL</td>
<td>Total sent discarded: other. From IMODISC.</td>
</tr>
<tr>
<td>IPTOT_SENT_DISNOR</td>
<td>REAL</td>
<td>Total sent discarded: no route. From IMONORTE.</td>
</tr>
<tr>
<td>IPTOT_REASS_TMOOUT</td>
<td>REAL</td>
<td>Total reassembly timeouts. From IMRSMTOS.</td>
</tr>
<tr>
<td>IPTOT_REC_REASSREQ</td>
<td>REAL</td>
<td>Total received: reassembly required. From IMRSMREQ.</td>
</tr>
<tr>
<td>IPTOTDATAGR_REASS</td>
<td>REAL</td>
<td>Total datagrams reassembled. From IMRSMOK.</td>
</tr>
<tr>
<td>IPTOT_REASS_FAILED</td>
<td>REAL</td>
<td>Total datagrams reassembled: failed. From IMRSMFLD.</td>
</tr>
<tr>
<td>IPTOTDATAGR_FRAGM</td>
<td>REAL</td>
<td>Total datagrams fragmented: from IMFRAGOK.</td>
</tr>
<tr>
<td>IPTOT_DISC_FRAGM</td>
<td>REAL</td>
<td>Total discarded: fragmentation failed. From IMFRGFLD.</td>
</tr>
<tr>
<td>IPTOT_FRAGM_GENER</td>
<td>REAL</td>
<td>Total fragments generated. From IMFRGCRE.</td>
</tr>
<tr>
<td>IPTOT_ROUT_DISCRDS</td>
<td>REAL</td>
<td>Total routing discards. From IMRTDISC.</td>
</tr>
<tr>
<td>IPMAX_REASS_ACTIVE</td>
<td>REAL</td>
<td>Maximum active reassemblies. From IMRSMMAX.</td>
</tr>
<tr>
<td>IPNUM_REASS_ACTIVE</td>
<td>REAL</td>
<td>Number of active reassemblies. From IMRSMACT.</td>
</tr>
<tr>
<td>IPNUM_DISC_REASSFR</td>
<td>REAL</td>
<td>Discarded reassembled segments. From IMRSMFUL.</td>
</tr>
</tbody>
</table>
TCP_GEN_TCP_H, _D, _W

This table provides hourly, daily and weekly TCP/IP statistics for the TCP section information in TCP/IP for OS/390. The default retention periods for these tables are:

- **TCP_GEN_TCP_H**: 7 days
- **TCP_GEN_TCP_D**: 30 days
- **TCP_GEN_TCP_W**: 375 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 statistics record was written to SMF. From SMFHDDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the statistics record was written to SMF. From SMFHDTME. Applies only to the _H table.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMFHDSID</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMFHDSSI.</td>
</tr>
<tr>
<td>TCPIP_PROCNAME</td>
<td>k CHAR(8)</td>
<td>TCP/IP Procname. From SMSUPRNRM.</td>
</tr>
<tr>
<td>TCPIP_ASID</td>
<td>k REAL</td>
<td>TCP/IP ASID. From SMSUASID.</td>
</tr>
<tr>
<td>TCPIP_START_TOD</td>
<td>TIMESTAMP</td>
<td>TCP/IP Startup TOD. From SMSUTOD.</td>
</tr>
<tr>
<td>TCPIP_IDENT_REC</td>
<td>CHAR(20)</td>
<td>TCP/IP SMF reason. X'10' Last SMF record/shutdown. X'20' Last SMF record/End stats. X'40' SMF Interval record. X'80' First SMF record. From SMSUREAS.</td>
</tr>
<tr>
<td>TCP_RETR_ALG</td>
<td>REAL</td>
<td>Retransmit algorithm. From RTOALGRT.</td>
</tr>
<tr>
<td>TCP_MINRETR_TIME</td>
<td>REAL</td>
<td>Minimum retransmit time (in milliseconds). From RTOMIN.</td>
</tr>
<tr>
<td>TCP_MAXRETR_TIME</td>
<td>REAL</td>
<td>Maximum retransmit time (in milliseconds). From RTOMAX.</td>
</tr>
<tr>
<td>TCP_MAX_CONNECT</td>
<td>REAL</td>
<td>Maximum connections. From MAXCONN.</td>
</tr>
<tr>
<td>TCP_ACTIVE_OPENS</td>
<td>REAL</td>
<td>Active opens. From ACTVOPEN.</td>
</tr>
<tr>
<td>TCP_PASSIVE_OPENS</td>
<td>REAL</td>
<td>Passive opens. From PASSOPEN.</td>
</tr>
<tr>
<td>TCP_OPEN_FAILS</td>
<td>REAL</td>
<td>Open failures. From ATTMFAIL.</td>
</tr>
<tr>
<td>TCP_EST_RESET_NUM</td>
<td>REAL</td>
<td>Number of resets. From ESTRESET.</td>
</tr>
<tr>
<td>TCP_CURR_EST_NUM</td>
<td>REAL</td>
<td>Number currently established. From CURESTAB.</td>
</tr>
<tr>
<td>TCP_INPUT_SEGM</td>
<td>REAL</td>
<td>Input segments. From INSEGS.</td>
</tr>
<tr>
<td>TCP_OUTPUT_SEGM</td>
<td>REAL</td>
<td>Output segments. From OUTSEGS.</td>
</tr>
<tr>
<td>TCP_RETR_SEM</td>
<td>REAL</td>
<td>Retransmitted segments. From RETRSEGS.</td>
</tr>
<tr>
<td>TCP_INPUT_ERR</td>
<td>REAL</td>
<td>Input errors. From INERRS.</td>
</tr>
<tr>
<td>TCP_OUT_RESET_NUM</td>
<td>REAL</td>
<td>Number of resets. From OUTERRS.</td>
</tr>
</tbody>
</table>
TCP/IP data tables

TCP_GEN_UDP_H, _D, _W

This table provides hourly, daily and weekly TCP/IP statistics for the UDP section information in TCP/IP for OS/390. The default retention periods for these tables are:
- TCP_GEN_UDP_H: 7 days
- TCP_GEN_UDP_D: 30 days
- TCP_GEN_UDP_W: 375 days

<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 when the statistics record was written to SMF. From SMFHDDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SMFHDTME. Applies only to the _H table.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMFHDSID.</td>
</tr>
<tr>
<td>SUB_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMFHDSI.</td>
</tr>
<tr>
<td>TCPIP_PROCNAME</td>
<td>CHAR(8)</td>
<td>TCP/IP Procname. From SMSUPRNM.</td>
</tr>
<tr>
<td>TCPIP_ASID</td>
<td>REAL</td>
<td>TCP/IP ASID. From SMSUASID.</td>
</tr>
<tr>
<td>TCPIP_START_TOD</td>
<td>TIMESTAMP</td>
<td>TCP/IP Startup TOD. From SMSUTOD.</td>
</tr>
<tr>
<td>TCPIP_IDENT_REC</td>
<td>CHAR(20)</td>
<td>TCP/IP SMF reason. X'10' Last SMF record/shutdown. X'20' Last SMF record/End stats. X'40' SMF Interval record. X'80' First SMF record. From SMSUREAS.</td>
</tr>
<tr>
<td>UDP_RECV_DATAGR</td>
<td>REAL</td>
<td>Received UDP datagrams. From USINDGRM.</td>
</tr>
<tr>
<td>UDP_DATAGR_NOPORT</td>
<td>REAL</td>
<td>UDP datagrams with no ports. From USOPRTS.</td>
</tr>
<tr>
<td>UDP_DATAGR_NOTREC</td>
<td>REAL</td>
<td>Other UDP datagrams not received. From USINERRS.</td>
</tr>
<tr>
<td>UDP_DATAGR_SENT</td>
<td>REAL</td>
<td>UDP datagrams sent. From USOTDGRM.</td>
</tr>
</tbody>
</table>
TCP/TN3270_CLNT_T, _H, _D, _W

This table provides detailed, hourly, daily and weekly T3270 client statistics for TCP/IP for MVS. The default retention period for these tables are:
- TCP_TN3270_CLNT_T: 1 days
- TCP_TN3270_CLNT_H: 7 days
- TCP_TN3270_CLNT_D: 30 days
- TCP_TN3270_CLNT_W: 375 days

<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 when the statistics record was written to SMF. From SMTNCDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF.</td>
</tr>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time when the record was written to SMF.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMTNCSID.</td>
</tr>
<tr>
<td>SUB_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMTNCSII.</td>
</tr>
<tr>
<td>LOCAL_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Fullword local ID address.</td>
</tr>
<tr>
<td>LOCAL_PORT</td>
<td>INTEGER</td>
<td>Local port number.</td>
</tr>
<tr>
<td>REMOTE_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Remote IP address.</td>
</tr>
<tr>
<td>REMOTE_PORT</td>
<td>INTEGER</td>
<td>Remote port number.</td>
</tr>
<tr>
<td>CONNECTION_STAT</td>
<td>CHAR(4)</td>
<td>LOGN of LOGF for START/STOP or INIT/TRM.</td>
</tr>
<tr>
<td>STARTED_TASK_QFY</td>
<td>CHAR(8)</td>
<td>Started Task qualifier name, for example TCP/IP.</td>
</tr>
<tr>
<td>NJE_NODE_NAME</td>
<td>CHAR(8)</td>
<td>Local port number.</td>
</tr>
</tbody>
</table>
TCP/IP data tables

TCP_TN3270_SERV_T, _H, _D, _W

This table provides detailed, hourly, daily and weekly TN3270 server statistics for TCP/IP for MVS. The default retention periods for these tables are:
- TCP_TN3270_SERV_T: 1 days
- TCP_TN3270_SERV_H: 7 days
- TCP_TN3270_SERV_D: 30 days
- TCP_TN3270_SERV_W: 375 days

<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 when the statistics record was written to SMF. From SMTNSDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the statistics record was written to SMF. From SMTNSTME. Applies only to _H and _T.</td>
</tr>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time when the record was written to SMF. SMTNSDTE and SMTNSTME. Applies only to _T.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMTNSSID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMTNSSSI.</td>
</tr>
<tr>
<td>LOCAL_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Fullword local ID address. From SMTNSLIP.</td>
</tr>
<tr>
<td>LOCAL_PORT</td>
<td>INTEGER</td>
<td>Local port number. From SMTNSLPN.</td>
</tr>
<tr>
<td>LU_NAME</td>
<td>CHAR(8)</td>
<td>LU name. From SMTNSLUN.</td>
</tr>
<tr>
<td>APPLICATION_NAME</td>
<td>CHAR(8)</td>
<td>Application name. From SMTNSAPN.</td>
</tr>
<tr>
<td>CONNECTION_STAT</td>
<td>CHAR(4)</td>
<td>LOGN or LOGF for START/STOP or INIT/TRM. From SMTNSLOG.</td>
</tr>
<tr>
<td>INTLOGIC_DEVADDR</td>
<td>REAL</td>
<td>Internal Logical device address. From SMTNSILA.</td>
</tr>
<tr>
<td>STARTED_TASK_QFY</td>
<td>CHAR(8)</td>
<td>Started Task qualifier name, for example TCP/IP. From SMTNSSTN</td>
</tr>
<tr>
<td>TCPIP_HOST_NAME</td>
<td>CHAR(8)</td>
<td>TCP/IP host name. From SMTNSHNHM.</td>
</tr>
<tr>
<td>BYTES_IN</td>
<td>REAL</td>
<td>IN byte count. From SMTNSINB.</td>
</tr>
<tr>
<td>BYTES_OUT</td>
<td>REAL</td>
<td>OUT byte count. From SMTNSOUB.</td>
</tr>
<tr>
<td>LOGF_TIME</td>
<td>TIME</td>
<td>Time. From SMTNSLFT.</td>
</tr>
<tr>
<td>LOGF_DATE</td>
<td>DATE</td>
<td>Date. From SMTNSLFD.</td>
</tr>
<tr>
<td>REMOTE_PORT</td>
<td>INTEGER</td>
<td>Remote port number. From SMTNSRPN.</td>
</tr>
<tr>
<td>REMOTE_IP_ADDR</td>
<td>CHAR(16)</td>
<td>Remote IP address. From SMTNSRIP.</td>
</tr>
</tbody>
</table>
**TCP_TNSERV_LOGN_H**

This table provides hourly statistics for the active logons to each application on a server for TCP/IP for MVS. The default retention periods for this table is:
- TCP_TNSERV_LOGN_H: 7 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 statistics record was written to SMF. From SMTNSDTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the statistics record was written to SMF. From SMTNSTIME.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>MVS system ID. This is the SMF system ID. From SMTNSSID.</td>
</tr>
<tr>
<td>SUB_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>Subsystem identification. This is the value set by the SUBSYS=option specified in the SMF macros. From SMTNSSSI.</td>
</tr>
<tr>
<td>LOCAL_IP_ADDR</td>
<td>k CHAR(16)</td>
<td>Fullword local ID address. From SMTNSSLIP.</td>
</tr>
<tr>
<td>LOCAL_PORT</td>
<td>k INTEGER</td>
<td>Local port number. From SMTNSLPN.</td>
</tr>
<tr>
<td>LU_NAME</td>
<td>k CHAR(8)</td>
<td>LU name. From SMTNSSLUN.</td>
</tr>
<tr>
<td>APPLICATION_NAME</td>
<td>k CHAR(8)</td>
<td>Application name. From SMTNSAPN.</td>
</tr>
<tr>
<td>LOGON_NUMBER</td>
<td>REAL</td>
<td>Number of logon records hour by hour</td>
</tr>
<tr>
<td>LOGOFF_NUMBER</td>
<td>REAL</td>
<td>Number of logoff records hour by hour</td>
</tr>
<tr>
<td>ACTIVE</td>
<td>FLOAT</td>
<td>Number of active logons hour by hour</td>
</tr>
</tbody>
</table>
TCP/IP data tables
Chapter 10. Reports

This chapter describes the reports provided with the TCP/IP component.

TCP/IP TELNET Server Active Logon by Hour report

This report shows how many logons made to an application on a server are active hour by hour on a specified day.

This information identifies the report:

Report ID: TCP01
Report group: TCP/IP Reports
Source: TCP_TNSERV_LOGN_H
Attributes: TCPIP, TN3270, SERVER, LOGON, APPLICATION
Variables: DATE, MVS_SYSTEM_ID, SUB_SYSTEM_ID, LOCAL_IP_ADDR, LOCAL_PORT, LU_NAME, APPL_NAME

<table>
<thead>
<tr>
<th>TIME</th>
<th>DATE</th>
<th>SYSTEM ID</th>
<th>LU</th>
<th>APPLICATION</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00</td>
<td>1999-10-29</td>
<td>8609</td>
<td>M0100</td>
<td>ECHOA01</td>
<td>0.000E+00</td>
</tr>
</tbody>
</table>

IMS Performance feature Report: TCP01

Figure 10. Example of TCP/IP TELNET Server Active Logon by Hour report

The report contains this information:

- **Time**: Hour of the measurement
- **Date**: Date of the measurement
- **MVS System ID**: System ID name
- **LU name**: Name of the LU
- **Application Name**: Name of the application
- **Sum active**: Number of active logons to an application hour by hour on the specified day
TCP/IP TELNET Server Bytes Traffic report

This report shows the traffic of bytes (bytes in and bytes out) caused by an application on a server in a date interval.

This information identifies the report:

Report ID: TCP02
Report group: TCP/IP Reports
Source: TCP_TN3270_SERV_T
Attributes: TCPIP, TN3270, SERVER, BYTES, APPLICATION
Variables: FROM_DATE, TO_DATE, MVS_SYSTEM_ID, SUB_SYSTEM_ID, LOCAL_IP_ADDR, LOCAL_PORT, LU_NAME, APPL_NAME

```
TCPIP TELNET Server Bytes traffic Report
MVS_SYSTEM_ID: '8609'
LU: 'M0100' APPL: 'ECHOA01'
```

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>MVS_SYSTEM_ID</th>
<th>SUBSYSTEM_ID</th>
<th>LU_NAME</th>
<th>APPLICATION_NAME</th>
<th>Tot Bytes In</th>
<th>Tot Bytes Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-10-29</td>
<td>16.00.00</td>
<td>8609</td>
<td>M0100</td>
<td>ECHOA01</td>
<td></td>
<td>7.770E+03</td>
<td>6.063E+03</td>
</tr>
</tbody>
</table>

Figure 11. Example of TCP/IP TELNET server bytes traffic report

The report contains this information:

- **Date** Date of the measurement
- **Time** Hour of the measurement
- **MVS System ID** System ID name
- **Subsystem_ID** Name of the subsystem
- **LU name** Name of the LU
- **Application Name** Name of the application
- **Tot Bytes In** Number of input bytes
- **Tot Bytes Out** Number of output bytes
TCP/IP TELNET AVG Connection Time to Application report

This report shows TCP/IP TELNET average connection time to an application.

This information identifies the report:

Report ID: TCP03
Report group: TCP/IP Reports
Source: TCP_TN3270_SERV_H
Attributes: TCPIP, TN3270, SERVER, LOGON, APPLICATION
Variables: TO_DATE, FROM_DATE, MVS_SYSTEM_ID, SUB_SYSTEM_ID, LOCAL_IP_ADDR, LOCAL_PORT, LU_NAME, APPL_NAME

The report contains this information:

- **Date**: Date of the measurement
- **MVS System ID**: System ID name
- **SubSystem ID**: Name of the subsystem
- **LU name**: Name of the LU
- **Application Name**: Name of the application
- **Average Logon Time**: Average time an application was logged on to the specific application.

Figure 12. Example of TCP/IP TELNET AVG Connection Time to Application report
TCP/IP reports

TCP/IP FTP Transmission report

This report shows statistics on the byte count for FTP functions on a server.

This information identifies the report:

Report ID: TCP04
Report group: TCP/IP Reports
Source: TCP_FTP_SERVER_T
Attributes: TCPIP, FTP, BYTES, TRANSMISSION
Variables: TO_DATE, FROM_DATE, MVS_SYSTEM_ID, SUB_SYSTEM_ID, LOCAL_IP_ADDR, LOCAL_PORT

TCP/IP FTP Transmission report
MVS_SYSTEM_ID:'MVSN'
LIP_ADDR:'9.67.113.63' LPORT:621

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>MVS_SYSTEM_ID</th>
<th>SYSTEM_ID</th>
<th>SUBSYSTEM_ID</th>
<th>TOT_BYTE_COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-09-22</td>
<td>11:00.00</td>
<td>MVSN</td>
<td></td>
<td></td>
<td>6.240E+02</td>
</tr>
</tbody>
</table>

Figure 13. Example of TCP/IP FTP Transmission report

The report contains this information:

Date       Date of the measurement
Time       Hour of the measurement
MVS System ID  System ID name
Subsystem ID  Name of the subsystem
Tot byte count  Total number of I/O bytes
TCP/IP reports

TCP/IP IP TCPIPSTATISTICS hourly report

This report shows IP statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

Report ID: TCP05
Report group: TCP/IP Reports
Source: TCP_GEN_IP_H
Attributes: TCPIP, TCPIPSTATISTICS, IP
Variables: DATE, MVS_SYSTEM_ID, SUB_SYSTEMID

Figure 14. Example of a TCP/IP IP TCPIPSTATISTICS report

The report contains this information:

<table>
<thead>
<tr>
<th>Time</th>
<th>TCPIP Proname</th>
<th>Received Datagrams</th>
<th>Attempted Forward Datagrams</th>
<th>Delivered Datagrams</th>
<th>Sent Datagrams</th>
<th>Reassembled Datagrams</th>
<th>Fragments Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.00.00</td>
<td>TCPIP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22.00.00</td>
<td>TCPIP</td>
<td>39857</td>
<td>0</td>
<td>40264</td>
<td>38478</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23.00.00</td>
<td>TCPIP</td>
<td>3365</td>
<td>0</td>
<td>3455</td>
<td>3148</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: TCP05
TCP/IP reports

TCP/IP IP TCPIPSTATISTICS Error report

This report shows IP statistics for failing operations from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

Report ID: TCP06
Report group: TCP/IP Reports
Source: TCP_GEN_IP_H
Attributes: TCPIP, TCPIPSTATISTICS, IP, ERROR
Variables: DATE, MVS_SYSTEM_ID, SUB_SYSTEMID

TCP/IP IP TCPIPSTATISTICS Error Report
MVS system: 'ES88' Subsystem: ' '; Procname: 'TCPIP ' Date: 2000-03-08

<table>
<thead>
<tr>
<th>Time</th>
<th>TCPIP Procnme</th>
<th>Discarded Datagrams</th>
<th>Sent discarded</th>
<th>Reassembly failed</th>
<th>Routing discards</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.00.00</td>
<td>TCPIP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22.00.00</td>
<td>TCPIP</td>
<td>68</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23.00.00</td>
<td>TCPIP</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

77 0 0 0

Figure 15. Example of a TCP/IP IP TCPIPSTATISTICS Error report

The report contains this information:

Time

Hour of the measurement.

TCPIP Procnme

The name of the TCP/IP procedure name.

Discarded Datagrams

The number of discarded datagrams. Calculated as the sum of IPTOT_DISC_DATAGR + IPTOP_DISC_ADDR + IPTOT_DISC_UNPR + IPTOT_DISC_OTHER.

Sent discarded

The number of sent discarded. Calculated as the sum of IPTOT_SENT_DISC + IPTOT_SENT_DISNOR.

Reassembly failed

The number of reassembly failed. Calculated as the sum of IPTOT_REASS_FAILED.

Routing discards

The number of routing discards. Calculated as the sum of IPTOT_ROUT_DISCRDS.
TCP/IP TCP TCPIPSTATISTICS report

This report shows TCP statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

Report ID: TCP07
Report group: TCP/IP Reports
Source: TCP_GEN_TCP_H
Attributes: TCPIP, TCPIPSTATISTICS, TCP
Variables: DATE, MVS_SYSTEM_ID, SUB_SYSTEMID

The report contains this information:

<table>
<thead>
<tr>
<th>Time</th>
<th>TCPIP Proname</th>
<th>Retransmit algorithm</th>
<th>Active Opens</th>
<th>Passive Opens</th>
<th>Open failures</th>
<th>Resets</th>
<th>Input errors</th>
<th>Out Resets</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.00.00</td>
<td>TCPIP</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22.00.00</td>
<td>TCPIP</td>
<td>36</td>
<td>53</td>
<td>53</td>
<td>14</td>
<td>20</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>23.00.00</td>
<td>TCPIP</td>
<td>12</td>
<td>25</td>
<td>25</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Figure 16. Example of a TCP/IP TCP TCPIPSTATISTICS report

The report contains this information:

- **Time**: Hour of the measurement.
- **TCPIP Proname**: The name of the TCP/IP procedure name.
- **Retransmit algorithm**: The number of retransmit algorithms. Calculated as the sum of TCP_RETR_ALG.
- **Active Opens**: The number of active opens. Calculated as the sum of TCP_ACTIVE_OPENS.
- **Passive Opens**: The number of passive opens. Calculated as the sum of TCP_PASSIVE_OPENS.
- **Open failures**: The number of open failures. Calculated as the sum of TCP_OPEN_FAILS.
- **Resets**: The number of resets. Calculated as the sum of TCP_EST_RESET_NUM.
- **Input errors**: The number of input errors. Calculated as the sum of TCP_INPUT_ERR.
- **Out Resets**: The number of output resets. Calculated as the sum of TCP_OUT_RESET_NUM.
TCP/IP UDP TCPIPSTATISTICS report

This report shows UDP statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

- **Report ID:** TCP08
- **Report group:** TCP/IP Reports
- **Source:** TCP_GEN_UDP_H
- **Attributes:** TCPIP, TCPIPSTATISTICS, UDP
- **Variables:** DATE, MVS_SYSTEM_ID, SUB_SYSTEMID

The report contains this information:

- **Time**
- **TCPIP Procname**
- **Received Datagrams**
- **Datagrams with no ports**
- **Other Datagrams not recv**
- **Datagrams sent**

![Table of UDP statistics]

**Figure 17. Example of a TCP/IP UDP TCPIPSTATISTICS report**

The report contains this information:

- **Time**
  - Hour of the measurement.

- **TCPIP Procname**
  - The name of the TCP/IP procedure name.

- **Received Datagrams**
  - The number of received UDP datagrams.
  - Calculated as the sum of UDP_RECV_DATAGR.

- **Datagrams with no ports**
  - The number of UDP datagrams with no port.
  - Calculated as the sum of UDP_DATAGR_NOPORT.

- **Other Datagrams not recv**
  - The number of other UDP datagrams not received.
  - Calculated as the sum of UDP_DATAGR_NOTREC.

- **Datagrams sent**
  - The number of sent datagrams. Calculated as the sum of UDP_DATAGR_SENT.
TCPIP ICMP TCPIPSTATISTICS Input report

This report shows ICMP for input message flow statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

**Report ID:** TCP09  
**Report group:** TCP/IP Reports  
**Source:** TCP_GEN_ICMP_H  
**Attributes:** TCPIP, TCPIPSTATISTICS, ICMP, INPUT  
**Variables:** DATE, MVS_SYSTEM_ID, SUB_SYSTEMID

The report contains this information:

- **Time**  
  Hour of the measurement.
- **TCPIP Proname**  
  The name of the TCP/IP procedure name.
- **In Msg**  
  The number of ICMP messages in input. Calculated as the sum of ICMP_INMSGS.
- **In Msg Error**  
  The number of ICMP error messages in input. Calculated as the sum of ICMP_INMSGS_ERRS.
- **In Dest Unreach**  
  The number of times that a destination unreachable problem occurred in the input. Calculated as the sum of ICMP_INDEST_UNRCH.
- **In Time exceed Msgs**  
  The number of times that a time exceeded input message was issued. Calculated as the sum of ICMP_INTM_EXCMSGS.
- **In Param Probl Msgs**  
  The number of times that an input parameter problem message was issued. Calculated as the sum of ICMP_INPAR_PRBMSG.
- **In Source Quench Msgs**  
  The number of times that an input source quench message was issued. Calculated as the sum of ICMP_INSRC_QUENCHS.

Figure 18. Example of a TCP/IP ICMP TCPIPSTATISTICS Input report

The report contains this information:

<table>
<thead>
<tr>
<th>In Time</th>
<th>In Dest Unreach</th>
<th>In Param Probl Msgs</th>
<th>In Source Quench Msgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Proname</td>
<td>In Msg</td>
<td>In Msg Error</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>---------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>10:14:33</td>
<td>TCPIP1</td>
<td>1.200E+01</td>
<td>1.000E+01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.300E+01</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.300E+03</td>
<td></td>
</tr>
</tbody>
</table>

TCPIP ICMP TCPIPSTATISTICS Input Report  
MVS system: 'SYS1' Subsystem: ' ';  
Procname: 'TCPIP1'  
Date: 2000-06-15  

Tivoli Decision Support for OS/390 Report: TCP09
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Redirec Msgs</td>
<td>The number of input redirect messages. Calculated as the sum of ICMP_INREDIRECTS.</td>
<td></td>
</tr>
<tr>
<td>In Echo Reqs Msgs</td>
<td>The number of input echo request messages.</td>
<td>Calculated as the sum of ICMP_INECHOS.</td>
</tr>
<tr>
<td>In Echo Reply Msgs</td>
<td>The number of input echo reply messages.</td>
<td>Calculated as the sum of ICMP_INECHOS_REPS.</td>
</tr>
<tr>
<td>In Addr Mask Reqs Msgs</td>
<td>The number of input address mask request messages.</td>
<td>Calculated as the sum of ICMP_INADDRMASKS.</td>
</tr>
<tr>
<td>In Addr Mask Reply Msgs</td>
<td>The number of input address mask reply messages.</td>
<td>Calculated as the sum of ICMP_INADDRMSKREP.</td>
</tr>
</tbody>
</table>
This report shows ICMP for output message flow statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed hour by hour on a specified day.

This information identifies the report:

**Report ID:** TCP10  
**Report group:** TCP/IP Reports  
**Source:** TCP_GEN_ICMP_H  
**Attributes:** TCPIP, TCPIPSTATISTICS, ICMP, OUTPUT  
**Variables:** DATE, MVS_SYSTEM_ID, SUB_SYSTEM_ID

The report contains this information:

<table>
<thead>
<tr>
<th>Time</th>
<th>Procname</th>
<th>Out Msg</th>
<th>Out Msg Error</th>
<th>Out Dest Unreach</th>
<th>Out Time exceed Mgs</th>
<th>Out Param Probl Mgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.14.33</td>
<td>TCPIP1</td>
<td>3.300E+03</td>
<td>0.000</td>
<td>1.400E+03</td>
<td>1.200E+03</td>
<td>1.000E+03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Out Source Quench</th>
<th>Out Redirc</th>
<th>Out Echo</th>
<th>Out Echo Mask</th>
<th>Reqs</th>
<th>Mask</th>
<th>Reply Mgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.600E+03</td>
<td>1.2000E+03</td>
<td>0.000</td>
<td>1.100E+03</td>
<td>8.000E+04</td>
<td>2.000E+04</td>
<td></td>
</tr>
</tbody>
</table>

**Time**  
Hour of the measurement.

**TCPIP Procname**  
The name of the TCP/IP procedure name.

**Out Msg**  
The number of ICMP messages in output. Calculated as the sum of ICMP_OUTMSGS.

**Out Msg Error**  
The number of ICMP error messages in output. Calculated as the sum of ICMP_OUTMSGS_ERRS.

**Out Dest Unreach**  
The number of times that a destination unreachable problem occurred in the output. Calculated as the sum of ICMP_OUTDEST_UNRCH.

**Out Time exceed Mgs**  
The number of times that a time exceeded output message was issued. Calculated as the sum of ICMP_OUTTM_EXCMSGS.

**Out Param Probl Mgs**  
The number of times that an output parameter problem message was issued. Calculated as the sum of ICMP_OUTPAR_PRBMSGS.

**Out Source Quench Mgs**  
The number of times that an output source quench

---

**Figure 19. Example of a TCP/IP ICMP TCPIPSTATISTICS Output report**
message was issued. Calculated as the sum of ICMP_OUTSRC_QUENCH.

**Out Redircet Msgs**  
The number of output redirect messages.  
Calculated as the sum of ICMP_OUTREDIRECTS.

**Out Echo Reqs Msgs**  
The number of output echo request messages.  
Calculated as the sum of ICMP_OUTECHOS.

**Out Echo Reply Msgs**  
The number of output echo reply messages.  
Calculated as the sum of ICMP_OUTECHOS_REPS.

**Out Addr Mask Reqs Msgs**  
The number of output address mask request messages. Calculated as the sum of ICMP_OUTADDRMASKS.

**Out Addr Mask Reply Msgs**  
The number of output address mask reply messages. Calculated as the sum of ICMP_OUTADDRMSKREP.
TCP/IP reports

TCP/IP IP TCPIPSTATISTICS daily report

This report shows IP statistics from the general statistics obtained by specifying the TCPIPSTATISTICS parameter in the SMFCONFIG statement. The information is displayed daily. This information identifies the report:

Report ID: TCP11

Report group: TCP/IP Reports

Source: TCP_GEN_IP_D

Attributes: TCPIP, TCPIPSTATISTICS, IP

Variables: MVS_SYSTEM_ID, SUB_SYSTEMID

The report contains this information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Procname</th>
<th>Attempted</th>
<th>Received</th>
<th>Forward</th>
<th>Delivered</th>
<th>Sent</th>
<th>Reassembled</th>
<th>Fragments Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-09-08</td>
<td>TCP/IP</td>
<td></td>
<td>2733</td>
<td>0</td>
<td>2785</td>
<td>2696</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-09-09</td>
<td>TCP/IP</td>
<td>893378</td>
<td>906493</td>
<td>0</td>
<td>763674</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: TCP11

Figure 20. Example of a TCP/IP TCPIPSTATISTICS Daily report

Date Day of the measurement.

TCP/IP Procname The name of the TCP/IP procedure name.

Received Datagrams The number of received datagrams. Calculated as the sum of IPTOT_REC_DATAGR.

Attempted Forward Datagrams The number of attempts to forward datagrams. Calculated as the sum of IPTOT_ATT_FWDTGR.

Delivered Datagrams The number of delivered datagrams. Calculated as the sum of IPTOT_DELIV_DATA.

Sent Datagrams The number of sent datagrams. Calculated as the sum of IPTOT_SENT_DATA.

Reassembled Datagrams The number of reassembled datagrams. Calculated as the sum of IPTOT_DATAGR_REASS.

Fragments Generated The number of generated fragments. Calculated as the sum of IPTOT_FRAGM_GENER.
Part 3. Internet Connection Secure Server component for OS/390

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Chapter 11. Customization

Before you can use ICSS, you must first configure it to write to SMF. Refer to the *Internet Connection Secure Server Webmaster’s Guide for OS/390 V2R2* for information about how to configure ICSS. No further configuration of ICSS is necessary.

With this component of the System Performance feature you can create and display four reports on data that is retrieved from the Internet Connection Secure Server (ICSS) application for OS/390. The data is collected and then logged to SMF data sets.

ICSS V2R2 introduces SMF logging of configuration and performance information. Configuration information is collected whenever the server is started, if SMF is setup correctly and the server itself has SMF logging enabled. This configuration information is saved as SMF record 103, subtype 01.

Performance data is collected periodically according to the SMF interval, if SMF is set up correctly and the server itself has SMF logging enabled. This performance information is saved as SMF record 103, subtype 02.

SMF logging by ICSS uses new facilities in OS/390 that enable applications such as ICSS to write their own SMF records.

Table 2 shows the predefined reports that are provided with the Internet Connection Secure Server component:

<table>
<thead>
<tr>
<th>Type of Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSS configuration</td>
<td>A complete view of the configuration information that is gathered by ICSS for a selected host for the day.</td>
</tr>
<tr>
<td>ICSS performance</td>
<td>A complete view of the performance information that is gathered by ICSS for a selected host, detailed by hourly, daily, and weekly trend reports.</td>
</tr>
</tbody>
</table>
ICSS customization
Chapter 12. Data flow

The ICSS component collects records from the SMF data set and stores extracted and summarized data in the Tivoli Decision Support for OS/390 database. The reporting function extracts data from the database and creates the reports that you request through the reporting dialogs. Figure 21 shows an overview of the flow of data through the ICSS component.

Figure 21. ICSS component data flow
Chapter 13. Log and record definitions

The SMF log file is processed by the log collector component. During the processing, the ICSS data is stored with the specified summarizations in the database. After the data is stored in the database, you can use graphical or tabular reports to display the data.

Four reports are provided with the ICSS component. Users can also build other, customized reports by using queries.

The definitions for the log collector are contained in the log definition, the record definition, and the table definition:

- The log definition describes the format of the log file to the log collector.
- The record definition describes the record format of the ICSS application SMF type 103 record, subtypes 01 and 02, to the log collector.
- The table definition consists of two parts:
  - The table definition that defines to the log collector how the tables for ICSS data are built. These tables will contain the data.
  - The update table definitions that describe to the log collector how to process the data that comes from the log file before the log collector stores the data in the data tables.

The report definitions describe the report layouts, data, and defaults.

Log file definitions

The SMF log file that is generated by ICSS contains 2 types of records:

- SMF type 103, subtype 01 for configuration data
- SMF type 103, subtype 02 for performance data

The format of each record is defined in the member DRLLINTE, which is contained in the dataset DRL160.SDRLDEFS. Table 3 shows the record format.

<table>
<thead>
<tr>
<th>Field</th>
<th>Offset</th>
<th>Length</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF103LEN</td>
<td>0</td>
<td>2</td>
<td>BINARY</td>
<td>Record length</td>
</tr>
<tr>
<td>SMF103SEG</td>
<td>2</td>
<td>2</td>
<td>BINARY</td>
<td>Segment descriptor</td>
</tr>
<tr>
<td>SMF103FLG</td>
<td>4</td>
<td>1</td>
<td>BINARY</td>
<td>System Indicator</td>
</tr>
<tr>
<td>SMF103RTY</td>
<td>5</td>
<td>1</td>
<td>BINARY</td>
<td>Record Type 103 (x’67’)</td>
</tr>
<tr>
<td>SMF103TME</td>
<td>6</td>
<td>4</td>
<td>BINARY</td>
<td>Time stamp</td>
</tr>
<tr>
<td>SMF103DTE</td>
<td>10</td>
<td>4</td>
<td>PACKED</td>
<td>Date stamp</td>
</tr>
<tr>
<td>SMF103SID</td>
<td>14</td>
<td>4</td>
<td>EBCDIC</td>
<td>System Identifier</td>
</tr>
<tr>
<td>SMF103SSI</td>
<td>18</td>
<td>4</td>
<td>EBCDIC</td>
<td>Subsystem Identifier</td>
</tr>
<tr>
<td>SMF103STY</td>
<td>22</td>
<td>2</td>
<td>BINARY</td>
<td>Record subtype (x’01’ or x’02’)</td>
</tr>
</tbody>
</table>
ICSS log and record definitions

Record definitions

An ICSS record definition is the description for the log collector of the data written to the SMF log file. The record format for the INT_103_01 and INT_103_02 records are defined in the member DRLRS103, which is contained in the dataset DRL160.SDRLDEFS.

The configuration record INT_103_01 (SMF type 103, subtype 01) is identified by:
SM103RTY = 103 AND SM103STY = 1

Performance record INT_103_02 (SMF type 103, subtype 02) is identified by:
SM103RTY = 103 AND SM103STY = 2

**INT_103_01**

The fields for Configuration record INT_103_01 are shown in Table 4.

<table>
<thead>
<tr>
<th>Field</th>
<th>Offset</th>
<th>Length</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entitynamelen</td>
<td>24</td>
<td>4</td>
<td>BINARY</td>
<td>Length of entity Name</td>
</tr>
<tr>
<td>Entityname</td>
<td>28</td>
<td>var</td>
<td>EBCDIC</td>
<td>Hostname for the server</td>
</tr>
<tr>
<td>EntityAddressLen</td>
<td>EntityNameLen+28 (called ENE in the following)</td>
<td>4</td>
<td>BINARY</td>
<td>Length of EntityAddress field</td>
</tr>
<tr>
<td>EntityAddress</td>
<td>ENE+4</td>
<td>4</td>
<td>BINARY</td>
<td>(long) IP address</td>
</tr>
<tr>
<td>EntityPort</td>
<td>ENE+8</td>
<td>4</td>
<td>BINARY</td>
<td>Port number being used</td>
</tr>
<tr>
<td>serverType</td>
<td>ENE+12</td>
<td>4</td>
<td>BINARY</td>
<td>Server type. Values can be: 0=uninitialized 1=standalone 2=inetd</td>
</tr>
<tr>
<td>applVersionLen</td>
<td>ENE+16</td>
<td>4</td>
<td>BINARY</td>
<td>Length of applVersion field</td>
</tr>
<tr>
<td>applVersion</td>
<td>ENE+20</td>
<td>var</td>
<td>EBCDIC</td>
<td>Version of server</td>
</tr>
<tr>
<td>serverRootLen</td>
<td>ENE+20+ApplVersionLen (called AVE in the following)</td>
<td>4</td>
<td>BINARY</td>
<td>Length of serverRoot field</td>
</tr>
<tr>
<td>serverRoot</td>
<td>AVE+4</td>
<td>var</td>
<td>EBCDIC</td>
<td>Directory for server_root</td>
</tr>
<tr>
<td>doDNSLookUp</td>
<td>AVE+4+serverRootLen (called SRE in the following)</td>
<td>4</td>
<td>BINARY</td>
<td>DNS lookup flag. Values can be: 0=off 1=on</td>
</tr>
<tr>
<td>maxContentBuf</td>
<td>SRE+4</td>
<td>4</td>
<td>BINARY</td>
<td>Maximum size of content buffer in bytes</td>
</tr>
<tr>
<td>ThreadsMin</td>
<td>SRE+8</td>
<td>4</td>
<td>BINARY</td>
<td>Minimum number of threads the server can have</td>
</tr>
<tr>
<td>ThreadsMax</td>
<td>SRE+12</td>
<td>4</td>
<td>BINARY</td>
<td>Max number of threads the server can have</td>
</tr>
<tr>
<td>IdleThreadTO</td>
<td>SRE+16</td>
<td>4</td>
<td>BINARY</td>
<td>Timeout value for idle threads</td>
</tr>
<tr>
<td>ACLSettings</td>
<td>SRE+20</td>
<td>4</td>
<td>BINARY</td>
<td>ACL settings. Values can be: 0=always 1=protectonly 2=never</td>
</tr>
</tbody>
</table>
## Table 4. Configuration record INT_103_01 fields (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Offset</th>
<th>Length</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UseMetaFiles</td>
<td>SRE+24</td>
<td>4</td>
<td>BINARY</td>
<td>Meta file flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=on</td>
</tr>
<tr>
<td>DirAccess</td>
<td>SRE+28</td>
<td>4</td>
<td>BINARY</td>
<td>Directory access flag</td>
</tr>
<tr>
<td>inputTO</td>
<td>SRE+32</td>
<td>4</td>
<td>BINARY</td>
<td>Input timeout</td>
</tr>
<tr>
<td>outputTO</td>
<td>SRE+36</td>
<td>4</td>
<td>BINARY</td>
<td>Output timeout</td>
</tr>
<tr>
<td>scriptTO</td>
<td>SRE+40</td>
<td>4</td>
<td>BINARY</td>
<td>Script timeout</td>
</tr>
<tr>
<td>useGMT</td>
<td>SRE+44</td>
<td>4</td>
<td>BINARY</td>
<td>GMT flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=localtime</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=GMT</td>
</tr>
<tr>
<td>serverImbedsHtml</td>
<td>SRE+48</td>
<td>4</td>
<td>BINARY</td>
<td>Server Imbeds HTML flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=off</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=on</td>
</tr>
<tr>
<td>secureType</td>
<td>SRE+52</td>
<td>4</td>
<td>BINARY</td>
<td>Security type. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=SSL mode is on</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2=SSL mode is off</td>
</tr>
<tr>
<td>sslPort</td>
<td>SRE+56</td>
<td>4</td>
<td>BINARY</td>
<td>Security (SSL) port</td>
</tr>
<tr>
<td>normalMode</td>
<td>SRE+60</td>
<td>4</td>
<td>~BINARY</td>
<td>Normal mode flag</td>
</tr>
<tr>
<td>cacheOff</td>
<td>SRE+64</td>
<td>4</td>
<td>BINARY</td>
<td>Cache flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=on</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=off</td>
</tr>
<tr>
<td>cache_max_k</td>
<td>SRE+68</td>
<td>4</td>
<td>BINARY</td>
<td>Max k cache</td>
</tr>
<tr>
<td>cache_max_f</td>
<td>SRE+72</td>
<td>4</td>
<td>BINARY</td>
<td>Max file to cache</td>
</tr>
<tr>
<td>cache_limit_1</td>
<td>SRE+76</td>
<td>4</td>
<td>BINARY</td>
<td>Cache limit 1</td>
</tr>
<tr>
<td>cache_limit_2</td>
<td>SRE+80</td>
<td>4</td>
<td>BINARY</td>
<td>Cache limit 2</td>
</tr>
<tr>
<td>cacheTimeMargin</td>
<td>SRE+84</td>
<td>4</td>
<td>BINARY</td>
<td>Length of cacheTimeMargin field</td>
</tr>
<tr>
<td>&gt;Len</td>
<td></td>
<td></td>
<td></td>
<td>(long) Cache time margin</td>
</tr>
<tr>
<td>cacheTimeMargin</td>
<td>SRE+88</td>
<td>4</td>
<td>BINARY</td>
<td>(long) Cache time margin</td>
</tr>
<tr>
<td>cacheLockTOLen</td>
<td>SRE+92</td>
<td>4</td>
<td>BINARY</td>
<td>Length of cacheLockTO field</td>
</tr>
<tr>
<td>cacheLockTO</td>
<td>SRE+96</td>
<td>4</td>
<td>BINARY</td>
<td>(long) Cache lock timeout</td>
</tr>
<tr>
<td>keepExpired</td>
<td>SRE+100</td>
<td>4</td>
<td>BINARY</td>
<td>Keep expired flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=expired cache data is deleted</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=expired cache data is kept</td>
</tr>
<tr>
<td>cacheNoConnect</td>
<td>SRE+104</td>
<td>4</td>
<td>BINARY</td>
<td>Cache connect flag</td>
</tr>
<tr>
<td>gcDisabled</td>
<td>SRE+108</td>
<td>4</td>
<td>BINARY</td>
<td>Garbage collection flag. Values can be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0=on</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1=off</td>
</tr>
<tr>
<td>gcDailyGCLen</td>
<td>SRE+112</td>
<td>4</td>
<td>BINARY</td>
<td>Length of gcDailyGC field</td>
</tr>
<tr>
<td>gcDailyGC</td>
<td>SRE+116</td>
<td>4</td>
<td>BINARY</td>
<td>(long) Garbage collection interval</td>
</tr>
<tr>
<td>gcMemUsage</td>
<td>SRE+120</td>
<td>4</td>
<td>BINARY</td>
<td>Garbage collection mem use</td>
</tr>
<tr>
<td>ProxySomething</td>
<td>SRE+124</td>
<td>4</td>
<td>BINARY</td>
<td>Proxy flag</td>
</tr>
</tbody>
</table>
The fields for Performance data record INT_103_02 are shown in Table 5.

<table>
<thead>
<tr>
<th>Field</th>
<th>Offset</th>
<th>Length</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entitynamelen</td>
<td>24</td>
<td>4</td>
<td>BINARY</td>
<td>Length of Entity Name</td>
</tr>
<tr>
<td>Entityname</td>
<td>28</td>
<td>var</td>
<td>EBCDIC</td>
<td>Hostname for the server</td>
</tr>
<tr>
<td>EntityAddressLen</td>
<td>EntityNameLen+28 (called ENE in the following)</td>
<td>4</td>
<td>BINARY</td>
<td>Length of EntityAddress field</td>
</tr>
<tr>
<td>EntityAddress</td>
<td>ENE+4</td>
<td>4</td>
<td>BINARY</td>
<td>(long) IP address</td>
</tr>
<tr>
<td>EntityPort</td>
<td>ENE+8</td>
<td>4</td>
<td>BINARY</td>
<td>Port number being used</td>
</tr>
<tr>
<td>serverType</td>
<td>ENE+12</td>
<td>4</td>
<td>BINARY</td>
<td>Server type. Values can be: 0=uninitialized 1=standalone 2=inetd</td>
</tr>
<tr>
<td>applVersionLen</td>
<td>ENE+16</td>
<td>4</td>
<td>BINARY</td>
<td>Length of applVersion field</td>
</tr>
<tr>
<td>applVersion</td>
<td>ENE+20</td>
<td>var</td>
<td>EBCDIC</td>
<td>Version of server</td>
</tr>
<tr>
<td>TotalCurrent</td>
<td>ENE+20+ApplVersionLen (called AVE in the following)</td>
<td>4</td>
<td>BINARY</td>
<td>Number of threads currently used</td>
</tr>
<tr>
<td>MaxThread</td>
<td>AVE+4</td>
<td>4</td>
<td>BINARY</td>
<td>Maximum number of threads defined</td>
</tr>
<tr>
<td>Request</td>
<td>AVE+8</td>
<td>4</td>
<td>BINARY</td>
<td>Number of requests received</td>
</tr>
<tr>
<td>RequestErrors</td>
<td>AVE+12</td>
<td>4</td>
<td>BINARY</td>
<td>Number of requests errors received</td>
</tr>
<tr>
<td>RequestDiscards</td>
<td>AVE+16</td>
<td>4</td>
<td>BINARY</td>
<td>Number of requests discarded</td>
</tr>
<tr>
<td>Responses</td>
<td>AVE+20</td>
<td>4</td>
<td>BINARY</td>
<td>Number of responses sent</td>
</tr>
<tr>
<td>ResponseDiscard</td>
<td>AVE+24</td>
<td>4</td>
<td>BINARY</td>
<td>Number of responses discarded</td>
</tr>
<tr>
<td>InBytes</td>
<td>AVE+28</td>
<td>4</td>
<td>BINARY</td>
<td>Number of bytes received</td>
</tr>
<tr>
<td>OutBytes</td>
<td>AVE+32</td>
<td>4</td>
<td>BINARY</td>
<td>Number of bytes sent</td>
</tr>
<tr>
<td>InUnknowns</td>
<td>AVE+36</td>
<td>4</td>
<td>BINARY</td>
<td>Number of bytes received for unknown type of requests received by the server</td>
</tr>
<tr>
<td>TotalTimeOuts</td>
<td>AVE+40</td>
<td>4</td>
<td>BINARY</td>
<td>Number of timeouts since startup</td>
</tr>
</tbody>
</table>
This section describes the modified Table objects for the Internet Connection Secure Server component for OS/390.

**INTCON_CONF**

The following table provides configuration information for ICSS. The source file is in the member DRLTINTE, which is contained in the dataset DRL160.SDRLDEFS.

The default retention period for INTCON_CONF is 765 days.

<table>
<thead>
<tr>
<th>Column</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTE</td>
<td>DATE</td>
<td>Date when the record was written</td>
</tr>
<tr>
<td>TME</td>
<td>TIME</td>
<td>Time when the record was written</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF103SID</td>
</tr>
<tr>
<td>ENTITY_NAME</td>
<td>CHAR(32)</td>
<td>Host name for the server</td>
</tr>
<tr>
<td>ENTITY_ADDR</td>
<td>CHAR(16)</td>
<td>IP address for the server</td>
</tr>
<tr>
<td>ENTITY_PORT</td>
<td>INTEGER</td>
<td>Port number being used</td>
</tr>
<tr>
<td>SERVER_TYPE</td>
<td>INTEGER</td>
<td>Server type. It can be 0, 1, and 2 (uninitialized, standalone, and inetd server)</td>
</tr>
<tr>
<td>APPL_VERSION</td>
<td>CHAR(8)</td>
<td>Version of server</td>
</tr>
<tr>
<td>SERVER_ROOT</td>
<td>CHAR(32)</td>
<td>Directory for server_root</td>
</tr>
<tr>
<td>DO_DNS_LKUP</td>
<td>INTEGER</td>
<td>Value of the DNS-lookup directive (0 if off, 1 if on).</td>
</tr>
<tr>
<td>MAX_CONT_BUF</td>
<td>INTEGER</td>
<td>Maxsize setting of the content buffer, in bytes</td>
</tr>
<tr>
<td>THREADS_MIN</td>
<td>INTEGER</td>
<td>Minimum number of threads that the server can have</td>
</tr>
<tr>
<td>THREADS_MAX</td>
<td>INTEGER</td>
<td>Value of the MaxActiveThreads directive</td>
</tr>
<tr>
<td>IDLE_THREAD_TO</td>
<td>INTEGER</td>
<td>Timeout for idle threads</td>
</tr>
<tr>
<td>ACL_SETTINGS</td>
<td>INTEGER</td>
<td>ACL settings, values can be 0, 1, and 2 (always, protectonly, and never)</td>
</tr>
<tr>
<td>USE_META_FILES</td>
<td>INTEGER</td>
<td>Settings use for meta files directive (0 is off, 1 is on).</td>
</tr>
<tr>
<td>DIR_ACCESS</td>
<td>INTEGER</td>
<td>Directory access flag.</td>
</tr>
<tr>
<td>INPUT_TO</td>
<td>INTEGER</td>
<td>Value of input timeout directive.</td>
</tr>
<tr>
<td>OUTPUT_TO</td>
<td>INTEGER</td>
<td>Value of output timeout directive.</td>
</tr>
<tr>
<td>SCRIPT_TO</td>
<td>INTEGER</td>
<td>Value of script timeout directive.</td>
</tr>
<tr>
<td>USE_GMT</td>
<td>INTEGER</td>
<td>Setting of the LogTime directive (0 if Localtime and 1 if GMT).</td>
</tr>
<tr>
<td>SERVER_IMBEDS_HTML</td>
<td>INTEGER</td>
<td>Settings of Imbeds directive (0 if off, 1 if on).</td>
</tr>
<tr>
<td>SECURE_TYPE</td>
<td>INTEGER</td>
<td>Secure type settings. Values can be 1 or 2 (1 if SSL mode is on, 2 if SSL mode is off).</td>
</tr>
<tr>
<td>SSL_PORT</td>
<td>INTEGER</td>
<td>Security (SSL) port.</td>
</tr>
<tr>
<td>NORMAL_MODE</td>
<td>INTEGER</td>
<td>Normal mode flag.</td>
</tr>
<tr>
<td>CACHE_OFF</td>
<td>INTEGER</td>
<td>Setting of the Caching directive. Values can be 1 or 2 (1 if off, 0 if on).</td>
</tr>
<tr>
<td>Column</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CACHE_MAX_K</td>
<td>INTEGER</td>
<td>Value max k cache.</td>
</tr>
<tr>
<td>CACHE_MAX_F</td>
<td>INTEGER</td>
<td>Value max file to cache.</td>
</tr>
<tr>
<td>CACHE_LIMIT_1</td>
<td>INTEGER</td>
<td>Value of cache limit 1.</td>
</tr>
<tr>
<td>CACHE_LIMIT_2</td>
<td>INTEGER</td>
<td>Value of cache limit 2.</td>
</tr>
<tr>
<td>CACHE_TIME_MARGIN</td>
<td>INTEGER</td>
<td>Value of cache time margin</td>
</tr>
<tr>
<td>CACHE_LOCK_TIMEOUT</td>
<td>INTEGER</td>
<td>Value of cache lock timeout.</td>
</tr>
<tr>
<td>KEEP_EXP</td>
<td>INTEGER</td>
<td>Settings of expired cache settings. Values can be 0 or 1 (0 if data is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>deleted, 1 if data is kept).</td>
</tr>
<tr>
<td>CACHE_NO_CONNECT</td>
<td>INTEGER</td>
<td>Cache connect flag.</td>
</tr>
<tr>
<td>GC_DISABLED</td>
<td>INTEGER</td>
<td>Settings of GC directive. Values can be 0 or 1 (0 if garbage collection is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on, 1 if off).</td>
</tr>
<tr>
<td>GC_DAILY_GC</td>
<td>INTEGER</td>
<td>Value of garbage collection interval.</td>
</tr>
<tr>
<td>GC_MEM_USAGE</td>
<td>INTEGER</td>
<td>Garbage collection memory use.</td>
</tr>
<tr>
<td>PROXY_FLAG</td>
<td>INTEGER</td>
<td>Proxy flag.</td>
</tr>
</tbody>
</table>
INTCON_PERF_H, _D, _M

These tables provide hourly, daily, and monthly performance statistics on ICSS data. The source file is in the member DRLTINTE, which is contained in the dataset &hlq.SDRLDEFS. The default retention periods are:

- 7 days for INTCON_PERF_H
- 30 days for INTCON_PERF_D
- 765 days for INTCON_PERF_M

The data stored in INTCON_PERF_H are cumulative values, whereas the data stored in INTCON_PERF_D and in INTCON_PERF_M are real values.

Table 7. ICSS table definition for INTCON_PERF_H, _D, _M

<table>
<thead>
<tr>
<th>Column</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTE</td>
<td>DATE</td>
<td>Date when the record was written.</td>
</tr>
<tr>
<td>TME</td>
<td>TIME</td>
<td>Time when the record was written.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF103SID.</td>
</tr>
<tr>
<td>ENTITY_NAME</td>
<td>CHAR(32)</td>
<td>Host name for the server.</td>
</tr>
<tr>
<td>ENTITY_ADDR</td>
<td>CHAR(16)</td>
<td>IP address for the server.</td>
</tr>
<tr>
<td>ENTITY_PORT</td>
<td>INTEGER</td>
<td>Port number being used.</td>
</tr>
<tr>
<td>TOTCUR_THREADS</td>
<td>INTEGER</td>
<td>Number of threads currently used.</td>
</tr>
<tr>
<td>MAX_THREAD</td>
<td>INTEGER</td>
<td>Max number threads defined.</td>
</tr>
<tr>
<td>REQUEST_NUM</td>
<td>INTEGER</td>
<td>Number of requests received.</td>
</tr>
<tr>
<td>REQUEST_ERR</td>
<td>INTEGER</td>
<td>Number of request errors received.</td>
</tr>
<tr>
<td>REQUEST_DISC</td>
<td>INTEGER</td>
<td>Number of requests discarded.</td>
</tr>
<tr>
<td>RESPONSES_NUM</td>
<td>INTEGER</td>
<td>Number of responses sent.</td>
</tr>
<tr>
<td>RESPONSES_DISC</td>
<td>INTEGER</td>
<td>Number of responses discarded.</td>
</tr>
<tr>
<td>INBYTES</td>
<td>INTEGER</td>
<td>Number of bytes received.</td>
</tr>
<tr>
<td>OUTBYTES</td>
<td>INTEGER</td>
<td>Number of bytes sent.</td>
</tr>
<tr>
<td>INUNKNOWN_BYTES</td>
<td>INTEGER</td>
<td>Number of bytes received that were of a type unknown to the server.</td>
</tr>
<tr>
<td>TOTAL_TIMEOUTS</td>
<td>INTEGER</td>
<td>Number of timeouts since startup.</td>
</tr>
<tr>
<td>PRXY_CACHE_READ</td>
<td>REAL</td>
<td>Total number of bytes read from the proxy cache.</td>
</tr>
<tr>
<td>PRXY_CACHE_HITS</td>
<td>REAL</td>
<td>Number of proxy cache hits.</td>
</tr>
<tr>
<td>PRXY_CACHE_RAM_USE</td>
<td>REAL</td>
<td>Number of bytes of proxy cache RAM in use, it represents the size of the proxy cache currently in use.</td>
</tr>
<tr>
<td>PRXY_CACHE_FILES</td>
<td>REAL</td>
<td>Number of proxy cached files, it represents the number of files currently in the proxy cache.</td>
</tr>
<tr>
<td>REQUESTS_GET</td>
<td>REAL</td>
<td>Number of GET requests.</td>
</tr>
<tr>
<td>REQUESTS_HEAD</td>
<td>REAL</td>
<td>Number of HEAD requests.</td>
</tr>
<tr>
<td>REQUESTS_POST</td>
<td>REAL</td>
<td>Number of POST requests.</td>
</tr>
<tr>
<td>REQUESTS_CGI</td>
<td>REAL</td>
<td>Number of CGI requests.</td>
</tr>
<tr>
<td>REQUESTS_CWAPI</td>
<td>REAL</td>
<td>Number of CWAPI requests.</td>
</tr>
<tr>
<td>Column</td>
<td>Data type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ERRORS_LEVEL_2XX</td>
<td>REAL</td>
<td>Number of Error Level 200 (Error 200-299) responses.</td>
</tr>
<tr>
<td>ERRORS_LEVEL_3XX</td>
<td>REAL</td>
<td>Number of Error Level 300 (Error 300-399) responses.</td>
</tr>
<tr>
<td>ERRORS_LEVEL_4XX</td>
<td>REAL</td>
<td>Number of Error Level 400 (Error 400-499) responses.</td>
</tr>
<tr>
<td>ERRORS_LEVEL_5XX</td>
<td>REAL</td>
<td>Number of Error Level 500 (Error 500-599) responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_200</td>
<td>REAL</td>
<td>Number of Error 200 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_302</td>
<td>REAL</td>
<td>Number of Error 302 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_401</td>
<td>REAL</td>
<td>Number of Error 401 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_403</td>
<td>REAL</td>
<td>Number of Error 403 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_404</td>
<td>REAL</td>
<td>Number of Error 404 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_407</td>
<td>REAL</td>
<td>Number of Error 407 responses.</td>
</tr>
<tr>
<td>ERRORS_TYPE_500</td>
<td>REAL</td>
<td>Number of Error 500 responses.</td>
</tr>
<tr>
<td>MEASURESD_SEC</td>
<td>REAL</td>
<td>Measured interval i seconds.</td>
</tr>
<tr>
<td>NUM_CONNECTIONS</td>
<td>REAL</td>
<td>Number of connections.</td>
</tr>
<tr>
<td>RSP_SEC_DSNLKP_MAX</td>
<td>FLOAT</td>
<td>Maximum DNS lookup response time in seconds, it represents the longest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_DSNLKP_MIN</td>
<td>FLOAT</td>
<td>Minimum DNS lookup response time in seconds, it represents the shortest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server start up.</td>
</tr>
<tr>
<td>RSP_SEC_DSNLKP_AVG</td>
<td>FLOAT</td>
<td>Average DNS lookup response time in seconds, it represents the average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SRVCPI_MAX</td>
<td>FLOAT</td>
<td>Maximum service plugins response time in seconds, it represents the longest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SRVCPI_MIN</td>
<td>FLOAT</td>
<td>Minimum service plugins response time in seconds, it represents the shortest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SRVCPI_AVG</td>
<td>FLOAT</td>
<td>Average service plugins response time in seconds, it represents the average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_CGI_MAX</td>
<td>FLOAT</td>
<td>Maximum CGI response time in seconds, it represents the longest response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_CGI_MIN</td>
<td>FLOAT</td>
<td>Minimum CGI response time in seconds, it represents the shortest response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_CGI_AVG</td>
<td>FLOAT</td>
<td>Average CGI response time in seconds, it represents the average response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SSLHS_MAX</td>
<td>FLOAT</td>
<td>Maximum SSL handshake response time in seconds, it represents the longest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SSLHS_MIN</td>
<td>FLOAT</td>
<td>Minimum SSL handshake response time in seconds, it represents the shortest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_SSLHS_AVG</td>
<td>FLOAT</td>
<td>Average SSL handshake response time in seconds, it represents the average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>response time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_PROXY_MAX</td>
<td>FLOAT</td>
<td>Maximum proxy response time in seconds, it represents the longest response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_PROXY_MIN</td>
<td>FLOAT</td>
<td>Minimum proxy response time in seconds, it represents the shortest response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>RSP_SEC_PROXY_AVG</td>
<td>FLOAT</td>
<td>Average proxy response time in seconds, it represents the average response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time since Web server startup.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>CHAR (8)</td>
<td>z/OS job name, the job name may change if the Web server is restarted.</td>
</tr>
</tbody>
</table>
ICSS data tables
Chapter 15. Reports

The report definitions describe the layout of the reports, the type of data that is collected, and the defaults that are used.

Two new report groups have been defined, along with four new reports:

- **INTCONSSC**, the Internet Connection Secure Server configuration report group. It contains the following new report:
  - ICSS configuration report (INTE01)

- **INTCONSSP**, the Internet Connection Secure Server performance report group. It contains the following three new reports:
  - ICSS performance hourly report (INTE02)
  - ICSS performance daily report (INTE03)
  - ICSS performance monthly report (INTE04)

You can also build other, customized reports by using queries.

The source file for the above group definitions is in the member DRLOINTE, which is contained in the dataset DRL160.SDRLRENU. The source files for the related queries and forms for the above report definitions are in the member DRLQINTy and DRLFINTy respectively where y is 1 through 4. They are located in the dataset DRL160.SDRLRENU.

The following list shows the predefined reports provided with the ICSS component:

<table>
<thead>
<tr>
<th>Type of Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSS configuration</td>
<td>A complete view of the ICSS gathered configuration information for the day and hostname selected.</td>
</tr>
<tr>
<td>ICSS performance</td>
<td>A complete view of the ICSS gathered performance information for a selected hostname, detailed by hourly, daily, and weekly trend reports.</td>
</tr>
</tbody>
</table>
ICSS configuration report

The following information identifies the report:

- **Report ID**: INTE01
- **Report group**: ICSS Configuration Reports
- **Source**: INTCON_CONF
- **Attributes**: INTERNET, SERVER, OVERVIEW, CONFIGURATION
- **Variables**: DATE, HOST_NAME

Internet Conn. Secure Server config.

<table>
<thead>
<tr>
<th>ACL SETTINGS</th>
<th>USE META FILES SETTINGS</th>
<th>DIRECTORY ACCESS FLAG</th>
<th>VALUE OF INPUT_TIMEOUT</th>
<th>VALUE OF OUTPUT_TIMEOUT</th>
<th>VALUE OF SCRIPT_TIMEOUT</th>
<th>LOGTIME SETTINGS</th>
<th>IMBEDS SETTINGS</th>
<th>SECURE TYPE SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>330</td>
<td>3600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>330</td>
<td>3600</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Report: INTE01

**Figure 22. Example of an ICSS configuration report (partial view)**

The report contains the following columns:

- **TIME**
- **SYSTEM_IDENTIF**
- **HOST_NAME**
- **IP_ADDRESS**
- **PORT_NUMBER**
- **SERVER_TYPE**
- **VERSION_OF_SERVER**
- **DIRECT_OF_SERVER_ROOT**
- **VALUE_OF_DNS_LOOKUP_FLAG**
- **MAXSIZE_SETTING_BYTES**
- **MINIMUM_NUMBER_OF_THREADS**
- **VALUE_OF_MAXACTIVE_THREADS**
- **TIMEOUT_FOR_IDLE_THREADS**
- **ACL_SETTINGS**
- **USE_META_FILESSETTINGS**
DIRECTORY_ACCESS_FLAG
VALUE_OF_INPUT_TIMEOUT
VALUE_OF_OUTPUT_TIMEOUT
VALUE_OF_SCRIPT_TIMEOUT
LOGTIME_SETTINGS
IMBEDS_SETTINGS
SECURE_TYPE_SETTINGS
SECURITY_(SSL)_PORT
NORMAL_MODE_FLAG
CACHING_SETTINGS
VALUE_OF_MAX_K_CACHE
VALUE_OF_MAX_FILE_TO_CACHE
VALUE_OF_CACHE_LIMIT_1
VALUE_OF_CACHE_LIMIT_2
VALUE_OF_CACHE_TIME_MARGIN
VALUE_OF_CACHE_LOCK_TIMEOUT
EXPIRED_CACHE_SETTINGS
CACHE_CONNECT_FLAG
GC_SETTINGS
VALUE_OF_GARBAGE_COLLECTION_INTERVAL
GARBAGE_COLLECTION_MEM_USE
PROXY_FLAG
ICSS performance reports

ICSS performance hourly report

The following information identifies the report:

- **Report ID**: INTE02
- **Report group**: ICSS Performance Reports
- **Source**: INTCON_PERF_H
- **Attributes**: INTERNET, SERVER, OVERVIEW, PERFORMANCE
- **Variables**: DATE, HOST_NAME

<table>
<thead>
<tr>
<th>PORT_NUMBER</th>
<th>NUMBER_OF_THREADS_CURRENTLY_USED</th>
<th>MAX_NUMBER_OF_THREADS_DEFINED</th>
<th>NUMBER_OF_REQUESTS_RECEIVED</th>
<th>NUMBER_OF_REQUESTS_IN_ERROR</th>
<th>NUMBER_OF_REQUESTS_DISCARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>501</td>
<td>6</td>
<td>66</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>80</td>
<td>1</td>
<td>40</td>
<td>502</td>
<td>6</td>
<td>66</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>506</td>
<td>6</td>
<td>67</td>
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<td>80</td>
<td>0</td>
<td>40</td>
<td>531</td>
<td>6</td>
<td>67</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>538</td>
<td>6</td>
<td>67</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>1740</td>
<td>22</td>
<td>221</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>1559</td>
<td>28</td>
<td>167</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>2424</td>
<td>42</td>
<td>264</td>
</tr>
<tr>
<td>80</td>
<td>2</td>
<td>40</td>
<td>841</td>
<td>14</td>
<td>97</td>
</tr>
<tr>
<td>80</td>
<td>4</td>
<td>40</td>
<td>1715</td>
<td>28</td>
<td>208</td>
</tr>
<tr>
<td>80</td>
<td>5</td>
<td>40</td>
<td>1761</td>
<td>28</td>
<td>230</td>
</tr>
<tr>
<td>80</td>
<td>1</td>
<td>40</td>
<td>1783</td>
<td>28</td>
<td>244</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>913</td>
<td>14</td>
<td>124</td>
</tr>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>951</td>
<td>14</td>
<td>128</td>
</tr>
</tbody>
</table>

Figure 23. Example of an ICSS performance hourly report (partial view)

The report contains the following columns:

- **HOUR**
- **SYSTEM_IDENTIF**
- **HOST_NAME**
- **IP_ADDRESS**
- **PORT_NUMBER**
- **NUMBER_OF_THREADS_CURRENTLY_USED**
- **MAX_NUMBER_OF_THREADS_DEFINED**
- **NUMBER_OF_REQUESTS_RECEIVED**
- **NUMBER_OF_REQUESTS_IN_ERROR**
ICSS reports

Chapter 15. Reports

NUMBER_OF_REQUESTS_DISCARDED

NUMBER_OF_RESPONSES_SENT

NUMBER_OF_RESPONSES_DISCARDED

NUMBER_OF_BYTES_RECEIVED

NUMBER_OF_BYTES_SENT

NUMBER_OF_BYTES_RECEIVED_(UNKNOWN_TYPE)

NUMBER_OF_TIMEOUTS_SINCE_STARTUP
ICSS reports

ICSS performance daily report

The following information identifies the report:

Report ID INTE03
Report group ICSS Performance Reports
Source INTCON_PERF_D
Attributes INTERNET, SERVER, OVERVIEW, PERFORMANCE
Variables FROM_DATE, TO_DATE, HOST_NAME

Internet Conn. Secure Server perfor. daily Report

<table>
<thead>
<tr>
<th>PORT NUMBER</th>
<th>NUMBER OF THREADS CURRENTLY USED</th>
<th>MAX NUMBER OF THREADS DEFINED</th>
<th>NUMBER OF REQUESTS RECEIVED</th>
<th>NUMBER OF REQUESTS IN ERROR</th>
<th>NUMBER OF REQUESTS DISCARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>0</td>
<td>40</td>
<td>467</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>80</td>
<td>6</td>
<td>40</td>
<td>7154</td>
<td>75</td>
<td>1033</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>80</td>
<td>5</td>
<td>40</td>
<td>16265</td>
<td>248</td>
<td>2016</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>3</td>
<td>68</td>
</tr>
<tr>
<td>80</td>
<td>5</td>
<td>40</td>
<td>29308</td>
<td>484</td>
<td>4681</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>1</td>
<td>30</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report:INTE03

Figure 24. Example of an ICSS performance daily report (partial view)

The report contains the following columns:

DATE
SYSTEM_IDENTIF
HOST_NAME
IP_ADDRESS
PORT_NUMBER
NUMBER_OF_THREADS_CURRENTLY_USED
MAX NUMBER_OF_THREADS_DEFINED
NUMBER_OF_REQUESTS_RECEIVED
NUMBER_OF_REQUESTS_IN_ERROR
NUMBER_OF_REQUESTS_DISCARDED
NUMBER_OF_RESPONSES_SENT
NUMBER_OF_RESPONSES_DISCARDED
ICSS reports

NUMBER_OF_BYTES_RECEIVED

NUMBER_OF_BYTES_SENT

NUMBER_OF_BYTES_RECEIVED_(UNKNOWN_TYPE)

NUMBER_OF_TIMEOUTS_SINCE_STARTUP
ICSS reports

ICSS performance monthly report

The following information identifies the report:

- **Report ID**: INTE04
- **Report group**: ICSS Performance Reports
- **Source**: INTCON_PERF_M
- **Attributes**: INTERNET, SERVER, OVERVIEW, PERFORMANCE
- **Variables**: FROM_DATE, TO_DATE, HOST_NAME

Internet Conn. Secure Server perf. monthly Report

<table>
<thead>
<tr>
<th>PORT_NUMBER</th>
<th>NUMBER_OF_THREADS_CURRENTLY_USED</th>
<th>MAX_NUMBER_OF_THREADS_DEFINED</th>
<th>NUMBER_OF_REQUESTS_RECEIVED</th>
<th>NUMBER_OF_REQUESTS_IN_ERROR</th>
<th>NUMBER_OF_REQUESTS_DISCARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>6</td>
<td>40</td>
<td>64023</td>
<td>994</td>
<td>9906</td>
</tr>
<tr>
<td>8000</td>
<td>0</td>
<td>40</td>
<td>0</td>
<td>9</td>
<td>173</td>
</tr>
</tbody>
</table>

Figure 25. Example of an ICSS performance monthly report (partial view)

The report contains the following columns:

- **DATE**
- **SYSTEM_IDENTIF**
- **HOST_NAME**
- **IP_ADDRESS**
- **PORT_NUMBER**
- **NUMBER_OF_THREADS_CURRENTLY_USED**
- **MAX NUMBER_OF_THREADS_DEFINED**
- **NUMBER_OF_REQUESTS_RECEIVED**
- **NUMBER_OF_REQUESTS_IN_ERROR**
- **NUMBER_OF_REQUESTS_DISCARDED**
- **NUMBER_OF_RESPONSES_SENT**
- **NUMBER_OF_RESPONSES_DISCARDED**
- **NUMBER_OF_BYTES_RECEIVED**
- **NUMBER_OF_BYTES_SENT**
NUMBER_OF_BYTES_RECEIVED_(UNKNOWN_TYPE)

NUMBER_OF_TIMEOUTS_SINCE_STARTUP
ICSS reports
# Part 4. EREP component

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## Chapter 19. Data tables and lookup tables
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Chapter 16. Customization

Before you can use the EREP component to collect data and create reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the EREP component:

1. Make input data available.
2. Modify DRLJCOLL.
3. Update lookup tables.

Make input data available

The EREP component collects these records from the EREP history file:
- Long OBR record (unit check); type = X'30'
- Long VTAM OBR record; type = X'36'
- System initialization (IPL) record; type = X'50'

Ensure that EREP generates these records.

The EREP component accepts data from history files generated on either MVS or VM systems. The MVS EREP history file can be from a single system, or it can be a sysplex-wide EREP history file generated using the MVS System Logger. No changes are required to Tivoli Decision Support for OS/390 to process sysplex-wide EREP history files.

To process EREP history files generated on a VM system, you must transfer the file to the MVS system on which you are running Tivoli Decision Support for OS/390.

Modify DRLJCOLL

Before running the Tivoli Decision Support for OS/390 collect job, you must update the DRLJCOLL member, as described in “Setting up the collect job” in Volume I.
Update lookup tables

The EREP component uses two lookup tables when updating tables in the database. Using the administration dialog, update these tables with the values to be used in your installation:

<table>
<thead>
<tr>
<th>Table name</th>
<th>Description</th>
<th>Key columns</th>
<th>Data columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>EREP_CPU_ID</td>
<td>Converts the serial numbers of processors in a multiprocessing environment to a system ID.</td>
<td>CPU_SERIAL_NO</td>
<td>SYSTEM_ID</td>
</tr>
<tr>
<td>EREP_DASD_GROUP</td>
<td>Converts processor serial numbers and device addresses to strings and groups of DASD devices.</td>
<td>CPU_SERIAL_NO</td>
<td>DASD_GROUP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DEVICE_ADDRESS</td>
<td>DASD_STRING</td>
</tr>
</tbody>
</table>

For a complete description of the lookup tables and examples of the table contents, see “EREP_CPU_ID” on page 111 and “EREP_DASD_GROUP” on page 112.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 17. Data flow

The EREP component collects records from the EREP history files created on MVS and VM systems, and stores the data in the Tivoli Decision Support for OS/390 database. You can then use the reporting dialog to create reports based on this data. Figure 26 shows an overview of the flow of data through the EREP component.

Figure 26. EREP component data flow
Lookup tables

After collecting the data, the EREP component stores the data in data tables in the Tivoli Decision Support for OS/390 database. As it updates the tables, the EREP component uses lookup tables to convert CPU serial numbers to CPU IDs, and to convert CPU serial numbers and device addresses to group and string names. Figure 27 shows which data tables contain values from the lookup tables.

Figure 27. EREP lookup table data

For more information about the data tables the component updates and the lookup tables it uses, see Chapter 19, “Data tables and lookup tables”, on page 107.

The EREP component also uses the MVSPM_UNIT_TYPE lookup table from the MVS performance management component to convert MVS unit codes to a device class and unit type. The EREP_DASD_x and EREP_VTAM_x tables use data from this lookup table. For a description of this lookup table, see “MVS_UNIT_TYPE” in the System Performance Feature Reference, Volume I.
Chapter 18. Log and record definitions

Each operating system includes error recovery procedures that write records onto the system error recording data set (ERDS). In MVS, the ERDS is the SYS1.LOGREC data set. In VM, it is not a data set but the error recording area. You can request that EREP write these records to a history file as it processes them. The EREP component of the System Performance feature collects these records from the EREP history file. The component processes these records:

Table 9. Input records to the EREP component

<table>
<thead>
<tr>
<th>EREP record</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long OBR (unit check) type = X’30’</td>
<td>EREP_30</td>
<td>Documents a variety of I/O errors and statistical data. It contains data on permanent unit checks. It is also written when the dynamic pathing availability facility encounters an error while changing the state of a path group.</td>
</tr>
<tr>
<td>Long VTAM OBR type = X’36’</td>
<td>EREP_36</td>
<td>Describes a permanent or temporary device failure (unit check) on a device supported by VTAM, if the device is channel-attached.</td>
</tr>
<tr>
<td>System initialization type = X’50’</td>
<td>EREP_50</td>
<td>Documents the IPLs that occur on the system. This record is also generated to provide information about power line disturbances that cause system termination.</td>
</tr>
</tbody>
</table>

Refer to the EREP User’s Guide and Reference for complete details on these records.
Chapter 19. Data tables and lookup tables

This chapter describes the data tables and lookup tables used by the EREP component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature, refer to the Administration Guide.

Data tables

This section describes the data tables for the EREP component.

**EREP_DASD_D, _M**

These tables provide daily and monthly statistics on DASD errors. They contain data from the EREP history file OBR (EREP type X'30') records.

These tables are updated by the EREP_CPU_ID, EREP_DASD_GROUP, and MVSPM_UNIT_TYPE lookup tables.

The default retention periods for these tables are:
- EREP_DASD_D 30 days
- EREP_DASD_M 765 days

**Note:** In the column descriptions, the source fields that do not begin with OBR are documented only in the record definitions for these 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 when the errors occurred. For the _M table, this is the date of the first day of the month. From OBRDATE.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>System ID associated with the processor serial number. From SYSTEM_ID in the EREP_CPU_ID lookup table.</td>
</tr>
<tr>
<td>DASD_GROUP</td>
<td>CHAR(8)</td>
<td>Name of the DASD group. From DASD_GROUP in the EREP_DASD_GROUP lookup table.</td>
</tr>
<tr>
<td>DASD_STRING</td>
<td>CHAR(8)</td>
<td>Name of the DASD string. From DASD_STRING in the EREP_DASD_GROUP lookup table.</td>
</tr>
<tr>
<td>CONTROL_UNIT_TYPE</td>
<td>CHAR(4)</td>
<td>Control unit type code. From CUTYPE if bit 0 in the first byte of CUTYPE is 1; otherwise, this is blank.</td>
</tr>
<tr>
<td>DEVICE_TYPE</td>
<td>CHAR(8)</td>
<td>Device type. From UNIT_TYPE in the MVSPM_UNIT_TYPE lookup table.</td>
</tr>
<tr>
<td>VOLSER</td>
<td>CHAR(6)</td>
<td>Volume serial number. From VOLSER.</td>
</tr>
<tr>
<td>CONTROL_UNIT_ID</td>
<td>CHAR(2)</td>
<td>Subsystem ID or control unit ID. From SSID.</td>
</tr>
<tr>
<td>BUS_OUT_ERRORS</td>
<td>INTEGER</td>
<td>Number of channel bus out parity errors that occurred. This is the count of records where bit 2 of SENSE0 is 1.</td>
</tr>
<tr>
<td>CORRECTABLE_ERRORS</td>
<td>INTEGER</td>
<td>Number of correctable errors that occurred. This is the count of records where bit 1 of SENSE2 is 1.</td>
</tr>
<tr>
<td>INVAL_TRACK_FORMAT</td>
<td>INTEGER</td>
<td>Number of times invalid track format occurred. This is the count of records where bit 1 of SENSE1 is 1.</td>
</tr>
<tr>
<td>IO_RETRIES</td>
<td>INTEGER</td>
<td>Number of I/O retries attempted for the errors that occurred. This is the sum of OBRRETRY.</td>
</tr>
<tr>
<td>OVERRUNS</td>
<td>INTEGER</td>
<td>Number of overruns that occurred. This is the count of records where bit 5 of SENSE0 is 1.</td>
</tr>
</tbody>
</table>
## EREP data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERM_DATA_CHECKS</td>
<td>INTEGER</td>
<td>Number of permanent data checks that occurred. This is the count of records where bit 1 of OBRSW2 is 0 and bit 4 of SENSE0 is 1.</td>
</tr>
<tr>
<td>PERM_EQUIP_CHECKS</td>
<td>INTEGER</td>
<td>Number of permanent equipment checks that occurred. This is the count of records where bit 1 of OBRSW2 is 0 and bit 3 of SENSE0 is 1.</td>
</tr>
<tr>
<td>TEMP_DATA_CHECKS</td>
<td>INTEGER</td>
<td>Number of temporary data checks that occurred. This is the count of records where bit 1 of OBRSW2 is 1 and bit 4 of SENSE0 is 1.</td>
</tr>
<tr>
<td>TEMP_EQUIP_CHECKS</td>
<td>INTEGER</td>
<td>Number of temporary equipment checks that occurred. This is the count of records where bit 1 of OBRSW2 is 1 and bit 3 of SENSE0 is 1.</td>
</tr>
<tr>
<td>UNCORR_ERRORS</td>
<td>INTEGER</td>
<td>Number of uncorrectable errors that occurred. This is the count of records where bit 1 of SENSE2 is 0.</td>
</tr>
</tbody>
</table>
**EREP_IPL_T**

This table provides detailed statistics on IPLs. It contains data from the EREP history file IPL (EREP type X'50') records.

This table is updated by the EREP_CPU_ID lookup table.

The default retention period for this table is 30 days.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU_SERIAL_NO</td>
<td>CHAR(6)</td>
<td>Processor serial number. From IPLSER.</td>
</tr>
<tr>
<td>DATE</td>
<td>DATE</td>
<td>Date when the IPL occurred. From IPLDATE.</td>
</tr>
<tr>
<td>DOWN_DATE</td>
<td>DATE</td>
<td>System down date. This is the date of the latest activity on the system before the IPL occurred. From IPLSDATE.</td>
</tr>
<tr>
<td>DOWN_TIME</td>
<td>TIME</td>
<td>System down time. This is the time of the latest activity on the system before the IPL occurred. From IPLSTIME.</td>
</tr>
<tr>
<td>IPL_REASON</td>
<td>CHAR(2)</td>
<td>Code representing the reason code for the IPL. From IPLREAS.</td>
</tr>
<tr>
<td>RELEASE</td>
<td>CHAR(1)</td>
<td>Release level of the operating system. From the last 4 bits of IPLKEY2.</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>CHAR(3)</td>
<td>Operating system. From the first 3 bits of IPLKEY2.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>System ID associated with the processor serial number. From SYSTEM_ID in the EREP_CPU_ID lookup table.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the IPL occurred. From IPLTIME.</td>
</tr>
</tbody>
</table>
**EREP data tables**

**EREP_VTAM_D, _M**

These tables provide daily and monthly statistics on VTAM errors. They contain data from the EREP history file VTAM long OBR (EREP type X'36') records.

These tables are updated by the EREP_CPU_ID and MVSPM_UNIT_TYPE lookup tables.

The default retention periods for these tables are:
- EREP_VTAM_D: 30 days
- EREP_VTAM_M: 765 days

**Note:** In the column descriptions, the source fields that do not begin with OBR are documented only in the record definitions for these 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 when the errors occurred. For the _M table, this is the date of the first day of the month. From OBRDATE.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>System ID associated with the processor serial number. From SYSTEM_ID in the EREP_CPU_ID lookup table.</td>
</tr>
<tr>
<td>DEVICE_TYPE</td>
<td>CHAR(4)</td>
<td>Device type. From UNIT_TYPE in the MVSPM_UNIT_TYPE lookup table.</td>
</tr>
<tr>
<td>DEVICE_ADDRESS</td>
<td>CHAR(4)</td>
<td>Device address or device number. From OBRPCUA2.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>CHAR(8)</td>
<td>VTAM resource name. From RESOURCE.</td>
</tr>
<tr>
<td>EOD_OVERFLOW_COUNT</td>
<td>INTEGER</td>
<td>Number of end-of-day or overflow records. This is the count of records where bit 1 of OBRSW2 is 1 and INSENSE is 1.</td>
</tr>
<tr>
<td>IO_RETRIES</td>
<td>INTEGER</td>
<td>Number of I/O retries attempted for the errors that occurred. This is the sum of OBRRETRY.</td>
</tr>
<tr>
<td>PERMANENT_ERRORS</td>
<td>INTEGER</td>
<td>Number of permanent errors that occurred. This is the count of records where bit 1 of OBRSW2 is 0.</td>
</tr>
<tr>
<td>START_IO_COUNT</td>
<td>INTEGER</td>
<td>Number of start I/O instructions. This is the sum of SIOCNTR.</td>
</tr>
<tr>
<td>TEMPORARY_ERRORS</td>
<td>INTEGER</td>
<td>Number of temporary errors that occurred. This is the count of records where bit 1 of OBRSW2 is 1 and INSENSE is not 0.</td>
</tr>
</tbody>
</table>
Lookup tables

This section describes the lookup tables specific to the EREP component.

**EREP_CPU_ID**

This lookup table converts the serial numbers of processors in a multiprocessing environment to a system ID.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU_SERIAL_NO</td>
<td>k CHAR(6)</td>
<td>Serial number of the processor. This can contain global search characters.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>System ID to be associated to the processor serial number.</td>
</tr>
</tbody>
</table>

Example of table contents

```
CPU SERIAL SYSTEM
NO   ID
------ --------
%12906 SYS1
%22906 SYS2
...```

Chapter 19. Data tables and lookup tables  111
EREP_DASD_GROUP

This lookup table converts processor serial numbers and device addresses to strings and groups of DASD devices.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU_SERIAL_NO</td>
<td>CHAR(6)</td>
<td>Serial number of the processor. This can contain global search characters.</td>
</tr>
<tr>
<td>DEVICE_ADDRESS</td>
<td>CHAR(4)</td>
<td>Device address or device number. This can contain global search characters.</td>
</tr>
<tr>
<td>DASD_GROUP</td>
<td>CHAR(8)</td>
<td>Name used to identify a group of DASD devices.</td>
</tr>
<tr>
<td>DASD_STRING</td>
<td>CHAR(8)</td>
<td>Name used to identify a string of DASD devices.</td>
</tr>
</tbody>
</table>

Example of table contents

<table>
<thead>
<tr>
<th>CPU SERIAL NO</th>
<th>DEVICE ADDRESS</th>
<th>DASD GROUP</th>
<th>DASD STRING</th>
</tr>
</thead>
<tbody>
<tr>
<td>%12906</td>
<td>012%</td>
<td>GROUP1</td>
<td>STR120</td>
</tr>
<tr>
<td>%12906</td>
<td>013%</td>
<td>GROUP1</td>
<td>STR130</td>
</tr>
<tr>
<td>%12906</td>
<td>014%</td>
<td>GROUP1</td>
<td>STR140</td>
</tr>
<tr>
<td>%12906</td>
<td>015%</td>
<td>GROUP1</td>
<td>STR150</td>
</tr>
<tr>
<td>%22906</td>
<td>012%</td>
<td>GROUP1</td>
<td>STR120</td>
</tr>
<tr>
<td>%22906</td>
<td>013%</td>
<td>GROUP1</td>
<td>STR130</td>
</tr>
<tr>
<td>%22906</td>
<td>014%</td>
<td>GROUP1</td>
<td>STR140</td>
</tr>
<tr>
<td>%22906</td>
<td>015%</td>
<td>GROUP1</td>
<td>STR150</td>
</tr>
<tr>
<td>%12906</td>
<td>022%</td>
<td>GROUP2</td>
<td>STR220</td>
</tr>
<tr>
<td>%12906</td>
<td>023%</td>
<td>GROUP2</td>
<td>STR230</td>
</tr>
<tr>
<td>%12906</td>
<td>024%</td>
<td>GROUP2</td>
<td>STR240</td>
</tr>
<tr>
<td>%12906</td>
<td>025%</td>
<td>GROUP2</td>
<td>STR250</td>
</tr>
<tr>
<td>%22906</td>
<td>022%</td>
<td>GROUP2</td>
<td>STR220</td>
</tr>
<tr>
<td>%22906</td>
<td>023%</td>
<td>GROUP2</td>
<td>STR230</td>
</tr>
<tr>
<td>%22906</td>
<td>024%</td>
<td>GROUP2</td>
<td>STR240</td>
</tr>
<tr>
<td>%22906</td>
<td>025%</td>
<td>GROUP2</td>
<td>STR250</td>
</tr>
</tbody>
</table>

;
Chapter 20. Reports

The EREP component provides these reports:

- DASD errors summary reports
  - EREP DASD Errors by Device Type, Monthly Trend report
  - EREP DASD Errors by DASD Group, Monthly Trend report
  - EREP DASD Errors by Control Unit, Monthly Trend report
- VTAM-controlled device errors summary report
  - EREP VTAM Errors by Resource, Monthly Trend report
- IPL system initialization statistics
  - EREP IPL and Downtime Summary, Daily report

DASD errors summary reports

The DASD errors summary reports show DASD error statistics by device type, group of DASD devices, and control unit types.

EREP DASD Errors by Device Type, Monthly Trend report

This report shows monthly DASD error statistics by device type.

This information identifies the report:

- **Report ID**: EREP01
- **Report group**: EREP reports
- **Source**: EREP_DASD_M
- **Attributes**: EREP, Problem, DASD, Monthly, Trend
- **Variables**: From_month, To_month, System_ID

```
<table>
<thead>
<tr>
<th>Month start date</th>
<th>Device type</th>
<th>Bus out errors</th>
<th>Perm equip checks</th>
<th>Temp equip checks</th>
<th>Perm data checks</th>
<th>Temp data checks</th>
<th>Total errors</th>
<th>I/O retries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-01</td>
<td>3380-K</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>1999-12-01</td>
<td>3380-K</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>
```

Figure 28. Example of an EREP DASD Errors by Device Type, Monthly Trend report

The report contains this information:

- **Month start date**: The date of the first day of the month of the measurement.
- **Device type**: The DASD device type.
- **Bus out errors**: The number of channel bus out parity errors that occurred on the device type during the month.
### EREP reports

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perm equip checks</td>
<td>The number of permanent equipment checks that occurred on the device type during the month.</td>
</tr>
<tr>
<td>Temp equip checks</td>
<td>The number of temporary equipment checks that occurred on the device type during the month.</td>
</tr>
<tr>
<td>Perm data checks</td>
<td>The number of permanent data checks that occurred on the device type during the month.</td>
</tr>
<tr>
<td>Temp data checks</td>
<td>The number of temporary data checks that occurred on the device type during the month.</td>
</tr>
<tr>
<td>Total errors</td>
<td>The total number of errors that occurred on the device type during the month.</td>
</tr>
<tr>
<td>I/O retries</td>
<td>The number of I/O retries attempted on the device type during the month.</td>
</tr>
</tbody>
</table>
EREPO2S DASD Errors by DASD Group, Monthly Trend report

This report shows monthly DASD error statistics by group of DASD devices. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

**Report ID**  EREP02

**Report group**  EREP reports

**Source**  EREP_DASD_M

**Attributes**  EREP, Problem, DASD, Monthly, Trend

**Variables**  From_month, To_month, System_ID

EREPO2S DASD Errors by DASD Group, Monthly Trend
System: 'SYS1' Month: '1999-11-01' to '1999-12-01'

<table>
<thead>
<tr>
<th>Month start date</th>
<th>DASD group</th>
<th>Bus out errors</th>
<th>Perm equip checks</th>
<th>Temp equip checks</th>
<th>Perm data checks</th>
<th>Temp data checks</th>
<th>Total errors</th>
<th>I/O retries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-01</td>
<td>08C0</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>1999-11-01</td>
<td>08C1</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>1999-12-01</td>
<td>08C0</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>1999-12-01</td>
<td>08C1</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 29. Example of an EREP DASD Errors by DASD Group, Monthly Trend report

The report contains this information:

**Month start date**  The date of the first day of the month of the measurement.

**DASD group**  The name of a group of DASD devices, as defined in the EREP_DASD_GROUP lookup table.

**Bus out errors**  The number of channel bus-out parity errors that occurred for the DASD group during the month.

**Perm equip checks**  The number of permanent equipment checks that occurred for the DASD group during the month.

**Temp equip checks**  The number of temporary equipment checks that occurred for the DASD group during the month.

**Perm data checks**  The number of permanent data checks that occurred for the DASD group during the month.

**Temp data checks**  The number of temporary data checks that occurred for the DASD group during the month.

**Total errors**  The total number of errors that occurred for the DASD group during the month.

**I/O retries**  The number of I/O retries attempted for the DASD group during the month.
EREP reports

EREP DASD Errors by Control Unit, Monthly Trend report

This report shows monthly DASD error statistics by control unit type.

This information identifies the report:

Report ID EREP03
Report group EREP reports
Source EREP_DASD_M
Attributes EREP, Problem, DASD, Monthly, Trend
Variables From_month, To_month, System_ID

The report contains this information:

Month start date The date of the first day of the month of the measurement.
Control unit ID The control unit type.
Bus out errors The number of channel bus-out parity errors that occurred for the control unit during the month.
Perm equip checks The number of permanent equipment checks that occurred for the control unit during the month.
Temp equip checks The number of temporary equipment checks that occurred for the control unit during the month.
Perm data checks The number of permanent data checks that occurred for the control unit during the month.
Temp data checks The number of temporary data checks that occurred for the control unit during the month.
Total errors The total number of errors that occurred for the control unit during the month.
I/O retries The number of I/O retries for the control unit during the month.

Figure 30. Example of an EREP DASD Errors by Control Unit, Monthly Trend report

Tivoli Decision Support for OS/390 Report: EREP03

System Performance Feature Reference Vol. II
VTAM-controlled device errors summary reports

These reports show error statistics for channel-attached devices controlled by VTAM.

EREP VTAM Errors by Resource, Monthly Trend report

This report shows monthly error statistics for channel-attached devices controlled by VTAM. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:
- Report ID: EREP04
- Report group: EREP reports
- Source: EREP_VTAM_M
- Attributes: EREP, Problem, VTAM, Resource, Monthly, Trend
- Variables: From_month, To_month, System_ID

The report contains this information:
- **Month start date**: The date of the first day of the month of the measurement.
- **Device type**: The teleprocessing device type.
- **Resource name**: The VTAM-controlled resource name.
- **Perm errors**: The number of permanent errors that occurred during the month.
- **Temp errors**: The number of temporary errors that occurred during the month.
- **Total errors**: The total number of errors that occurred during the month.
- **I/O retries**: The number of I/O retries that occurred during the month.
- **Start I/O count**: The number of start I/O instructions issued during the month.
**IPL system initialization statistics**

The IPL system initialization statistics report shows information about each IPL and a downtime summary. It also lists the IPL reason codes and their descriptions.

**EREP IPL and Downtime Summary, Daily report**

This report lists each IPL and provides a downtime summary. For more information on using this report, refer to the *System Performance Feature Guide*.

This information identifies the report:

- **Report ID**: EREP05
- **Report group**: EREP reports
- **Source**: EREP_IPL_T
- **Attributes**: EREP, Problem, IPL, Daily
- **Variables**: System_ID, From_date, To_date

---

**EREP IPL and Downtime Summary, Daily**

System: SYSTEM_ID Date: '1999-12-01' to '1999-12-15'

<table>
<thead>
<tr>
<th>System ID</th>
<th>Date</th>
<th>Time</th>
<th>IPL reason</th>
<th>Downtime (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>012906</td>
<td>1999-12-02</td>
<td>17:15:17</td>
<td>DF</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>1999-12-02</td>
<td>17:59:47</td>
<td>DF</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

---

*Figure 32. Example of an EREP IPL and Downtime Summary, Daily report*

The report contains this information:

- **System ID**: The name of the system that was IPLed.
- **Date**: The date when the IPL was performed.
- **Time**: The time when the IPL was performed.
- **IPL reason**: The IPL reason code.
- **Downtime (min)**: The system downtime, in minutes.
# Part 5. Tivoli Service Desk component

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Chapter 21. Customization

For Year 2000 (Y2K) support, Tivoli Service Desk (existing Information/Family products) has introduced two internal date formats to handle date fields. Tivoli Service Desk always physically stores the dates in its database in internal format. Prior to Y2K support, this format was YY/MM/DD. Now Tivoli Service Desk supports internal formats of YY/MM/DD for 2-digit years (1900 - 1999) and YYYY/MM/DD for 4-digit years (2000 onwards).

To reflect this new date support a new report format table (RFT) has been created. The RFT gets the date in either YY/MM/DD or YYYY/MM/DD format and tests for a slash (/) in the third or fifth position to determine what format was used. This format is translated into the MM/DD/YY format used by the Log collector of Tivoli Decision Support for OS/390 as the default date format.

Before you can use the Tivoli Service Desk component to collect data and create useful reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the Tivoli Service Desk component:

1. Make input data available.
2. Modify collect job.
3. Update lookup tables.

Use the Tivoli Service Desk component as a sample. As shipped, it will work correctly only if you are running a default Tivoli Service Desk system. If you are running a changed system, you must customize the Tivoli Service Desk component as described in this chapter.

Make input data available

To ensure that the Tivoli Service Desk component collects the right data, perform these steps:

1. Check the RFT provided with Tivoli Decision Support for OS/390 to see if the definition maps the Tivoli Service Desk system on which you are running. The RFT, named DRLJRFT (or DRLJRFT2 for Tivoli Service Desk V1.2), extracts problem and change records from the Tivoli Service Desk database and writes these records to a sequential data set. DRLJRFT (or DRLJRFT2) is automatically run by the Tivoli Service Desk collect job.

2. Change the RFT as needed. Refer to Tivoli Service Desk for OS/390 V1.2 Data Reporting User’s Guide for complete information.

3. If you change the RFT, check that the provided record definitions are still valid and correctly map the log from the Tivoli Service Desk database (the result of the RFT).

You may also need to change the table definitions and the reports.

[Figure 33 on page 122 to Figure 36 on page 125] show the report format table DRLJRFT.

[Figure 37 on page 126 to Figure 48 on page 137] show the report format table DRLJRFT2.
Tivoli Service Desk customization

/***************************************************************/
/* */
/* Licensed Materials - Property of IBM */
/* */
/* 5695-101 (C) Copyright IBM Corporation 1993. */
/* See Copyright Instructions. */
/* */
/***************************************************************************/
/* */
/* Name: DRLJRFT */
/* */
/* Status: Tivoli Decision Support for OS/390 1.6.0 */
/* */
/* Function: */
/* Extract problem and change records from the */
/* Information/Management database and write them */
/* to a sequential file. */
/* */
/* Data source: */
/* The Information/Management database. */
/* */
/* Change activity: */
/* 00 1993-02-03 DMA Created */
/* */
/***************************************************************************/
/***/
/** Extract problem records from the Information/Management database and write them to a sequential file. */
/***/
/*******************************************************************/
SECTION SEPARATION(0)
SETD IDATE(STARTDAT) VAL(&ZECDATE) OP(-) VAL(400) /*<= Optionally change extract interval here */
SETD IDATE(STOPDAT) VAL(&ZECDATE) OP(+) VAL(100) /*<= change extract interval here */
SEARCH ARG(!S0032 DATO/&STARTDAT -&STOPDAT) /* Search problems */
PUT COL(001) VAL(P) /* Problem record flag */
IF DATA(DATO/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATO) DATA(DATO/.) /* Date occurred, */
  PUT COL(002) VAL(&IDATO) FROM(4) FOR(2) /* Month */
  /* PUT COL(004) VAL(/) /* Slash suppressed */
  PUT COL(004) VAL(&IDATO) FROM(7) FOR(2) /* Day */
  /* PUT COL(006) VAL(/) /* Slash suppressed */
  PUT COL(006) VAL(&IDATO) FROM(1) FOR(2) /* Year */
  PUT COL(008) DATA(TIMO/.) LENGTH(5) /* Time occurred */
EIF

IF DATA(DATE/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATE) DATA(DATE/.) /* Date entered, */
  PUT COL(013) VAL(&IDATE) FROM(4) FOR(2) /* Month */
  /* PUT COL(015) VAL(/) /* Slash suppressed */
  PUT COL(015) VAL(&IDATE) FROM(7) FOR(2) /* Day */
  /* PUT COL(017) VAL(/) /* Slash suppressed */
  PUT COL(017) VAL(&IDATE) FROM(1) FOR(2) /* Year */
  PUT COL(019) DATA(TIME/.) LENGTH(5) /* Time entered */
EIF

Figure 33. Report format table DRLJRFT (Part 1 of 4)
IF DATA(DATX/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATX) DATA(DATX/.) /* Date opened,
  PUT COL(024) VAL(&IDATX) FROM(4) FOR(2) /* Month
  /* PUT COL(026) VAL(/) LENGTH(1) /* Slash suppressed
  PUT COL(026) VAL(&IDATX) FROM(7) FOR(2) /* Day
  /* PUT COL(028) VAL(/) LENGTH(1) /* Slash suppressed
  PUT COL(028) VAL(&IDATX) FROM(1) FOR(2) /* Year
  PUT COL(030) DATA(TIMX/.) /* Time opened
EIF

IF DATA(DATF/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATF) DATA(DATF/.) /* Date finished
  PUT COL(035) VAL(&IDATF) FROM(4) FOR(2) /* Month
  /* PUT COL(037) VAL(/) /* Slash suppressed
  PUT COL(037) VAL(&IDATF) FROM(7) FOR(2) /* Day
  /* PUT COL(039) VAL(/) /* Slash suppressed
  PUT COL(039) VAL(&IDATF) FROM(1) FOR(2) /* Year
  PUT COL(041) DATA(TIMF/.) /* Time finished
EIF

IF DATA(DATR/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATR) DATA(DATR/.) /* Date closed,
  PUT COL(046) VAL(&IDATR) FROM(4) FOR(2) /* Month
  /* PUT COL(048) VAL(/) LENGTH(1) /* Slash suppressed
  PUT COL(048) VAL(&IDATR) FROM(7) FOR(2) /* Day
  /* PUT COL(050) VAL(/) LENGTH(1) /* Slash suppressed
  PUT COL(050) VAL(&IDATR) FROM(1) FOR(2) /* Year
  PUT COL(052) DATA(TIMP/.) /* Time closed
EIF

PUT COL(057) DATA(PERA/.) LENGTH(15) /* Assignee name
PUT COL(072) DATA(PRIO/.) LENGTH(2) /* Current priority
PUT COL(074) DATA(ISOEOF) LENGTH(45) /* Description
PUT COL(119) DATA(COMD/.) LENGTH(8) /* Device name
PUT COL(127) DATA(PRII/.) LENGTH(2) /* Initial priority
PUT COL(129) DATA(INTO/.) LENGTH(8) /* Outage duration
PUT COL(137) DATA(RNID/.) LENGTH(8) /* Problem number
PUT COL(145) DATA(STAC/.) LENGTH(7) /* Problem status
PUT COL(152) DATA(TYPE/.) LENGTH(8) /* Problem type
PUT COL(160) DATA(COMX/.) LENGTH(8) /* Program name
PUT COL(168) DATA(GROS/.) LENGTH(11) /* Reporter department
PUT COL(179) DATA(INTR/.) LENGTH(8) /* Rerun time
PUT COL(187) DATA(GROR/.) LENGTH(11) /* Resolver department
PUT COL(198) DATA(IMPS/.) LENGTH(8) /* System impact
PUT COL(206) DATA(GROC/.) LENGTH(11) /* Tracker department
PUT COL(217) DATA(CODP/.) LENGTH(8) /* Current phase
PUT COL(225) DATA(CODC/.) LENGTH(8) /* Cause code
PUT COL(233) DATA(LOCC/.) LENGTH(8) /* Location code
PUT COL(241) DATA(GROA/.) LENGTH(8) /* Assignee Group
PUT COL(249) VAL(&ZICDATE) FROM(4) FOR(2) /* RFT Run Date, Month
  /* PUT COL(251) VAL(/) /* Slash suppressed
PUT COL(251) VAL(&ZICDATE) FROM(7) FOR(2) /* Day
  /* PUT COL(253) VAL(/) /* Slash suppressed
PUT COL(253) VAL(&ZICDATE) FROM(1) FOR(2) /* Year
PUT COL(255) VAL(&ZCTIME) /* Time of RFT run
ESEARCH
ESECTION

Figure 34. Report format table DRLJRFT (Part 2 of 4)
Tivoli Service Desk customization

/* Extract change records from the Information/Management database and append them to the sequential file. */
/* ***************************************************************************/
SECTION SEPARATION(0)
SEARCH ARG(ISO806 DATP/STARTDAT -&STOPDAT) /* Search changes
PUT COL(001) VAL(C) /* Change record flag
IF DATA(DATO./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATD) DATA(DATO./) /* Date required, Month
  PUT COL(002) VAL(&IDATD) FROM(4) FOR(2) /* Day
  PUT COL(004) VAL(/) /* Slash suppressed
  PUT COL(004) VAL(&IDATD) FROM(7) FOR(2) /* Day
  PUT COL(006) VAL(/) /* Slash suppressed
  PUT COL(006) VAL(&IDATD) FROM(1) FOR(2) /* Year
EIF
IF DATA(DATA./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATA) DATA(DATA./) /* Date assigned, Month
  PUT COL(008) VAL(&IDATA) FROM(4) FOR(2) /* Day
  PUT COL(010) VAL(/) /* Slash suppressed
  PUT COL(010) VAL(&IDATA) FROM(7) FOR(2) /* Day
  PUT COL(012) VAL(/) /* Slash suppressed
  PUT COL(012) VAL(&IDATA) FROM(1) FOR(2) /* Year
EIF
IF DATA(DATP./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATP) DATA(DATP./) /* Date planned start, Month
  PUT COL(014) VAL(&IDATP) FROM(4) FOR(2) /* Day
  PUT COL(016) VAL(/) /* Slash suppressed
  PUT COL(016) VAL(&IDATP) FROM(7) FOR(2) /* Day
  PUT COL(018) VAL(/) /* Slash suppressed
  PUT COL(018) VAL(&IDATP) FROM(1) FOR(2) /* Year
EIF
IF DATA(DATT./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATT) DATA(DATT./) /* Date planned end, Month
  PUT COL(020) VAL(&IDATT) FROM(4) FOR(2) /* Day
  PUT COL(022) VAL(/) /* Slash suppressed
  PUT COL(022) VAL(&IDATT) FROM(7) FOR(2) /* Day
  PUT COL(024) VAL(/) /* Slash suppressed
  PUT COL(024) VAL(&IDATT) FROM(1) FOR(2) /* Year
EIF
IF DATA(DATB./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATB) DATA(DATB./) /* Date actual start, Month
  PUT COL(026) VAL(&IDATB) FROM(4) FOR(2) /* Day
  PUT COL(028) VAL(/) /* Slash suppressed
  PUT COL(028) VAL(&IDATB) FROM(7) FOR(2) /* Day
  PUT COL(030) VAL(/) /* Slash suppressed
  PUT COL(030) VAL(&IDATB) FROM(1) FOR(2) /* Year
EIF
IF DATA(DATF./) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATF) DATA(DATF./) /* Date completed, Month
  PUT COL(032) VAL(&IDATF) FROM(4) FOR(2) /* Day
  PUT COL(034) VAL(/) /* Slash suppressed
  PUT COL(034) VAL(&IDATF) FROM(7) FOR(2) /* Day
  PUT COL(036) VAL(/) /* Slash suppressed
  PUT COL(036) VAL(&IDATF) FROM(1) FOR(2) /* Year
EIF

Figure 35. Report format table DRLJRFT (Part 3 of 4)
Figure 36. Report format table DRLJRFT (Part 4 of 4)
Tivoli Service Desk customization

/**************************************************************/
/* */
/* Licensed Materials - Property of IBM */
/* */
/* 5695-101 (C) Copyright IBM Corporation 2001. */
/* */
/* See Copyright Instructions. */
/* */
/**************************************************************/
/* */
/* Name: DRLJRFT2 */
/* */
/* Status: Tivoli Decision Support for OS/390 1.5.1 */
/* */
/* Function: */
/* Extract problems and changes from the Tivoli Service Desk for */
/* OS/390 V1.2 database and write them to a sequential file. */
/* */
/* Data source: */
/* The Tivoli service desk 1.2 database */
/* */
/* Change activity: */
/* 00 2001-03-30 SL Created PTR235 */
/* */
/**************************************************************/
/**************************************************************/
/* Extract problems from the Tivoli service desk for OS/390 db */
/* and write them to a sequential file */
/**************************************************************/
SECTION SEPARATION(0)
SETD IDATE(STARTDAT) VAL(&ZECDATE) OP(-) VAL(400) /* <= Optionally
SETD IDATE(STOPDAT) VAL(&ZECDATE) OP(+) VAL(100) /* <= change extract
SEARCH ARG(!S0032 DATO/&STARTDAT -&STOPDAT) /* Search problems
PUT COL(001) VAL(V12) /* Tsd version
PUT COL(004) VAL(P) /* Problem record flag
IF DATA(DATO/. ) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATO) DATA(DATO/.)
  IF VAL(&IDATO) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(005) VAL(&IDATO) FROM(6) FOR(2) /* Month
    PUT COL(007) VAL(&IDATO) FROM(9) FOR(2) /* Day
    PUT COL(009) VAL(&IDATO) FROM(3) FOR(2) /* Year
    PUT COL(013) DATA(TIMO/. ) LENGTH(5) /* Time occurred
  ELSE
    IF VAL(&IDATO) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(005) VAL(&IDATO) FROM(4) FOR(2) /* Month
      PUT COL(007) VAL(&IDATO) FROM(7) FOR(2) /* Day
      PUT COL(009) VAL(&IDATO) FROM(1) FOR(2) /* Year
      PUT COL(013) DATA(TIMO/. ) LENGTH(5) /* Time occurred
  EIF
EIF
EIF
Figure 37. Report format table DRLJRFT2 (Part 1 of 12)
IF DATA(DATA./) OP(=) VAL(&ZIFDATA)
SET IDATE(IDATA) DATA(DATA./) /* Date assigned, 
IF VAL(&IDATA) FROM(5) FOR(1) OP(=) VAL('/')
  PUT COL(018) VAL(&IDATA) FROM(6) FOR(2) /* Month
  PUT COL(020) VAL(&IDATA) FROM(9) FOR(2) /* Day
  PUT COL(022) VAL(&IDATA) FROM(3) FOR(2) /* Year
  PUT COL(026) DATA(TIMA./.) LENGTH(5) /* Time occured
ELSE
  IF VAL(&IDATA) FROM(3) FOR(1) OP(=) VAL('/')
    PUT COL(018) VAL(&IDATA) FROM(4) FOR(2) /* Month
    PUT COL(020) VAL(&IDATA) FROM(7) FOR(2) /* Day
    PUT COL(022) VAL(&IDATA) FROM(1) FOR(2) /* Year
    PUT COL(026) DATA(TIMA./.) LENGTH(5) /* Time occured
EIF
EIF
EIF

IF DATA(DATR./) OP(=) VAL(&ZIFDATA)
SET IDATE(IDATR) DATA(DATR./) /* Date closed,
IF VAL(&IDATR) FROM(5) FOR(1) OP(=) VAL('/')
  PUT COL(031) VAL(&IDATR) FROM(6) FOR(2) /* Month
  PUT COL(033) VAL(&IDATR) FROM(9) FOR(2) /* Day
  PUT COL(035) VAL(&IDATR) FROM(3) FOR(2) /* Year
  PUT COL(039) DATA(TIMR./.) LENGTH(5) /* Time occured
ELSE
  IF VAL(&IDATR) FROM(3) FOR(1) OP(=) VAL('/')
    PUT COL(031) VAL(&IDATR) FROM(4) FOR(2) /* Month
    PUT COL(033) VAL(&IDATR) FROM(7) FOR(2) /* Day
    PUT COL(035) VAL(&IDATR) FROM(1) FOR(2) /* Year
    PUT COL(039) DATA(TIMR./.) LENGTH(5) /* Time occured
EIF
EIF
EIF

IF DATA(DATE./) OP(=) VAL(&ZIFDATA)
SET IDATE(IDATE) DATA(DATE./) /* Date entered
IF VAL(&IDATE) FROM(5) FOR(1) OP(=) VAL('/')
  PUT COL(044) VAL(&IDATE) FROM(6) FOR(2) /* Month
  PUT COL(046) VAL(&IDATE) FROM(9) FOR(2) /* Day
  PUT COL(048) VAL(&IDATE) FROM(3) FOR(2) /* Year
  PUT COL(052) DATA(TIME./.) LENGTH(5) /* Time occured
ELSE
  IF VAL(&IDATE) FROM(3) FOR(1) OP(=) VAL('/')
    PUT COL(044) VAL(&IDATE) FROM(4) FOR(2) /* Month
    PUT COL(046) VAL(&IDATE) FROM(7) FOR(2) /* Day
    PUT COL(048) VAL(&IDATE) FROM(1) FOR(2) /* Year
    PUT COL(052) DATA(TIME./.) LENGTH(5) /* Time occured
EIF
EIF
EIF

IF DATA(DATF./) OP(=) VAL(&ZIFDATA)
SET IDATE(IDATF) DATA(DATF./) /* Date finished
IF VAL(&IDATF) FROM(5) FOR(1) OP(=) VAL('/')
  PUT COL(057) VAL(&IDATF) FROM(6) FOR(2) /* Month
  PUT COL(059) VAL(&IDATF) FROM(9) FOR(2) /* Day
  PUT COL(061) VAL(&IDATF) FROM(3) FOR(2) /* Year
  PUT COL(065) DATA(TIMF./.) LENGTH(5) /* Time occured

Figure 38. Report format table DRLJRFT2 (Part 2 of 12)
ELSE
  IF VAL(&IDATF) FROM(3) FOR(1) OP(=) VAL('/')
    PUT COL(057) VAL(&IDATF) FROM(4) FOR(2) /* Month
    PUT COL(059) VAL(&IDATF) FROM(7) FOR(2) /* Day
    PUT COL(061) VAL(&IDATF) FROM(1) FOR(2) /* Year
    PUT COL(065) DATA(TIMF/.) LENGTH(5) /* Time occurred
  EIF
EIF
EIF

IF DATA(DATO/.) OP(=) VAL(&ZIFDATA)
  SET IDATE(IDATD) DATA(DATO/.) /* Date fix req.
  IF VAL(&IDATD) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(070) VAL(&IDATD) FROM(6) FOR(2) /* Month
    PUT COL(072) VAL(&IDATD) FROM(9) FOR(2) /* Day
    PUT COL(074) VAL(&IDATD) FROM(3) FOR(2) /* Year
    PUT COL(078) DATA(TIMD/.) LENGTH(5) /* Time occurred
  ELSE
    IF VAL(&IDATD) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(070) VAL(&IDATD) FROM(4) FOR(2) /* Month
      PUT COL(072) VAL(&IDATD) FROM(7) FOR(2) /* Day
      PUT COL(074) VAL(&IDATD) FROM(1) FOR(2) /* Year
      PUT COL(078) DATA(TIMD/.) LENGTH(5) /* Time occurred
  EIF
EIF
EIF

IF DATA(DATOM/.) OP(=) VAL(&ZIFDATA)
  SET IDATE(IDATM) DATA(DATOM/.) /* Date last alter
  IF VAL(&IDATM) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(083) VAL(&IDATM) FROM(6) FOR(2) /* Month
    PUT COL(085) VAL(&IDATM) FROM(9) FOR(2) /* Day
    PUT COL(087) VAL(&IDATM) FROM(3) FOR(2) /* Year
    PUT COL(091) DATA(TIMM/.) LENGTH(5) /* Time occurred
  ELSE
    IF VAL(&IDATM) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(083) VAL(&IDATM) FROM(4) FOR(2) /* Month
      PUT COL(085) VAL(&IDATM) FROM(7) FOR(2) /* Day
      PUT COL(087) VAL(&IDATM) FROM(1) FOR(2) /* Year
      PUT COL(091) DATA(TIMM/.) LENGTH(5) /* Time occurred
  EIF
EIF
EIF

IF DATA(DATRF/.) OP(=) VAL(&ZIFDATA)
  SET IDATE(IDATRF) DATA(DATRF/.) /* Date last refr.
  IF VAL(&IDATRF) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(096) VAL(&IDATRF) FROM(6) FOR(2) /* Month
    PUT COL(098) VAL(&IDATRF) FROM(9) FOR(2) /* Day
    PUT COL(100) VAL(&IDATRF) FROM(3) FOR(2) /* Year
    PUT COL(104) DATA(TIMRF/.) LENGTH(5) /* Time occurred
  ELSE
    IF VAL(&IDATRF) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(096) VAL(&IDATRF) FROM(4) FOR(2) /* Month
      PUT COL(098) VAL(&IDATRF) FROM(7) FOR(2) /* Day
      PUT COL(100) VAL(&IDATRF) FROM(1) FOR(2) /* Year
      PUT COL(104) DATA(TIMRF/.) LENGTH(5) /* Time occurred
  EIF
EIF
EIF

Figure 39. Report format table DRLJRFT2 (Part 3 of 12)
IF DATA(DATX/.) OP(=) VAL(&ZIFDATA)
SETD IDATE(IDATX) DATA(DATX/.) /* Date opened
IF VAL(&IDATX) FROM(5) FOR(1) OP(=) VAL('/')
   PUT COL(109) VAL(&IDATX) FROM(6) FOR(2) /* Month
   PUT COL(111) VAL(&IDATX) FROM(9) FOR(2) /* Day
   PUT COL(113) VAL(&IDATX) FROM(3) FOR(2) /* Year
   PUT COL(117) DATA(TIMX/.) LENGTH(5) /* Time occurred
ELSE
   IF VAL(&IDATX) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(109) VAL(&IDATX) FROM(4) FOR(2) /* Month
      PUT COL(111) VAL(&IDATX) FROM(7) FOR(2) /* Day
      PUT COL(113) VAL(&IDATX) FROM(1) FOR(2) /* Year
      PUT COL(117) DATA(TIMX/.) LENGTH(5) /* Time occurred
ENDIF
ENDIF
ENDIF

IF DATA(DATN/.) OP(=) VAL(&ZIFDATA)
SETD IDATE(IDATN) DATA(DATN/.) /* Date rep. notif.
IF VAL(&IDATN) FROM(5) FOR(1) OP(=) VAL('/')
   PUT COL(122) VAL(&IDATN) FROM(6) FOR(2) /* Month
   PUT COL(124) VAL(&IDATN) FROM(9) FOR(2) /* Day
   PUT COL(126) VAL(&IDATN) FROM(3) FOR(2) /* Year
ELSE
   IF VAL(&IDATN) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(122) VAL(&IDATN) FROM(4) FOR(2) /* Month
      PUT COL(124) VAL(&IDATN) FROM(7) FOR(2) /* Day
      PUT COL(126) VAL(&IDATN) FROM(1) FOR(2) /* Year
ENDIF
ENDIF
ENDIF

IF DATA(DATB/.) OP(=) VAL(&ZIFDATA)
SETD IDATE(IDATB) DATA(DATB/.) /* Date started
IF VAL(&IDATB) FROM(5) FOR(1) OP(=) VAL('/')
   PUT COL(130) VAL(&IDATB) FROM(6) FOR(2) /* Month
   PUT COL(132) VAL(&IDATB) FROM(9) FOR(2) /* Day
   PUT COL(134) VAL(&IDATB) FROM(3) FOR(2) /* Year
   PUT COL(138) DATA(TIMB/.) LENGTH(5) /* Time started
ELSE
   IF VAL(&IDATB) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(130) VAL(&IDATB) FROM(4) FOR(2) /* Month
      PUT COL(132) VAL(&IDATB) FROM(7) FOR(2) /* Day
      PUT COL(134) VAL(&IDATB) FROM(1) FOR(2) /* Year
      PUT COL(138) DATA(TIMB/.) LENGTH(5) /* Time started
ENDIF
ENDIF
ENDIF

IF DATA(DATT/.) OP(=) VAL(&ZIFDATA)
SETD IDATE(IDATT) DATA(DATT/.) /* Target date
IF VAL(&IDATT) FROM(5) FOR(1) OP(=) VAL('/')
   PUT COL(143) VAL(&IDATT) FROM(6) FOR(2) /* Month
   PUT COL(145) VAL(&IDATT) FROM(9) FOR(2) /* Day
   PUT COL(147) VAL(&IDATT) FROM(3) FOR(2) /* Year
ELSE
   IF VAL(&IDATT) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(143) VAL(&IDATT) FROM(4) FOR(2) /* Month
      PUT COL(145) VAL(&IDATT) FROM(7) FOR(2) /* Day
      PUT COL(147) VAL(&IDATT) FROM(1) FOR(2) /* Year
ENDIF
ENDIF
ENDIF

Figure 40. Report format table DRLJRFT2 (Part 4 of 12)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL(151) DATA(GROA/.) LENGTH(11)</td>
<td>Assignee department</td>
</tr>
<tr>
<td>COL(162) DATA(PERA/.) LENGTH(40)</td>
<td>Assignee name</td>
</tr>
<tr>
<td>COL(202) DATA(ISOBSE) LENGTH(13)</td>
<td>Assignee phone</td>
</tr>
<tr>
<td>COL(215) DATA(COUX/.) LENGTH(3)</td>
<td>Assignment number</td>
</tr>
<tr>
<td>COL(218) DATA(STAA/.) LENGTH(8)</td>
<td>Assignment status</td>
</tr>
<tr>
<td>COL(226) DATA(APAR/.) LENGTH(7)</td>
<td>Ap/PTR status</td>
</tr>
<tr>
<td>COL(241) DATA(MISB/.) LENGTH(3)</td>
<td>Bypass available</td>
</tr>
<tr>
<td>COL(244) DATA(RNCK/.) LENGTH(6)</td>
<td>Cause change number</td>
</tr>
<tr>
<td>COL(252) DATA(CODC/.) LENGTH(8)</td>
<td>Cause code</td>
</tr>
<tr>
<td>COL(260) DATA(APPL/.) LENGTH(8)</td>
<td>Checkout appl. ID</td>
</tr>
<tr>
<td>COL(268) DATA(ISOD12) LENGTH(8)</td>
<td>Circuit number</td>
</tr>
<tr>
<td>COL(276) DATA(CLSN/.) LENGTH(8)</td>
<td>Cluster name</td>
</tr>
<tr>
<td>COL(284) DATA(PIDS/.) LENGTH(11)</td>
<td>Component apared</td>
</tr>
<tr>
<td>COL(295) DATA(ISOD69) LENGTH(11)</td>
<td>Console output</td>
</tr>
<tr>
<td>COL(306) DATA(CODP/.) LENGTH(8)</td>
<td>Current phase</td>
</tr>
<tr>
<td>COL(314) DATA(PRIO/.) LENGTH(2)</td>
<td>Current priority</td>
</tr>
<tr>
<td>COL(316) DATA(INTC/.) LENGTH(8)</td>
<td>Customer PD time</td>
</tr>
<tr>
<td>COL(324) DATA(DSTN/.) LENGTH(11)</td>
<td>Dataset type</td>
</tr>
<tr>
<td>COL(335) DATA(ISOEOF) LENGTH(45)</td>
<td>Description</td>
</tr>
<tr>
<td>COL(380) DATA(IMPD/.) LENGTH(8)</td>
<td>Device impact</td>
</tr>
<tr>
<td>COL(388) DATA(COMD/.) LENGTH(8)</td>
<td>Device name</td>
</tr>
<tr>
<td>COL(396) DATA(ISOD76) LENGTH(11)</td>
<td>Diagnostic output</td>
</tr>
<tr>
<td>COL(407) DATA(ISOD7A) LENGTH(54)</td>
<td>Dump dataset</td>
</tr>
<tr>
<td>COL(461) DATA(CODU/) LENGTH(3)</td>
<td>Duplicate count</td>
</tr>
<tr>
<td>COL(464) DATA(CLAE/.) LENGTH(8)</td>
<td>Entry priv. class</td>
</tr>
<tr>
<td>COL(472) DATA(CODE/.) LENGTH(8)</td>
<td>Error code</td>
</tr>
<tr>
<td>COL(480) DATA(ESCL/.) LENGTH(11)</td>
<td>Escalation level</td>
</tr>
<tr>
<td>COL(481) DATA(LVLS/.) LENGTH(8)</td>
<td>Ec number</td>
</tr>
<tr>
<td>COL(492) DATA(RNCR/) LENGTH(8)</td>
<td>Fix change number</td>
</tr>
<tr>
<td>COL(500) DATA(GWID/.) LENGTH(9)</td>
<td>Gateway ID</td>
</tr>
<tr>
<td>COL(509) DATA(ISOD71) LENGTH(11)</td>
<td>Graph/log data</td>
</tr>
<tr>
<td>COL(520) DATA(PRII/.) LENGTH(2)</td>
<td>Initial priority</td>
</tr>
<tr>
<td>COL(522) DATA(ISOD6B) LENGTH(11)</td>
<td>Input data</td>
</tr>
<tr>
<td>COL(533) DATA(SP01/.) LENGTH(8)</td>
<td>Interested class 1</td>
</tr>
<tr>
<td>COL(541) DATA(SP02/.) LENGTH(8)</td>
<td>Interested class 2</td>
</tr>
<tr>
<td>COL(549) DATA(SP03/.) LENGTH(8)</td>
<td>Interested class 3</td>
</tr>
<tr>
<td>COL(557) DATA(SP04/.) LENGTH(8)</td>
<td>Interested class 4</td>
</tr>
<tr>
<td>COL(565) DATA(SP05/.) LENGTH(8)</td>
<td>Interested class 5</td>
</tr>
<tr>
<td>COL(573) DATA(SP06/.) LENGTH(8)</td>
<td>Interested class 6</td>
</tr>
<tr>
<td>COL(581) DATA(SP07/.) LENGTH(8)</td>
<td>Interested class 7</td>
</tr>
<tr>
<td>COL(589) DATA(SP08/.) LENGTH(8)</td>
<td>Interested class 8</td>
</tr>
<tr>
<td>COL(597) DATA(SP09/.) LENGTH(8)</td>
<td>Interested class 9</td>
</tr>
<tr>
<td>COL(605) DATA(SP10/.) LENGTH(8)</td>
<td>Interested class 10</td>
</tr>
<tr>
<td>COL(613) DATA(SP11/.) LENGTH(8)</td>
<td>Interested class 11</td>
</tr>
<tr>
<td>COL(621) DATA(SP12/.) LENGTH(8)</td>
<td>Interested class 12</td>
</tr>
<tr>
<td>COL(629) DATA(SP13/.) LENGTH(8)</td>
<td>Interested class 13</td>
</tr>
<tr>
<td>COL(637) DATA(SP14/.) LENGTH(8)</td>
<td>Interested class 14</td>
</tr>
<tr>
<td>COL(645) DATA(SP15/.) LENGTH(8)</td>
<td>Interested class 15</td>
</tr>
<tr>
<td>COL(653) DATA(SP16/.) LENGTH(8)</td>
<td>Interested class 16</td>
</tr>
<tr>
<td>COL(661) DATA(SP17/.) LENGTH(8)</td>
<td>Interested class 17</td>
</tr>
<tr>
<td>COL(669) DATA(SP18/.) LENGTH(8)</td>
<td>Interested class 18</td>
</tr>
<tr>
<td>COL(677) DATA(SP19/.) LENGTH(8)</td>
<td>Interested class 19</td>
</tr>
<tr>
<td>COL(685) DATA(SP20/.) LENGTH(8)</td>
<td>Interested class 20</td>
</tr>
<tr>
<td>COL(693) DATA(SP21/.) LENGTH(8)</td>
<td>Interested class 21</td>
</tr>
<tr>
<td>COL(701) DATA(SP22/.) LENGTH(8)</td>
<td>Interested class 22</td>
</tr>
<tr>
<td>COL(709) DATA(SP23/.) LENGTH(8)</td>
<td>Interested class 23</td>
</tr>
<tr>
<td>COL(717) DATA(SP24/.) LENGTH(8)</td>
<td>Interested class 24</td>
</tr>
<tr>
<td>COL(725) DATA(SP25/.) LENGTH(8)</td>
<td>Interested class 25</td>
</tr>
<tr>
<td>COL(733) DATA(SP26/.) LENGTH(8)</td>
<td>Interested class 26</td>
</tr>
</tbody>
</table>

Figure 41. Report format table DRLJRFT2 (Part 5 of 12)
Tivoli Service Desk customization

Figure 42. Report format table DRLJRFT2 (Part 6 of 12)
Tivoli Service Desk customization

IF VAL(&ZICDATE) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(1374) VAL(&ZICDATE) FROM(6) FOR(2) /* Run Date, Month
    PUT COL(1376) VAL(&ZICDATE) FROM(9) FOR(2) /* Day
    PUT COL(1378) VAL(&ZICDATE) FROM(3) FOR(2) /* Year
    PUT COL(1382) VAL(&ZCTIME) /* Time of RFT run
ELSE
    IF VAL(&ZICDATE) FROM(3) FOR(1) OP(=) VAL('/')
        PUT COL(1374) VAL(&ZICDATE) FROM(4) FOR(2) /* Run Date, Month
        PUT COL(1376) VAL(&ZICDATE) FROM(7) FOR(2) /* Day
        PUT COL(1378) VAL(&ZICDATE) FROM(1) FOR(2) /* Year
        PUT COL(1382) VAL(&ZCTIME) /* Time of RFT run
    EIF
EIF
ESearch
Esection

/*******************************************************************************
/* Extract changes from the Tivoli service desk for OS/390 db and */
/* append them to the sequential file. */
/*******************************************************************************
SECTION SEPARATION(0)

SEARCH ARG(!S0B06 DATP/&STARTDAT -&STOPDAT) /* Search changes
    PUT COL(001) VAL(V12) /* Tsd version
    PUT COL(004) VAL(C) /* Change record flag
    IF DATA(DATD/.) OP(=) VAL(&ZIFDATA)
        SETD IDATE(IDATD) DATA(DATD/.) /* Date required,
        IF VAL(&IDATD) FROM(5) FOR(1) OP(=) VAL('/')
            PUT COL(005) VAL(&IDATD) FROM(6) FOR(2) /* Month
            PUT COL(007) VAL(&IDATD) FROM(9) FOR(2) /* Day
            PUT COL(009) VAL(&IDATD) FROM(3) FOR(2) /* Year
        ELSE
            IF VAL(&IDATD) FROM(3) FOR(1) OP(=) VAL('/')
                PUT COL(013) VAL(&IDATD) FROM(4) FOR(2) /* Month
                PUT COL(015) VAL(&IDATD) FROM(7) FOR(2) /* Day
                PUT COL(017) VAL(&IDATD) FROM(1) FOR(2) /* Year
            EIF
        EIF
    EIF

    IF DATA(DATB/.) OP(=) VAL(&ZIFDATA)
        SETD IDATE(IDATB) DATA(DATB/.) /* Date actual start
        IF VAL(&IDATD) FROM(5) FOR(1) OP(=) VAL('/')
            PUT COL(013) VAL(&IDATB) FROM(6) FOR(2) /* Month
            PUT COL(015) VAL(&IDATB) FROM(9) FOR(2) /* Day
            PUT COL(017) VAL(&IDATB) FROM(3) FOR(2) /* Year
        ELSE
            IF VAL(&IDATB) FROM(3) FOR(1) OP(=) VAL('/')
                PUT COL(013) VAL(&IDATB) FROM(4) FOR(2) /* Month
                PUT COL(015) VAL(&IDATB) FROM(7) FOR(2) /* Day
                PUT COL(017) VAL(&IDATB) FROM(1) FOR(2) /* Year
            EIF
        EIF
    EIF

Figure 43. Report format table DRLJRF2 (Part 7 of 12)
IF DATA(DATF/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATF) DATA(DATF/.) /* Date completed
  IF VAL(&IDATF) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(021) VAL(&IDATF) FROM(6) FOR(2) /* Month
    PUT COL(023) VAL(&IDATF) FROM(9) FOR(2) /* Day
    PUT COL(025) VAL(&IDATF) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATF) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(021) VAL(&IDATF) FROM(4) FOR(2) /* Month
      PUT COL(023) VAL(&IDATF) FROM(7) FOR(2) /* Day
      PUT COL(025) VAL(&IDATF) FROM(1) FOR(2) /* Year
    EIF
  EIF
  EIF

IF DATA(DATA/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATA) DATA(DATA/.) /* Date assigned,
  IF VAL(&IDATA) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(029) VAL(&IDATA) FROM(6) FOR(2) /* Month
    PUT COL(031) VAL(&IDATA) FROM(9) FOR(2) /* Day
    PUT COL(033) VAL(&IDATA) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATA) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(029) VAL(&IDATA) FROM(4) FOR(2) /* Month
      PUT COL(031) VAL(&IDATA) FROM(7) FOR(2) /* Day
      PUT COL(033) VAL(&IDATA) FROM(1) FOR(2) /* Year
    EIF
  EIF
  EIF

IF DATA(DATE/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATE) DATA(DATE/.) /* Date entered,
  IF VAL(&IDATE) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(037) VAL(&IDATE) FROM(6) FOR(2) /* Month
    PUT COL(039) VAL(&IDATE) FROM(9) FOR(2) /* Day
    PUT COL(041) VAL(&IDATE) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATE) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(037) VAL(&IDATE) FROM(4) FOR(2) /* Month
      PUT COL(039) VAL(&IDATE) FROM(7) FOR(2) /* Day
      PUT COL(041) VAL(&IDATE) FROM(1) FOR(2) /* Year
    EIF
  EIF
  EIF

IF DATA(DATM/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATM) DATA(DATM/.) /* Date last enter.
  IF VAL(&IDATM) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(045) VAL(&IDATM) FROM(6) FOR(2) /* Month
    PUT COL(047) VAL(&IDATM) FROM(9) FOR(2) /* Day
    PUT COL(049) VAL(&IDATM) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATM) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(045) VAL(&IDATM) FROM(4) FOR(2) /* Month
      PUT COL(047) VAL(&IDATM) FROM(7) FOR(2) /* Day
      PUT COL(049) VAL(&IDATM) FROM(1) FOR(2) /* Year
    EIF
  EIF
  EIF

Figure 44. Report format table DRLJRFT2 (Part 8 of 12)
Tivoli Service Desk customization

IF DATA(DATN/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATN) DATA(DATN/.) /* Date request. notif.
  IF VAL(&IDATN) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(053) VAL(&IDATN) FROM(6) FOR(2) /* Month
    PUT COL(055) VAL(&IDATN) FROM(9) FOR(2) /* Day
    PUT COL(057) VAL(&IDATN) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATN) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(053) VAL(&IDATN) FROM(4) FOR(2) /* Month
      PUT COL(055) VAL(&IDATN) FROM(7) FOR(2) /* Day
      PUT COL(057) VAL(&IDATN) FROM(1) FOR(2) /* Year
  EIF
EIF

IF DATA(DATP/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATP) DATA(DATP/.) /* Date planned start
  IF VAL(&IDATP) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(061) VAL(&IDATP) FROM(6) FOR(2) /* Month
    PUT COL(063) VAL(&IDATP) FROM(9) FOR(2) /* Day
    PUT COL(065) VAL(&IDATP) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATP) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(061) VAL(&IDATP) FROM(4) FOR(2) /* Month
      PUT COL(063) VAL(&IDATP) FROM(7) FOR(2) /* Day
      PUT COL(065) VAL(&IDATP) FROM(1) FOR(2) /* Year
  EIF
EIF

IF DATA(DATT/.) OP(=) VAL(&ZIFDATA)
  SETD IDATE(IDATT) DATA(DATT/.) /* Date planned end
  IF VAL(&IDATT) FROM(5) FOR(1) OP(=) VAL('/')
    PUT COL(069) VAL(&IDATT) FROM(6) FOR(2) /* Month
    PUT COL(071) VAL(&IDATT) FROM(9) FOR(2) /* Day
    PUT COL(073) VAL(&IDATT) FROM(3) FOR(2) /* Year
  ELSE
    IF VAL(&IDATP) FROM(3) FOR(1) OP(=) VAL('/')
      PUT COL(069) VAL(&IDATT) FROM(4) FOR(2) /* Month
      PUT COL(071) VAL(&IDATT) FROM(7) FOR(2) /* Day
      PUT COL(073) VAL(&IDATT) FROM(1) FOR(2) /* Year
  EIF
EIF

PUT COL(077) DATA(INTO/.) LENGTH(8) /* Actual duration
PUT COL(085) DATA(EFA/.) LENGTH(4) /* Actual effort
PUT COL(089) DATA(IMPA/.) LENGTH(6) /* Actual impact
PUT COL(095) DATA(TIMX/.) LENGTH(5) /* Actual start time
PUT COL(100) DATA(SP01/.) LENGTH(8) /* Approval pending 1
PUT COL(108) DATA(SP02/.) LENGTH(8) /* Approval pending 2
PUT COL(116) DATA(SP03/.) LENGTH(8) /* Approval pending 3
PUT COL(124) DATA(SP04/.) LENGTH(8) /* Approval pending 4
PUT COL(132) DATA(SP05/.) LENGTH(8) /* Approval pending 5
PUT COL(140) DATA(SP06/.) LENGTH(8) /* Approval pending 6
PUT COL(148) DATA(SP07/.) LENGTH(8) /* Approval pending 7
PUT COL(156) DATA(SP08/.) LENGTH(8) /* Approval pending 8
PUT COL(164) DATA(SP09/.) LENGTH(8) /* Approval pending 9
PUT COL(172) DATA(SP10/.) LENGTH(8) /* Approval pending 10
PUT COL(180) DATA(SP11/.) LENGTH(8) /* Approval pending 11
PUT COL(188) DATA(SP12/.) LENGTH(8) /* Approval pending 12
PUT COL(196) DATA(SP13/.) LENGTH(8) /* Approval pending 13

Figure 45. Report format table DRLJRFT2 (Part 9 of 12)
Tivoli Service Desk customization

Figure 46. Report format table DRLJRFT2 (Part 10 of 12)
## Tivoli Service Desk customization

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval Class</td>
<td>Class identifier for approver.</td>
</tr>
<tr>
<td>Assignee Dept.</td>
<td>Department identifier for assignee.</td>
</tr>
<tr>
<td>Assignee Name</td>
<td>Name of assignee.</td>
</tr>
<tr>
<td>Assignee Phone</td>
<td>Contact phone for assignee.</td>
</tr>
<tr>
<td>Backup Plan</td>
<td>Plan used for backup.</td>
</tr>
<tr>
<td>Change Number</td>
<td>Number identifying change.</td>
</tr>
<tr>
<td>Change Reason</td>
<td>Reason for change.</td>
</tr>
<tr>
<td>Change Status</td>
<td>Status of change.</td>
</tr>
<tr>
<td>Change Type</td>
<td>Type of change.</td>
</tr>
<tr>
<td>Checkout Appl.</td>
<td>Application identifier for checkout.</td>
</tr>
<tr>
<td>Closed By</td>
<td>Person or entity that closed.</td>
</tr>
<tr>
<td>Closer Dept.</td>
<td>Department identifier for closer.</td>
</tr>
<tr>
<td>Closer Phone</td>
<td>Contact phone for closer.</td>
</tr>
<tr>
<td>Closer Class</td>
<td>Class identifier for closer.</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Additional requirements.</td>
</tr>
<tr>
<td>Completion Code</td>
<td>Code indicating completion.</td>
</tr>
<tr>
<td>Completion Time</td>
<td>Time required to complete.</td>
</tr>
<tr>
<td>Coordinator</td>
<td>Person or entity responsible.</td>
</tr>
<tr>
<td>Coordinator Dept.</td>
<td>Department identifier for coordinator.</td>
</tr>
<tr>
<td>Coordinator Name</td>
<td>Name of coordinator.</td>
</tr>
<tr>
<td>Coordinator Phone</td>
<td>Contact phone for coordinator.</td>
</tr>
<tr>
<td>Current Phase</td>
<td>Phase of current activity.</td>
</tr>
<tr>
<td>Current Priority</td>
<td>Priority of current activity.</td>
</tr>
<tr>
<td>Description</td>
<td>Detailed description.</td>
</tr>
<tr>
<td>Device Name</td>
<td>Name of device.</td>
</tr>
<tr>
<td>Device ID</td>
<td>Identifier for device.</td>
</tr>
<tr>
<td>Estimated Duration</td>
<td>Duration before estimated completion.</td>
</tr>
<tr>
<td>Estimated Effort</td>
<td>Effort estimated for completion.</td>
</tr>
<tr>
<td>Gateway ID</td>
<td>Identifier for gateway.</td>
</tr>
<tr>
<td>Initial Priority</td>
<td>Initial priority for task.</td>
</tr>
<tr>
<td>Key Item Affected</td>
<td>Item affected by change.</td>
</tr>
<tr>
<td>Location Code</td>
<td>Code indicating location.</td>
</tr>
<tr>
<td>Network Name</td>
<td>Name of network.</td>
</tr>
<tr>
<td>Owning Class</td>
<td>Class identifier for owning.</td>
</tr>
<tr>
<td>Planned End Date</td>
<td>Date when activity is planned to end.</td>
</tr>
<tr>
<td>Planned Start Time</td>
<td>Date when activity is planned to begin.</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>Additional requirements.</td>
</tr>
<tr>
<td>Program Name</td>
<td>Name of program.</td>
</tr>
<tr>
<td>Requested by</td>
<td>Person or entity requested.</td>
</tr>
<tr>
<td>Requester Dept.</td>
<td>Department identifier for requester.</td>
</tr>
<tr>
<td>Requester Phone</td>
<td>Contact phone for requester.</td>
</tr>
<tr>
<td>Reviewer Class</td>
<td>Class identifier for reviewer.</td>
</tr>
<tr>
<td>Tec Event ID</td>
<td>Identifier for technical event.</td>
</tr>
<tr>
<td>Network Name</td>
<td>Name of network.</td>
</tr>
<tr>
<td>System Name</td>
<td>Name of system.</td>
</tr>
</tbody>
</table>

Figure 47. Report format table DRLJRFT2 (Part 11 of 12)
The Tivoli Service Desk component uses the DRLJCOIN job for collecting problem and change data from the Tivoli Service Desk database. This job has two steps:

- Run RFT DRLJRFT/DRLJRFT2
- Run the collect process

DRLJCOIN is a sample collect job for collecting data from the Tivoli Service Desk database. Figure 49 on page 138 and Figure 50 on page 139 show the DRLJCOIN job.

Before running the DRLJCOIN job:
1. Change the data set names according to the naming convention of your installation.
2. Allocate a separate ISPPROF data set for step 1 of the DRLJCOIN job.
3. Check your DB2 SYSTEM and SYSPREFIX names.

The DRLJCOIN job writes the log data to a temporary data set, which is deleted when the job completes. If you want to save the data, change the DRLJCOIN job.

Also note that as the RFT extracts data in the Tivoli Service Desk database, the DRLJCOIN job deletes the data in the INFOMAN_CHANGE_D and INFOMAN_PROBLEM_D tables to avoid duplication of data. The DRLJCOIN job deletes the data in these tables just before running the collect step.
Figure 49. DRLJCOIN job for collecting Tivoli Service Desk data (Part 1 of 2)
Figure 50. DRLJCOIN job for collecting Tivoli Service Desk data (Part 2 of 2)
Update lookup tables

The Tivoli Service Desk component uses two lookup tables to provide problem resolution objectives and to standardize problem and change types.

Using the administration dialog, update these lookup tables:

<table>
<thead>
<tr>
<th>Table name</th>
<th>Description</th>
<th>Key columns</th>
<th>Data columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFOMAN_OBJECTIVE</td>
<td>Defines the resolution-time objective (in days) for each problem priority.</td>
<td>PROBLEM_PRIORITY</td>
<td>RESOLUTION_OBJ</td>
</tr>
<tr>
<td>INFOMAN_TYPE</td>
<td>Standardizes problem types and change types under which problems and changes will be grouped.</td>
<td>INFOMAN_TYPE</td>
<td>STANDARD_TYPE</td>
</tr>
</tbody>
</table>

For a complete description of these lookup tables and an example of their table contents, see “[INFOMAN_OBJECTIVE” on page 148] and “[INFOMAN_TYPE” on page 149”.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 22. Data flow

The Tivoli Service Desk component collects system problem and change management records and stores the data in the Tivoli Decision Support for OS/390 database. You can then use the reporting dialog to display reports based on this data. Figure 51 shows an overview of the flow of data from the Tivoli Service Desk licensed program, through the Tivoli Service Desk component, and finally into reports.

Figure 51. Tivoli Service Desk component data flow

The Tivoli Service Desk component collect job, DRLJCOIN, contains two steps. The first step runs an RFT (DRLJRFT or DRLJRFT2 for Tivoli Service Desk V1.2) that extracts data from the Tivoli Service Desk database and writes the data to a data set, called the INFOMAN log.

The second step runs a Tivoli Decision Support for OS/390 collect job, which reads the log and collects data into the INFOMAN_CHANGE_D and INFOMAN_PROBLEM_D tables. Before the collect is run, Tivoli Decision Support for OS/390 deletes the data in the two tables to avoid duplicating data.
The collect job DRLJCOIN reads the whole Tivoli Service Desk database. However, using DRLJRFT (or DRLJRFT2), you can specify that you want changes and problems extracted only for a certain period. You may be extracting and collecting some data from the Tivoli Service Desk database that you already have from a previous collect. To avoid duplicating data, you must delete the old data in the tables. What you collect into your Tivoli Decision Support for OS/390 tables is a snapshot of how the Tivoli Service Desk database looks at a certain moment (when you run the job).

For information on the search criteria that you can specify in the RFT, refer to the Tivoli Service Desk for OS/390 V1.2 Data Reporting User’s Guide.

Lookup tables

After collecting the data, the component stores the data in the Tivoli Decision Support for OS/390 database. As it updates the tables, the Tivoli Service Desk component uses lookup tables to provide resolution objectives (in days) and to provide standardized problem and change types. Figure 52 shows which data tables contain values from the lookup tables.

Figure 52. Tivoli Service Desk lookup table data
Chapter 23. Log and record definitions

Tivoli Service Desk produces records that contain information on the kind of problem or change occurring in the system. The Tivoli Service Desk component uses the DRLJCOIN job to extract change and problem records from the Tivoli Service Desk database and creates a log called INFOMAN from the records in the database. The component processes these records:

Table 10. Input records to the Tivoli Service Desk component

<table>
<thead>
<tr>
<th>Tivoli Service Desk record</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change records from the Information/Management database</td>
<td>INFOMAN_CHANGE</td>
<td>Contains change information indicating any modification made within an organization, such as equipment or software additions or removals.</td>
</tr>
<tr>
<td>Problem records from the Information/Management database</td>
<td>INFOMAN_PROBLEM</td>
<td>Contains information indicating problems that may require additional assessment and diagnosis.</td>
</tr>
<tr>
<td>Change records from the Tivoli Service Desk database</td>
<td>TSD_CHANGE_V12</td>
<td>Contains change information indicating any modification made within an organization, such as equipment or software additions or removals.</td>
</tr>
<tr>
<td>Problem records from the Tivoli Service Desk database</td>
<td>TSD_PROBLEM_V12</td>
<td>Contains information indicating problems that may require additional assessment and diagnosis.</td>
</tr>
</tbody>
</table>
Tivoli Service Desk log and record definitions
Chapter 24. Data tables and lookup tables

This section describes the data tables and lookup tables used by the Tivoli Service Desk component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature, refer to the Administration Guide.

Data tables

This section describes the data tables for the Tivoli Service Desk component.

INFOMAN_CHANGE_D

This table provides daily statistics on changes required or implemented on the system. It contains change records from the Tivoli Service Desk database, extracted by the collect job DRLJCOIN.

This table is updated by the INFOMAN_TYPE lookup table.

<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 change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED). From INDATD or INDATF.</td>
</tr>
<tr>
<td>GROUP_ASSIGNED</td>
<td>k CHAR(11)</td>
<td>Group that the change was assigned to. From INGROA.</td>
</tr>
<tr>
<td>CHANGE_STATUS</td>
<td>k CHAR(8)</td>
<td>Status of the change, such as INITIAL, OPEN, and CLOSED. From INSTAC.</td>
</tr>
<tr>
<td>CHANGE_TYPE</td>
<td>k CHAR(8)</td>
<td>Change category, such as SOFTWARE, HARDWARE and APPL. From STANDARD_TYPE in the INFOMAN_TYPE lookup table. If no match is found, this column gets its value from INTYPE.</td>
</tr>
<tr>
<td>CHANGE_PRIORITY</td>
<td>k CHAR(2)</td>
<td>Current priority assigned to the change. This can be 01 to 04. From INPrio.</td>
</tr>
<tr>
<td>CHANGE_REASON</td>
<td>k CHAR(8)</td>
<td>Reason why the change was required or implemented. From INCODR.</td>
</tr>
<tr>
<td>BACKUP_USED_COUNT</td>
<td>INTEGER</td>
<td>Number of times the backup plan was used. This is the count of times that INMISX was equal to YES.</td>
</tr>
<tr>
<td>CHANGE_DAYS</td>
<td>FLOAT</td>
<td>Actual number of days it took to implement the change. This is the sum of the difference between the date the change was started and the date the change was closed.</td>
</tr>
<tr>
<td>CHANGE_HOURS</td>
<td>FLOAT</td>
<td>Actual number of hours it took to implement the change. Calculated as the sum of (24*ININTOD + ININTOH + ININTOM/60).</td>
</tr>
<tr>
<td>CHANGES</td>
<td>INTEGER</td>
<td>Number of changes opened or closed. This is the count of change records (INRNID) collected.</td>
</tr>
<tr>
<td>COLLECT_DATE</td>
<td>DATE</td>
<td>Date when the Tivoli Decision Support for OS/390 job DRLJCOIN was run. From INRFTDATE.</td>
</tr>
<tr>
<td>HIGH_IMPACTS</td>
<td>INTEGER</td>
<td>Number of changes with high impact. This is the count of times that INIMPA was equal to HIGH.</td>
</tr>
<tr>
<td>LOW_IMPACTS</td>
<td>INTEGER</td>
<td>Number of changes with low impact. This is the count of times that INIMPA was equal to LOW.</td>
</tr>
</tbody>
</table>
### Information/Management data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIUM_IMPACTS</td>
<td>INTEGER</td>
<td>Number of changes with medium impact. This is the count of times that INIMPA was equal to MEDIUM.</td>
</tr>
<tr>
<td>MONTH</td>
<td>DATE</td>
<td>Date when the change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED). This is the date of the first day of the month. From INDATD or INDATF.</td>
</tr>
<tr>
<td>PLANNED_DAYS</td>
<td>FLOAT</td>
<td>Number of days planned for implementing the change. This is the sum of the difference between the planned start date (INDATP) and the planned end date (INDATT).</td>
</tr>
<tr>
<td>SUCCESSFUL_CHANGES</td>
<td>INTEGER</td>
<td>Number of successful changes implemented. This is the count of times that INCODC was equal to OK.</td>
</tr>
<tr>
<td>UNEXPECT_PROBLEMS</td>
<td>INTEGER</td>
<td>Number of changes with unexpected problems. This is the count of times that INMISP was equal to YES.</td>
</tr>
</tbody>
</table>
INFOMAN_PROBLEM_D

This table provides daily statistics on problems such as hardware, software, and application. It contains problem records from the Tivoli Service Desk database, extracted by the collect job DRLJCOIN.

This table is updated by the INFOMAN_TYPE and INFOMAN_OBJECTIVE lookup 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 when the problem occurred. From INDATO.</td>
</tr>
<tr>
<td>GROUP_ASSIGNED</td>
<td>CHAR(8)</td>
<td>Group that the problem was assigned to. From INGROA.</td>
</tr>
<tr>
<td>PROBLEM_STATUS</td>
<td>CHAR(8)</td>
<td>Status of the problem. From INSTAC.</td>
</tr>
<tr>
<td>PROBLEM_TYPE</td>
<td>CHAR(8)</td>
<td>Problem category, such as SOFTWARE, HARDWARE, and APPL. From STANDARD_TYPE in the INFOMAN_TYPE lookup table. If no match is found, this column gets its value from INTYPE.</td>
</tr>
<tr>
<td>PROBLEM_PRIORITY</td>
<td>CHAR(2)</td>
<td>Current priority assigned to the problem. Can be 01 to 04. From INPRIO.</td>
</tr>
<tr>
<td>PROBLEM_CAUSE</td>
<td>CHAR(8)</td>
<td>Cause of the problem, such as PROGRAM, HARDWARE, and USAGE. From INCODC.</td>
</tr>
<tr>
<td>COLLECT_DATE</td>
<td>DATE</td>
<td>Date when the Tivoli Decision Support for OS/390 job DRLJCOIN was run. From INRFTDATE.</td>
</tr>
<tr>
<td>FIX_HOURS</td>
<td>FLOAT</td>
<td>Number of hours needed to fix the problem. This is the sum of the difference between the time the problem occurred and the time the problem was resolved.</td>
</tr>
<tr>
<td>MONTH</td>
<td>DATE</td>
<td>Month when the problem occurred. This is the date of the first day of the month. From INDATO.</td>
</tr>
<tr>
<td>OBJECTIVE_EXCEEDS</td>
<td>INTEGER</td>
<td>Number of times the resolution-time objective was exceeded. This is the count of records with fix hours greater than the resolution objective defined in the INFOMAN_OBJECTIVE lookup table.</td>
</tr>
<tr>
<td>PROBLEMS</td>
<td>INTEGER</td>
<td>Number of problems that occurred. This is the count of problem records (INDATO) collected.</td>
</tr>
<tr>
<td>REIPLS</td>
<td>INTEGER</td>
<td>Number of re-IPLs performed because of unexpected problems. This is the count of times that INIMPS was equal to REIPL.</td>
</tr>
<tr>
<td>RERUN_HOURS</td>
<td>INTEGER</td>
<td>Number of hours spent to rerun applications or jobs because of the problems. Calculated as the sum of (24*ININTRD + ININTRH + ININTRM/60).</td>
</tr>
<tr>
<td>RESTARTS</td>
<td>INTEGER</td>
<td>Number of restarts required because of unexpected problems. This is the count of times that INIMPS was equal to RESTART.</td>
</tr>
</tbody>
</table>
Lookup tables

This section describes the lookup tables specific to the Tivoli Service Desk component.

INFOMAN_OBJECTIVE

This lookup table defines the resolution-time objective (in days) for each problem priority. It updates the INFOMAN_PROBLEM_D table.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROBLEM_PRIORITY</td>
<td>CHAR(2)</td>
<td>Priority for the problem. This is normally 01 to 04.</td>
</tr>
<tr>
<td>RESOLUTION_OBJ</td>
<td>INTEGER</td>
<td>Resolution-time objective for the problem priority. This is the number of days within which the problem should be resolved.</td>
</tr>
</tbody>
</table>

Example of table contents

<table>
<thead>
<tr>
<th>PROBLEM_PRIORITY</th>
<th>RESOLUTION_OBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>7</td>
</tr>
<tr>
<td>02</td>
<td>14</td>
</tr>
<tr>
<td>03</td>
<td>21</td>
</tr>
</tbody>
</table>
This lookup table standardizes Tivoli Service Desk problem and change types under which problems and changes will be grouped. It updates the INFOMAN_PROBLEM_D and INFOMAN_CHANGE_D tables.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFOMAN_TYPE</td>
<td>k</td>
<td>Tivoli Service Desk problem type or change type to be converted.</td>
</tr>
<tr>
<td>STANDARD_TYPE</td>
<td>CHAR(8)</td>
<td>Standardized problem type or change type to use instead of the Tivoli Service Desk type.</td>
</tr>
</tbody>
</table>

Example of table contents

```
INFOMAN_STANDARD_TYPE
-------- --------
SW SOFTWARE SOFTWARE
SOFT SOFTWARE SOFTWARE
SOFTWARE SOFTWARE SOFTWARE
HW HARDWARE HARDWARE
HARD HARDWARE HARDWARE
HARDWARE HARDWARE
```
Tivoli Service Desk lookup tables
Chapter 25. Reports

The Tivoli Service Desk (TSD) component provides these reports:

• Problem management reports
  – TSD Problem Cause, Monthly Overview report
  – TSD Problems, Monthly Overview report
  – TSD Problems, Daily Trend report
  – TSD Problems Closed, Monthly Overview report
  – TSD Problems Not Closed, Weekly Overview report

• Change management reports
  – TSD Change Successes, Monthly Overview report
  – TSD Changes, Monthly Overview report
  – TSD Changes, Daily Trend report
  – TSD Changes Closed, Monthly Overview report
  – TSD Changes Not Closed, Weekly Overview report

• Mixed reports
  – TSD Problems and Changes, Monthly Trend report
Problem management reports

The problem management reports show the number of problems, problem causes, and group assignments for a selected time period. These reports also show the number of closed problems and the time it takes to fix the problems.

TSD Problem Cause, Monthly Overview report

This report shows, for a selected time period, the number of problems per month and problem cause.

This information identifies the report:

- **Report ID**: INFOMAN01
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_PROBLEM_D
- **Attributes**: Infoman, Info/man, Problem, Overview, Monthly
- **Variables**: From_month, To_month

```
TSD Problem Cause, Monthly Overview
Month: '2000-01-01' to '2000-06-01'

<table>
<thead>
<tr>
<th>Month</th>
<th>Problem cause</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>HARDWARE</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>PROGRAM</td>
<td>12</td>
</tr>
</tbody>
</table>
```

Figure 53. Example of a TSD Problem Cause, Monthly Overview report

The report contains this information:

- **Month**: The date of the first day of the month during which the problem occurred.
- **Problem cause**: The cause of the problem, such as PROGRAM, HARDWARE, or USAGE.
- **Problems**: The number of problems that occurred during the specified month.
TSD Problems, Monthly Overview report

This report shows, for a selected time period, the number of problems per month, problem type, and group assigned. For more information on using this report, refer to the *System Performance Feature Guide*.

This information identifies the report:

**Report ID** INFOMAN02  
**Report group** Tivoli Service Desk reports  
**Source** INFOMAN_PROBLEM_D  
**Attributes** Infoman, Info/man, Problem, Overview, Monthly  
**Variables** From_month, To_month

---

<table>
<thead>
<tr>
<th>Month</th>
<th>Problem type</th>
<th>Group assigned</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>HARDWARE</td>
<td>DEPT1</td>
<td>16</td>
</tr>
<tr>
<td>2000-01-01</td>
<td>SOFTWARE</td>
<td>DEPT1</td>
<td>20</td>
</tr>
</tbody>
</table>

*Tivoli Decision Support for OS/390 Report: INFOMAN02*

*Figure 54. Example of a TSD Problems, Monthly Overview report*

The report contains this information:

**Month** The date of the first day of the month during which the problem occurred.

**Problem type** The problem category, such as SOFTWARE, HARDWARE, or APPL.

**Group assigned** The group to which the problem was assigned.

**Problems** The number of problems that occurred during the month.
Tivoli Service Desk reports

**TSD Problems, Daily Trend report**

This report shows, for a selected month, the number of problems per day.

This information identifies the report:

- **Report ID**: INFOMAN03
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_PROBLEM_D
- **Attributes**: Infoman, Info/man, Problem, Trend, Daily
- **Variables**: Month

![Figure 55. Example of a TSD Problems, Daily Trend report](image)

The report contains this information:

- **Day**: The day when the problem occurred.
- **Problems**: The number of problems that occurred.
TSD Problems Closed, Monthly Overview report

This report shows, for a selected time period, the number of closed problems and fix hours per month, problem type, and group assigned.

This information identifies the report:

- **Report ID**: INFOMAN04
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_PROBLEM_D
- **Attributes**: Infoman, Info/man, Problem, Overview, Monthly
- **Variables**: From_month, To_month

### Table: TSD Problems Closed, Monthly Overview

<table>
<thead>
<tr>
<th>Month</th>
<th>Problem type</th>
<th>Group assigned</th>
<th>Problems</th>
<th>Fix hours</th>
<th>Fix hours per problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>HARDWARE</td>
<td>DEPT1</td>
<td>10</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DEPT2</td>
<td>5</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SOFTWARE</td>
<td>DEPT1</td>
<td>7</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DEPT2</td>
<td>5</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: INFOMAN04

**Figure 56. Example of a TSD Problems Closed, Monthly Overview report**

The report contains this information:

- **Month**: The date of the first day of the month during which the problem occurred.
- **Problem type**: The problem category, such as SOFTWARE, HARDWARE, or APPL.
- **Group assigned**: The group to which the problem was assigned.
- **Problems**: The number of problems that occurred.
- **Fix hours**: The number of hours needed to fix the problems.
- **Fix hours per problem**: The average number of hours needed to fix a problem. Calculated as: FIX_HOURS / PROBLEMS.
Tivoli Service Desk reports

TSD Problems Not Closed, Weekly Overview report

This report shows the age, in weeks, of problems that are not closed.

This information identifies the report:

- **Report ID**: INFOMAN05
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_PROBLEM_D
- **Attributes**: Infoman, Info/man, Problem, Overview, Weekly

The report contains this information:

<table>
<thead>
<tr>
<th>Problem type</th>
<th>Problem priority</th>
<th>Group assigned</th>
<th>Problems</th>
<th>Problems</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARDWARE 03</td>
<td>03</td>
<td>DEPT2</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>04</td>
<td>04</td>
<td>DEPT1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>SOFTWARE 02</td>
<td>02</td>
<td>DEPT2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Total: 4 3 7

Figure 57. Example of a TSD Problems Not Closed, Weekly Overview report

The report contains this information:

- **Problem type**: The problem category, such as SOFTWARE, HARDWARE, or APPL.
- **Problem priority**: The current problem priority in a range from 01 to 04.
- **Group assigned**: The group to which the problem was assigned.
- **Weeks old problems**: The number of problems with an age of \( n \) weeks. Calculated as: \((COLLECT_DATE - DATE) / 7\).
- **Total problems**: The total number of problems that have not been closed.
Change management reports

The change management reports show the number of changes, successful changes, and group assignment for a selected time period. The reports also show the number of closed changes and the time spent implementing a change.

TSD Change Successes, Monthly Overview report

This report shows, for a selected time period, the number of changes and successful changes, per month and group assigned.

This information identifies the report:

Report ID INFOMAN06
Report group Tivoli Service Desk reports
Source INFOMAN_CHANGE_D
Attributes Infoman, Info/man, Change, Overview, Monthly
Variables From_month, To_month

<table>
<thead>
<tr>
<th>Month</th>
<th>Group assigned</th>
<th>Changes</th>
<th>Successful changes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>DEPT11</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>DEPT12</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 58. Example of a TSD Change Successes, Monthly Overview report

The report contains this information:

Month The date of the first day of the month when the change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED).

Group assigned The group to which the change was assigned.

Changes The number of changes opened or closed.

Successful changes (%) The percentage of successful changes implemented. Calculated as: 100 * SUCCESSFUL_CHANGES / CHANGES.
Tivoli Service Desk reports

TSD Changes, Monthly Overview report

This report shows, for a selected time period, the number of changes per month, change type, and group assigned.

This information identifies the report:

- **Report ID**: INFOMAN07
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_CHANGE_D
- **Attributes**: Infoman, Info/man, Change, Overview, Monthly
- **Variables**: From_month, To_month

<table>
<thead>
<tr>
<th>Month</th>
<th>Change type</th>
<th>Group assigned</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>HARDWARE</td>
<td>DEPT1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DEPT2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>SOFTWARE</td>
<td>DEPT1</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 59. Example of a TSD Changes, Monthly Overview report

The report contains this information:

- **Month**: The date of the first day of the month when the change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED).
- **Change type**: The change category, such as SOFTWARE, HARDWARE or APPL.
- **Group assigned**: The group to which the change was assigned.
- **Changes**: The number of changes opened or closed.
TSD Changes, Daily Trend report

This graphic report shows, for a selected month, the number of changes per day.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>INFOMAN08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Tivoli Service Desk reports</td>
</tr>
<tr>
<td>Source</td>
<td>INFOMAN_CHANGE_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>Infoman, Info/man, Change, Trend, Daily</td>
</tr>
<tr>
<td>Variables</td>
<td>Month</td>
</tr>
</tbody>
</table>

The report contains this information:

**Day**

The day when the change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED).

**Changes**

The number of changes opened or closed.

Figure 60. Example of a TSD Changes, Daily Trend report
**Tivoli Service Desk reports**

**TSD Changes Closed, Monthly Overview report**

This report shows, for a selected time period, the number of closed changes and change hours per month, change type, and group assigned. For more information on using this report, refer to the *System Performance Feature Guide*.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>INFOMAN09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Tivoli Service Desk reports</td>
</tr>
<tr>
<td>Source</td>
<td>INFOMAN_CHANGE_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>Infoman, Info/man, Change, Overview, Monthly</td>
</tr>
<tr>
<td>Variables</td>
<td>From_month, To_month</td>
</tr>
</tbody>
</table>

The report contains this information:

- **Month**: The date of the first day of the month when the change was required (when status is not CLOSED) or when the change was implemented (when status is CLOSED).
- **Change type**: The change category, such as SOFTWARE, HARDWARE, or APPL.
- **Group assigned**: The group to which the change was assigned.
- **Changes**: The number of successful changes implemented.
- **Change hours**: The actual number of hours it took to implement the changes.
- **Change hours per change**: The average actual hours it took to implement a change. Calculated as: CHANGE_HOURS / CHANGES.

<table>
<thead>
<tr>
<th>Month</th>
<th>Change type</th>
<th>Group assigned</th>
<th>Changes</th>
<th>Change hours</th>
<th>Change hours per change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-01</td>
<td>HARDWARE</td>
<td>DEPT1</td>
<td>3</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>2000-02-01</td>
<td>HARDWARE</td>
<td>DEPT1</td>
<td>2</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

*Figure 61. Example of a TSD Changes Closed, Monthly Overview report*
TSD Changes Not Closed, Weekly Overview report

This report shows, for changes that are not closed, the weeks left before a change is required.

This information identifies the report:

- **Report ID**: INFOMAN10
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_CHANGE_D
- **Attributes**: Infoman, Info/man, Change, Overview, Weekly

<table>
<thead>
<tr>
<th>Change Group</th>
<th>Change type assigned</th>
<th>Changes</th>
<th>Changes</th>
<th>Changes</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARDWARE DEPT1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DEPT2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFTWARE DEPT1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 62. Example of a TSD Changes Not Closed, Weekly Overview report

The report contains this information:

- **Change type**: The change category, such as SOFTWARE, HARDWARE, or APPL.
- **Group assigned**: The group to which the change was assigned.
- **Weeks left**: The weeks left before a change is required. Calculated as: \( \frac{(\text{DATE} - \text{COLLECT_DATE})}{7} \)
- **Changes**: The number of changes opened or closed.
Mixed reports

These reports show a combination of changes and problems for a selected time period.

TSD Problems and Changes, Monthly Trend report

This report shows, for a selected time period, the number of changes and problems per month. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: INFOMAN11
- **Report group**: Tivoli Service Desk reports
- **Source**: INFOMAN_PROBLEM_D, INFOMAN_CHANGE_D
- **Attributes**: Infoman, Info/man, Change, Problem, Trend, Monthly
- **Variables**: From_month, To_month

![Image of TSD Problems and Changes, Monthly Trend report]

Figure 63. Example of a TSD Problems and Changes, Monthly Trend report

The report contains this information:

- **Month start date**: For problems, the date of the first day of the month when the problem occurred. For changes, the date of the first day of the month when the
change was required (status is not CLOSED) or when the change was finished (status is CLOSED).

<table>
<thead>
<tr>
<th>Problems</th>
<th>The number of problems that occurred.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes</td>
<td>The number of changes opened or closed.</td>
</tr>
</tbody>
</table>
Part 6. IXFP component

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Chapter 26. Customization

IXFP is the host software that helps you manage the IBM RAMAC Virtual Array Storage. IXFP is a set of utility programs that provide extended facilities for administering, configuring, and obtaining reports. These reports provide information about the performance of RAMAC Virtual Array (RVA) subsystems, about the performance of traditional DASD subsystems, and about the cache effectiveness of certain non-RVA subsystems.

XSA/Reporter is the part of the IXFP that collects data from your RAMAC Virtual Array subsystems and produces reports based upon that data. XSA/Reporter also provides Cache Effectiveness reports for subsystems attached to controllers that are compatible with the IBM 3390.

For further information about IXFP, refer to:
- IXFP Installation for MVS Version 2 Release 1 SC26-7179
- IXFP Configuration and Administration Version 2 Release 1 SC26-7178
- IXFP Subsystem Reporting Version 2 Release 1 SC26-7184.

IXFP data

The records written in the XSA/Reporter data collection file can be directed to SMF or to a user-managed file. In each instance, a standard header precedes the XSA/Reporter data portion of the record, although it is mainly binary zeros if output is not directed to SMF.

The five XSA/Reporter data collection record subtypes are:
- Subtype 1: Subsystem Performance
- Subtype 2: Channel Interface Statistics
- Subtype 3: Functional Device Performance
- Subtype 4: Drive Module Performance
- Subtype 7: Space Utilization.

The other three IXFP SMF record subtypes are:
- Subtype 5: Deleted Data Space Release (DDSR) data
- Subtypes 6 and 8: SnapShot event data.
To enable SMF to collect IXFP data, you must identify the SMF record type and subtype for IXFP in the SMFPRMxx member of SYS1.PARMLIB. An example of an SMFPRMxx member, where 250 is the record type selected for IXFP data, and XSA/Reporter, DDSR and space utilization are to be written, is as follows:

SYS(TYPE(0:104, 250))
SUBSYS(STC,TYPE(0:55, 08:104, 250))
SUBPARM(IXFP(250, 2, 5, 7))

By default, Tivoli Decision Support for OS/390 assumes that the SMF type for IXFP data is 250. If you want to change the value, you have to manually modify the record definitions (DRLRIXFP member) in the IDENTIFIED BY clause (IDENTIFIED BY SMFFARTY = 250 must be changed to IDENTIFIED BY SMFFARTY = xxx, where xxx is the value you require).
Chapter 27. Data tables

This chapter describes the data tables used by the IXFP component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature component, refer to the Administration Guide.

**IXFP\_CHANNEL\_H, \_D, \_M**

These tables provide hourly, daily, and monthly statistics about the IXFP channel interface based on data from SMF type 50, subtype 2 records.

The default retention periods for these tables are:
- IXFP\_CHANNEL\_H: 10 days
- IXFP\_CHANNEL\_D: 60 days
- IXFP\_CHANNEL\_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>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. It applies only to the _H table. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>PARTITION</td>
<td>CHAR(1)</td>
<td>The partitions that are active during this collection interval. From activPrt.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>CHANNEL_INT_ID</td>
<td>CHAR(1)</td>
<td>The channel interface identifier. From intfld.</td>
</tr>
<tr>
<td>SUBSYSTEM_NAME</td>
<td>CHAR(8)</td>
<td>The name of the MVS subsystem. From subsysName.</td>
</tr>
<tr>
<td>CHANNEL_INT_NAME</td>
<td>CHAR(8)</td>
<td>The channel interface identifier. From intName.</td>
</tr>
<tr>
<td>DURATION_TIME</td>
<td>FLOAT</td>
<td>Interval duration time for the subsystem, in seconds. Calculated as the sum of duraTime/1000.</td>
</tr>
<tr>
<td>CHANNEL_SPEED</td>
<td>INTEGER</td>
<td>The channel speed (megabytes per second: 3.0, 4.5, or 20.0). From chanSped.</td>
</tr>
<tr>
<td>NUMBER_IO</td>
<td>FLOAT</td>
<td>The number of I/Os. Calculated as the sum of numberIo.</td>
</tr>
<tr>
<td>TCU_BUSY</td>
<td>FLOAT</td>
<td>The time control unit busy at channel (in seconds). Calculated as the sum of tiCoBuCh/1000.</td>
</tr>
</tbody>
</table>
**IXFP_DDSR_H, _D, _M**

These tables provide hourly, daily, and monthly data about IXFP Deleted Data Space Release (DDSR) based on data from SMF type 50, subtype 5 records.

The default retention periods for these tables are:
- IXFP_DDSR_H 10 days
- IXFP_DDSR_D 60 days
- IXFP_DDSR_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>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. It applies only to the _H table. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>DEVICE_ADDRESS</td>
<td>CHAR(4)</td>
<td>The device address on which space was released. From DEVNUM.</td>
</tr>
<tr>
<td>VOLUME_ID</td>
<td>CHAR(6)</td>
<td>The volume ID on which space was released. From VOLID.</td>
</tr>
<tr>
<td>RAMAC_FD_ID</td>
<td>CHAR(4)</td>
<td>The RAMAC Virtual Array functional device ID. From FDID.</td>
</tr>
<tr>
<td>RAMAC_SSYS_NAME</td>
<td>CHAR(8)</td>
<td>The RAMAC Virtual Array subsystem name that owns the device. From SUBSYS.</td>
</tr>
<tr>
<td>RAMAC_SSYS_ID</td>
<td>CHAR(4)</td>
<td>The RAMAC Virtual Array subsystem ID. From SSID.</td>
</tr>
<tr>
<td>CHANNEL_UA_ID</td>
<td>CHAR(4)</td>
<td>The channel unit address ID. From IDID</td>
</tr>
<tr>
<td>IO_TIME</td>
<td>INTEGER</td>
<td>The I/O time for space release, in seconds. Calculated as the sum of IOTIME.</td>
</tr>
</tbody>
</table>
These tables provide hourly, daily, and monthly data about IXFP functional device performance based on data from SMF type 50, subtype 3 records.

The default retention periods for these tables are:
- IXFP_DEVICE_H: 10 days
- IXFPDEVICE_D: 60 days
- IXFPDEVICE_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>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. It applies only to the _H table. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>PARTITION</td>
<td>CHAR(1)</td>
<td>The partitions that are active during this collection interval. From activPrt.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>DEVICE_ID</td>
<td>CHAR(4)</td>
<td>The functional device identifier (0-1023). From vdid.</td>
</tr>
<tr>
<td>SUBSYSTEM_NAME</td>
<td>CHAR(8)</td>
<td>The name of the MVS subsystem. From subsysName.</td>
</tr>
<tr>
<td>PART_MEMB</td>
<td>CHAR(1)</td>
<td>Partition membership. From partMemb.</td>
</tr>
<tr>
<td>DEVICE_ADDRESS</td>
<td>CHAR(4)</td>
<td>Device address as known to the SCP. From devNum.</td>
</tr>
<tr>
<td>VOLSER</td>
<td>CHAR(6)</td>
<td>Volume serial number. From volSer.</td>
</tr>
<tr>
<td>DEV_NAME</td>
<td>CHAR(8)</td>
<td>Device name. From vDevName.</td>
</tr>
<tr>
<td>ICEBERG</td>
<td>CHAR(1)</td>
<td>This is an Iceberg device. From iceberg.</td>
</tr>
<tr>
<td>DURATION_TIME</td>
<td>FLOAT</td>
<td>Interval duration time for the subsystem, in seconds. Calculated as the sum of duraTime/1000.</td>
</tr>
<tr>
<td>READ_REQS</td>
<td>FLOAT</td>
<td>Total read request count. Calculated as the sum of readReqs.</td>
</tr>
<tr>
<td>WRITE_REQS</td>
<td>FLOAT</td>
<td>Total write request count. Calculated as the sum of writReqs.</td>
</tr>
<tr>
<td>IO_OPERATION</td>
<td>FLOAT</td>
<td>Number of I/O operations (number of end-of-chain events). Calculated as the sum of devActiv.</td>
</tr>
<tr>
<td>FRONT_END_READ</td>
<td>FLOAT</td>
<td>Count of front-end bytes that were transferred for read operations. Calculated as the sum of feBytXfR.</td>
</tr>
<tr>
<td>FRONT_END_WRITE</td>
<td>FLOAT</td>
<td>Count of front-end bytes that were transferred for write operations. Calculated as the sum of feBytXfR.</td>
</tr>
<tr>
<td>DEVICE_AVAIL_TIME</td>
<td>FLOAT</td>
<td>Device available time (in seconds). Calculated as the sum of availTim/1000.</td>
</tr>
<tr>
<td>DEVICE_UTIL_TIME</td>
<td>FLOAT</td>
<td>Device utilization time (in seconds). Calculated as the sum of devUtilTi/1000.</td>
</tr>
<tr>
<td>DEVICE_CONN_TIME</td>
<td>FLOAT</td>
<td>Device connect time (in seconds). Calculated as the sum of connTime/1000.</td>
</tr>
<tr>
<td>PRIM_CAPACITY</td>
<td>FLOAT</td>
<td>Primary capacity in cylinders. From primCapa.</td>
</tr>
<tr>
<td>TRACKS_PER_CYL</td>
<td>FLOAT</td>
<td>Tracks per cylinder. From trackCyl.</td>
</tr>
<tr>
<td>BYTES_PER_TRACK</td>
<td>FLOAT</td>
<td>Bytes per track. From byteTrak.</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>SREAD_REQS</td>
<td>FLOAT</td>
<td>Search or read normal request count. Calculated as the sum of rdNorReq.</td>
</tr>
<tr>
<td>SREAD_HITS</td>
<td>FLOAT</td>
<td>Search or read normal hits. Calculated as the sum of rdNorHit.</td>
</tr>
<tr>
<td>WRITE_NORM_REQS</td>
<td>FLOAT</td>
<td>Write normal requests. Calculated as the sum of wrNorReq.</td>
</tr>
<tr>
<td>DASD_FW_HITS</td>
<td>FLOAT</td>
<td>DASD Fast Write normal hits. Calculated as the sum of dfwNorHt.</td>
</tr>
<tr>
<td>SREAD_SEQ_REQS</td>
<td>FLOAT</td>
<td>Search or read sequential request count. Calculated as the sum of dSeqReq.</td>
</tr>
<tr>
<td>SREAD_SEQ_HITS</td>
<td>FLOAT</td>
<td>Search or read sequential hits. Calculated as the sum of rdSeqHt.</td>
</tr>
<tr>
<td>WRITE_SEQ_REQS</td>
<td>FLOAT</td>
<td>Write sequential requests. Calculated as the sum of wrSeqReq.</td>
</tr>
<tr>
<td>DASD_FW_SEQ_HITS</td>
<td>FLOAT</td>
<td>DASD Fast Write sequential hits. Calculated as the sum of dfwSeqHt.</td>
</tr>
<tr>
<td>SREAD_CACHE_FW_R</td>
<td>FLOAT</td>
<td>Search or read Cache Fast Write requests. Calculated as the sum of rdCFWreq.</td>
</tr>
<tr>
<td>SREAD_CACHE_FW_W</td>
<td>FLOAT</td>
<td>Search or read Cache Fast Write hits. Calculated as the sum of rdCFWhit.</td>
</tr>
<tr>
<td>CACHE_FW_REQS</td>
<td>FLOAT</td>
<td>Cache Fast Write requests. Calculated as the sum of wrCFWreq.</td>
</tr>
<tr>
<td>CACHE_FW_HITS</td>
<td>FLOAT</td>
<td>Cache Fast Write hits. Calculated as the sum of wrCFWhit.</td>
</tr>
<tr>
<td>INH_CACHE_LOAD_REQ</td>
<td>FLOAT</td>
<td>Inhibit cache loading requests. Calculated as the sum of inhCaLrq.</td>
</tr>
<tr>
<td>BYP_CACHE_REQ</td>
<td>FLOAT</td>
<td>Bypass cache requests. Calculated as the sum of bypCaReq.</td>
</tr>
<tr>
<td>SEQ_DASD_CACHE_TR</td>
<td>FLOAT</td>
<td>Sequential DASD to cache transfers (stages). Calculated as the sum of caSeqXfr.</td>
</tr>
<tr>
<td>DASD_CACHE_TR</td>
<td>FLOAT</td>
<td>DASD to cache transfers (stages). Calculated as the sum of caXfrStg.</td>
</tr>
<tr>
<td>CACHE_DASD_TR</td>
<td>FLOAT</td>
<td>Cache to DASD (stages). Calculated as the sum of caDasdXf.</td>
</tr>
<tr>
<td>DASD_FW_NVs</td>
<td>FLOAT</td>
<td>DASD Fast Write NVS constraint count. Calculated as the sum of dfwNVScnt.</td>
</tr>
<tr>
<td>DASD_FW_NORM</td>
<td>FLOAT</td>
<td>DASD Fast Write normal write requests. Calculated as the sum of dfwNorWr.</td>
</tr>
<tr>
<td>DASD_FW_SEQ</td>
<td>FLOAT</td>
<td>DASD Fast Write sequential write requests. Calculated as the sum of dfwSeqWr.</td>
</tr>
<tr>
<td>SEQ_ACC_READ_REQ</td>
<td>FLOAT</td>
<td>Sequential-detected sequential access read requests. Calculated as the sum of seqIntAc.</td>
</tr>
<tr>
<td>LOW_REF_COUNT</td>
<td>FLOAT</td>
<td>Low reference count. Calculated as the sum of lowrfCnt.</td>
</tr>
<tr>
<td>LOW_REF_COUNT_LRU</td>
<td>FLOAT</td>
<td>Low reference count due to LRU. Calculated as the sum of lowRfLru.</td>
</tr>
<tr>
<td>FRAME_DEALL_COUNT</td>
<td>FLOAT</td>
<td>Frame deallocation count. Calculated as the sum of frDealCt.</td>
</tr>
<tr>
<td>CACHE_OCCUPANCY</td>
<td>FLOAT</td>
<td>Cache occupancy (track seconds). Calculated as the sum of caTrkSec/1000.</td>
</tr>
</tbody>
</table>
**IXFP_DRIVE_H, _D, _M**

These tables provide hourly, daily, and monthly data about IXFP drive module performance based on data from SMF type 50, subtype 4 records.

The default retention periods for these tables are:
- IXFP_DRIVE_H: 10 days
- IXFP_DRIVE_D: 60 days
- IXFP_DRIVE_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>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. It applies only to the _H table. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>PARTITION</td>
<td>CHAR(1)</td>
<td>The partitions that are active during this collection interval. From activPrt.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>SUBSYSTEM_NAME</td>
<td>CHAR(8)</td>
<td>The name of the MVS subsystem. From subsysName.</td>
</tr>
<tr>
<td>PART_MEMB</td>
<td>CHAR(1)</td>
<td>Partition membership. From partMemb.</td>
</tr>
<tr>
<td>UNIT</td>
<td>CHAR(2)</td>
<td>The unit. From unit.</td>
</tr>
<tr>
<td>TRAY</td>
<td>CHAR(2)</td>
<td>The tray. From tray.</td>
</tr>
<tr>
<td>SLOT</td>
<td>CHAR(2)</td>
<td>The slot. From slot.</td>
</tr>
<tr>
<td>DURATION_TIME</td>
<td>FLOAT</td>
<td>Interval duration time for the drive module, in seconds. Calculated as the sum of drvMdTim/1000.</td>
</tr>
<tr>
<td>BUSY_TIME</td>
<td>FLOAT</td>
<td>Busy time for the drive module, in seconds. Calculated as the sum of busyTime/1000.</td>
</tr>
<tr>
<td>READ_BYTES_TR</td>
<td>FLOAT</td>
<td>Bytes that were transferred during read operations. Calculated as the sum of readByts.</td>
</tr>
<tr>
<td>WRITE_BYTES_TR</td>
<td>FLOAT</td>
<td>Bytes that were transferred during write operations. Calculated as the sum of wrteByts.</td>
</tr>
</tbody>
</table>
### IXFP_SNAPSHOT_H

This table provides hourly data about IXFP SnapShot Events based on data from SMF type 50, subtype 6 records.

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>DATE</td>
<td>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASLI.</td>
</tr>
<tr>
<td>SOURCE_VOLUME_ID</td>
<td>CHAR(6)</td>
<td>The source volume ID. From SRCVOL.</td>
</tr>
<tr>
<td>TARGET_VOLUME_ID</td>
<td>CHAR(6)</td>
<td>The target volume ID. From TRGVOL.</td>
</tr>
<tr>
<td>SOURCE_DATASET_ID</td>
<td>CHAR(44)</td>
<td>The source data set ID. From SRCDSN.</td>
</tr>
<tr>
<td>TARGET_DATASET_ID</td>
<td>CHAR(44)</td>
<td>The target data set ID. From TRGDSN.</td>
</tr>
</tbody>
</table>
This table provides hourly data about IXFP Space Utilization based on data from SMF type 50, subtype 7 records.

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>DATE</td>
<td>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>TOTFLAG</td>
<td>SMALLINT</td>
<td>The totals record flag. From totflag.</td>
</tr>
<tr>
<td>NOTRMAPD</td>
<td>FLOAT</td>
<td>The number of mapped tracks. From noTrMapd.</td>
</tr>
<tr>
<td>PRIMCAPA</td>
<td>INTEGER</td>
<td>The primary capacity in cylinders. From primCapa.</td>
</tr>
<tr>
<td>TRACKCYL</td>
<td>INTEGER</td>
<td>The tracks per cylinder. From trackCyl.</td>
</tr>
<tr>
<td>BYTETRAK</td>
<td>FLOAT</td>
<td>The bytes per track. From byteTrak.</td>
</tr>
<tr>
<td>CAPNSTR</td>
<td>FLOAT</td>
<td>The functional capacity that was not stored. From capnstr.</td>
</tr>
<tr>
<td>SPALLOC</td>
<td>FLOAT</td>
<td>The allocated space (MVS only). From spAlloc.</td>
</tr>
<tr>
<td>FNCTCAP</td>
<td>FLOAT</td>
<td>The functional capacity. From fnctcap, counted as (primCapa<em>trackCyl</em>byteTrak).</td>
</tr>
<tr>
<td>CAPSTORD</td>
<td>FLOAT</td>
<td>The capacity that was stored. From capstord, counted as (noTrMapd*byteTrak).</td>
</tr>
<tr>
<td>BEBYTEXT</td>
<td>FLOAT</td>
<td>The number of back-end bytes. From beByExt.</td>
</tr>
<tr>
<td>TOTBECPT</td>
<td>FLOAT</td>
<td>The total back-end capacity (Test partition). From totBeCpT.</td>
</tr>
<tr>
<td>TOTBECPP</td>
<td>FLOAT</td>
<td>The total back-end capacity (Production partition). From totBeCpP.</td>
</tr>
<tr>
<td>FREBECPT</td>
<td>FLOAT</td>
<td>The free back-end capacity (Test partition). From freBeCpT.</td>
</tr>
<tr>
<td>FREBECPP</td>
<td>FLOAT</td>
<td>The free back-end capacity (Production partition). From freBeCpP.</td>
</tr>
<tr>
<td>FREBESCPT</td>
<td>FLOAT</td>
<td>The free back-end space that was collected (Test partition). From freBeScT.</td>
</tr>
<tr>
<td>FREBESCP</td>
<td>FLOAT</td>
<td>The free back-end space that was collected (Production partition). From freBeScP.</td>
</tr>
</tbody>
</table>

Space Utilization Summary Heading

| SUBSNAM          | CHAR(9)   | The subsystem name. From subSName.                                         |
| FDEVCNT          | INTEGER   | The number of functional devices. From fDevCnt.                            |

Space Utilization Report Summary

<p>| VDEVNAME         | CHAR(9)   | The name of the functional device. From vDevName.                          |
| DEVNUM           | CHAR(5)   | The device address. From devNum.                                           |
| VOLSER           | CHAR(9)   | The volume serial number. From volSer.                                     |
| OFFFLAG          | CHAR(2)   | The offline flag. If an asterisk is displayed between the VOLSER and T/P (PARTMEMB) columns in the report, the volume is offline. From offlag. |</p>
<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERRFLAG</td>
<td>CHAR(2)</td>
<td>The device error flag. If there is a device error, ALLOC fields in the report are changed to V-EER. From errflag.</td>
</tr>
<tr>
<td>PARTMEMB</td>
<td>CHAR(2)</td>
<td>T/P: Partition membership. From partMemb.</td>
</tr>
<tr>
<td>VDEVTYPE</td>
<td>CHAR(7)</td>
<td>The type of virtual device. From vDevType.</td>
</tr>
<tr>
<td>FCAPCITY</td>
<td>FLOAT</td>
<td>The functional capacity in megabytes. From fcapcity.</td>
</tr>
<tr>
<td>FALLOC</td>
<td>FLOAT</td>
<td>The functional capacity that was allocated, in megabytes. From falloc.</td>
</tr>
<tr>
<td>FSTORED</td>
<td>FLOAT</td>
<td>The functional capacity that was stored, in megabytes. From fstored.</td>
</tr>
<tr>
<td>FNOTSTOR</td>
<td>FLOAT</td>
<td>The functional capacity that was not stored, in megabytes. From fnotstor.</td>
</tr>
<tr>
<td>PALLOC</td>
<td>FLOAT</td>
<td>The percentage of functional capacity that was allocated. From palloc.</td>
</tr>
<tr>
<td>PSTORED</td>
<td>FLOAT</td>
<td>The percentage of functional capacity that was stored. From pstored.</td>
</tr>
<tr>
<td>PNOTSTOR</td>
<td>FLOAT</td>
<td>The percentage of functional capacity that was not stored. From pnotstor.</td>
</tr>
<tr>
<td>PHCAPUSE</td>
<td>FLOAT</td>
<td>The physical capacity that was used, in megabytes. From PhCapUse.</td>
</tr>
<tr>
<td>CMPRAT</td>
<td>FLOAT</td>
<td>The compress ratio. From cmprat.</td>
</tr>
<tr>
<td>BACKSTOR</td>
<td>CHAR(1)</td>
<td>If PhCapUse = 0.0 but the value is greater than zero before rounding, an asterisk (*) is appended to the PHYS CAP USE field. From backstor.</td>
</tr>
<tr>
<td>TDEVCNTP</td>
<td>INTEGER</td>
<td>The total number of functional devices (Production partition). From tDevCntP.</td>
</tr>
<tr>
<td>TDEVCNTT</td>
<td>INTEGER</td>
<td>The total number of functional devices (Test partition). From tDevCntT.</td>
</tr>
<tr>
<td>TDEVCNTB</td>
<td>INTEGER</td>
<td>The total number of functional devices (both partitions). From tDevCntB.</td>
</tr>
<tr>
<td>TFUNCAPP</td>
<td>FLOAT</td>
<td>The total functional capacity, in megabytes (Production partition). From tFunCapP.</td>
</tr>
<tr>
<td>TFUNCACT</td>
<td>FLOAT</td>
<td>The total functional capacity, in megabytes (Test partition). From tFunCapT.</td>
</tr>
<tr>
<td>TFUNCAPB</td>
<td>FLOAT</td>
<td>The total functional capacity, in megabytes (both partitions). From tFunCapB.</td>
</tr>
<tr>
<td>TFUCPSTP</td>
<td>FLOAT</td>
<td>The total functional capacity that was stored, in megabytes (Production partition). From tFuCpStP.</td>
</tr>
<tr>
<td>TFUCPSTP</td>
<td>FLOAT</td>
<td>The total functional capacity that was stored, in megabytes (Test partition). From tFuCpStT.</td>
</tr>
<tr>
<td>TFUCPSTB</td>
<td>FLOAT</td>
<td>The total functional capacity that was stored, in megabytes (both partitions). From tFuCpStB.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFUCPNOP</td>
<td>FLOAT</td>
<td>The total functional capacity that was not stored, in megabytes (Production partition). From tFuCpNoP.</td>
</tr>
<tr>
<td>TFUCPNOP</td>
<td>FLOAT</td>
<td>The total functional capacity that was not stored, in megabytes (Test partition). From tFuCpNoT.</td>
</tr>
<tr>
<td>TFUCPNOB</td>
<td>FLOAT</td>
<td>The total functional capacity that was not stored, in megabytes (both partitions). From tFuCpNoB.</td>
</tr>
<tr>
<td>PFUCPSTP</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was stored, in megabytes (Production partition). From pFuCpStP.</td>
</tr>
<tr>
<td>PFUCPSTP</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was stored, in megabytes (Test partition). From pFuCpStT.</td>
</tr>
<tr>
<td>PFUCPSTB</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was stored, in megabytes (both partitions). From pFuCpStB.</td>
</tr>
<tr>
<td>PFUCPNOP</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was not stored, in megabytes (Production partition). From pFuCpNoP.</td>
</tr>
<tr>
<td>FUCPNOP</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was not stored, in megabytes (Test partition). From pFuCpNoT.</td>
</tr>
<tr>
<td>PFUCPNOB</td>
<td>FLOAT</td>
<td>The percentage functional capacity that was not stored, in megabytes (both partitions). From pFuCpNoB.</td>
</tr>
<tr>
<td>TPHCPUSP</td>
<td>FLOAT</td>
<td>The total physical capacity of disk array that was used (Production partition). From tPhCpUsP.</td>
</tr>
<tr>
<td>TPHCPUST</td>
<td>FLOAT</td>
<td>The total physical capacity of disk array that was used (Test partition). From tPhCpUsT.</td>
</tr>
<tr>
<td>TPHCPUSB</td>
<td>FLOAT</td>
<td>The total physical capacity of disk array that was used (both partitions). From tPhCpUsB.</td>
</tr>
<tr>
<td>TCMPRATP</td>
<td>FLOAT</td>
<td>The compression ratio of disk array (Production partition). From tCmpRatP.</td>
</tr>
<tr>
<td>TCMPRATT</td>
<td>FLOAT</td>
<td>The compression ratio of disk array (Test partition). From tCmpRatT.</td>
</tr>
<tr>
<td>TCMPRATB</td>
<td>FLOAT</td>
<td>The compression ratio of disk array (both partitions). From tCmpRatB.</td>
</tr>
<tr>
<td>TBAKSTOP</td>
<td>CHAR(1)</td>
<td>The flag (in the report, an asterisk (*) to the right of the PHYS CAP USED column) to indicate that the physical capacity of the disk array that was used is greater than 1.0 (Production partition). From tBakStoP.</td>
</tr>
<tr>
<td>TBAKSTOT</td>
<td>CHAR(1)</td>
<td>The flag (in the report, an asterisk (*) to the right of the PHYS CAP USED column) to indicate that the physical capacity of the disk array that was used is greater than 1.0 (Test partition). From tBakStoT.</td>
</tr>
<tr>
<td>TBAKSTOB</td>
<td>CHAR(1)</td>
<td>The flag (in the report, an asterisk (*) to the right of the PHYS CAP USED column) to indicate that the physical capacity of the disk array that was used is greater than 1.0 (both partitions). From tBakStoB.</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>TOTLPCAP</td>
<td>FLOAT</td>
<td>The capacity of disk array, in megabytes. From totlpcap.</td>
</tr>
<tr>
<td>NET CAPACITY LOAD %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCAPLDPT</td>
<td>FLOAT</td>
<td>The percentage net capacity load (Test partition). From ncapldpt.</td>
</tr>
<tr>
<td>NCAPLDPP</td>
<td>FLOAT</td>
<td>The percentage net capacity load (Production partition). From ncapldpp.</td>
</tr>
<tr>
<td>NCAPLDPB</td>
<td>FLOAT</td>
<td>The percentage net capacity load (both partitions). From ncapldpb.</td>
</tr>
<tr>
<td>COLL FREE SPACE %</td>
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<td></td>
</tr>
<tr>
<td>FSPCCOLTT</td>
<td>FLOAT</td>
<td>The percentage collected free space (Test partition). From fspccolt.</td>
</tr>
<tr>
<td>FSPCCOLTP</td>
<td>FLOAT</td>
<td>The percentage collected free space (Production partition). From fspccolp.</td>
</tr>
<tr>
<td>FSPCCOLTB</td>
<td>FLOAT</td>
<td>The percentage collected free space (both partitions). From fspccolb.</td>
</tr>
<tr>
<td>UNCOLL FREE SPACE %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSPCUNCT</td>
<td>FLOAT</td>
<td>The percentage uncollected free space (Test partition). From fspcunct.</td>
</tr>
<tr>
<td>FSPCUNCP</td>
<td>FLOAT</td>
<td>The percentage uncollected free space (Production partition). From fspcuncp.</td>
</tr>
<tr>
<td>FSPCUNCB</td>
<td>FLOAT</td>
<td>The percentage uncollected free space (both partitions). From fspcuncb.</td>
</tr>
<tr>
<td>DATETIME</td>
<td>CHAR(25)</td>
<td>The date and time that the record was produced. From datetime.</td>
</tr>
<tr>
<td>NOTRMAPU</td>
<td>FLOAT</td>
<td>The number of unique tracks that were mapped. From noTrMapu.</td>
</tr>
<tr>
<td>BEBYTUNQ</td>
<td>FLOAT</td>
<td>The number of unique back-end bytes. From beBytUnq.</td>
</tr>
<tr>
<td>BEBYTSHR</td>
<td>FLOAT</td>
<td>The number of shared back-end bytes. From beBytShr.</td>
</tr>
<tr>
<td>PHCAPUSS</td>
<td>FLOAT</td>
<td>The shared physical capacity that was used, in megabytes. From PhCapUsS.</td>
</tr>
<tr>
<td>PHCAPUSU</td>
<td>FLOAT</td>
<td>The unique physical capacity that was used, in megabytes. From PhCapUsU.</td>
</tr>
<tr>
<td>TPHCPSRP</td>
<td>FLOAT</td>
<td>The total shared physical capacity that was used (Production partition). From tPhCpSrP.</td>
</tr>
<tr>
<td>TPHCPSRT</td>
<td>FLOAT</td>
<td>The total shared physical capacity that was used (Test partition). From tPhCpSrT.</td>
</tr>
<tr>
<td>TPHCPSRB</td>
<td>FLOAT</td>
<td>The total shared physical capacity that was used (both partitions). From tPhCpSrB.</td>
</tr>
<tr>
<td>TPHCPUNP</td>
<td>FLOAT</td>
<td>The total unique physical capacity that was used (Production partition). From tPhCpUnP.</td>
</tr>
<tr>
<td>TPHCPUNT</td>
<td>FLOAT</td>
<td>The total unique physical capacity that was used (Test partition). From tPhCpUnT.</td>
</tr>
<tr>
<td>TPHCPUNB</td>
<td>FLOAT</td>
<td>The total unique physical capacity that was used (both partitions). From tPhCpUnB.</td>
</tr>
</tbody>
</table>
**IXFP_SUBSYSTEM_H, _D, _M**

These tables provide hourly, daily, and monthly data about IXFP subsystem performance based on data from SMF type 50, subtype 1 records.

The default retention periods for these tables are:
- **IXFP_SUBSYSTEM_H** 10 days
- **IXFP_SUBSYSTEM_D** 60 days
- **IXFP_SUBSYSTEM_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>DATE</td>
<td>Date when the record was written to SMF. From SMFFADTE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the record was written to SMF. From SMFFATME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMFFASID, SMFFADTE, and SMFFATME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS system ID. From SMFFASID.</td>
</tr>
<tr>
<td>PARTITION</td>
<td>CHAR(1)</td>
<td>The partitions that are active during this collection interval. From activPrt.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>MVS subsystem ID. From SMFFASSI.</td>
</tr>
<tr>
<td>SUBSYSTEM_NAME</td>
<td>CHAR(8)</td>
<td>The name of the MVS subsystem. From subsysName.</td>
</tr>
<tr>
<td>DURATION_TIME</td>
<td>FLOAT</td>
<td>Interval duration time for the subsystem, in seconds. Calculated as the sum of duraTime/1000.</td>
</tr>
<tr>
<td>CACHE_SIZE</td>
<td>FLOAT</td>
<td>The cache size in megabytes. Calculated as the sum of custCach.</td>
</tr>
<tr>
<td>OFFLINE_CACHE</td>
<td>FLOAT</td>
<td>The offline cache in bytes. Calculated as the sum of offCach.</td>
</tr>
<tr>
<td>PINNED_CACHE</td>
<td>FLOAT</td>
<td>The pinned cache in bytes. Calculated as the sum of pindCach.</td>
</tr>
<tr>
<td>NVS_SIZE</td>
<td>FLOAT</td>
<td>The NVS size in megabytes. Calculated as the sum of nvsSize.</td>
</tr>
<tr>
<td>ECAM_MSGS</td>
<td>FLOAT</td>
<td>Count of ECAM messages that were processed. Calculated as the sum of ecamMsgs.</td>
</tr>
<tr>
<td>ECAM_CHAN_PGMS</td>
<td>FLOAT</td>
<td>Number of ECAM channel programs. Calculated as the sum of ecamPgmss.</td>
</tr>
<tr>
<td>E_C_BYP_NO_B_SP</td>
<td>FLOAT</td>
<td>Number of ECAM channel programs that were bypassed because no buffer space was available. Calculated as the sum of ecamNsps.</td>
</tr>
<tr>
<td>E_C_BYP_NO_CONF</td>
<td>FLOAT</td>
<td>Number of ECAM channel programs that were bypassed because no configuration was busy. Calculated as the sum of ecamCfs.</td>
</tr>
<tr>
<td>TOT_BE_CAP_TEST</td>
<td>FLOAT</td>
<td>Total back-end capacity of the Test partition (in bytes). Calculated as the sum of totBeCpT.</td>
</tr>
<tr>
<td>TOT_BE_CAP_PROD</td>
<td>FLOAT</td>
<td>Total back-end capacity of the Production partition (in bytes). Calculated as the sum of totBeCpP.</td>
</tr>
<tr>
<td>FREE_BE_CAP_TEST</td>
<td>FLOAT</td>
<td>Free back-end capacity in the Test partition (in bytes). The value includes the capacity reserved for standard volumes. Calculated as the sum of freBeCpT.</td>
</tr>
<tr>
<td>FREE_BE_CAP_PROD</td>
<td>FLOAT</td>
<td>Free back-end capacity in the Production partition (in bytes). The value includes the capacity reserved for standard volumes. Calculated as the sum of freBeCpP.</td>
</tr>
<tr>
<td>TOT_READ_TEST</td>
<td>FLOAT</td>
<td>Total number of bytes read for free space collection in the Test partition. Calculated as the sum of fSpCtRT.</td>
</tr>
</tbody>
</table>

Chapter 27. Data tables 179
<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOT_READ_PROD</td>
<td>FLOAT</td>
<td>Total number of bytes read for free space collection in the Production partition. Calculated as the sum of fSpcBtRP.</td>
</tr>
<tr>
<td>TOT_FREE_SP_TEST</td>
<td>FLOAT</td>
<td>Total amount of free space that was collected in the Test partition. Calculated as the sum of fSpcColT.</td>
</tr>
<tr>
<td>TOT_FREE_SP_PROD</td>
<td>FLOAT</td>
<td>Total amount of free space that was collected in the Production partition. Calculated as the sum of fSpcColP.</td>
</tr>
<tr>
<td>STD_CAPACITY</td>
<td>FLOAT</td>
<td>Standard capacity that was defined. From stnDefd.</td>
</tr>
<tr>
<td>FREE_BE_SPACE</td>
<td>FLOAT</td>
<td>Free back-end space that was collected. From freBeSct.</td>
</tr>
<tr>
<td>FREE_BE_SPACE_PROD</td>
<td>FLOAT</td>
<td>Free back-end space that was collected in the Production partition. From freBeScp.</td>
</tr>
</tbody>
</table>
Chapter 28. Reports

This chapter describes the reports provided with the IXFP component.

**IXFP Channel Interface Statistic, Overview report**

This report shows an overview of statistics information for IXFP channel interfaces.

This information identifies the report:

- **Report ID:** IXFPC01
- **Report group:** IXFP Reports
- **Source:** IXFP_CHANNEL_D
- **Attributes:** IXFP, Channel, Statistic, Daily
- **Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name
The report contains this information:

**Date**
The date of the measurement.

**Time**
The time of the measurement.

**MVS system ID**
The MVS system ID.

**Subsystem name**
The MVS subsystem name.

**Partition**
The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

**Channel int ID**
The channel interface ID.

---

### MVS system Subsystem ID

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Channel Interface ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-14</td>
<td>17.00.00</td>
<td>IXA1 RVA00 Production</td>
</tr>
</tbody>
</table>

### Channel int ID

<table>
<thead>
<tr>
<th>Channel</th>
<th>TCU name</th>
<th>Channel No of I/O</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ABC00000</td>
<td>8</td>
<td>206327</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
<td>211086</td>
<td>235</td>
</tr>
<tr>
<td>I</td>
<td>8</td>
<td>206218</td>
<td>229</td>
</tr>
<tr>
<td>K</td>
<td>8</td>
<td>211357</td>
<td>235</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Channel</th>
<th>Channel int ID</th>
<th>Channel No of I/O</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ABC00000</td>
<td>5</td>
<td>136246</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>143217</td>
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<tr>
<td>I</td>
<td>5</td>
<td>136119</td>
<td>151</td>
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<tr>
<td>K</td>
<td>5</td>
<td>143302</td>
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<table>
<thead>
<tr>
<th>Channel</th>
<th>Channel int ID</th>
<th>Channel No of I/O</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ABC00000</td>
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<td>200273</td>
</tr>
<tr>
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<td>7</td>
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<td>I</td>
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<tr>
<td>K</td>
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</tbody>
</table>

---

* Tivoli Decision Support for OS/390 Report: IXFP01

**Figure 64. Example of part of an IXFP Channel Interface Statistic, Overview report**
<table>
<thead>
<tr>
<th><strong>Channel int name</strong></th>
<th>The channel interface name.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TCU busy in min</strong></td>
<td>The average time that the control unit was busy at the channel, in minutes.</td>
</tr>
<tr>
<td><strong>No of I/O</strong></td>
<td>The average number of I/Os.</td>
</tr>
<tr>
<td><strong>No of I/O per sec</strong></td>
<td>The average number of I/Os per second.</td>
</tr>
<tr>
<td><strong>Channel speed</strong></td>
<td>The average channel speed.</td>
</tr>
<tr>
<td><strong>Dur. Time in min</strong></td>
<td>The interval duration time for the subsystem, in minutes.</td>
</tr>
</tbody>
</table>
IXFP Device Performance per Device ID report

This report shows IXFP functional device performance, on an hourly basis, grouped by Device ID.

This information identifies the report:

**Report ID:** IXFPD01  
**Report group:** IXFP Reports  
**Source:** IXFP_DEVICE_H  
**Attributes:** IXFP, Device, Performance, ID, Hourly  
**Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name
The report contains this information:

**Date**
The date of the measurement.

**Time**
The time of the measurement.

**MVS system ID**
The MVS system ID.

**Subsystem name**
The MVS subsystem name.

---

**IXFP Device Performance, by Device ID**

From date: '1999-11-14' To date: '1999-11-14'

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<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1999-11-14</td>
<td>17.00.00</td>
<td>IXA1</td>
<td>RVA00</td>
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</tbody>
</table>

**Tot write reqs**

<table>
<thead>
<tr>
<th>I/O oper</th>
<th>Front-end reads</th>
<th>Front-end writes</th>
<th>Search/read reqs</th>
<th>Search/read hits</th>
</tr>
</thead>
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**Write seq/reqs**

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<th>DASD FW seq/reqs</th>
<th>Search/read seq/reqs</th>
<th>Search/read seq/hits</th>
<th>Write seq/reqs</th>
<th>DASD FW seq/reqs</th>
<th>Search/read seq/reqs</th>
<th>Search/read seq/hits</th>
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</thead>
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**Tivoli Decision Support for OS/390 Report: IXFP001**

Figure 65. Example of part of an IXFP Device Performance per Device ID report
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dev ID</td>
<td>The functional device ID.</td>
</tr>
<tr>
<td>Dev Addr</td>
<td>The device address as known to the lost SCP.</td>
</tr>
<tr>
<td>Volser</td>
<td>The volume serial number.</td>
</tr>
<tr>
<td>Partition</td>
<td>The partition (or partitions) active during the measurement. This can be Production, Test, or Both.</td>
</tr>
<tr>
<td>Tot read Reqs</td>
<td>The total count of read requests.</td>
</tr>
<tr>
<td>Tot write Reqs</td>
<td>The total count of write requests.</td>
</tr>
<tr>
<td>I/O opers</td>
<td>The number of I/O operations.</td>
</tr>
<tr>
<td>Front-end reads</td>
<td>The total count of front-end bytes transferred during read operations.</td>
</tr>
<tr>
<td>Front-end writes</td>
<td>The total count of front-end bytes transferred during write operations.</td>
</tr>
<tr>
<td>Search/read reqs</td>
<td>The total count of search or read normal requests.</td>
</tr>
<tr>
<td>Search/read hits</td>
<td>The total count of search or read normal hits.</td>
</tr>
<tr>
<td>Write reqs</td>
<td>The total count of write normal requests.</td>
</tr>
<tr>
<td>DASD FW hits</td>
<td>The total count of DASD fast-write normal hits.</td>
</tr>
<tr>
<td>Search/read seq. reqs</td>
<td>The total count of search or read sequential requests.</td>
</tr>
<tr>
<td>Search/read seq. hits</td>
<td>The total count of search or read sequential hits.</td>
</tr>
<tr>
<td>Write seq. reqs</td>
<td>The total count of write sequential requests.</td>
</tr>
<tr>
<td>DASD FW seq. hits</td>
<td>The total count of DASD fast-write sequential hits.</td>
</tr>
</tbody>
</table>
The report shows IXFP functional device performance, on an hourly basis, grouped by Device ID.

This information identifies the report:

- **Report ID:** IXFPD02
- **Report group:** IXFP Reports
- **Source:** IXFP_DEVICE_H
- **Attributes:** IXFP, Device, Performance, VOLSER, Hourly
- **Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

The report contains this information:

- **Date**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>ID</th>
<th>name</th>
<th>Volser</th>
<th>Partition</th>
<th>Tot read reqs</th>
</tr>
</thead>
<tbody>
<tr>
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<td>RVA00</td>
<td>Production</td>
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<table>
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<th>I/O opers</th>
<th>Front-end reads</th>
<th>Front-end writes</th>
<th>Search/read reqs</th>
<th>Search/read hits</th>
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</thead>
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<tr>
<td>309</td>
<td>404</td>
<td>218592</td>
<td>20410472</td>
<td>78</td>
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<td>42</td>
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<table>
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<tr>
<th>Write reqs</th>
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<th>Search/read seq reqs</th>
<th>Search/read seq hits</th>
<th>Write seq reqs</th>
<th>DASD FW seq hits</th>
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<tbody>
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<td>404</td>
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<td>167</td>
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<td>140</td>
<td>67</td>
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</tbody>
</table>

**Figure 66. Example of part of an IXFP Device Performance per Volser report**

The report contains this information:

- **Date**

The date of the measurement.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Time</strong></td>
<td>The time of the measurement.</td>
</tr>
<tr>
<td><strong>MVS system ID</strong></td>
<td>The MVS system ID.</td>
</tr>
<tr>
<td><strong>Subsystem name</strong></td>
<td>The MVS subsystem name.</td>
</tr>
<tr>
<td><strong>Volser</strong></td>
<td>The volume serial number.</td>
</tr>
<tr>
<td><strong>Partition</strong></td>
<td>The partition (or partitions) active during the measurement. This can be Production, Test, or Both.</td>
</tr>
<tr>
<td><strong>Tot read Reqs</strong></td>
<td>The total count of read requests.</td>
</tr>
<tr>
<td><strong>Tot write Reqs</strong></td>
<td>The total count of write requests.</td>
</tr>
<tr>
<td><strong>I/O opers</strong></td>
<td>The number of I/O operations.</td>
</tr>
<tr>
<td><strong>Front-end reads</strong></td>
<td>The total count of front-end bytes transferred during read operations.</td>
</tr>
<tr>
<td><strong>Front-end writes</strong></td>
<td>The total count of front-end bytes transferred during write operations.</td>
</tr>
<tr>
<td><strong>Search/read reqs</strong></td>
<td>The total count of search or read normal requests.</td>
</tr>
<tr>
<td><strong>Search/read hits</strong></td>
<td>The total count of search or read normal hits.</td>
</tr>
<tr>
<td><strong>Write reqs</strong></td>
<td>The total count of write normal requests.</td>
</tr>
<tr>
<td><strong>DASD FW hits</strong></td>
<td>The total count of DASD fast-write normal hits.</td>
</tr>
<tr>
<td><strong>Search/read seq. reqs</strong></td>
<td>The total count of search or read sequential requests.</td>
</tr>
<tr>
<td><strong>Search/read seq. hits</strong></td>
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</tr>
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</table>
IXFP Device Utilization, Hourly Trend report

This report shows IXFP device utilization information, on an hourly basis, grouped by Device ID.

This information identifies the report:

Report ID: IXFPD03
Report group: IXFP Reports
Source: IXFPDEVICE_H
Attributes: IXFP, Device, Utilization, Hourly
Variables: From_Date, To_Date, MVS_system_ID, Subsystem_name
The report contains this information:

**Date**
The date of the measurement.

**Time**
The time of the measurement.

**MVS system ID**
The MVS system ID.

**Subsystem name**
The MVS subsystem name.

**Partition**
The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

**Dev ID**
The functional device ID.

**Dev Addr**
The device address as known to the lost SCP.

### IXFP Device Utilization, Hourly Trend

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Dev ID</th>
<th>Dev Addr</th>
<th>Volser</th>
<th>Duration (min)</th>
<th>Util Time (sec)</th>
<th>Conn Time (sec)</th>
<th>Dev Avail</th>
<th>Dev Util</th>
<th>Dev Conn</th>
</tr>
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<td>00AA</td>
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Figure 67. Example of part of an IXFP Device Utilization, Hourly Trend report

Tivoli Decision Support for OS/390 Report: IXFPD03
<table>
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<tr>
<th>Term</th>
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<tbody>
<tr>
<td><strong>Volser</strong></td>
<td>The volume serial number.</td>
</tr>
<tr>
<td><strong>Duration min</strong></td>
<td>The total interval duration time, in minutes.</td>
</tr>
<tr>
<td><strong>Avail time min</strong></td>
<td>The total device available time, in minutes.</td>
</tr>
<tr>
<td><strong>Util time min</strong></td>
<td>The total device utilization time, in seconds.</td>
</tr>
<tr>
<td><strong>Conn time min</strong></td>
<td>The total device connection time, in seconds.</td>
</tr>
<tr>
<td><strong>Dev avail %</strong></td>
<td>The total device available time as a percentage of the total interval duration time.</td>
</tr>
<tr>
<td><strong>Dev util %</strong></td>
<td>The total device utilization time as a percentage of the total interval duration time.</td>
</tr>
<tr>
<td><strong>Dev conn %</strong></td>
<td>The total device connection time as a percentage of the total interval duration time.</td>
</tr>
</tbody>
</table>
IXFP Device DASD/Cache Transfer, Daily Trend report

This report shows information on DASD/cache transfers, on a daily basis, grouped by Partition.

This information identifies the report:

Report ID: IXFPD04
Report group: IXFP Reports
Source: IXFP_DEVICE_D
Attributes: IXFP, Device, DASD, Daily
Variables: From_Date, To_Date, MVS_system_ID, Subsystem_name

The report contains this information:

Date
The date of the measurement.

MVS system ID
The MVS system ID.

Subsystem name
The MVS subsystem name.

Partition
The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

Seq DASD to cache
The total sequential DASD to cache transfers (stages).
DASD to cache
The total DASD to cache transfers (stages).

Cache to DASD
The total cache to DASD transfers.
IXFP Device Performance, Hourly Trend report

This report shows IXFP functional device performance, on an hourly basis.

This information identifies the report:

**Report ID:** IXFPD05  
**Report group:** IXFP Reports  
**Source:** IXFPDEVICE_H  
**Attributes:** IXFP, Device, Performance, Hourly  
**Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

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<th>Search/read</th>
<th>Search/read</th>
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<th>Inh.cache</th>
<th>Bypass</th>
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</tr>
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</table>

**Figure 69. Example of part of an IXFP Device Performance, Hourly Trend report**

The report contains this information:

**Date**

The date of the measurement.
| **Time** | The time of the measurement. |
| **MVS system ID** | The MVS system ID. |
| **Subsystem name** | The MVS subsystem name. |
| **Partition** | The partition (or partitions) active during the measurement. This can be Production, Test, or Both. |
| **Dev ID** | The functional device ID. |
| **Dev addr** | The device address as known to the host SCP. |
| **Volser** | The volume serial number. |
| **Search/read fast write reqs** | The total number of search or read fast-write requests. |
| **Search/read fast write hits** | The total number of search or read fast-write hits. |
| **Cache fast write reqs** | The total number of cache fast-write requests. |
| **Cache fast write hits** | The total number of cache fast-write hits. |
| **Inh. cache loading reqs** | The total number of inhibit cache loading requests. |
| **Bypass cache reqs** | The total number of bypass cache requests. |
IXFP Device Utilization, Monthly Trend report

This report shows IXFP device utilization information, on a monthly basis, grouped by Device ID.

This information identifies the report:

Report ID: IXFPD06
Report group: IXFP Reports
Source: IXFP_DEVICE_M
Attributes: IXFP, Device, Utilization, Monthly, Trend
Variables: From_Date, To_Date, MVS_system_ID, Subsystem_name

The report contains this information:

Date The date of the measurement.
MVS system ID The MVS system ID.
Subsystem name The MVS subsystem name.
Partition The partition (or partitions) active during the measurement. This can be Production, Test, or Both.
Dev avail % The average device available time as a percentage of the total interval duration time.

Figure 70. Example of an IXFP Device Utilization, Monthly Trend report
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<td>The average device utilization time as a percentage of the total interval duration time.</td>
</tr>
<tr>
<td><strong>Dev conn %</strong></td>
<td>The average device connection time as a percentage of the total interval duration time.</td>
</tr>
</tbody>
</table>
IXFP Drive Utilization, Hourly Trend report

This report shows information on drive module utilization, on an hourly basis.

This information identifies the report:

Report ID: IXFPM01
Report group: IXFP Reports
Source: IXFP_DRIVE_H
Attributes: IXFP, Device, Utilization, Hourly
Variables: From_Date, To_Date, MVS_system_ID, Subsystem_name
The report contains this information:

**Date**

The date of the measurement.

**MVS system ID**

The MVS system ID.

**Partition**

The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

**Subsystem name**

The MVS subsystem name.

### IXFP Drive Utilization, Hourly Trend

From date: '1999-11-14' To date: '1999-11-14'

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<th>Partition</th>
<th>Subsystem name</th>
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<th>Unit</th>
<th>Tray</th>
<th>Slot</th>
<th>No of read (MB)</th>
<th>No of write (MB)</th>
<th>Busy time (min)</th>
<th>Duration (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.00.00</td>
<td>00</td>
<td>00</td>
<td>8</td>
<td>71</td>
<td>1</td>
<td>60</td>
</tr>
<tr>
<td>00 00 01</td>
<td>10</td>
<td>71</td>
<td>1</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00 00 02</td>
<td>7</td>
<td>71</td>
<td>1</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00 00 03</td>
<td>78</td>
<td>177</td>
<td>3</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00 00 04</td>
<td>6</td>
<td>66</td>
<td>1</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00 03 04</td>
<td>6</td>
<td>66</td>
<td>1</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00 03 05</td>
<td>10</td>
<td>71</td>
<td>1</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>1303</td>
<td>3619</td>
<td>2</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Tivoli Decision Support for OS/390 Report: IXFPM01

**Figure 71. Example of part of an IXFP Drive Utilization, Hourly Trend report**
| **Unit**   | The unit.                      |
| **Tray**  | The tray.                      |
| **Slot**  | The slot.                      |
| **No of read in MB** | The total number of megabytes that were transferred during read operations. |
| **No of write in MB** | The total number of megabytes that were transferred during write operations. |
| **Busy time in min** | The average time that the drive module was busy, in minutes. |
| **Duration in min** | The average interval duration time for the drive module, in minutes. |
**IXFP Drive Utilization, Daily Trend report**

This report shows information on drive module utilization, on a daily basis.

This information identifies the report:

- **Report ID:** IXFPM02
- **Report group:** IXFP Reports
- **Source:** IXFP_DRIVE_D
- **Attributes:** IXFP, Device, Utilization, Daily
- **Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

**IXFP Drive Utilization, Daily Trend**
From date: '1999-11-14' To date: '1999-11-14'

<table>
<thead>
<tr>
<th>Date</th>
<th>MVS system ID</th>
<th>Partition</th>
<th>Subsystem name</th>
<th>No of read opers MB</th>
<th>No of write opers MB</th>
<th>No of opers per interval</th>
<th>Busy time (min)</th>
<th>Duration (min)</th>
<th>Drive module utilization (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-14</td>
<td>IXA1</td>
<td>Production</td>
<td>RVA00</td>
<td>45523</td>
<td>33862</td>
<td>3</td>
<td>43</td>
<td>405</td>
<td>10.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 72. Example of an IXFP Drive Utilization, Daily Trend report

The report contains this information:

- **Date**
  The date of the measurement.

- **MVS system ID**
  The MVS system ID.

- **Partition**
  The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

- **Subsystem name**
  The MVS subsystem name.

- **No of read opers MB**
  The total number of megabytes that were transferred during read operations.

- **No of write opers MB**
  The total number of megabytes that were transferred during write operations.
No of opers per interval
The number of megabytes that were transferred during read and write operations, per interval duration.

Busy time in min
The average time that the drive module was busy, in minutes.

Duration in min
The average interval duration time for the drive module, in minutes.

Drive module utilization %
The average time that the drive module was busy as a percentage of the interval duration time.
### IXFP Deleted Data Space Release, Daily Trend report

This report shows information for IXFP Deleted Data Space Release (DDSR), on a daily basis.

This information identifies the report:

**Report ID:** IXFPR01  
**Report group:** IXFP Reports  
**Source:** IXFP_DDSR_D  
**Attributes:** IXFP, DDSR, Daily  
**Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

#### IXFP Deleted Data Space Release, Daily Trend

From date: '1999-11-14' To date: '1999-11-14'

<table>
<thead>
<tr>
<th>Period</th>
<th>MVS system ID</th>
<th>RAMAC subsystem ID</th>
<th>RAMAC Dev ID</th>
<th>Vol ID</th>
<th>I/O time (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-14</td>
<td>RVA00 001A</td>
<td>RVA00 001A</td>
<td>RVA00 001A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>000A 020A</td>
<td>BUF003</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>000C 020C</td>
<td>BUF004</td>
<td>1037</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>000E 020E</td>
<td>BUF005</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0008 020B</td>
<td>BUF001</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>001C 021C</td>
<td>R93029</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>001D 021D</td>
<td>R93030</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0017 0217</td>
<td>BUF007</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>002D 0220</td>
<td>R93046</td>
<td>169</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>002E 022E</td>
<td>R93047</td>
<td>381</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0027 0227</td>
<td>R93040</td>
<td>354</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>003E 023E</td>
<td>BUF006</td>
<td>847</td>
<td></td>
</tr>
</tbody>
</table>

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**** 319131

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***** 319131


Figure 73. Example of part of an IXFP Deleted Data Space Release, Daily Trend report
The report contains this information:

**Date**
The date of the measurement.

**Period name**
The name of the period.

**MVS system ID**
The MVS system ID.

**RAMAC subsys name**
The subsystem name of the RAMAC Virtual Array.

**RAMAC subsys ID**
The subsystem ID of the RAMAC Virtual Array.

**RAMAC FDID**
The functional device ID of the RAMAC Virtual Array.

**Dev addr**
The device address on which space was released.

**Volid**
The volume ID on which space was released.

**I/O time in sec**
The I/O time for space release, in seconds.
**IXFP Subsystem Space Utilization, Daily Trend report**

This report shows information on IXFP subsystem space utilization, on a daily basis.

This information identifies the report:

- **Report ID:** IXFPS01
- **Report group:** IXFP Reports
- **Source:** IXFP_SUBSYSTEM_D
- **Attributes:** IXFP, Subsystem, Space, Daily
- **Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

The report contains this information:

- **Date**
  - The date of the measurement.

- **MVS system ID**
  - The MVS system ID.

- **Subsystem name**
  - The MVS subsystem name.

- **Partition**
  - The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

- **Standard capacity GB**
  - The defined standard capacity, in gigabytes.

*Figure 74. Example of an IXFP Subsystem Space Utilization, Daily Trend report*
**Total back-end capacity GB**
The total back-end capacity of the partition, in gigabytes.

**Free back-end capacity GB**
The total of free back-end capacity in the partition that is available for user data, in gigabytes.

**Total no of read GB**
The total number of gigabytes read for free space collection in the partition.

**Total amount of free GB**
The total amount of free collected space in the partition, in gigabytes.

**Free collected back-end GB**
The total amount of free collected back-end space in the partition, in gigabytes.
IXFP Subsystem Information, Daily Trend report

This report shows information on IXFP subsystem performance, on a daily basis.

This information identifies the report:

**Report ID:** IXFPS02

**Report group:** IXFP Reports

**Source:** IXFP_SUBSYSTEM_D

**Attributes:** IXFP, Subsystem, Information, Daily

**Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

<table>
<thead>
<tr>
<th>Date</th>
<th>Period name</th>
<th>MVS system ID</th>
<th>Subsystem name</th>
<th>Partition</th>
<th>No of ECAM msgs</th>
<th>No of ECAM chnl pgms</th>
<th>Byp.msgs no buffer space</th>
<th>Byp.msgs no conf</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-11-14</td>
<td>WEEKEND</td>
<td>IXA1</td>
<td>RVA00</td>
<td>Production</td>
<td>27758</td>
<td>26786</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
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<td>**</td>
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<td></td>
<td></td>
<td></td>
<td>****</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: IXFPS02

**Figure 75. Example of an IXFP Subsystem Information, Daily Trend report**

The report contains this information:

**Date**
The date of the measurement.

**Period name**
The name of the period.

**MVS system ID**
The MVS system ID.

**Subsystem name**
The MVS subsystem name.

**Partition**
The partition (or partitions) active during the measurement. This can be Production, Test, or Both.

**No of ECAM msgs**
The total number of ECAM messages that were processed.

**No of ECAM chnl pgms**
The total number of ECAM channel programs.

**Byp.msgs no buffer space**
The total number of ECAM channel programs that were bypassed because no buffer space was available.
Bypmsgs no conf
The total number of ECAM channel programs that were bypassed because no configuration was busy.
**IXFP Space Utilization, Hourly Trend report**

This report shows IXFP space utilization, on an hourly basis.

This information identifies the report:

**Report ID:** IXFPS03

**Report group:** IXFP Reports

**Source:** IXFP_SPACE_H

**Attributes:** IXFP, Space, Hourly

**Variables:** From_Date, To_Date, MVS_system_ID, Subsystem_name

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>MVS System ID</th>
<th>Subsystem ID</th>
<th>Device number</th>
<th>Device Volser</th>
<th>Device type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-03-20</td>
<td>02.00.00</td>
<td>BAT</td>
<td>IXFP</td>
<td>00AA</td>
<td>09AA</td>
<td>PR9346</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00AB</td>
<td>09AB</td>
<td>PR9347</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00AC</td>
<td>09AC</td>
<td>PR9348</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00AD</td>
<td>09AD</td>
<td>PR9349</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>00AE</td>
<td>09AE</td>
<td>PR9350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00AF</td>
<td>09AF</td>
<td>PR9351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>00A0</td>
<td>09A0</td>
<td>BATPG0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition</th>
<th>Functional capacity (MB)</th>
<th>Funct cap allocated (MB)</th>
<th>Funct cap stored (MB)</th>
<th>Funct cap not stored (MB)</th>
<th>Funct cap stored %</th>
<th>Functional cap stored %</th>
<th>Unique cap used (MB)</th>
<th>Total cap used (MB)</th>
<th>Comp ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>2838.0</td>
<td>1665.69</td>
<td>1910.14</td>
<td>927.87</td>
<td>58.69</td>
<td>67.31</td>
<td>301.16</td>
<td>301.16</td>
<td>6.34</td>
</tr>
<tr>
<td></td>
<td>2838.0</td>
<td>2453.49</td>
<td>2415.76</td>
<td>422.26</td>
<td>86.45</td>
<td>85.12</td>
<td>486.39</td>
<td>486.39</td>
<td>4.88</td>
</tr>
<tr>
<td></td>
<td>2838.0</td>
<td>2346.89</td>
<td>2373.71</td>
<td>464.30</td>
<td>85.16</td>
<td>83.64</td>
<td>191.73</td>
<td>191.73</td>
<td>7.60</td>
</tr>
<tr>
<td></td>
<td>2838.0</td>
<td>1981.26</td>
<td>1465.89</td>
<td>1381.13</td>
<td>69.81</td>
<td>51.33</td>
<td>1381.13</td>
<td>1381.13</td>
<td>6.16</td>
</tr>
<tr>
<td></td>
<td>2838.0</td>
<td>2132.44</td>
<td>2685.93</td>
<td>152.09</td>
<td>75.14</td>
<td>94.64</td>
<td>2685.93</td>
<td>2685.93</td>
<td>4.54</td>
</tr>
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<td></td>
<td>2838.0</td>
<td>1427.54</td>
<td>1418.36</td>
<td>411.26</td>
<td>50.30</td>
<td>49.98</td>
<td>1418.36</td>
<td>1418.36</td>
<td>6.12</td>
</tr>
<tr>
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<td>2838.0</td>
<td>2637.43</td>
<td>2637.43</td>
<td>200.59</td>
<td>92.93</td>
<td>92.93</td>
<td>2637.43</td>
<td>2637.43</td>
<td>6.12</td>
</tr>
</tbody>
</table>

**Figure 76. Example of part of an IXFP Space Utilization, Hourly Trend report**

The report contains this information:

**Date**

The date of the measurement.

**Time**

The time of the measurement.

**MVS system ID**

The MVS system ID.

**Subsystem name**

The MVS subsystem name.
<table>
<thead>
<tr>
<th><strong>Device name</strong></th>
<th>The name of the functional device.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device number</strong></td>
<td>The device address.</td>
</tr>
<tr>
<td><strong>Volser</strong></td>
<td>The volume serial number.</td>
</tr>
<tr>
<td><strong>Device type</strong></td>
<td>The type functional device.</td>
</tr>
<tr>
<td><strong>Partition</strong></td>
<td>The partition (or partitions) active during the measurement. This can be Production, Test, or Both.</td>
</tr>
<tr>
<td><strong>Functional capacity (MB)</strong></td>
<td>The functional capacity, in megabytes.</td>
</tr>
<tr>
<td><strong>Functional cap allocated (MB)</strong></td>
<td>The functional capacity that was allocated, in megabytes.</td>
</tr>
<tr>
<td><strong>Functional cap stored (MB)</strong></td>
<td>The functional capacity that was stored, in megabytes.</td>
</tr>
<tr>
<td><strong>Functional cap stored (MB)</strong></td>
<td>The functional capacity that was not stored, in megabytes.</td>
</tr>
<tr>
<td><strong>Functional cap allocated (%)</strong></td>
<td>The percentage of functional capacity that was allocated.</td>
</tr>
<tr>
<td><strong>Functional cap stored (%)</strong></td>
<td>The percentage of functional capacity that was stored.</td>
</tr>
<tr>
<td><strong>Functional cap stored (%)</strong></td>
<td>The percentage of functional capacity that was not stored.</td>
</tr>
<tr>
<td><strong>Shared cap used (MB)</strong></td>
<td>The shared physical capacity that was used, in megabytes.</td>
</tr>
<tr>
<td><strong>Unique cap used (MB)</strong></td>
<td>The unique physical capacity that was used, in megabytes.</td>
</tr>
<tr>
<td><strong>Total cap used (MB)</strong></td>
<td>The shared physical capacity that was used, in megabytes.</td>
</tr>
<tr>
<td><strong>Comp ratio</strong></td>
<td>The compression ratio.</td>
</tr>
</tbody>
</table>
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Chapter 29. Customization

Before you can use the message analysis/automation component to collect data and create reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the message analysis/automation component:

1. Make input data available.
2. Modify DRLJCOLL.
3. Update lookup tables.

Make input data available

You must ensure that the appropriate data is available to Tivoli Decision Support for OS/390. The message analysis/automation component collects data from the JES2 and JES3 system logs (SYSLOGs) and from the NetView log. If using SYSLOGs and not the operations log (OPERLOG), you must convert your current VB log to a FB format for the collect to function in the correct manner. You can use many different utilities for this job but care must be made to strip the leading X'40', which is left after most conversion jobs, or the record is not collected.

**JES2 and JES3 SYSLOG and OPERLOG**

In a sysplex environment, you can collect the OPERLOG instead of collecting individual JES2 or JES3 SYSLOGs. Tivoli Decision Support for OS/390 collects data from the OPERLOG using the MVS System Logger subsystem data set interface. To collect the OPERLOG, specify a JES2 log in the Tivoli Decision Support for OS/390 collect job, and change the DRLLOG dd statement as described in the DRLJCOLL job example in Volume I. See *MVS/ESA Diagnosis: Tools and Service Aids* for details on Log Stream Subsystem Data Set JCL specification.

Ensure that the SYSLOG records produced by JES2 or JES3 systems are available to Tivoli Decision Support for OS/390 and are in the correct format. Perform these steps:

1. Ensure that RECFM = FB is used for the SYSLOG data set, because the log procedure assumes that the JES2 or JES3 SYSLOG data set is a fixed-format data set.
2. Ensure that there are no printer control characters at position 1 in the records in the SYSLOG data set.
3. If your SYSLOG records are produced by JES2, the log procedure assumes that the JES2 message prefix is either an X'5A' or X'5B' character. Ensure that either of these prefix characters is specified in the JES2 initialization parameters.
4. If your SYSLOG records are produced by JES3 and the JES3 release is earlier than 2.2.0, ensure that the JES3 data contains at least one system log initialization record. If there is no system log initialization record, the Tivoli Decision Support for OS/390 log procedure skips the SYSLOG records.

**NetView**

Use the NetView DSIPRT utility to print the NetView log to a DASD data set. The member CNMSJM04 in CNMSAMP contains JCL to do the printing. You must modify this JCL to direct the output to a data set.
Modify DRLJCOLL

Before running the Tivoli Decision Support for OS/390 collect job, you must update the DRLJCOLL member, as described in “Setting up the collect job” in Volume I.

Update lookup tables

The message analysis/automation component uses several lookup tables when updating tables in the Tivoli Decision Support for OS/390 database. The lookup tables contain a default set of parameters when shipped with the product. After you have been using the message analysis/automation component for a while, you may want to customize the lookup tables.

Using the administration dialog, update these lookup tables:

<table>
<thead>
<tr>
<th>Table name</th>
<th>Description</th>
<th>Key columns</th>
<th>Data columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSG_SYSLOG_ROUTE</td>
<td>Converts JES2 message route codes to a more readable form. This information</td>
<td>ROUTE_CODE</td>
<td>ROUTE_CODE_CONVERT</td>
</tr>
<tr>
<td></td>
<td>is used to provide statistics on JES2 system log messages.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSG_SYSLOG_TYPE</td>
<td>Converts the first three characters of the message ID to a message type.</td>
<td>MESSAGE_ID_PREFIX</td>
<td>MESSAGE_TYPE</td>
</tr>
<tr>
<td>MSG_NETVIEW_TYPE</td>
<td>Converts message types to meaningful descriptions.</td>
<td>MESSAGE_TYPE</td>
<td>MESSAGE_TYPE_DESC</td>
</tr>
<tr>
<td>MSG_ANO_EVENT</td>
<td>Converts message IDs to event types and descriptions, and gives the number</td>
<td>MESSAGE_ID</td>
<td>WORD_NUMBER EVENT_TYPE MESSAGE_DESC</td>
</tr>
<tr>
<td></td>
<td>of the word that contains the resource name.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For descriptions of these lookup tables and examples of their contents, see “Lookup tables” on page 226.

The message analysis/automation component also uses the DAY_OF_WEEK, PERIOD_PLAN, and SPECIAL_DAY control tables. Ensure that these tables include the correct information. Refer to the Administration Guide for information on the control tables.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 30. Data flow

The message analysis/automation component collects records from the JES2, JES3, and NetView systems, and stores the data in the Tivoli Decision Support for OS/390 database. You can then use reporting dialogs to create reports based on this data. Figure 77 shows an overview of the data flow through the message analysis/automation component.

Figure 77. Message analysis/automation component data flow

Lookup tables

After collecting the data, the message analysis/automation component stores the data in tables in the Tivoli Decision Support for OS/390 database. As it updates the tables, the component uses lookup tables to convert the first three characters of the message ID to a message type, convert JES2 route logs, convert message types to meaningful descriptions, and convert message IDs to event types and descriptions.
In creating the NetView reports, the message analysis/automation component uses the lookup tables MSG_NETVIEW_TYPE and MSG_ANO_EVENT to convert message types to a meaningful description and to convert message IDs to event types and descriptions, and to give the number of the word that contains the resource name. Figure 78 shows which data tables contain values from the lookup tables.

The message analysis/automation component uses the DAY_OF_WEEK, PERIOD_PLAN, and SPECIAL_DAY control tables to update all hourly tables. For information on the control tables, refer to the Administration Guide.

For detailed information about the tables updated by the component and the lookup tables it uses, see Chapter 32, “Data tables, views, and lookup tables”, on page 219.
Chapter 31. Log and record definitions

Messages sent to a SYSOUT data set are intended for a programmer. These messages are issued by an assembler or compiler, the linkage editor, the loader, and an application program. If the SYSOUT data set and the MSGCLASS parameter on the JCL JOB statement specify the same class, all messages about a program will appear in the same SYSOUT listing. The message analysis/automation component processes these records:

Table 11. Input records to the message analysis/automation component

<table>
<thead>
<tr>
<th>SYSLOG or NetView record</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JES2 SYSLOG records</td>
<td>SYSLOG_JES2_MSG</td>
<td>These records contain all messages issued through WTL macros, messages entered by operator log commands, usually the hardcopy log, and messages routed to the system log that are output by the JES2 system.</td>
</tr>
<tr>
<td>JES3 SYSLOG records</td>
<td>SYSLOG_JES3_MSG</td>
<td>These records contain all messages issued through WTL macros, messages entered by operator log commands, the hardcopy log, and messages routed to the system log that are output by the JES3 system.</td>
</tr>
<tr>
<td>NetView log records</td>
<td>NETVIEW_MSG</td>
<td>These records contain activity of all NetView operator stations, including commands entered and messages received.</td>
</tr>
</tbody>
</table>

For information on the JES2 and JES3 SYSLOG, refer to *MVS/ESA System Messages, Volume 1*.

For information on the NetView log, refer to *NetView Problem Determination and Diagnosis*.

Log procedures

The message analysis/automation component uses three log procedures to process the input logs:

**DRL2MAJ2**  Reads records from the JES2 SYSLOG and formats and builds an output record with a common format.

**DRL2MAJ3**  Reads records from the JES3 SYSLOG and formats and builds an output record with a common format.

**DRL2MANV**  Reads records from the NetView log and formats and builds an output record with a common format.

**Note:** The log procedures are automatic and run at the time of a log collect. They are not procedures that you need to run separately.
Message analysis/automation log and record definitions
Chapter 32. Data tables, views, and lookup tables

This chapter describes the data tables, views, and lookup tables used by the message analysis/automation component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature component, refer to the Administration Guide.

Data tables

This section describes the data tables for the message analysis/automation component.

MSG_NETVIEW_H, _D, _M

These tables provide hourly, daily, and monthly statistics on NetView log messages. They contain message data from the NetView log, which is reformatted to a common layout by the log procedure DRL2MANV.

These tables are updated by the MSG_NETVIEW_TYPE and MSG_ANO_EVENT lookup tables.

The default retention periods for these tables are:

<table>
<thead>
<tr>
<th>Table</th>
<th>Retention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSG_NETVIEW_H</td>
<td>10 days</td>
</tr>
<tr>
<td>MSG_NETVIEW_D</td>
<td>30 days</td>
</tr>
<tr>
<td>MSG_NETVIEW_M</td>
<td>765 days</td>
</tr>
</tbody>
</table>

<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 when the NetView log records were written. For the _M table, this is the date of the first day of the month. From NVDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the NetView log records were written. It applies only to the _H table. From NVTIME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields NVDATE and NVTIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>MVS system ID. This is the name of the MVS system in which NetView is running. From the SET MVS_SYSTEM_ID='mvs_system_id' statement in the DRLJCOLL collect JCL.</td>
</tr>
<tr>
<td>MESSAGE_ID</td>
<td>CHAR(10)</td>
<td>Message ID. From NVMSG.</td>
</tr>
<tr>
<td>MESSAGE_CODE</td>
<td>CHAR(2)</td>
<td>Message code. From NVINDIC.</td>
</tr>
<tr>
<td>MESSAGE_TYPE</td>
<td>CHAR(1)</td>
<td>Message type symbol. From NVFLAG.</td>
</tr>
<tr>
<td>NETVIEW_DOMAIN</td>
<td>CHAR(5)</td>
<td>NetView domain. From NVDOMAIN.</td>
</tr>
<tr>
<td>NETVIEW_OPERATOR</td>
<td>CHAR(8)</td>
<td>NetView operator. From NVOPERAT.</td>
</tr>
<tr>
<td>EVENT_TYPE</td>
<td>CHAR(8)</td>
<td>Type of event. From EVENT_TYPE in the MSG_ANO_EVENT lookup table.</td>
</tr>
<tr>
<td>MESSAGE_DESC</td>
<td>CHAR(48)</td>
<td>Description for the message ID. From MESSAGE_DESC in the MSG_ANO_EVENT lookup table.</td>
</tr>
</tbody>
</table>
### Message analysis/automation data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGES_SOLICITED</td>
<td>INTEGER</td>
<td>VTAM solicited messages. This is the number of records where NVFLAG is blank.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>INTEGER</td>
<td>Total number of messages. This is the count of NVMSG.</td>
</tr>
<tr>
<td>MESSAGES_UNSOL</td>
<td>INTEGER</td>
<td>VTAM unsolicited messages. This is the number of records where NVFLAG is Q.</td>
</tr>
<tr>
<td>MESSAGE_TYPE_DESC</td>
<td>CHAR(48)</td>
<td>Message type description. From MESSAGE_TYPE_DESC in the MSG_NETVIEW_TYPE lookup table.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>CHAR(8)</td>
<td>Name of the resource. From NVTEXTxx, where xx is the word number derived from WORD_NUMBER in the MSG_ANO_EVENT lookup table using NVMSG as key.</td>
</tr>
</tbody>
</table>
MSG_SYSLOG_H, _D, _M

These tables provide hourly, daily, and monthly statistics on JES2 and JES3 system log messages. They contain message data from the JES2 and JES3 system logs, which is reformatted to a common layout by the log procedures DRL2MAJ2 and DRL2MAJ3, respectively.

These tables are updated by the MSG_SYSLOG_TYPE and MSG_SYSLOG_ROUTE lookup tables.

The default retention periods for these tables are:
- MSG_SYSLOG_H: 10 days
- MSG_SYSLOG_D: 30 days
- MSG_SYSLOG_M: 765 days

<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 when the SYSLOG records were written. For the _M table, this is the date of the first day of the month. From S2DATE or S3DATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the SYSLOG records were written. It applies only to the _H table. From S2TIME or S3TIME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields S2DATE and S2TIME, or S3DATE and S3TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>JES_COMPLEX</td>
<td>CHAR(8)</td>
<td>Name of the JES complex. From the SET JES_COMPLEX='jes_complex_name' statement in the DRLJCCLl collect JCL.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>MVS system ID. This is the MVS system name in the SYSLOG record. From S2PRNAME or S3PRNAME.</td>
</tr>
<tr>
<td>MESSAGE_ID</td>
<td>CHAR(10)</td>
<td>SYSLOG message ID. CCC0000 is the group identifier for commands. From S2MSGID or S3MSGID.</td>
</tr>
<tr>
<td>MESSAGE_TYPE</td>
<td>CHAR(4)</td>
<td>Message type. From MESSAGE_TYPE in the MSG_SYSLOG_TYPE lookup table.</td>
</tr>
<tr>
<td>CONSOLE_ID</td>
<td>CHAR(2)</td>
<td>Console ID for the SYSLOG message. From S2CONID or S3CONID.</td>
</tr>
<tr>
<td>ROUTE_CODE</td>
<td>CHAR(7)</td>
<td>SYSLOG message route code. From S2ROUTE or S3ROUTE. For JES2 SYSLOG messages, the route code is converted in the MSG_SYSLOG_ROUTE lookup table.</td>
</tr>
<tr>
<td>AUTO_MESSAGES</td>
<td>INTEGER</td>
<td>Number of automation messages. This is the number of records where position 7 of S2MSGFLG is equal to 1 or 9.</td>
</tr>
<tr>
<td>COMMAND_RESPONSES</td>
<td>INTEGER</td>
<td>Number of response messages to commands. This is the number of records where position 2 of S2ROUTE is equal to R.</td>
</tr>
<tr>
<td>CONSOLE_COMMANDS</td>
<td>INTEGER</td>
<td>Number of commands entered from consoles. This is the number of records where position 2 of S2ROUTE is equal to C.</td>
</tr>
<tr>
<td>INTERNAL_COMMANDS</td>
<td>INTEGER</td>
<td>Number of commands entered internally. This is the number of records where position 2 of S2ROUTE is equal to I.</td>
</tr>
<tr>
<td>JES_TYPE</td>
<td>CHAR(1)</td>
<td>Type of JES subsystem. This is 2 or 3.</td>
</tr>
<tr>
<td>MESSAGES_HIGH</td>
<td>FLOAT</td>
<td>Number of nonsuppressed and suppressed messages that arrived during the high interval (0.0 to 1.0 second after the previous message).</td>
</tr>
</tbody>
</table>
## Message analysis/automation data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGES_LOW</td>
<td>FLOAT</td>
<td>Number of nonsuppressed and suppressed messages that arrived during the low interval (5.0 seconds or more after the previous message).</td>
</tr>
<tr>
<td>MESSAGES_MEDIUM</td>
<td>FLOAT</td>
<td>Number of nonsuppressed and suppressed messages that arrived during the medium interval (1.0 to 5.0 seconds after the previous message).</td>
</tr>
<tr>
<td>MESSAGES_SUPPR</td>
<td>INTEGER</td>
<td>Number of suppressed messages. This is the number of records where position 6 to 9 of S2ROUTE is equal to SUPP.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>INTEGER</td>
<td>Total number of messages. This is the count of S2MSGID or S3MSGID.</td>
</tr>
<tr>
<td>MESSAGE_TEXT</td>
<td>CHAR(40)</td>
<td>First 40 characters of the message text. From S2MSGTXT or S3MSGTXT.</td>
</tr>
<tr>
<td>MULTILINE_LINES</td>
<td>FLOAT</td>
<td>Number of lines in the multiline messages. This is the sum of S2MLINE.</td>
</tr>
<tr>
<td>MULTILINE_MESSAGES</td>
<td>FLOAT</td>
<td>Number of multiline messages. This is the number of records where S2MLINE is greater than 1.</td>
</tr>
<tr>
<td>NONSUPPRESSED_HIGH</td>
<td>FLOAT</td>
<td>Number of nonsuppressed messages that arrived during the high interval (0.0 to 1.0 second after the previous message).</td>
</tr>
<tr>
<td>NONSUPPRESSED_LOW</td>
<td>FLOAT</td>
<td>Number of nonsuppressed messages that arrived during the low interval (5.0 seconds or more after the previous message).</td>
</tr>
<tr>
<td>NONSUPPRESSED_MED</td>
<td>FLOAT</td>
<td>Number of nonsuppressed messages that arrived during the medium interval (1.0 to 5 seconds after the previous message).</td>
</tr>
<tr>
<td>SINGLE_LINE_MSG</td>
<td>INTEGER</td>
<td>Number of one-line messages. This is the number of records where S2MLINE is equal to 1.</td>
</tr>
</tbody>
</table>
Views

This section describes the views for the message analysis/automation component.

**MSG_NETVIEW_DV**

This view provides daily statistics on the total number of NetView log messages per NetView domain and period name. It is based on the MSG_NETVIEW_D table.

<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 NetView log records were written. From NVDATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields NVDATE and NVTIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>NETVIEW_DOMAIN</td>
<td>k CHAR(5)</td>
<td>NetView domain. From NVDOMAIN.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>FLOAT</td>
<td>Total number of messages. This is the count of NVMSG.</td>
</tr>
</tbody>
</table>

**MSG_NETVIEW_HV**

This view provides hourly statistics on the total number of NetView log messages per NetView domain and period name. It is based on the MSG_NETVIEW_H table.

<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 NetView log records were written. From NVDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time (rounded down to the nearest hour) when the NetView log records were written. From NVTIME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields NVDATE and NVTIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>NETVIEW_DOMAIN</td>
<td>k CHAR(5)</td>
<td>NetView domain. From NVDOMAIN.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>INTEGER</td>
<td>Total number of messages. This is the count of NVMSG.</td>
</tr>
</tbody>
</table>

**MSG_NETVIEW_MV**

This view provides monthly statistics on the total number of NetView log messages per NetView domain and period name. It is based on the MSG_NETVIEW_M table.

<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 NetView log records were written. This is the date of the first day of the month. From NVDATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields NVDATE and NVTIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>NETVIEW_DOMAIN</td>
<td>k CHAR(5)</td>
<td>NetView domain. From NVDOMAIN.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>FLOAT</td>
<td>Total number of messages. This is the count of NVMSG.</td>
</tr>
</tbody>
</table>
Message analysis/automation views

**MSG_SYSLOG_DV**

This view provides daily statistics on the total number of JES2 and JES3 system log messages per JES complex and period name. It is based on the MSG_SYSLOG_D table.

<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 when the SYSLOG records were written. From S2DATE or S3DATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields S2DATE and S2TIME, or S3DATE and S3TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>JES_COMPLEX</td>
<td>CHAR(8)</td>
<td>Name of the JES complex. From the SET JES_COMP='jes_complex_name' statement in the DRLJCOLL collect JCL.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>INTEGER</td>
<td>Total number of messages. This is the count of S2MSGID or S3MSGID.</td>
</tr>
</tbody>
</table>

**MSG_SYSLOG_HV**

This view provides hourly statistics on the total number of JES2 and JES3 system log messages per JES complex and period name. It is based on the MSG_SYSLOG_H table.

<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 when the SYSLOG records were written. From S2DATE or S3DATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the SYSLOG records were written. From S2TIME or S3TIME.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields S2DATE and S2TIME, or S3DATE and S3TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>JES_COMPLEX</td>
<td>CHAR(8)</td>
<td>Name of the JES complex. From the SET JES_COMP='jes_complex_name' statement in the DRLJCOLL collect JCL.</td>
</tr>
<tr>
<td>MESSAGES_TOT</td>
<td>INTEGER</td>
<td>Total number of messages. This is the count of S2MSGID or S3MSGID.</td>
</tr>
</tbody>
</table>

**MSG_SYSLOG_MV**

This view provides monthly statistics on the total number of JES2 and JES3 system log messages per JES complex and period name. It is based on the MSG_SYSLOG_M table.

<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 when the SYSLOG records were written. From S2DATE or S3DATE. This is the date of the first day of the month.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields S2DATE and S2TIME, or S3DATE and S3TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>JES_COMPLEX</td>
<td>CHAR(8)</td>
<td>Name of the JES complex. From the SET JES_COMP='jes_complex_name' statement in the DRLJCOLL collect JCL.</td>
</tr>
</tbody>
</table>
### Message analysis/automation views

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGES_TOT</td>
<td>FLOAT</td>
<td>Total number of messages. This is the count of S2MSGID or S3MSGID.</td>
</tr>
</tbody>
</table>
Lookup tables

This section describes the lookup tables specific to the message analysis/automation component.

**MSG_ANO_EVENT**

This lookup table converts the automated network operations (ANO) message IDs to event types and descriptive text, and gives the number of the word in the record that contains the resource name.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGE_ID</td>
<td>CHAR(10)</td>
<td>Message ID in the log record. From NVMSG.</td>
</tr>
<tr>
<td>EVENT_TYPE</td>
<td>CHAR(8)</td>
<td>Type of event.</td>
</tr>
<tr>
<td>MESSAGE_DESC</td>
<td>CHAR(48)</td>
<td>Description for the message ID.</td>
</tr>
<tr>
<td>WORD_NUMBER</td>
<td>SMALLINT</td>
<td>Position of the word in the record that contains the resource name.</td>
</tr>
</tbody>
</table>

**Example of table contents**

<table>
<thead>
<tr>
<th>MESSAGE ID</th>
<th>WORD NUMBER</th>
<th>EVENT TYPE</th>
<th>MESSAGE DESC</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST095A</td>
<td>4</td>
<td>OUTAGE</td>
<td>OPTION TO DUMP</td>
</tr>
<tr>
<td>IST284A</td>
<td>4</td>
<td>OUTAGE</td>
<td>OPTION TO RELOAD</td>
</tr>
<tr>
<td>IST727I</td>
<td>4</td>
<td>OUTAGE</td>
<td>COMMUNICATION WITH CDRM LOST</td>
</tr>
<tr>
<td>IST105I</td>
<td>1</td>
<td>OUTAGE</td>
<td>NODE INACTIVE</td>
</tr>
<tr>
<td>IST400I</td>
<td>6</td>
<td>OUTAGE</td>
<td>TERMINATION IN PROGRESS</td>
</tr>
<tr>
<td>IST619I</td>
<td>3</td>
<td>OUTAGE</td>
<td>FAILED - RECOVERY IN PROGRESS</td>
</tr>
<tr>
<td>IST621I</td>
<td>6</td>
<td>RECOVERY</td>
<td>RECOVERY SUCCESSFUL</td>
</tr>
<tr>
<td>IST804I</td>
<td>5</td>
<td>OUTAGE</td>
<td>CLOSE IN PROGRESS</td>
</tr>
<tr>
<td>IST093I</td>
<td>1</td>
<td>RECOVERY</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>EHK504I</td>
<td>3</td>
<td>-OTHER-</td>
<td>AVAILABLE</td>
</tr>
<tr>
<td>EHK509I</td>
<td>3</td>
<td>-OTHER-</td>
<td>UNAVAILABLE</td>
</tr>
<tr>
<td>EHK506I</td>
<td>3</td>
<td>-OTHER-</td>
<td>ATTEMPTING RECOVERY</td>
</tr>
<tr>
<td>EHK507I</td>
<td>3</td>
<td>-OTHER-</td>
<td>UNRECOVERABLE FOR NN MINUTES</td>
</tr>
<tr>
<td>EHK541W</td>
<td>7</td>
<td>-OTHER-</td>
<td>ACTIVATION FAILED</td>
</tr>
<tr>
<td>EHK501W</td>
<td>6</td>
<td>RECHALT</td>
<td>RECOVERY HALTED</td>
</tr>
<tr>
<td>EHK502I</td>
<td>6</td>
<td>-OTHER-</td>
<td>RECOVERY CONTINUING</td>
</tr>
<tr>
<td>EHK503I</td>
<td>5</td>
<td>-OTHER-</td>
<td>RECOVERY CONTINUING</td>
</tr>
</tbody>
</table>

Message analysis/automation lookup tables
MSG_NETVIEW_TYPE

This lookup table converts the message type symbol in a NetView log to descriptive text.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGE_TYPE</td>
<td>k</td>
<td>Message type symbol to be converted to descriptive text. From NVFLAG.</td>
</tr>
<tr>
<td>MESSAGE_TYPE_DESC</td>
<td>CHAR(48)</td>
<td>Descriptive text for the message type symbol.</td>
</tr>
</tbody>
</table>

Example of table contents

<table>
<thead>
<tr>
<th>MESSAGE</th>
<th>TYPE DESC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>MSG AUTOMATED TO DRIVE CMD/CMDBLIST</td>
</tr>
<tr>
<td>C</td>
<td>MSG/CMD GENERATED DURING CMDBLIST PROCESSING</td>
</tr>
<tr>
<td>E</td>
<td>EXTERNAL MSG</td>
</tr>
<tr>
<td>M</td>
<td>MSG FROM A MSG CMD</td>
</tr>
<tr>
<td>Q</td>
<td>UNSOLICITED MSG FROM VTAM</td>
</tr>
<tr>
<td>S</td>
<td>MSG TEXT PROVIDED BY USER EXIT</td>
</tr>
<tr>
<td>U</td>
<td>MSG FROM USER-WRITTEN CODE</td>
</tr>
<tr>
<td>V</td>
<td>VTAM COMMAND FROM SYSTEM CONSOLE</td>
</tr>
<tr>
<td>W</td>
<td>MSG SATISFYING CMDBLIST WAIT</td>
</tr>
<tr>
<td>Y</td>
<td>VTAM MESSAGE FROM SYSTEM CONSOLE</td>
</tr>
<tr>
<td>Z</td>
<td>MSG FROM DATA SERVICE TASK</td>
</tr>
<tr>
<td></td>
<td>CROSS-DOMAIN OR IMMEDIATE CMD MSG</td>
</tr>
<tr>
<td></td>
<td>IMMEDIATE COMMAND MSG</td>
</tr>
<tr>
<td>-</td>
<td>NETVIEW MESSAGE</td>
</tr>
<tr>
<td>*</td>
<td>CMD ECHO</td>
</tr>
<tr>
<td>+</td>
<td>SOLICITED MSG FROM VTAM</td>
</tr>
<tr>
<td>+</td>
<td>MSG GENERATED BY NON-NETVIEW CMD</td>
</tr>
</tbody>
</table>
**MSG_SYSLOG_ROUTE**

This lookup table converts the message route code from a JES2 SYSLOG record to a more readable form.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROUTE_CODE</td>
<td>CHAR(7)</td>
<td>SYSLOG message route code to be converted to a more readable form. From S2ROUTE.</td>
</tr>
<tr>
<td>ROUTE_CODE_CONVERT</td>
<td>CHAR(7)</td>
<td>Message route code converted to a more readable form.</td>
</tr>
</tbody>
</table>

**Example of table contents**

```
ROUTE
CODE CONVERT
------- -------
SUPP SUPP
C000000 0102
C200000 010207
FFFFFFF ALL
00A0000 0911
0000000 00
0004000 14
0020000 11
0040000 10
0060000 1011
0080000 09
0100000 08
0140000 0810
0200000 07
0300000 0708
2000000 03
2800000 0309
```
MSG_SYSLOG_TYPE

This lookup table converts the first three characters of the message ID to a message type such as CICS, JES3, and so on.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESSAGE_ID_PREFIX</td>
<td>CHAR(3)</td>
<td>SYSLOG message ID. CCC is the group identifier for commands. From S2MSGID or S3MSGID.</td>
</tr>
<tr>
<td>MESSAGE_TYPE</td>
<td>CHAR(4)</td>
<td>Message type assigned for the first three characters of the SYSLOG message ID.</td>
</tr>
</tbody>
</table>

Example of table contents

```
MESSAGE_ID  MESSAGE_TYPE
---------    --------
HAS         JES2
IAT         JES3
CSV         MVS
IOS         MVS
IEC         MVS
ICK         MVS
ICP         MVS
IRA         MVS
ERB         MVS
CRE         MVS
IEF         MVS
IEA         MVS
IEE         MVS
IGF         MVS
ADY         MVS
ARC         HSM
ICT         MVS
ICU         MVS
IAR         MVS
```
Message analysis/automation lookup tables
Chapter 33. Reports

The message analysis/automation component provides these reports:

- **SYSLOG reports**
  - MAA Messages From Commands (JES2), Daily report
  - MAA Messages by Console ID, Daily report
  - MAA Most Frequent Messages (JES2), Daily report
  - MAA Most Frequent Messages (JES3), Daily report
  - MAA Messages Passed to NetView (JES2), Daily report
  - MAA Most Frequent Messages With Text, Daily report
  - MAA Most Frequent Nonsuppressed Messages, Daily report
  - MAA Most Frequent Messages by Type (JES2), Daily report
  - MAA Most Frequent Messages by Type (JES3), Daily report
  - MAA Messages by Route Code (JES2), Daily report
  - MAA Messages by Route Code (JES3), Daily report
  - MAA Messages by JES Complex, Daily report
  - MAA Messages Suppressed, Monthly Trend report

- **NetView reports**
  - MAA Most Frequent Messages (NetView), Daily report
  - MAA Messages Passed via the SSI (NetView), Daily report
  - MAA Messages by NetView Operator (NetView), Daily report

**SYSLOG reports**

These reports help you analyze responses to commands and how different consoles are used. They also show you command and message information such as the number of commands in your system and the most frequent messages in JES2 and JES3 systems, grouped by type.
MAA Messages From Commands (JES2), Daily report

This report shows you how many commands are entered in your system and helps you analyze responses to commands.

This information identifies the report:

Report ID        MAA01
Report group      Message analysis/automation reports
Source            MSG_SYSLOG_D, MSG_SYSLOG_DV
Attributes        Message, Operation, Console, ID, SYSLOG, JES2, Daily
Variables         Date, JES_complex, Period_name

The report contains this information:

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Console commands</th>
<th>Internal commands</th>
<th>Command responses</th>
<th>Multi line messages</th>
<th>Lines per multiline message</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC0000</td>
<td>1427</td>
<td>8.4</td>
<td>1123</td>
<td>304</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IEF403I</td>
<td>476</td>
<td>2.8</td>
<td>0</td>
<td>0</td>
<td>476</td>
<td>0</td>
</tr>
<tr>
<td>IEF404I</td>
<td>455</td>
<td>2.7</td>
<td>0</td>
<td>0</td>
<td>455</td>
<td>0</td>
</tr>
<tr>
<td>HASP608</td>
<td>273</td>
<td>1.6</td>
<td>0</td>
<td>0</td>
<td>273</td>
<td>0</td>
</tr>
<tr>
<td>IEF125I</td>
<td>262</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>262</td>
<td>0</td>
</tr>
<tr>
<td>HASP808</td>
<td>252</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>252</td>
<td>0</td>
</tr>
<tr>
<td>IEF126I</td>
<td>214</td>
<td>1.3</td>
<td>0</td>
<td>0</td>
<td>214</td>
<td>0</td>
</tr>
<tr>
<td>IKJ674I</td>
<td>133</td>
<td>0.8</td>
<td>0</td>
<td>0</td>
<td>133</td>
<td>0</td>
</tr>
<tr>
<td>IEF450I</td>
<td>33</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>AOF570I</td>
<td>32</td>
<td>0.2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 79. Example of an MAA Messages From Commands (JES2), Daily report

The report contains this information:

<table>
<thead>
<tr>
<th>Message ID</th>
<th>The SYSLOG message ID. CCC0000 is the group identifier for commands.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message count</td>
<td>The number of messages.</td>
</tr>
<tr>
<td>Messages of total (%)</td>
<td>The percentage of all messages.</td>
</tr>
<tr>
<td>Console commands</td>
<td>The number of commands entered from consoles.</td>
</tr>
<tr>
<td>Internal commands</td>
<td>The number of commands entered internally.</td>
</tr>
<tr>
<td>Command responses</td>
<td>The number of response messages to commands.</td>
</tr>
<tr>
<td>Multi line messages</td>
<td>The number of multiline messages.</td>
</tr>
<tr>
<td>Lines per multiline message</td>
<td>The number of lines per multiline message.</td>
</tr>
</tbody>
</table>
MAA Messages by Console ID, Daily report

This report helps you analyze how different consoles are used.

This information identifies the report:

Report ID  MAA02
Report group  Message analysis/automation reports
Source  MSG_SYSLOG_D, MSG_SYSLOG_DV
Attributes  Message, Operation, Console, ID, SYSLOG, JES2, JES3, Daily
Variables  Date, JES_complex, Period_name

The report contains this information:

<table>
<thead>
<tr>
<th>Console ID</th>
<th>Message count</th>
<th>Messages of total (%)</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>16955</td>
<td>99.3</td>
<td>12107</td>
<td>71.4</td>
</tr>
<tr>
<td>25</td>
<td>90</td>
<td>0.5</td>
<td>90</td>
<td>100.0</td>
</tr>
<tr>
<td>23</td>
<td>13</td>
<td>0.1</td>
<td>13</td>
<td>100.0</td>
</tr>
<tr>
<td>19</td>
<td>11</td>
<td>0.1</td>
<td>11</td>
<td>100.0</td>
</tr>
<tr>
<td>26</td>
<td>6</td>
<td>0.0</td>
<td>6</td>
<td>100.0</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>0.0</td>
<td>1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 80. Example of an MAA Messages by Console ID, Daily report

The report contains this information:

**Console ID**  The console ID. This is the group identifier for messages not associated with any console.

**Message count**  The number of messages.

**Messages of total (%)**  The percentage of all messages.

**Suppressed messages**  The number of suppressed messages.

**Suppressed (%)**  The percentage of the total number of messages for this console ID that were suppressed.
MAA Most Frequent Messages (JES2), Daily report

This report shows you the most frequent messages in your JES2 system.

This information identifies the report:

Report ID MAA03
Report group Message analysis/automation reports
Source MSG_SYSLOG_D, MSG_SYSLOG_DV
Attributes Message, Operation, Console, ID, SYSLOG, JES2, Daily
Variables Date, JES_complex, Period_name, Maxrows

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Messages of total (%)</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
<th>Single line messages</th>
<th>Multi line messages</th>
<th>Lines per multiline message</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC105</td>
<td>3140</td>
<td>18.4</td>
<td>3140</td>
<td>100.0</td>
<td>3140</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CCC0000</td>
<td>1427</td>
<td>8.4</td>
<td>148</td>
<td>10.4</td>
<td>1427</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HASP250</td>
<td>819</td>
<td>4.8</td>
<td>819</td>
<td>100.0</td>
<td>819</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HASP100</td>
<td>750</td>
<td>4.4</td>
<td>750</td>
<td>100.0</td>
<td>750</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HASP373</td>
<td>738</td>
<td>4.3</td>
<td>738</td>
<td>100.0</td>
<td>738</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IEE4001</td>
<td>733</td>
<td>4.3</td>
<td>733</td>
<td>100.0</td>
<td>733</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HASP395</td>
<td>710</td>
<td>4.2</td>
<td>710</td>
<td>100.0</td>
<td>710</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>010/001</td>
<td>536</td>
<td>3.1</td>
<td>0</td>
<td>0.0</td>
<td>536</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ICH70001I</td>
<td>477</td>
<td>2.8</td>
<td>477</td>
<td>100.0</td>
<td>477</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IEF403I</td>
<td>476</td>
<td>2.8</td>
<td>476</td>
<td>100.0</td>
<td>476</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 81. Example of an MAA Most Frequent Messages (JES2), Daily report

The report contains this information:

Message ID The SYSLOG message ID. CCC0000 is the group identifier for commands.
Message count The number of messages.
Messages of total (%) The percentage of all messages.
Suppressed messages The number of suppressed messages.
Suppressed (%) The percentage of the total number of messages for this message ID that were suppressed.
Single line messages The number of one-line messages.
Multi line messages The number of multiline messages.
Lines per multiline message The number of lines per multiline message.
MAA Most Frequent Messages (JES3), Daily report

This report shows you the most frequent messages in your JES3 system.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>MAA04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Message analysis/automation reports</td>
</tr>
<tr>
<td>Source</td>
<td>MSG_SYSLOG_D, MSG_SYSLOG_DV</td>
</tr>
<tr>
<td>Attributes</td>
<td>Message, Operation, Console, ID, SYSLOG, JES3, Daily</td>
</tr>
<tr>
<td>Variables</td>
<td>Date, JES_complex, Period_name, Maxrows</td>
</tr>
</tbody>
</table>

The report contains this information:

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Messages of total (%)</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAT7450</td>
<td>11515</td>
<td>11.9</td>
<td>11515</td>
<td>100.0</td>
</tr>
<tr>
<td>IAT7005</td>
<td>9103</td>
<td>9.5</td>
<td>8709</td>
<td>94.8</td>
</tr>
<tr>
<td>IAT6101</td>
<td>6707</td>
<td>6.9</td>
<td>6707</td>
<td>100.0</td>
</tr>
<tr>
<td>ICH700011</td>
<td>6413</td>
<td>6.6</td>
<td>6413</td>
<td>100.0</td>
</tr>
<tr>
<td>IEF4031</td>
<td>6298</td>
<td>6.5</td>
<td>6298</td>
<td>100.0</td>
</tr>
<tr>
<td>IEF4041</td>
<td>6288</td>
<td>6.5</td>
<td>6288</td>
<td>100.0</td>
</tr>
<tr>
<td>CCC0000</td>
<td>5731</td>
<td>5.9</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>IAT9127</td>
<td>4947</td>
<td>5.1</td>
<td>4947</td>
<td>100.0</td>
</tr>
<tr>
<td>IAT7001</td>
<td>4912</td>
<td>5.1</td>
<td>4640</td>
<td>94.5</td>
</tr>
<tr>
<td>IAT2003</td>
<td>4770</td>
<td>4.9</td>
<td>4770</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 82. Example of an MAA Most Frequent Messages (JES3), Daily report

The report contains this information:

**Message ID**

The SYSLOG message ID. CCC0000 is the group identifier for commands.

**Message count**

The number of messages.

**Messages of total (%)**

The percentage of all messages.

**Suppressed messages**

The number of suppressed messages.

**Suppressed (%)**

The percentage of the total number of messages for this message ID that were suppressed.
### MAA Messages Passed to NetView (JES2), Daily report

This report shows the most frequent messages and the first 40 characters from the message text. These messages are passed to NetView for automation. This report exists only for JES2 systems because there is no indication in a JES3 SYSLOG that a message is destined for automation. For more information on using this report, refer to the *System Performance Feature Guide*.

This information identifies the report:

- **Report ID**: MAA05
- **Report group**: Message analysis/automation reports
- **Source**: MSG_SYSLOG_D
- **Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, Daily
- **Variables**: From_date, To_date, JES_complex, Period_name, Maxrows

The report contains this information:

- **Message ID**
- **Automation message count**
- **Message text**

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Automation message count</th>
<th>Message text</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASP373</td>
<td>738</td>
<td>$HASP373 SE58186 STARTED</td>
</tr>
<tr>
<td>HASP395</td>
<td>710</td>
<td>$HASP395 SE51045L ENDED</td>
</tr>
<tr>
<td>010/001</td>
<td>536</td>
<td>+010/001 -K -KIS-ENTER PARAMETERS (AUTO=</td>
</tr>
<tr>
<td>IEF403I</td>
<td>476</td>
<td>IEF403I SE51045L - STARTED - TIME=08.03</td>
</tr>
<tr>
<td>IEF404I</td>
<td>455</td>
<td>IEF404I SE51045L - ENDED - TIME=08.00.0</td>
</tr>
<tr>
<td>HASP308</td>
<td>334</td>
<td>$HASP308 VPWPROD ESTIMATED TIME EXCEED</td>
</tr>
<tr>
<td>HASP530</td>
<td>329</td>
<td>$HASP530 F172340 ON L5.ST1 1,0</td>
</tr>
<tr>
<td>IEF125I</td>
<td>262</td>
<td>IEF125I SE58186 - LOGGED ON - TIME=08.0</td>
</tr>
<tr>
<td>IEF126I</td>
<td>214</td>
<td>IEF126I SE58186 - LOGGED OFF - TIME=08.0</td>
</tr>
<tr>
<td>EDG6627A</td>
<td>196</td>
<td>+EDG6627A MA M 052B Y(K10900) R(K10900)</td>
</tr>
</tbody>
</table>

*Figure 83. Example of an MAA Messages Passed to NetView (JES2), Daily report*

The report contains this information:

- **Message ID**: The SYSLOG message ID.
- **Automation message count**: The number of messages.
- **Message text**: The first 40 characters from the message text.
MAA Most Frequent Messages With Text, Daily report

This report shows the most frequent messages and the first 40 characters from the message text.

This information identifies the report:

- **Report ID**: MAA06
- **Report group**: Message analysis/automation reports
- **Source**: MSG_SYSLOG_D
- **Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, JES3, Daily
- **Variables**: From_date, To_date, JES_complex, Period_name, Maxrows

### MAA Most Frequent Messages With Text, Daily

JES Complex: 'JES2COMP' Period: 'PRIME'
Date: '2000-01-15' to '2000-01-15'

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Message text</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSC105</td>
<td>3140</td>
<td>SSC105 JOBNAME SN STEP PSTEP EL</td>
</tr>
<tr>
<td>CCC0000</td>
<td>1427</td>
<td>SE '08.00.03 JOB00038 $HASP165 SE51045L</td>
</tr>
<tr>
<td>HASP250</td>
<td>819</td>
<td>$HASP250 SE58186 IS PURGED</td>
</tr>
<tr>
<td>HASP100</td>
<td>750</td>
<td>$HASP100 SE58186 ON TSOINRDR</td>
</tr>
<tr>
<td>HASP373</td>
<td>738</td>
<td>$HASP373 SE58186 STARTED</td>
</tr>
<tr>
<td>1EE4001</td>
<td>733</td>
<td>1EE4001 THESE MESSAGES CANCELLED - 06.</td>
</tr>
<tr>
<td>HASP395</td>
<td>710</td>
<td>$HASP395 SE51045L ENDED</td>
</tr>
<tr>
<td>010/001</td>
<td>536</td>
<td>*010/001 -K -KIS-ENTER PARAMETERS (AUTO)</td>
</tr>
<tr>
<td>ICH700011</td>
<td>477</td>
<td>ICH700011 SE51045 LAST ACCESS AT 07:59</td>
</tr>
<tr>
<td>1EF4031</td>
<td>476</td>
<td>1EF4031 SE51045B - STARTED - TIME=08.03</td>
</tr>
</tbody>
</table>

Figure 84. Example of an MAA Most Frequent Messages With Text, Daily report

The report contains this information:

- **Message ID**: The SYSLOG message ID. CCC0000 is the group identifier for commands.
- **Message count**: The number of messages.
- **Message text**: The first 40 characters from the message text.
MAA Most Frequent Nonsuppressed Messages, Daily report

This report shows the most frequent nonsuppressed messages and the first 40 characters from the message text. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>MAA07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Message analysis/automation reports</td>
</tr>
<tr>
<td>Source</td>
<td>MSG_SYSLOG_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>Message, Operation, Console, ID, SYSLOG, JES2, JES3, Daily</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date, JES_complex, Period_name, Maxrows</td>
</tr>
</tbody>
</table>

MAA Most Frequent Nonsuppressed Messages, Daily
JES Complex: 'JES2COMP' Period: 'PRIME '
Date: '2000-01-15' to '1993-01-15'

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Message text</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC0000</td>
<td>1279</td>
<td>SE '08.00.03 JOB00038 $HASP165 SES1045L</td>
</tr>
<tr>
<td>010/001</td>
<td>536</td>
<td>+010/001 -K -KIS-ENTER PARAMETERS (AUTO)</td>
</tr>
<tr>
<td>IEA9091</td>
<td>471</td>
<td>IEA9091 SLIP TRAP ID=X33E MATCHED</td>
</tr>
<tr>
<td>HASP308</td>
<td>334</td>
<td>$HASP308 VPWPROD ESTIMATED TIME EXCEED</td>
</tr>
<tr>
<td>HASP530</td>
<td>329</td>
<td>$HASP530 F172340 ON L5 ST1 1,0</td>
</tr>
<tr>
<td>IEF1961</td>
<td>257</td>
<td>IEF1961 IEF237I JES2 ALLOCATED TO SYSLOG</td>
</tr>
<tr>
<td>EDG6627A</td>
<td>196</td>
<td>+EDG6627A MA M 052B Y(K10900) R(K10900)</td>
</tr>
<tr>
<td>IOS0001</td>
<td>188</td>
<td>IOS0001 528,89,NCA,02,0600,***,INIT348</td>
</tr>
<tr>
<td>EDG6642I</td>
<td>185</td>
<td>EDG6642I VOLUME K10900 LABELLED SUCCESS</td>
</tr>
<tr>
<td>EDG6622I</td>
<td>183</td>
<td>EDG6622I VOLUME K10900 INITIALIZATION S</td>
</tr>
</tbody>
</table>

Figure 85. Example of an MAA Most Frequent Nonsuppressed Messages, Daily report

The report contains this information:

<table>
<thead>
<tr>
<th>Message ID</th>
<th>The SYSLOG message ID. CCC0000 is the group identifier for commands.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message count</td>
<td>The number of messages.</td>
</tr>
<tr>
<td>Message text</td>
<td>The first 40 characters from the message text.</td>
</tr>
</tbody>
</table>
MAA Most Frequent Messages by Type (JES2), Daily report

This report shows the most frequent messages in your JES2 system grouped by type (for example CICS, MVS, RACF).

This information identifies the report:

- **Report ID**: MAA08
- **Report group**: Message analysis/automation reports
- **Source**: MSG_SYSLOG_D, MSG_SYSLOG_DV
- **Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, Daily
- **Variables**: Date, JES_complex, Period_name, Maxrows

The report contains this information:

<table>
<thead>
<tr>
<th>Message type</th>
<th>Message count</th>
<th>Messages of total (%)</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
<th>Single line messages</th>
<th>Multi line messages</th>
<th>Lines per multiline message</th>
</tr>
</thead>
<tbody>
<tr>
<td>JES2</td>
<td>5449</td>
<td>31.9</td>
<td>4724</td>
<td>86.7</td>
<td>5388</td>
<td>61</td>
<td>5</td>
</tr>
<tr>
<td>?</td>
<td>5227</td>
<td>30.6</td>
<td>3962</td>
<td>75.8</td>
<td>5168</td>
<td>59</td>
<td>4</td>
</tr>
<tr>
<td>MVS</td>
<td>3468</td>
<td>20.3</td>
<td>2452</td>
<td>70.9</td>
<td>3184</td>
<td>276</td>
<td>5</td>
</tr>
<tr>
<td>CMD</td>
<td>1427</td>
<td>8.4</td>
<td>148</td>
<td>10.4</td>
<td>1427</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RACF</td>
<td>929</td>
<td>5.4</td>
<td>774</td>
<td>83.3</td>
<td>781</td>
<td>148</td>
<td>2</td>
</tr>
<tr>
<td>VTAM</td>
<td>177</td>
<td>1.0</td>
<td>18</td>
<td>10.2</td>
<td>172</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>DBZ</td>
<td>127</td>
<td>0.7</td>
<td>31</td>
<td>24.4</td>
<td>6</td>
<td>121</td>
<td>4</td>
</tr>
<tr>
<td>AOC</td>
<td>114</td>
<td>0.7</td>
<td>92</td>
<td>80.7</td>
<td>114</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CICS</td>
<td>89</td>
<td>0.5</td>
<td>14</td>
<td>15.7</td>
<td>89</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IMS</td>
<td>56</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
<td>56</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The report contains the following information:
- **Message type**: The message type assigned for the first three characters of the SYSLOG message ID.
- **Message count**: The number of messages.
- **Messages of total (%)**: The percentage of all messages.
- **Suppressed messages**: The number of suppressed messages.
- **Suppressed (%)**: The percentage of the total number of messages for this message type that were suppressed.
- **Single line messages**: The number of one-line messages.
- **Multi line messages**: The number of multiline messages.
- **Lines per multiline message**: The number of lines per multiline message.

Figure 86. Example of an MAA Most Frequent Messages by Type (JES2), Daily report

Tivoli Decision Support for OS/390 Report: MAA08
MAA Most Frequent Messages by Type (JES3), Daily report

This report shows the most frequent messages in your JES3 system grouped by type (for example CICS, MVS, RACF).

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>MAA09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>Message analysis/automation reports</td>
</tr>
<tr>
<td>Source</td>
<td>MSG_SYSLOG_D, MSG_SYSLOG_DV</td>
</tr>
<tr>
<td>Attributes</td>
<td>Message, Operation, Console, ID, SYSLOG, JES3, Daily</td>
</tr>
<tr>
<td>Variables</td>
<td>Date, JES_complex, Period_name, Maxrows</td>
</tr>
</tbody>
</table>

The report contains this information:

- **Message type**: The message type assigned for the first three characters of the SYSLOG message ID.
- **Message count**: The number of messages.
- **Messages of total (%)**: The percentage of all messages.
- **Suppressed messages**: The number of suppressed messages.
- **Suppressed (%)**: The percentage of the total number of messages for this message type that were suppressed.

<table>
<thead>
<tr>
<th>Message type</th>
<th>Message count</th>
<th>Messages of total (%)</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JES3</td>
<td>51052</td>
<td>52.6</td>
<td>48094</td>
<td>94.2</td>
</tr>
<tr>
<td>MVS</td>
<td>18753</td>
<td>19.3</td>
<td>18330</td>
<td>97.7</td>
</tr>
<tr>
<td>RACF</td>
<td>8142</td>
<td>8.4</td>
<td>8142</td>
<td>100.0</td>
</tr>
<tr>
<td>IMS</td>
<td>7801</td>
<td>8.0</td>
<td>7166</td>
<td>91.8</td>
</tr>
<tr>
<td>CMD</td>
<td>5731</td>
<td>5.9</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>?</td>
<td>4910</td>
<td>5.1</td>
<td>2783</td>
<td>56.7</td>
</tr>
<tr>
<td>VTAM</td>
<td>210</td>
<td>0.2</td>
<td>20</td>
<td>9.5</td>
</tr>
<tr>
<td>USER</td>
<td>205</td>
<td>0.2</td>
<td>205</td>
<td>100.0</td>
</tr>
<tr>
<td>HSM</td>
<td>110</td>
<td>0.1</td>
<td>34</td>
<td>30.9</td>
</tr>
<tr>
<td>CICS</td>
<td>74</td>
<td>0.1</td>
<td>31</td>
<td>41.9</td>
</tr>
<tr>
<td>DB2</td>
<td>53</td>
<td>0.1</td>
<td>42</td>
<td>79.2</td>
</tr>
<tr>
<td>NETV</td>
<td>27</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>AND</td>
<td>16</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 87. Example of an MAA Most Frequent Messages by Type (JES3), Daily report
MAA Messages by Route Code (JES2), Daily report

This report shows which route codes are used in a JES2 system. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: MAA10
- **Report group**: Message analysis/automation reports
- **Source**: MSG_SYSLOG_D, MSG_SYSLOG_DV
- **Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, Daily
- **Variables**: Date, JES_complex, Period_name, Maxrows

<table>
<thead>
<tr>
<th>Route code</th>
<th>Message count</th>
<th>Single line messages (%)</th>
<th>Multi line messages</th>
<th>Lines per multiline message</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPP</td>
<td>12229</td>
<td>71.6</td>
<td>11855</td>
<td>374</td>
</tr>
<tr>
<td>00</td>
<td>2245</td>
<td>13.1</td>
<td>2233</td>
<td>12</td>
</tr>
<tr>
<td>08</td>
<td>923</td>
<td>5.4</td>
<td>919</td>
<td>4</td>
</tr>
<tr>
<td>-OTHER-</td>
<td>621</td>
<td>3.6</td>
<td>339</td>
<td>282</td>
</tr>
<tr>
<td>03</td>
<td>383</td>
<td>2.2</td>
<td>383</td>
<td>0</td>
</tr>
<tr>
<td>0102</td>
<td>355</td>
<td>2.1</td>
<td>355</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>135</td>
<td>0.8</td>
<td>135</td>
<td>0</td>
</tr>
<tr>
<td>ALL</td>
<td>94</td>
<td>0.6</td>
<td>94</td>
<td>0</td>
</tr>
<tr>
<td>02</td>
<td>35</td>
<td>0.2</td>
<td>34</td>
<td>1</td>
</tr>
<tr>
<td>0810</td>
<td>18</td>
<td>0.1</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>0208</td>
<td>10</td>
<td>0.1</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>0211</td>
<td>8</td>
<td>0.0</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 88. Example of an MAA Messages by Route Code (JES2), Daily report

The report contains this information:

- **Route code**: The SYSLOG message route code. This is a translation of a 7-byte field into a more readable code. For example 010207, means route codes 01, 02, 07 and is a translation of C200000. SUPP is the group identifier for suppressed messages.

- **Message count**: The number of messages.

- **Messages of total (%)**: The percentage of all messages.

- **Single line messages**: The number of one-line messages.

- **Multi line messages**: The number of multiline messages.

- **Lines per multiline message**: The number of lines per multiline message.
MAA Messages by Route Code (JES3), Daily report

This report shows which route codes are used in a JES3 system.

This information identifies the report:

Report ID: MAA11
Report group: Message analysis/automation reports
Source: MSG_SYSLOG_D, MSG_SYSLOG_DV
Attributes: Message, Operation, Console, ID, SYSLOG, JES2, Daily
Variables: Date, JES_complex, Period_name, Maxrows

<table>
<thead>
<tr>
<th>Route code</th>
<th>Message count</th>
<th>Messages of total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPP</td>
<td>84846</td>
<td>87.4</td>
</tr>
<tr>
<td></td>
<td>9609</td>
<td>9.9</td>
</tr>
<tr>
<td>D9</td>
<td>826</td>
<td>0.9</td>
</tr>
<tr>
<td>TP</td>
<td>803</td>
<td>0.8</td>
</tr>
<tr>
<td>M4</td>
<td>323</td>
<td>0.3</td>
</tr>
<tr>
<td>UR</td>
<td>301</td>
<td>0.3</td>
</tr>
<tr>
<td>D4</td>
<td>150</td>
<td>0.2</td>
</tr>
<tr>
<td>M5</td>
<td>86</td>
<td>0.1</td>
</tr>
<tr>
<td>S32</td>
<td>86</td>
<td>0.1</td>
</tr>
<tr>
<td>JES</td>
<td>36</td>
<td>0.0</td>
</tr>
<tr>
<td>D5</td>
<td>11</td>
<td>0.0</td>
</tr>
<tr>
<td>ALL</td>
<td>5</td>
<td>0.0</td>
</tr>
<tr>
<td>LOG</td>
<td>2</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: MAA11

Figure 89. Example of an MAA Messages by Route Code (JES3), Daily report

The report contains this information:

Route code: The SYSLOG message route code. SUPP is the group identifier for suppressed messages.
Message count: The number of messages.
Messages of total (%): The percentage of all messages.
The report shows the total number of messages for each JES complex.

This information identifies the report:

**Report ID**: MAA12  
**Report group**: Message analysis/automation reports  
**Source**: MSG_SYSLOG_D  
**Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, JES3, Daily  
**Variables**: From_date, To_date, Period_name

<table>
<thead>
<tr>
<th>JES complex</th>
<th>Message count</th>
<th>Suppressed messages</th>
<th>Suppressed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JES3COMP</td>
<td>97084</td>
<td>84846</td>
<td>87.4</td>
</tr>
<tr>
<td>JES2COMP</td>
<td>17077</td>
<td>12229</td>
<td>71.6</td>
</tr>
</tbody>
</table>

**Figure 90. Example of an MAA Messages by JES Complex, Daily report**

The report contains this information:

**JES complex**: The name of the JES complex.  
**Message count**: The number of messages.  
**Suppressed messages**: The number of suppressed messages.  
**Suppressed (%)**: The percentage of messages that were suppressed.
**MAA Messages Suppressed, Monthly Trend report**

This report shows a monthly trend for suppressed messages in your system.

This information identifies the report:

- **Report ID**: MAA13
- **Report group**: Message analysis/automation reports
- **Source**: MSG_SYSLOG_M
- **Attributes**: Message, Operation, Console, ID, SYSLOG, JES2, JES3, Monthly
- **Variables**: From_month, To_month, JES_complex, Period_name

The report contains this information:

- **Month**: The date of the first day of the month.
- **Nonsuppressed messages (1000)**: The number of nonsuppressed messages, in thousands.
- **Suppressed messages (1000)**: The number of suppressed messages, in thousands.
NetView reports

These reports give you NetView message information. The reports include information on the most frequent messages in the NetView log, the messages passed to NetView through the SSI, and the number of messages generated by each NetView operator.

MAA Most Frequent Messages (NetView), Daily report

This report shows the most frequent messages in the NetView log.

This information identifies the report:

- **Report ID**: MAA14
- **Report group**: Message analysis/automation reports
- **Source**: MSG_NETVIEW_D, MSG_NETVIEW_DV
- **Attributes**: Message, Operation, Console, ID, Log, Netview, Daily
- **Variables**: Date, Netview_domain, Period_name, Maxrows

### MAA Most Frequent Messages (NetView), Daily report

NetView Domain: 'FSMZA' Period: 'PRIME'
Date: '1999-08-17'

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Messages of total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWREQ</td>
<td>200</td>
<td>6.4</td>
</tr>
<tr>
<td>CNM493I</td>
<td>195</td>
<td>6.2</td>
</tr>
<tr>
<td>EVJEA07</td>
<td>195</td>
<td>6.2</td>
</tr>
<tr>
<td>HASP308</td>
<td>194</td>
<td>6.2</td>
</tr>
<tr>
<td>HASP373</td>
<td>146</td>
<td>4.6</td>
</tr>
<tr>
<td>EXIT</td>
<td>144</td>
<td>4.6</td>
</tr>
<tr>
<td>HASP395</td>
<td>124</td>
<td>3.9</td>
</tr>
<tr>
<td>ASSIGN</td>
<td>104</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Figure 91. Example of an MAA Most Frequent Messages (NetView), Daily report

The report contains this information:

- **Message ID**: The message ID for the message in the NetView log.
- **Message count**: The number of messages.
- **Messages of total (%)**: The percentage of all messages.
## MAA Messages Passed via the SSI (NetView), Daily report

This report shows the messages passed to NetView through the SSI.

This information identifies the report:

- **Report ID**: MAA15
- **Report group**: Message analysis/automation reports
- **Source**: MSG_NETVIEW_D, MSG_NETVIEW_DV
- **Attributes**: Message, Operation, Console, ID, Log, Netview, Daily
- **Variables**: Date, Netview_domain, Period_name, Maxrows

### MAA Messages Passed via the SSI (NetView), Daily

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Message count</th>
<th>Messages of total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HASP308</td>
<td>194</td>
<td>6.2</td>
</tr>
<tr>
<td>HASP373</td>
<td>146</td>
<td>4.6</td>
</tr>
<tr>
<td>HASP395</td>
<td>124</td>
<td>3.9</td>
</tr>
<tr>
<td>HASP500</td>
<td>47</td>
<td>1.5</td>
</tr>
<tr>
<td>HASP530</td>
<td>36</td>
<td>1.1</td>
</tr>
<tr>
<td>IEF452I</td>
<td>5</td>
<td>0.2</td>
</tr>
<tr>
<td>HASP301</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>AOF2061</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>AOF2561</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>AOF532I</td>
<td>2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: MAA15

**Figure 92. Example of an MAA Messages Passed via the SSI (NetView), Daily report**

The report contains this information:

- **Message ID**: The message ID for the message in the NetView log.
- **Message count**: The number of messages.
- **Messages of total (%)**: The percentage of all messages.
MAA Messages by NetView Operator (NetView), Daily report

This report shows the number of messages generated by each NetView operator.

This information identifies the report:

- **Report ID**: MAA16
- **Report group**: Message analysis/automation reports
- **Source**: MSG_NETVIEW_D, MSG_NETVIEW_DV
- **Attributes**: Message, Operation, Console, ID, Log, Netview, Daily
- **Variables**: Date, Netview_domain, Period_name, Maxrows

The report contains this information:

<table>
<thead>
<tr>
<th>NetView operator</th>
<th>Message count</th>
<th>Message of total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO3</td>
<td>1399</td>
<td>44.5</td>
</tr>
<tr>
<td>AUTJES</td>
<td>607</td>
<td>19.3</td>
</tr>
<tr>
<td>GATFSMZA</td>
<td>293</td>
<td>9.3</td>
</tr>
<tr>
<td>AUTMSG</td>
<td>279</td>
<td>8.9</td>
</tr>
<tr>
<td>LOG</td>
<td>113</td>
<td>3.6</td>
</tr>
<tr>
<td>GATFSOZA</td>
<td>91</td>
<td>2.9</td>
</tr>
<tr>
<td>AUTO2</td>
<td>86</td>
<td>2.7</td>
</tr>
<tr>
<td>AUTSYS</td>
<td>67</td>
<td>2.1</td>
</tr>
<tr>
<td>AUT01</td>
<td>66</td>
<td>2.1</td>
</tr>
<tr>
<td>AUTMON</td>
<td>40</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Figure 93. Example of an MAA Messages by NetView Operator (NetView), Daily report

The report contains this information:

- **NetView operator**: The NetView operator.
- **Message count**: The number of messages.
- **Messages of total (%)**: The percentage of all messages.
Message analysis/automation reports
Part 8. Tivoli Workload Scheduler for z/OS (OPC) component

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Chapter 34. Customization

The OPC component provides reports on OPC/ESA Versions 2.0 through 2.3, and on Tivoli Workload Scheduler for z/OS Version 8.1.

Before you can use the OPC component to collect data and create useful reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the OPC component:

1. Make input data available.
2. Modify DRLJCOLL.
3. Modify DRLJOPCP.
4. Update lookup tables.

Make input data available

The OPC track log is created by the OPC daily planning extend or replan batch jobs. The track log should be written to the file EQQTROUT with disposition MOD.

If you are using OPC/ESA Version 1 Release 2.0, ensure that the OPC track log contains record types 23, 24, 27, and 29.

If you are using OPC/ESA Version 1 Release 2.1, ensure that the OPC track log contains record types 03, 04, 23, 24, 27, and 29.

If you are using OPC/ESA Version 2 Release 1.0 and subsequent releases of Version 2, ensure that the OPC track log contains record types 03, 04, 23, 24, 27, and 29.

To contain completed and deleted occurrences, type 03 records should be created with the option OPCTROUT(CMP), which is specified in the BATCHOPT initialization statement for the OPC batch job.

Each data table for the OPC component has a column called OPC_SYSTEM_ID. This ID is set with the LOGID parameter of the BATCHOPT initialization statement. If data from more than one OPC system is to be collected into Tivoli Decision Support for OS/390, the LOGID parameter must be set to a unique value for each OPC system—to differentiate between the logs from the different systems. The default ID is 01.

For more information on the BATCHOPT statement, refer to OPC Installation and Customization.

Modify DRLJCOLL

Before running the Tivoli Decision Support for OS/390 collect job, you must update the DRLJCOLL job (a member in the DRL160.SDRLCNTL library) to include the collection of OPC log data sets. Follow the instructions in the comments section of this job to modify the appropriate JCL statements.
Modify DRLJOPCP

Before running your purge job for the OPC tables, run the OPC component purge-preparation job DRLJOPCP (a member in the DRL160.SDRLCNTL library). The DRLJOPCP job contains a utility program that flags which rows to purge in the OPC_OPER_EVENT_T table. For example, in the statement:

40DRLJOCPK KEEP=5 OPC_SYSTEM_ID=01 SQLMAX=50000

the KEEP parameter specifies the number of rows for the same event (job) that should not be purged. (See also “OPC_OPER_EVENT_T” on page 263 for more information.)

Before running DRLJOPCP, you must modify the job statements according to the instructions in its comments section.

Update lookup tables

The OPC component uses one lookup table when updating tables in the Tivoli Decision Support for OS/390 database. Using the administration dialog, update this table with the values to be used in your installation:

<table>
<thead>
<tr>
<th>Table name</th>
<th>Description</th>
<th>Key column</th>
<th>Data column</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPC_WORKSTATION</td>
<td>Defines the type of workstation for each OPC workstation name.</td>
<td>WORKSTATION_NAME WORKSTATION_TYPE</td>
<td></td>
</tr>
</tbody>
</table>

The OPC component also uses the DAY_OF_WEEK, PERIOD_PLAN, and SPECIAL_DAY control tables to update the data tables. Ensure that these tables include the correct information. Refer to the Administration Guide for information on the control tables.

For a complete description of the OPC_WORKSTATION lookup table and an example of its contents, see “OPC_WORKSTATION” on page 271.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 35. Data flow

The OPC component collects OPC track log data and stores the data in the Tivoli Decision Support for OS/390 database. You can then use the reporting dialog to create reports based on this data. Figure 94 shows an overview of the flow of data from the OPC licensed program, through the OPC component, and finally into reports.

![Diagram showing data flow](image)

Figure 94. OPC component data flow

Lookup tables

After collecting the data, the OPC component stores the data in data tables in the Tivoli Decision Support for OS/390 database. As it updates the tables, the component uses the OPC_WORKSTATION lookup table to convert the OPC workstation name to a workstation type. Figure 95 on page 254 shows which data tables contain values from the lookup table.
The OPC component uses the DAY_OF_WEEK, PERIOD_PLAN, and SPECIAL_DAY control tables to update the data tables. For information on the control tables, refer to the Administration Guide.

For detailed information about the data tables the component updates and the lookup table it uses, see Chapter 37, “Data tables, views, and lookup tables”, on page 257.
Chapter 36. Log and record definitions

The OPC component extracts historical information from the OPC track log. OPC job tracking works correctly only if it receives information about status changes for all jobs or started tasks to be tracked. Job tracking gets this information from SMF and JES exits.

The OPC component processes these OPC track log records:

Table 12. Input records to the OPC component

<table>
<thead>
<tr>
<th>OPC record</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRLBDY23</td>
<td>OPC_23</td>
<td>Track-log operation event. This job-tracking record documents OPC operation events processed at workstations.</td>
</tr>
<tr>
<td>TRLBDY24</td>
<td>OPC_24</td>
<td>Track-log modify-current-plan event. This job-tracking record documents OPC MCP events that occur at workstations.</td>
</tr>
<tr>
<td>TRLBDY27</td>
<td>OPC_27</td>
<td>Track-log missed-feedback record. This job-tracking record documents OPC missed-feedback operation events.</td>
</tr>
<tr>
<td>TRLBDY29</td>
<td>OPC_29</td>
<td>Track-log auto-tracked event. This job-tracking record documents OPC automatic operation events and OPC internal processing and tracking times.</td>
</tr>
<tr>
<td>CPLREC3C</td>
<td>OPC_03_C</td>
<td>Current plan record type 3C (valid only from OPC/ESA Release 2.1)—occurrence record. This documents the attempts to process an application in the OPC current plan.</td>
</tr>
<tr>
<td>CPLREC3P</td>
<td>OPC_03_P</td>
<td>Current plan record type 3P (valid only from OPC/ESA Release 2.1)—operation record. This documents each operation in an application in the OPC current plan.</td>
</tr>
<tr>
<td>CPLREC04</td>
<td>OPC_04</td>
<td>Current plan record type 4 (valid only from OPC/ESA Release 2.1)—job name table. This documents the job name table record associated with an operation in the OPC current plan.</td>
</tr>
</tbody>
</table>

For complete descriptions of these records, refer to the OPC/ESA Programming Interfaces and the OPC/ESA Diagnosis Guide and Reference.
Chapter 37. Data tables, views, and lookup tables

This chapter describes the data tables, views, and lookup table used by the OPC component. For descriptions of control tables used by the OPC component, refer to the Administration Guide.

Data tables

This section describes the data tables for the OPC component.

OPC.AUTO_EVENT_D, _M

These tables provide daily and monthly statistics on OPC automatic operation events. They contain data from the OPC track log record 29, which gives information on OPC internal processing and tracking times.

The default retention periods for these tables are:
- OPC.AUTO_EVENT_D: 30 days
- OPC.AUTO_EVENT_M: 765 days

<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 when the automatic operation events were processed. For the _M table, this is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC's own batch jobs. From TRLOGID.</td>
</tr>
<tr>
<td>OPC_NODE</td>
<td>CHAR(8)</td>
<td>OPC node name. This can be the VTAM application ID, the XCF member name, or $LOCAL if EQENODE is 0. From EQERELDD.</td>
</tr>
<tr>
<td>AUTO_EVENT_TYPE</td>
<td>CHAR(3)</td>
<td>Automatic-event type generated by OPC for both jobs and started tasks. From EXRTYPE and EXRSTYPE. This can be one of these event types:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Event type Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>x1</td>
<td>Reader event. A job has entered the JES system.</td>
<td></td>
</tr>
<tr>
<td>x2</td>
<td>Job start event. A job has started to execute.</td>
<td></td>
</tr>
<tr>
<td>x3S</td>
<td>Step end event. A job step has finished executing.</td>
<td></td>
</tr>
<tr>
<td>x3J</td>
<td>Job end event. A job has finished executing.</td>
<td></td>
</tr>
<tr>
<td>x3P</td>
<td>Job termination event. A job has been added to the JES output queues.</td>
<td></td>
</tr>
<tr>
<td>x4</td>
<td>Print event. A group of SYSOUT data sets has been purged from the JES system.</td>
<td></td>
</tr>
<tr>
<td>x5</td>
<td>Purge event. A job has been purged from the JES system.</td>
<td></td>
</tr>
<tr>
<td>x (the first byte in the exit record)</td>
<td>A if the event was created on a JES 2 system, or B if the event was created on a JES 3 system.</td>
<td></td>
</tr>
<tr>
<td>EVENT_READER</td>
<td>INTEGER</td>
<td>Event reader number. From EQERDRN.</td>
</tr>
</tbody>
</table>
### OPC data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVENTS</td>
<td>INTEGER</td>
<td>Number of automatic operation events. This is the count of TRLEVDAT.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The OPC MVS System ID as indicated in the collect job.</td>
</tr>
<tr>
<td>PROCESSING_NODE</td>
<td>CHAR(8)</td>
<td>Network job entry (NJE) processing node name. This is present only for job start events (A2 or B2). From EXRNNJE.</td>
</tr>
<tr>
<td>PROCESS_TOT_SEC</td>
<td>FLOAT</td>
<td>Total OPC processing time, in seconds. This is the time that elapsed from the time an event was written to an event data set to the time OPC finished processing the event. This column is valid only if the two timestamps used to calculate the process time are taken from the same processor or if the processor clocks involved are synchronized in a sysplex environment. Calculated as the sum of (TRLEVDAT and TRLEVTIM) − (EXRDATE and EXRTIME).</td>
</tr>
<tr>
<td>TRACK_TOT_SEC</td>
<td>FLOAT</td>
<td>Total tracking time, in seconds. This is the total time that elapsed from the time an automatic operation event occurred to the time the event record was written to an event data set. Calculated as the sum of (EXREDATE and EXRETIME) − (EXRDATE and EXRTIME); or (EXRSDATE and EXRSTIME) − (EXRDATE and EXRTIME); or (EXRRDATE and EXRRTIME) − (EXRDATE and EXRTIME).</td>
</tr>
</tbody>
</table>
These tables provide daily and monthly statistics on application occurrences and operations in the OPC current plan. It contains data from the OPC current-plan record type 3C (CPLREC3C) and type 3P (CPLREC3P), which are valid only from OPC/ESA Release 2.1.

These tables are updated by the OPC_WORKSTATION lookup table.

The default retention periods for these tables are:
OPC_CURRENT_PLAN_D 30 days
OPC_CURRENT_PLAN_M 765 days

<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 when the application occurrences or operations were processed. For the _M table, this is the date of the first day of the month. From CPLIADOC or CPLIADOP.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, CPLIADOC, and CPLIATOC from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>APPL_OWNER_ID</td>
<td>CHAR(16)</td>
<td>Application owner ID. This is set to $MISSING for operations. From CPLOIDOC.</td>
</tr>
<tr>
<td>APPLICATION_ID</td>
<td>CHAR(16)</td>
<td>Application ID related to the occurrence or operation. From CPLADIOC or CPLADIOP.</td>
</tr>
<tr>
<td>PRIORITY</td>
<td>CHAR(1)</td>
<td>Priority of the application occurrence or operation. From CPLPRIOC or CPLPRIOP.</td>
</tr>
<tr>
<td>EVENT_TYPE</td>
<td>CHAR(1)</td>
<td>Application occurrence or operation event type (C or P). From CPLEYE3P or CPLEYE3C.</td>
</tr>
<tr>
<td>WORKSTATION_TYPE</td>
<td>CHAR(8)</td>
<td>Type of workstation for the operation event. This is set to $MISSING for application occurrences. From WORKSTATION_TYPE in the OPC_WORKSTATION lookup table. This is derived using fields TRLLOGID and CPLWSOP from the record as key.</td>
</tr>
<tr>
<td>DEADLINE_MISSES</td>
<td>FLOAT</td>
<td>Number of application occurrences or operations that were late. This is the number of records where CPLACDOC and CPLACTOC are greater than CPLDLDOC and CPLDLTOC, or where CPLAEDOP and CPLAETOP are greater than CPLPEDOP and CPLPETOP.</td>
</tr>
<tr>
<td>JOBS_DELETED</td>
<td>FLOAT</td>
<td>Total number of deleted jobs. This is the count of state code D in CPLCSTOP.</td>
</tr>
<tr>
<td>JOBS_FAILED</td>
<td>FLOAT</td>
<td>Total number of failed jobs. This is the count of state code E in CPLCSTOP.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The OPC MVS System ID as indicated in the collect job.</td>
</tr>
<tr>
<td>OCCUR_TOTAL</td>
<td>FLOAT</td>
<td>Total number of occurrences or operations. This is the count of CPLIADOC or CPLIADOP.</td>
</tr>
</tbody>
</table>
These tables provide daily and monthly statistics on OPC modify current plan (MCP) events. They contain data from the OPC track log record type 24 (TRLBDY24).

The default retention periods for these tables are:
- OPC_MCP_D: 30 days
- OPC_MCP_M: 765 days

### Column name | Data type | Description
--- | --- | ---
DATE | DATE | Date when the MCP operation events were processed. For the _M table, this is the date of the first day of the month. From TRLEVDAT.
PERIOD_NAME | CHAR(8) | Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.
OPC_SYSTEM_ID | CHAR(2) | ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.
APPLICATION_NAME | CHAR(16) | Name of the application. From MT0AID.
MCP_TYPE | CHAR(18) | Description of the type of MCP function. From MT0TYPE. This can be one of these:

<table>
<thead>
<tr>
<th>Description</th>
<th>Type code</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCCURRENCE ADD</td>
<td>1</td>
</tr>
<tr>
<td>OCCURRENCE RERUN</td>
<td>2</td>
</tr>
<tr>
<td>OCC/OP DATA CHANGE</td>
<td>3</td>
</tr>
<tr>
<td>OCCURRENCE DELETE</td>
<td>4</td>
</tr>
<tr>
<td>CHANGE REPORT ATTR</td>
<td>6</td>
</tr>
<tr>
<td>SET OPER TO WAIT</td>
<td>7</td>
</tr>
<tr>
<td>SET OPER TO COMP</td>
<td>8</td>
</tr>
<tr>
<td>VARY WS STATUS</td>
<td>9</td>
</tr>
<tr>
<td>GROUP MODIFICATION</td>
<td>G</td>
</tr>
<tr>
<td>UNKNOWN MCP TYPE</td>
<td>Not 1-8</td>
</tr>
</tbody>
</table>

JOB_NAME | CHAR(8) | Name of the job. If the job name cannot be obtained, this is set to $MISSING. For OCCURRENCE RERUN events, the job name can only be obtained in some cases. From MTDJOBN.
OPERATION_NO | INTEGER | Operation number for OCCURRENCE RERUN events. For all other events, this is set to 0. From MTDOPER2.
ARC_CALLS | INTEGER | Number of autorecovery calls to the MCP. This is the number of records where MCPCALLER is A.
DLG_CALLS | INTEGER | Number of dialog calls to the MCP. This is the number of records where MCPCALLER is blank or missing.
ETT_CALLS | INTEGER | Number of event triggered tracking (ETT) calls to the MCP. This is the number of records where MCPCALLER is E.
MCP_EVENTS | INTEGER | Number of MCP events that occurred. This is the count of TRLEVDAT.
MVS_SYSTEM_ID | CHAR(4) | The OPC MVS System ID as indicated in the collect job.
PIF_CALLS | INTEGER | Number of program interface (PIF) calls to the MCP. This is the number of records where MCPCALLER is P.
These tables provide daily and monthly statistics on OPC missed-feedback events by application and workstation. They contain data from the OPC track log record type 27 (TRLBDY27).

The default retention periods for these tables are:
- **OPC_MISSED_FB_D**: 30 days
- **OPC_MISSED_FB_M**: 765 days

<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 when the missed-feedback operation events were processed. For the _M table, this is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC's own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>APPLICATION_NAME</td>
<td>CHAR(16)</td>
<td>Name of the application. From TRLAID27.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>CHAR(4)</td>
<td>Name of the workstation. From TRLOID27 (first 4 characters).</td>
</tr>
<tr>
<td>MISSED_FB_EVENTS</td>
<td>INTEGER</td>
<td>Number of missed-feedback events. This is the count of TRLEVDAT.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The OPC MVS System ID as indicated in the collect job.</td>
</tr>
<tr>
<td>OPER_ABOVE_LIMIT</td>
<td>INTEGER</td>
<td>Number of operations whose durations were above the limit for feedback. This is the count of records where the sum of (TRLEDUH27<em>60) + TRLEDUM27 is less than the sum of (TRLADUH27</em>60) + TRLADUM27.</td>
</tr>
<tr>
<td>OPER_BELOW_LIMIT</td>
<td>INTEGER</td>
<td>Number of operations whose durations were below the limit for feedback. This is the count of records where the sum of (TRLEDUH27<em>60) + TRLEDUM27 is greater than the sum of (TRLADUH27</em>60) + TRLADUM27.</td>
</tr>
</tbody>
</table>
**OPC data tables**

**OPC_OPER_EVENT_D, _M**

These tables provide daily and monthly statistics on OPC operation events processed at workstations. They contain consolidated data from the OPC_OPER_EVENT_T table, which contains data from the OPC track log record type 23 (TRLBDY23).

The default retention periods for these tables are:
- OPC_OPER_EVENT_D  30 days
- OPC_OPER_EVENT_M  765 days

<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 when the operation events were processed. For the _M table, this is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>APPL_OWNER_ID</td>
<td>CHAR(16)</td>
<td>Application owner ID. From TRLOWI23.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>CHAR(4)</td>
<td>Name of the workstation. From TRLWSN23.</td>
</tr>
</tbody>
</table>
| OPERATION_EVENT        | CHAR(1)   | Code for the type of operation event processed. From TRLEVT23. This can be one of these:
  - Oper event code   | Description                        |
  - A               | Wait for arrival                   |
  - C               | Completed                          |
  - E               | Ended-in-error                     |
  - I               | Interrupted                        |
  - R               | Ready                              |
  - S               | Started                            |
  - U               | Undecided                          |
  - W               | Waiting                            |
  - X               | Reset                              |
  - *               | Rdy prev ws nonrep                 |
  - Not any of above | Unknown                            |
| ERROR_CODE             | CHAR(4)   | Reported error code for the operation event processed. From TRLERC23.        |
| DURATION_TOT_HOURS     | FLOAT     | Total duration of the operation events processed, in hours. Calculated as the sum of TRLDURH23 + TRLDURM23/60, where TRLDURH23 is the first 4 characters of TRLDUR23, and TRLDURM23 is the last 2 characters of TRLDUR23. |
| MVS_SYSTEM_ID          | CHAR(4)   | The OPC MVS System ID as indicated in the collect job.                      |
| OPERATIONS_TOT         | FLOAT     | Total number of operation events processed. This is the count of records where TRLEVT23 is E (Ended-in-error) or C (Completed). |
**OPCOPER_EVENT_T**

This table provides detailed information about OPC operation events processed at workstations. It contains data from the OPC track log record type 23 (TRLBDY23).

The default retention periods for this table are:
- All operation events are retained for at least 7 days.
- All operation events that ended in error are retained for at least 45 days.
- The maximum retention period for all operation events is 765 days.
- A specified number of rows for the same event (job) is always retained. This is set by the DRLEOPCP utility program contained in the DRLJOPCP purge-preparation job.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMESTAMP</td>
<td>k TIMESTAMP</td>
<td>Date and time when the operation event was processed. From TRLEVDAT and TRLEVTIM.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>k CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>APPLICATION_NAME</td>
<td>k CHAR(16)</td>
<td>Application name. From TRLADI23.</td>
</tr>
<tr>
<td>APPL_OWNER_ID</td>
<td>k CHAR(16)</td>
<td>Application owner ID. From TRLOWI23.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>k CHAR(4)</td>
<td>Name of the workstation. From TRLWSN23.</td>
</tr>
<tr>
<td>DURATION_HOURS</td>
<td>FLOAT</td>
<td>Reported duration of the operation event processed, in hours. Calculated as TRLDURH23 + TRLDURM23/60, where TRLDURH23 is the first 4 characters of TRLDUR23, and TRLDURM23 is the last 2 characters of TRLDUR23.</td>
</tr>
<tr>
<td>ERROR_CODE</td>
<td>CHAR(4)</td>
<td>Reported error code for the operation event processed. From TRLERC23.</td>
</tr>
<tr>
<td>JOB_NAME</td>
<td>CHAR(8)</td>
<td>Name of the job that was processed. From TRLJBN23.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>The OPC MVS System ID as indicated in the collect job.</td>
</tr>
<tr>
<td>OPERATION_EVENT</td>
<td>CHAR(1)</td>
<td>Code for the type of OPC operation event processed. From TRLEVT23. This can be one of these:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oper event code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Wait for arrival</td>
</tr>
<tr>
<td>C</td>
<td>Completed</td>
</tr>
<tr>
<td>E</td>
<td>Ended-in-error</td>
</tr>
<tr>
<td>I</td>
<td>Interrupted</td>
</tr>
<tr>
<td>R</td>
<td>Ready</td>
</tr>
<tr>
<td>S</td>
<td>Started</td>
</tr>
<tr>
<td>U</td>
<td>Undecided</td>
</tr>
<tr>
<td>W</td>
<td>Waiting</td>
</tr>
<tr>
<td>X</td>
<td>Reset</td>
</tr>
<tr>
<td>*</td>
<td>Rdy prev ws nonrep</td>
</tr>
<tr>
<td>Not any of above</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

---

Chapter 37. Data tables, views, and lookup tables 263
<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPER_STATUS_DESCR</td>
<td>VARCHAR(18)</td>
<td>Description of the code for the operation status (operation event) at the workstation. From TRLEVT23. This can be one of these:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wait for arrival</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ended-in-error</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interrupted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ready</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undecided</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waiting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rdy prev ws nonrep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown</td>
</tr>
<tr>
<td>PURGE_FLAG</td>
<td>CHAR(1)</td>
<td>Flag for setting the purge condition for this table. This can be 1 or 0 but is initially set to 0. The utility program DRLEOPCP contained in the OPC component purge-preparation job DRLJOPCP can set this flag to 1 for all but the latest specified number of rows for the same event (job).</td>
</tr>
</tbody>
</table>
Views

This section describes the views for the OPC component.

**OPC_OPER_EVENT_DV1**

This view provides daily statistics on the total number of OPC operation events and the total duration hours for these events per workstation. It is based on the OPC_OPER_EVENT_D table.

<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 operation events were processed. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>k CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>k CHAR(4)</td>
<td>Name of the workstation. From TRLWSN23.</td>
</tr>
</tbody>
</table>

Note: Aside from the key columns described here, this view also contains all the data columns described in "OPC_OPER_EVENT_D, _M" on page 262.
## OPC_OPER_EVENT_DV2

This view provides daily statistics on the total number of OPC operation events and the total duration hours for these events per workstation and error code. It is based on the OPC_OPER_EVENT_D table.

<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 when the operation events were processed. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>CHAR(4)</td>
<td>Name of the workstation. From TRLWSN23.</td>
</tr>
<tr>
<td>OPERATION_EVENT</td>
<td>CHAR(1)</td>
<td>Code for the type of operation event processed. From TRLEVT23. This can be one of these:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oper event code</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S</td>
</tr>
<tr>
<td></td>
<td></td>
<td>U</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not any of above</td>
</tr>
<tr>
<td>ERROR_CODE</td>
<td>CHAR(4)</td>
<td>Reported error code for the operation event processed. From TRLERC23.</td>
</tr>
</tbody>
</table>

### Note:
Aside from the key columns described here, this view also contains all the data columns described in "OPC_OPER_EVENT_D, _M" on page 262.
**OPC_OPER_EVENT_DV3**

This view provides daily statistics on the total number of OPC operation events and the total duration hours for these events. It is based on the OPC_OPER_EVENT_D table.

<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 when the operation events were processed. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
</tbody>
</table>

**Note:** Aside from the key columns described here, this view also contains all the data columns described in "OPC_OPER_EVENT_D, _M" on page 262.
OPC views

OPC_OPER_EVENT_MV1

This view provides monthly statistics on the total number of operation events and the total duration hours for these events per application owner. It is based on the OPC_OPER_EVENT_M table.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k</td>
<td>DATE Date when the operation events were processed. This is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k</td>
<td>CHAR(8) Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>k</td>
<td>CHAR(2) ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC's own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>APPL_OWNER_ID</td>
<td>k</td>
<td>CHAR(16) Application owner ID. From TRLOWI23.</td>
</tr>
</tbody>
</table>

Note: Aside from the key columns described here, this view also contains all the data columns described in “OPC_OPER_EVENT_D, _M” on page 262.
OPC_OPEREVENT_MV2

This view provides monthly statistics on the total number of operation events and the total duration hours for these events per application owner. It is based on the OPC_OPER_EVENT_M table.

<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 when the operation events were processed. This is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>CHAR(2)</td>
<td>ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>CHAR(4)</td>
<td>Name of the workstation. From TRLWSN23.</td>
</tr>
<tr>
<td>APPL_OWNER_ID</td>
<td>CHAR(16)</td>
<td>Application owner ID. From TRLOWI23.</td>
</tr>
<tr>
<td>OPERATION_EVENT</td>
<td>CHAR(1)</td>
<td>Code for the type of operation event processed. From TRLEVT23. This can be one of these:</td>
</tr>
<tr>
<td>Oper event code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Wait for arrival</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Ended-in-error</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Interrupted</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>Ready</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>Started</td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>Undecided</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Waiting</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Reset</td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>Rdy prev ws nonrep</td>
<td></td>
</tr>
<tr>
<td>Not any of above</td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

Note: Aside from the key columns described here, this view also contains all the data columns described in OPC_OPER_EVENT_D, _M" on page 262
OPC views

**OPC_OPER_EVENT_MV3**

This view provides monthly statistics on the total number of operation events and the total duration hours for these events. It is based on the OPC_OPER_EVENT_M table.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k</td>
<td>DATE Date when the operation events were processed. This is the date of the first day of the month. From TRLEVDAT.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>k</td>
<td>CHAR(8) Name of the period. This is derived using fields TRLLOGID, TRLEVDAT, and TRLEVTIM from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>k</td>
<td>CHAR(2) ID of the OPC system, which is specified with the LOGID parameter of the BATCHOPT initialization statement for OPC’s own batch jobs. From TRLLOGID.</td>
</tr>
</tbody>
</table>

Note: Aside from the key columns described here, this view also contains all the data columns described in "OPC_OPER_EVENT_D_M" on page 262.
Lookup tables

This section describes the lookup table specific to the OPC component.

**OPC_WORKSTATION**

This lookup table defines the type of workstation for each OPC workstation name. Only workstations of type CPU need to be defined in this table.

This table updates the `OPC_CURRENT_PLAN_D` and `OPC_CURRENT_PLAN_M` tables.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPC_SYSTEM_ID</td>
<td>k</td>
<td>ID of the OPC system. This can contain global search characters.</td>
</tr>
<tr>
<td>WORKSTATION_NAME</td>
<td>k</td>
<td>OPC workstation name. This can contain global search characters.</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>VARCHAR(32)</td>
<td>Description of the node.</td>
</tr>
<tr>
<td>WORKSTATION_TYPE</td>
<td>CHAR(8)</td>
<td>OPC workstation type.</td>
</tr>
</tbody>
</table>

**Example of table contents**

```
<table>
<thead>
<tr>
<th>OPC_SYSTEM_ID</th>
<th>WORKSTATION_NAME</th>
<th>WORKSTATION_TYPE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>CPU</td>
<td>CPU</td>
<td>The biggest mainframe</td>
</tr>
<tr>
<td>%</td>
<td>CPU_</td>
<td>CPU</td>
<td>Another mainframe</td>
</tr>
<tr>
<td>%</td>
<td>_PRT</td>
<td>PRT</td>
<td>All printer workstations</td>
</tr>
<tr>
<td>%</td>
<td>%</td>
<td>OTHER</td>
<td>All other workstations</td>
</tr>
</tbody>
</table>
```
OPC lookup tables
Chapter 38. Reports

The OPC component provides these reports:

- OPC operation events summary reports
  - OPC Operations Ended-in-error by Workstation report
  - OPC Operations Ended-in-error by Error Code report
  - OPC Operation Events by Application Owner ID report

- OPC operation events detail report
  - OPC Operation Complete/Ended-in-error Events report

- OPC execution history for specific job name report
  - OPC Operations for Specific Job Name report

- OPC modify current plan events summary reports
  - OPC Reruns per Application, Worst Case report
  - OPC Reruns by Operation Number, Worst Case report
  - OPC Number of Reruns, Monthly Trend report
  - OPC MCP Events per Caller, Monthly Overview report

- OPC missed-feedback report
  - OPC Missed-Feedback Operations, in Percent report

- OPC automatic workstation events report
  - OPC Number of Jobs Processed, Monthly Trend report

- OPC processing and tracking times statistics report
  - OPC Tracking Times by Event Type, Daily Trend report

- OPC service-level report
  - OPC Missed Deadline by Application Owner ID report
  - OPC Late-Job Statistics by Application Owner ID report
**OPC reports**

**OPC operation events summary reports**

The OPC operation events summary reports show statistics on operations that ended in error and operations that completed.

**OPC Operations Ended-in-error by Workstation report**

This report shows statistics on OPC operation events that ended in error. It shows the data per day and period, and by workstation.

This information identifies the report:

- **Report ID**: OPC01
- **Report group**: OPC reports
- **Source**: OPC_OPER_EVENT_D, OPC_OPER_EVENT_DV1
- **Attributes**: OPC, Operations, Workstation, Overview
- **Variables**: From_date, To_date, Period_name, OPC_system ID, Workstation_name

The report contains this information:

- **Date**: The date of the measurement. This is the date when the ended-in-error operation events occurred.
- **Period name**: The name of the period in which the ended-in-error operation events occurred.
- **Workstation**: The name of the workstation on which the ended-in-error operation events occurred.
- **Operations tot**: The total number of ended-in-error operation events processed for the workstation.
- **Duration tot (hours)**: The total duration, in hours, of the ended-in-error operation events processed for the workstation.

<table>
<thead>
<tr>
<th>Date</th>
<th>Period name</th>
<th>Workstation</th>
<th>Operations tot</th>
<th>Duration tot (hours)</th>
<th>Operations tot (%)</th>
<th>Duration tot (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-07-13</td>
<td>NIGHT</td>
<td>MBRA</td>
<td>1</td>
<td>0.12</td>
<td>0.9</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCPU</td>
<td>2</td>
<td>1.72</td>
<td>0.3</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MONL</td>
<td>3</td>
<td>2.77</td>
<td>1.9</td>
<td>10.4</td>
</tr>
<tr>
<td></td>
<td>PRIME</td>
<td>MCPU</td>
<td>8</td>
<td>0.17</td>
<td>4.0</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MONL</td>
<td>3</td>
<td>8.48</td>
<td>2.6</td>
<td>76.0</td>
</tr>
<tr>
<td>1999-07-14</td>
<td>NIGHT</td>
<td>MBRA</td>
<td>2</td>
<td>19.30</td>
<td>1.9</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCPU</td>
<td>2</td>
<td>0.03</td>
<td>0.6</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>PRIME</td>
<td>MBRA</td>
<td>5</td>
<td>0.27</td>
<td>3.1</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCPU</td>
<td>10</td>
<td>0.35</td>
<td>4.0</td>
<td>3.8</td>
</tr>
</tbody>
</table>

...  

2000-02-17  NIGHT CPU1 4 0.05 6.3 5.1

*Figure 96. Example of an OPC Operations Ended-in-error by Workstation report*

The report contains this information:
<table>
<thead>
<tr>
<th><strong>Operations (%)</strong></th>
<th>The number of ended-in-error operation events processed for the workstation, as a percentage of the total number of events that occurred on this date, period, and workstation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration (%)</strong></td>
<td>The duration of the ended-in-error operation events processed for the workstation, as a percentage of the total duration of all events that occurred on this date, period, and workstation.</td>
</tr>
</tbody>
</table>
**OPC Operations Ended-in-error by Error Code report**

This report shows statistics on OPC operation events that ended in error. It shows the data per day and period, and by error code and workstation.

This information identifies the report:

- **Report ID**: OPC02
- **Report group**: OPC reports
- **Source**: OPC_OPER_EVENT_D, OPC_OPER_EVENT_DV1
- **Attributes**: OPC, Operations, Workstation, Error, Code
- **Variables**: From_date, To_date, Period_name, OPC_system_ID, Workstation_name

The report contains this information:

- **Date**: The date of the measurement. This is the date when the ended-in-error operation events occurred.

- **Period name**: The name of the period in which the ended-in-error operation events occurred.

- **Workstation**: The name of the workstation on which the ended-in-error operation events occurred.

- **Error code**: The error code set by OPC for the ended-in-error operation event processed for the workstation.
<table>
<thead>
<tr>
<th><strong>Operations tot</strong></th>
<th>The total number of operation events with this error code that were processed for the workstation.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration tot (hours)</strong></td>
<td>The total duration, in hours, of the operation events with this error code that were processed for the workstation.</td>
</tr>
<tr>
<td><strong>Error (%)</strong></td>
<td>The number of operation events with this error code that were processed for this workstation, as a percentage of the total number of events that occurred on this date, period, and workstation.</td>
</tr>
<tr>
<td><strong>Duration (%)</strong></td>
<td>The duration of the operation events with this error code that were processed for the workstation, as a percentage of the total duration of all events that occurred on this date, period, and workstation.</td>
</tr>
</tbody>
</table>
OPC reports

OPC Operation Events by Application Owner ID report

This report shows statistics on OPC operation events for a given month and period. It shows the data by application owner and workstation.

This information identifies the report:

Report ID: OPC03
Report group: OPC reports
Source: OPC_OPER_EVENT_M, OPC_OPER_EVENT_MV3
Attributes: OPC, Operations, Application, Owner, Workstation
Variables: Month, Period_name, OPC_system_ID, Appl_owner_ID, Workstation_name

The report contains this information:

Application owner
The application owner ID associated with the operation events.

Workstation
The name of the workstation on which the operation events occurred.

Operation event
The code for the type of operation event processed. This can be C for an operation event that completed, or E for an operation event that ended in error.

Operations tot
The total number of operation events of this type that were processed for the workstation and application owner.

Figure 98. Example of an OPC Operation Events by Application Owner ID report

<table>
<thead>
<tr>
<th>Application owner</th>
<th>Workstation</th>
<th>Operation event</th>
<th>Operations tot</th>
<th>Duration (hours)</th>
<th>Operations (%)</th>
<th>Duration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMW</td>
<td>MBRA</td>
<td>C</td>
<td>2</td>
<td>0.22</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>2</td>
<td>0.22</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>CICS</td>
<td>DUMM</td>
<td>C</td>
<td>2</td>
<td>0.00</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>MBRA</td>
<td>C</td>
<td>17</td>
<td>0.28</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>19</td>
<td>0.28</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>ECODEX</td>
<td>DUMM</td>
<td>C</td>
<td>7</td>
<td>0.00</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>MBRA</td>
<td>C</td>
<td>4</td>
<td>86.00</td>
<td>0.1</td>
<td>29.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>11</td>
<td>86.00</td>
<td>0.3</td>
<td>29.8</td>
</tr>
<tr>
<td>STGL</td>
<td>DUMM</td>
<td>C</td>
<td>1</td>
<td>0.00</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>IPPOP</td>
<td>C</td>
<td>1</td>
<td>0.00</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>MBRA</td>
<td>C</td>
<td>150</td>
<td>5.72</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td></td>
<td>4</td>
<td>0.42</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>USER</td>
<td>C</td>
<td>4</td>
<td>0.00</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>**</td>
<td>160</td>
<td>6.13</td>
<td>4.3</td>
<td>2.1</td>
</tr>
<tr>
<td>TAYL</td>
<td>MBRA</td>
<td>C</td>
<td>2</td>
<td>0.03</td>
<td>0.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: OPC03

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<table>
<thead>
<tr>
<th><strong>Duration tot (hours)</strong></th>
<th>The total duration, in hours, of the operation events of this type that were processed for the workstation and application owner.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operations (%)</strong></td>
<td>The number of operation events of this type that were processed for the workstation and application owner, as a percentage of the total number of events that occurred on this month and period.</td>
</tr>
<tr>
<td><strong>Duration (%)</strong></td>
<td>The duration of the operation events of this type that were processed for the workstation and application owner, as a percentage of the total duration of all events that occurred on this month and period.</td>
</tr>
</tbody>
</table>
OPC reports

OPC operation events detail report

The OPC operation events detail report lists the operations that completed or ended in error.

OPC Operation Complete/Ended-in-error Events report

This report shows detailed statistics on OPC operation events that completed or ended in error. It shows the data by date and time, and gives the workstation, application owner, and job name associated with the operation event.

This information identifies the report:

**Report ID** OPC04

**Report group** OPC reports

**Source** OPC_OPER_EVENT_T

**Attributes** OPC, Operations, Application, Workstation, Detail, Event

**Variables** Operation_event, From_date, To_date, Workstation_name, Appl_owner_ID, Job_name, OPC_system_ID, Error_code.

Variables Appl_owner_ID and Job_name can contain global search characters.

OPC Operation Complete/Ended-in-error Events

OPC System: '01'

Operation Event: OPERATION_EVENT

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Workstation</th>
<th>Application owner ID</th>
<th>Job name</th>
<th>Duration</th>
<th>Error code</th>
<th>Operation event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-09-07</td>
<td>00.03.04</td>
<td>MCPU 00/791</td>
<td>A800265C</td>
<td></td>
<td>0.07</td>
<td>0000</td>
<td>C</td>
</tr>
<tr>
<td>00.03.04</td>
<td>MCPU 00/791</td>
<td>A000265C</td>
<td>0.07</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.03.06</td>
<td>MCPU 01/030</td>
<td>V03373</td>
<td></td>
<td>0.07</td>
<td>0000</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>00.14.47</td>
<td>MCPU 01/030</td>
<td>A04117</td>
<td>0.37</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.16.19</td>
<td>MCPU 00/791</td>
<td>A00069Q</td>
<td>0.03</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.16.19</td>
<td>MCPU 00/791</td>
<td>A00069Q</td>
<td>0.03</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.16.31</td>
<td>MCPU 00/731</td>
<td>X009999</td>
<td>0.02</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.16.31</td>
<td>MCPU 00/731</td>
<td>X009999</td>
<td>0.02</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
<tr>
<td>00.16.35</td>
<td>MCPU 00/731</td>
<td>MG09001</td>
<td>0.02</td>
<td>0000</td>
<td>C</td>
<td>Operation_event</td>
<td></td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report OPC04

*Figure 99. Example of an OPC Operation Complete/Ended-in-error Events report*

The report contains this information:

**Date**

The date of the measurement. This is the date when the operation events occurred.

**Time**

The time of the measurement. This is the time when the operation event occurred.

**Workstation**

The name of the workstation on which the operation event occurred.

**Application owner ID**

The application owner ID associated with the operation event processed.

**Job name**

The name of the job associated with the operation event processed.
**Duration hours**  The reported duration of the operation event processed, in hours.

**Error code**  The error code set by OPC for the operation event processed.

**Operation event**  The code for the type of operation event processed. This can be C for an operation event that completed, or E for an operation event that ended in error.
**OPC execution history for specific job name report**

The OPC execution history for specific job name report shows detailed statistics on operation events processed for a specific job.

**OPC Operations for Specific Job Name report**

This report shows detailed statistics on OPC operation events for a specific job name. It shows the data by date and time, and gives the workstation and application name associated with the operation event.

This information identifies the report:

- **Report ID**: OPC05
- **Report group**: OPC Reports
- **Source**: OPC_OPER_EVENT_T
- **Attributes**: OPC, Operations, Application, Workstation, Jobs
- **Variables**: From_date, To_date, Job_name, OPC_system_ID

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Workstation</th>
<th>Application name</th>
<th>Operation event</th>
<th>Error code</th>
<th>Duration (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-07-13</td>
<td>14.10.50 MBRA</td>
<td>$$HAKALOHN</td>
<td>C</td>
<td>0000</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>2000-07-14</td>
<td>14.14.53 MBRA</td>
<td>$$HAKALOHN</td>
<td>E</td>
<td>S214</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>2000-07-14</td>
<td>14.28.53 MBRA</td>
<td>$$HAKALOHN</td>
<td>E</td>
<td>JCLI</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>2000-07-14</td>
<td>14.31.34 MBRA</td>
<td>$$HAKALOHN</td>
<td>C</td>
<td>0000</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 100. Example of an OPC Operations for Specific Job Name report**

The report contains this information:

- **Date**: The date of the measurement. This is the date when the operation event occurred.
- **Time**: The time of the measurement. This is the time when the operation event occurred.
- **Workstation**: The name of the workstation on which the operation event occurred.
- **Application name**: The name of the application associated with the operation event processed.
- **Operation event**: The code for the type of operation event processed. This can be C for an operation event that completed, or E for an operation event that ended in error.
- **Error code**: The error code set by OPC for the operation event processed.
- **Duration (hours)**: The reported duration of the operation event processed, in hours.
OPC modify current plan events summary reports

The OPC modify current plan events summary reports show the number of reruns per application, and an overview of the MCP events processed per caller.

OPC Reruns per Application, Worst Case report

This report shows the number of reruns (from MCP events) that occurred for a selected time period. It shows the number of reruns per application in descending order.

This information identifies the report:

- **Report ID**: OPC06
- **Report group**: OPC reports
- **Source**: OPC_MCP_D
- **Attributes**: OPC, Operations, Worst, Case, Reruns, MCP
- **Variables**: From_date, To_date, OPC_system_ID, Maxrows

<table>
<thead>
<tr>
<th>Application name</th>
<th>Reruns</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJE1B0QTR</td>
<td>4</td>
</tr>
<tr>
<td>AJ01482</td>
<td>3</td>
</tr>
<tr>
<td>AJ02892</td>
<td>2</td>
</tr>
<tr>
<td>AJ03668</td>
<td>2</td>
</tr>
<tr>
<td>ICSCOMUPDATE</td>
<td>2</td>
</tr>
<tr>
<td>SMFE</td>
<td>2</td>
</tr>
</tbody>
</table>

Figure 101. Example of an OPC Reruns per Application, Worst Case report

The report contains this information:

- **Application name**: The name of the application on which the reruns were recorded.
- **Reruns**: The number of reruns recorded for the application.
**OPC Reruns by Operation Number, Worst Case report**

This report shows the number of reruns (from MCP events) by operation number and application. The job name is also shown. If the job name cannot be determined, it is shown as missing.

Operations with status code R or W are selected. The operation number indicates from where an application is restarted.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>OPC14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>OPC reports</td>
</tr>
<tr>
<td>Source</td>
<td>OPC_MCP_D</td>
</tr>
<tr>
<td>Attributes</td>
<td>OPC, Operations, Worst, Case, Reruns, MCP</td>
</tr>
<tr>
<td>Variables</td>
<td>From date, To date, OPC system ID, Maxrows</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application name</th>
<th>Operation number</th>
<th>Jobname</th>
<th>Reruns</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVJ034</td>
<td>10</td>
<td>AVJOB12</td>
<td>3</td>
</tr>
<tr>
<td>AVJFGHT</td>
<td>25</td>
<td>$MISSING</td>
<td>3</td>
</tr>
<tr>
<td>AX01345</td>
<td>50</td>
<td>$MISSING</td>
<td>2</td>
</tr>
<tr>
<td>A123P</td>
<td>15</td>
<td>A1JOB17</td>
<td>2</td>
</tr>
<tr>
<td>AJOZXY0</td>
<td>20</td>
<td>$MISSING</td>
<td>2</td>
</tr>
<tr>
<td>AJOZERT</td>
<td>42</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>MJIHALRTCLENEU</td>
<td>40</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>AJ03796</td>
<td>10</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>EM101CD</td>
<td>10</td>
<td>A1JOB34</td>
<td>1</td>
</tr>
<tr>
<td>XYZOSR07</td>
<td>10</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>XYDEB2R0</td>
<td>10</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>YYJO3050</td>
<td>22</td>
<td>YYJOB322</td>
<td>1</td>
</tr>
<tr>
<td>YYJLJW35</td>
<td>25</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>VJ0075TESTRUNS</td>
<td>30</td>
<td>$MISSING</td>
<td>1</td>
</tr>
<tr>
<td>YYJRL23</td>
<td>15</td>
<td>$MISSING</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 102. Example of an OPC Reruns by Operation Number, Worst Case report

The report contains this information:

- **Application name**: The name of the application on which the reruns were recorded.
- **Operation number**: The operation number, which indicates from where an application is restarted.
- **Jobname**: Name of the job. $MISSING means that the job name could not be determined.
- **Reruns**: The number of reruns recorded for the application.
OPC Number of Reruns, Monthly Trend report

This graphic report shows the number of reruns (from MCP events) that occurred for a selected month.

This information identifies the report:

- **Report ID**: OPC07
- **Report group**: OPC reports
- **Source**: OPC_MCP_M
- **Attributes**: OPC, Graph, Operations, Trend, Reruns, MCP, Monthly
- **Variables**: From_month, To_month, OPC_system_ID

The report contains this information:

- **Month start date**: The date of the measurement. This is the date of the first day of the month when the reruns occurred.
- **Number of reruns**: The number of reruns that occurred.

*Figure 103. Example of an OPC Number of Reruns, Monthly Trend report*
OPC MCP Events per Caller, Monthly Overview report

This report shows the distribution of MCP events per MCP type for a selected month. Because MCP events are changes to the preplanned production, increasing numbers of MCP events, specially reruns, give an early warning that the planning is not working well.

This information identifies the report:

**Report ID** OPC08  
**Report group** OPC reports  
**Source** OPC_MCP_M  
**Attributes** OPC, Operations, MCP, Events, Caller  
**Variables** From_month, To_month, OPC_system_ID

The report contains this information:

- **Month start date**: The date of the measurement. This is the date of the first day of the month when the MCP events occurred.
- **MCP type**: The type of MCP event. This is a descriptive text of the MCP function code derived from the OPC_MCP_TYPE lookup table.
- **MCP events**: The number of MCP events that occurred.
- **DLG (%)**: The number of dialog calls to the MCP, as a percentage of the number of MCP events. Calculated as: 100 * DLG_CALLS / MCP_EVENTS.
- **ETT (%)**: The number of event triggered tracking calls to the MCP, as a percentage of the number of MCP events. Calculated as: 100 * ETT_CALLS / MCP_EVENTS.
- **PIF (%)**: The number of program interface calls to the MCP, as a percentage of the number of MCP events. Calculated as: 100 * PIF_CALLS / MCP_EVENTS.
- **ARC (%)**: The number of autorecovery calls to the MCP, as a percentage of the number of MCP events. Calculated as: 100 * ARC_CALLS / MCP_EVENTS.

<table>
<thead>
<tr>
<th>Month start date</th>
<th>MCP type</th>
<th>MCP events</th>
<th>DLG (%)</th>
<th>ETT (%)</th>
<th>PIF (%)</th>
<th>ARC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-07-01</td>
<td>OCC/OP DATA CHANGE</td>
<td>45</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>18.1</td>
</tr>
<tr>
<td></td>
<td>OCCURRENCE ADD</td>
<td>152</td>
<td>0.0</td>
<td>61.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>OCCURRENCE DELETE</td>
<td>15</td>
<td>0.4</td>
<td>0.0</td>
<td>6.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>OCCURRENCE RERUN</td>
<td>36</td>
<td>14.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>SET OPER. TO COMP</td>
<td>1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 104. Example of an OPC MCP Events per Caller, Monthly Overview report
OPC missed-feedback report

The OPC missed-feedback report shows the percentage of missed-feedback operations that occurred at each workstation.

OPC Missed-Feedback Operations, in Percent report

This report shows the percentage of missed-feedback operation events that occurred at each workstation for a selected day and period. You can use it to give an estimated duration of an operation to OPC with upper and lower limits.

This information identifies the report:

- **Report ID**: OPC09
- **Report group**: OPC reports
- **Source**: OPC_MISSED_FB_D, OPC_OPER_EVENT_DV2
- **Attributes**: OPC, Operations, Missed, Feedback, Overview
- **Variables**: Date, Period_name, OPC_system_ID

<table>
<thead>
<tr>
<th>Period name</th>
<th>Workstation</th>
<th>Missed FB (%)</th>
<th>Missed FB above (%)</th>
<th>Missed FB below (%)</th>
<th>Oper above limit</th>
<th>Oper below limit</th>
<th>Operations tot</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIGHT</td>
<td>MBRA</td>
<td>15.79</td>
<td>10.53</td>
<td>5.26</td>
<td>2</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>PRT1</td>
<td>3.70</td>
<td>3.70</td>
<td>0.00</td>
<td>1</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>MCPU</td>
<td>1.88</td>
<td>1.46</td>
<td>0.42</td>
<td>7</td>
<td>2</td>
<td>478</td>
</tr>
<tr>
<td></td>
<td>MONL</td>
<td>1.73</td>
<td>0.58</td>
<td>1.16</td>
<td>1</td>
<td>2</td>
<td>173</td>
</tr>
</tbody>
</table>

* 11 5 697

Figure 105. Example of an OPC Missed-Feedback Operations, in Percent report

The report contains this information:

- **Period name**: The name of the period in which the missed-feedback operation events occurred.
- **Workstation**: The name of the workstation on which the missed-feedback operation events occurred.
- **Missed FB (%)**: The number of missed-feedback operation events, as a percentage of the total number of operation events processed on this date, period, and workstation. Calculated as: 100 * MISSED_FB_EVENTS / OPERATIONS_TOT.
- **Missed FB above (%)**: The number of missed-feedback operation events whose durations were above the limit for feedback, as a percentage of the total number of operation events processed on this date, period, and workstation. Calculated as: 100 * OPER_ABOVE_LIMIT / OPERATIONS_TOT.
- **Missed FB below (%)**: The number of missed-feedback operation events...
OPC reports

whose duration times were below the limit for feedback, as a percentage of the total number of operation events processed on this date, period, and workstation. Calculated as: 100 * OPER_BELOW_LIMIT / OPERATIONS_TOT.

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oper above limit</td>
<td>The number of operation events whose durations were above the limit for feedback.</td>
</tr>
<tr>
<td>Oper below limit</td>
<td>The number of operation events whose durations were below the limit for feedback.</td>
</tr>
<tr>
<td>Operations tot</td>
<td>The total number of operation events processed.</td>
</tr>
</tbody>
</table>
OPC automatic workstation events report

The OPC automatic workstation events report graphically shows the number of OPC-controlled jobs compared to the total number of jobs processed.

OPC Number of Jobs Processed, Monthly Trend report

This graphic report shows the number of OPC-controlled jobs (automatic operation events) processed in relation to the total number of jobs processed on the system.

Note: You can create this report only if the MVS component is installed.

This information identifies the report:

- **Report ID**: OPC10
- **Report group**: OPC reports
- **Source**: MVS_ADDRSPACE_M, OPC_AUTO_EVENT_M
- **Attributes**: OPC, Operations, Jobs, Workstation, Graph
- **Variables**: From_month, To_month, Processing_node, OPC_system_ID, OPC_node

The report contains this information:

- **Month start date**: The date of the measurement. This is date of the
**OPC reports**

First day of the month when the automatic operation events or jobs were processed.

**OPC jobs**
The number of OPC-controlled jobs (automatic operation events) processed on the system.

**Tot jobs**
The total number of jobs processed on the system.
**OPC processing and tracking times reports**

The OPC processing and tracking times report graphically shows the daily average tracking times for a specific automatic operation event processed.

**OPC Tracking Times by Event Type, Daily Trend report**

This graphic report shows the average tracking times (per day on a given time period) for a specified automatic operation event.

This information identifies the report:

- **Report ID**: OPC11
- **Report group**: OPC reports
- **Source**: OPC_AUTO_EVENT_D
- **Attributes**: OPC, Operations, Tracking, Times, Trend
- **Variables**: From_date, To_date, OPC_system_ID, OPC_node, Event_reader

![OPC Tracking Times by Event Type, Daily Trend report](image)

*Figure 107. Example of an OPC Tracking Times by Event Type, Daily Trend report*

The report contains this information:

- **Date**: The date of the measurement. This is the date when the automatic operation events of this specified type were processed.
- **Track time (avg)**: The average tracking time, in seconds. This is the
time that elapsed from the time the automatic operation event occurred to the time the event record was written to an event data set. Calculated as: TRACK_TOT_SEC / EVENTS.
OPC service-level reports

The OPC service-level reports show the applications that missed their deadlines, and statistics on late jobs.

OPC Missed Deadline by Application Owner ID report

This report shows the applications (or application occurrences in the OPC current plan) that missed their deadlines for a given month.

This information identifies the report:

- **Report ID**: OPC12
- **Report group**: OPC reports
- **Source**: OPC_CURRENT_PLAN_M
- **Attributes**: OPC, Operations, Missed, Application
- **Variables**: Month (format AAAA-MM-01), Priority, Maxrows, OPC_system_ID

Here is an example of the report:

```
Application owner ID  Priority  Deadline misses (%)  Deadline misses  Occurrences
---------------------- -------- ------------------ ------------------ -------
CLE                   5        100.0              5                 5
GDT                   5        100.0              1                 1
GLJ                   6        100.0              1                 1
KPN                   5        100.0              9                 9
KPN                   6        100.0              1                 1
KPN                   8        100.0              4                 4
```

Figure 108. Example of an OPC Missed Deadline by Application Owner ID report

The report contains this information:

- **Application owner ID**: The application owner ID that missed the deadline.
- **Priority**: The priority of the application.
- **Deadline misses (%)**: The number of applications (or application occurrences) processed that missed the deadline, as a percentage of the total number of application occurrences processed. Calculated as:
  \[ 100 \times \frac{\text{DEADLINE_MISSES}}{\text{OCCUR_TOTAL}}. \]
- **Deadline misses**: The number of applications (or application occurrences) processed that missed the deadline.
- **Occurrences**: The total number of application occurrences processed.
OPC Late-Job Statistics by Application Owner ID report

This report shows by application owner ID statistics on OPC late jobs, failed jobs, and deleted jobs for a given month.

This information identifies the report:

Report ID: OPC13
Report group: OPC reports
Source: OPC_CURRENT_PLAN_M
Attributes: OPC, Operations, Missed, Batch_job
Variables: Month (format AAAA-MM-01), OPC system ID, Priority

<table>
<thead>
<tr>
<th>Application owner ID</th>
<th>Priority</th>
<th>Late jobs (%)</th>
<th>Late jobs</th>
<th>Total jobs</th>
<th>Failed jobs</th>
<th>Deleted jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLE</td>
<td>5</td>
<td>28.6</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>28.6</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GDT</td>
<td>5</td>
<td>0.0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>0.0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GLJ</td>
<td>9</td>
<td>0.0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>33.3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>16.7</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

XPN

<table>
<thead>
<tr>
<th>Application owner ID</th>
<th>Priority</th>
<th>Late jobs (%)</th>
<th>Late jobs</th>
<th>Total jobs</th>
<th>Failed jobs</th>
<th>Deleted jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>19.2</td>
<td>5</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0.0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>29.4</td>
<td>30</td>
<td>102</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0.0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>9.7</td>
<td>35</td>
<td>137</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

YOE747

<table>
<thead>
<tr>
<th>Application owner ID</th>
<th>Priority</th>
<th>Late jobs (%)</th>
<th>Late jobs</th>
<th>Total jobs</th>
<th>Failed jobs</th>
<th>Deleted jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>0.0</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0.0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>100.0</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>33.3</td>
<td>5</td>
<td>15</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The report contains this information:

**Application owner ID**

The application owner ID on which the job statistics were recorded.

**Priority**

The priority of the job.

**Late jobs (%)**

The number of late jobs processed for this combination of application owner ID/priority as a
percentage of the total number of jobs processed. Calculated as: 100 * DEADLINE_MISSES / OCCUR_TOTAL.

**Late jobs**
The number of late jobs processed for this combination of application owner ID/priority.

**Total jobs**
The total number of jobs processed for this combination of application owner ID/priority.

**Failed jobs**
The number of failed jobs processed for this job combination of application owner ID/priority.

**Deleted jobs**
The number of deleted jobs for this job combination of application owner ID/priority.
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Chapter 39. Customization

Before you can use the RACF component to collect data and create useful reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the RACF component:

1. Make input data available.
2. Review the DRLJCQLL job.
3. Update lookup tables.

Make input data available

Ensure that the input data records are present in the input log.

The RACF component accepts RACF records written in SMF format under MVS and VM.

Make MVS data available

To make MVS RACF data available:

1. Check that SMF record type 80 is not suppressed by any SMF parameter or exit.
2. Ensure that the desired auditing and logging options are activated in RACF, for the associated resource classes (SETROPTS). Refer to the Resource Access Control Facility (RACF) Security Administrator’s Guide.
3. Change the installation data field in RACF user and group profiles, so that reports are directed to the right person or department. This step is optional. All RACF profiles contain an OWNER field. This field establishes the profile ownership within RACF. It contains a user ID or a group name. Tivoli Decision Support for OS/390 uses both the owner and the installation data field in the owner profile to find the responsible user for any resource, user, or group. For all RACF profiles where you want the reports sent to a user or department other than the owner of the resource, insert the string RESPUSER=xxxxxxxx (where xxxxxxxx is the responsible user) in the installation data field in the owner profile or see “Update RACF_USER OWNER and RACF_RES_OWNER tables” on page 300.

Note: The term “responsible user” is the name that Tivoli Decision Support for OS/390 uses to group information, and need not be the name of any RACF resource.

Make VM data available

When used on a VM system, RACF writes SMF records to a CMS file. You must transmit the CMS file to the MVS system on which you are running Tivoli Decision Support for OS/390.

RACF/VM SMF records must be reformatted with SMFCONV fn ft fm (where fn ft fm is your VM file name, file type, and file mode) to put them in the same format as the MVS RACF records.
Review the DRLJCOLL job

Before running the Tivoli Decision Support for OS/390 collect job, you should review the DRLJCOLL member, as described in “Setting up the collect job” in Volume I.

Update lookup tables

The RACF component uses several lookup tables to translate user IDs, classes, and resource names to responsible owners and security levels, and RACF event codes and qualifiers to event descriptions. Using the administration dialog, update the lookup tables to include parameters specific to your installation.

<table>
<thead>
<tr>
<th>Table name</th>
<th>Description</th>
<th>Key columns</th>
<th>Data columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>RACF_EVENT_CODE</td>
<td>Converts RACF event codes and qualifiers to event descriptions. You need not update this table.</td>
<td>EVENT_CODE, EVENT_QUAL</td>
<td>EVENT, EVENT_DESC</td>
</tr>
<tr>
<td>RACF_RES_OWNER</td>
<td>Converts classes and resource names to responsible owners and security levels.</td>
<td>SYSTEM_ID, CLASS, PROFILE_NAME, GENERIC</td>
<td>RESPONSIBLE_USER, SECLEVEL, SECLEVEL_NAME</td>
</tr>
<tr>
<td>RACF_USER_OWNER</td>
<td>Converts user IDs to responsible owners and security levels.</td>
<td>SYSTEM_ID, USER_ID</td>
<td>RESPONSIBLE_USER, SECLEVEL, SECLEVEL_NAME</td>
</tr>
</tbody>
</table>

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.

Update RACF_EVENT_CODE table

You need not change this lookup table, unless you want to change the default event descriptions (for example, to translate them to another language).

For a complete description of this lookup and an example of its contents, see “RACF_EVENT_CODE” on page 317.

Update RACF_USER_OWNER and RACF_RES_OWNER tables

These lookup tables provide responsible users for users and resources. Because a system contains a large number of users and resources, it is not practical to maintain the tables manually. Tivoli Decision Support for OS/390 provides a utility to extract this information from an unloaded RACF database:

2. Customize and submit the job DRLJRACF (in the SDRLCNTL library). This job reads the unloaded RACF database and updates the Tivoli Decision Support for OS/390 database.

Tivoli Decision Support for OS/390 has an algorithm to find the responsible user (see Table 13). To get better control of this, you can insert the character string
RESPUSER=xxxxxx anywhere in the installation data field of the owner’s user profile, using standard RACF commands or the RACF dialog. The installation data field is called DATA, and is in the RACF segment.

The position of this string in the installation data field is not critical. The RESPUSER parameter is used for sending Tivoli Decision Support for OS/390 reports to the person or department that is responsible for a resource, group, or user. It does not have to be a user ID—it can be any name or code that you find convenient for grouping reports.

Table 13. How RESPUSER works

<table>
<thead>
<tr>
<th>Step</th>
<th>The owner is</th>
<th>Installation data field in the owner profile contains the RESPUSER parameter</th>
<th>Tivoli Decision Support for OS/390 sets the responsible user to</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A user</td>
<td>Yes</td>
<td>RESPUSER parameter value</td>
</tr>
<tr>
<td>2</td>
<td>A user</td>
<td>No</td>
<td>User ID</td>
</tr>
<tr>
<td>3</td>
<td>A group</td>
<td>Yes</td>
<td>RESPUSER parameter value</td>
</tr>
<tr>
<td>4</td>
<td>The group</td>
<td>No</td>
<td>Original group</td>
</tr>
<tr>
<td></td>
<td>SYS1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>A group</td>
<td>No</td>
<td>Tivoli Decision Support for OS/390 looks at the owner of the group profile and continues at step 1</td>
</tr>
</tbody>
</table>

**Note:** If the RACF_xxx_OWNER tables are not filled in, the responsible user appears as a question mark (?) in the reports.

The RESPUSER parameter is valid only in user and group profiles.

See “RACF_USER_OWNER” on page 325 for a complete description and an example of the contents of the RACF_RES_OWNER lookup table. See “RACF_USER_OWNER” on page 325 for a complete description and an example of the contents of the RACF_USER_OWNER lookup table.
Chapter 40. Data flow

The RACF component collects SMF log data recorded by RACF and stores the data in the Tivoli Decision Support for OS/390 database. You can then use the reporting dialog to display reports based on the data.

Figure 110 shows an overview of the flow of data from the RACF licensed program, through the RACF component, and finally into reports.

Figure 110. RACF data flow

Lookup tables

After collecting data, the RACF component stores the data in the Tivoli Decision Support for OS/390 database. As it updates tables, the component uses lookup tables to convert RACF event codes and qualifiers to event descriptions. Figure 111 on page 304 shows which data tables contain values from the lookup tables.
For detailed information about the tables updated by RACF and the lookup tables it uses, see Chapter 42, “Data tables and lookup tables”, on page 307.
Chapter 41. Log and record definitions

RACF records data in the SMF log. The RACF component processes this record type from the SMF log:

Table 14. Input records to the RACF component

<table>
<thead>
<tr>
<th>SMF record type</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>SMF_080</td>
<td>This record is written for each successful or unsuccessful partner LU verification, each unauthorized attempt to enter the system, and each authorized or unauthorized access to RACF-protected resources or attempts to modify profiles.</td>
</tr>
</tbody>
</table>

SMF records 81 and 83 are not used (but record mappings are provided).

Refer to RACF Macros and Interfaces for detailed descriptions of RACF records.
Chapter 42. Data tables and lookup tables

This chapter describes the data tables and lookup tables used by the RACF component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature, refer to the Administration Guide.
This section contains a description of each data table used by the RACF component.

### RACF_COMMAND_T

This table provides details about failed RACF commands and commands issued by users with the SPECIAL, Group-SPECIAL, AUDITOR, or Group-AUDITOR attribute. It contains data from SMF type 80 records with event codes 8 to 25.

This table is updated by the RACF_EVENT_CODE lookup table.

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>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time when the RACF command was entered. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the event (failed, special, or auditor command) is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>AUDITOR</td>
<td>CHAR(1)</td>
<td>Indicates whether the RACF command was issued by a user with the AUDITOR or Group-AUDITOR attribute. This is Y (yes) if bit 3 of SMF80ATH is on; otherwise, N (no).</td>
</tr>
<tr>
<td>COMMAND</td>
<td>CHAR(8)</td>
<td>Name of the RACF command that was used. From EVENT in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>FAILED</td>
<td>CHAR(1)</td>
<td>Indicates whether the RACF command failed because of insufficient authority. This is Y (yes) if SMF80EVQ is greater than 0; otherwise, N (no).</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>VARCHAR(44)</td>
<td>Name of the resource on which the RACF command was to operate. Extracted from different parts of SMF80DTA, where the data type (SMF80DTP) is 6 or 9, depending on the event type (SMF80EVT).</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>CHAR(1)</td>
<td>Indicates whether the RACF command was issued by a user with the SPECIAL or Group-SPECIAL attribute. This is Y (yes) if bit 1 of SMF80ATH is on; otherwise, N (no).</td>
</tr>
<tr>
<td>TERMINAL_ID</td>
<td>CHAR(8)</td>
<td>Terminal ID of the foreground user. This is set to zero if the terminal ID is not available. From SMF80TRM.</td>
</tr>
</tbody>
</table>
RACF_LOGON_T

This table provides details about logon and job violations. It contains data from SMF type 80 records with event code 1. You can use this table to report on unauthorized attempts to log on to the system or run jobs.

This table is updated by the RACF_EVENT_CODE lookup table.

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>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time of the violation. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the event (logon or job violation) is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>APPLICATION_NAME</td>
<td>CHAR(8)</td>
<td>Name of the application. From SMF80DTA, where data type (SMF80DTP) is 20.</td>
</tr>
<tr>
<td>EVENT</td>
<td>CHAR(10)</td>
<td>Event description. From EVENT in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_QUAL</td>
<td>SMALLINT</td>
<td>Event code qualifier. From SMF80EVQ. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</td>
</tr>
<tr>
<td>TERMINAL_ID</td>
<td>CHAR(8)</td>
<td>Terminal ID of the foreground user. This is set to zero if the terminal ID is not available. From SMF80TRM.</td>
</tr>
</tbody>
</table>
**RACF data tables**

**RACF_OMVS_RES_T**

This table provides audit information about OpenEdition resource access checking. It contains data from the extended relocation section of SMF type 80 records.

The default retention period for this table is 35 days.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time of the event. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the access or access attempt is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>EVENT_CODE</td>
<td>SMALLINT</td>
<td>Event code. From SMF80EVT. For detailed information on RACF event codes, refer to <em>RACF Macros and Interfaces</em>.</td>
</tr>
<tr>
<td>AUDIT_NAME</td>
<td>CHAR(16)</td>
<td>OpenEdition audit function name. From AUDIT_NAME in the RACF_OMVS_AUDCODE lookup table. This is derived using field SMF80DA2 where data type (SMF80TP2) is 256 as a key.</td>
</tr>
<tr>
<td>AUDIT_DESC</td>
<td>CHAR(20)</td>
<td>OpenEdition audit function description. From AUDIT_DESC in the RACF_OMVS_AUDCODE lookup table. This is derived using field SMF80DA2 where data type (SMF80TP2) is 256 as a key.</td>
</tr>
<tr>
<td>SUPERUSER</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition services require SUPERUSER authority. This is Y (yes) if bit 1 of SMF80AU2 is on; otherwise, N (no).</td>
</tr>
<tr>
<td>CLASS</td>
<td>CHAR(8)</td>
<td>Resource class. From SMF80DTA, where data type (SMF80DTP) is 17.</td>
</tr>
<tr>
<td>REAL_UID</td>
<td>INTEGER</td>
<td>The OpenEdition real UID. From SMF80DA2, where data type (SMF80TP2) is 257.</td>
</tr>
<tr>
<td>REAL_GID</td>
<td>INTEGER</td>
<td>The OpenEdition real GID. From SMF80DA2, where data type (SMF80TP2) is 260.</td>
</tr>
<tr>
<td>EFFECTIVE_UID</td>
<td>INTEGER</td>
<td>The OpenEdition effective UID. From SMF80DA2, where data type (SMF80TP2) is 258.</td>
</tr>
<tr>
<td>EFFECTIVE_GID</td>
<td>INTEGER</td>
<td>The OpenEdition effective GID. From SMF80DA2, where data type (SMF80TP2) is 261.</td>
</tr>
<tr>
<td>SAVED_UID</td>
<td>INTEGER</td>
<td>The OpenEdition saved UID. From SMF80DA2, where data type (SMF80TP2) is 259.</td>
</tr>
<tr>
<td>SAVED_GID</td>
<td>INTEGER</td>
<td>The OpenEdition saved GID. From SMF80DA2, where data type (SMF80TP2) is 262.</td>
</tr>
<tr>
<td>FILENAME</td>
<td>VARCHAR(64)</td>
<td>The OpenEdition file name being checked. From SMF80DA2, where data type (SMF80TP2) is 298.</td>
</tr>
<tr>
<td>FILE_OWNER_UID</td>
<td>INTEGER</td>
<td>The owner UID of OpenEdition file. From SMF80DA2, where data type (SMF80TP2) is 265.</td>
</tr>
<tr>
<td>FILE_OWNER_GID</td>
<td>INTEGER</td>
<td>The owner GID of OpenEdition file. From SMF80DA2, where data type (SMF80TP2) is 266.</td>
</tr>
<tr>
<td>ACCESS_TYPE</td>
<td>CHAR(5)</td>
<td>Access type used to make access check. This can be OWNER, GROUP, OTHER, or NONE. From SMF80DA2, where data type (SMF80TP2) is 268.</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>ACCESS_REQUESTED</td>
<td>CHAR(5)</td>
<td>Access authority requested. This can be READ, WRITE, EXECUTE, DIRECTORY SEARCH, or ANY. From SMF80DA2, where data type (SMF80TP2) is 267.</td>
</tr>
<tr>
<td>ACCESS_ALLOWED</td>
<td>CHAR(16)</td>
<td>Access authority allowed. This can be READ, WRITE, EXECUTE, or SEARCH. From SMF80DA2, where data type (SMF80TP2) is 269.</td>
</tr>
<tr>
<td>EVENT_QUAL</td>
<td>SMALLINT</td>
<td>Event code qualifier. From SMF80EVQ. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>PATHNAME</td>
<td>VARCHAR(254)</td>
<td>The OpenEdition requested pathname. From SMF80DA2, where data type (SMF80TP2) is 263.</td>
</tr>
</tbody>
</table>
RACF data tables

**RACF_OMVS_SEC_T**

This table provides audit information about OpenEdition changes to the security data (FSP). It contains data from the extended relocation section of SMF type 80 records.

The default retention period for this table is 35 days.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time of the event. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the access or access attempt is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>EVENT_CODE</td>
<td>SMALLINT</td>
<td>Event code. From SMF80EVT. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</td>
</tr>
<tr>
<td>CLASS</td>
<td>CHAR(8)</td>
<td>Resource class. From SMF80DTA, where data type (SMF80DTP) is 17.</td>
</tr>
<tr>
<td>REAL_UID</td>
<td>INTEGER</td>
<td>The OpenEdition real UID. From SMF80DA2, where data type (SMF80TP2) is 257.</td>
</tr>
<tr>
<td>REAL_GID</td>
<td>INTEGER</td>
<td>The OpenEdition real GID. From SMF80DA2, where data type (SMF80TP2) is 260.</td>
</tr>
<tr>
<td>EFFECTIVE_UID</td>
<td>INTEGER</td>
<td>The OpenEdition effective UID. From SMF80DA2, where data type (SMF80TP2) is 258.</td>
</tr>
<tr>
<td>EFFECTIVE_GID</td>
<td>INTEGER</td>
<td>The OpenEdition effective GID. From SMF80DA2, where data type (SMF80TP2) is 261.</td>
</tr>
<tr>
<td>SAVED_UID</td>
<td>INTEGER</td>
<td>The OpenEdition saved UID. From SMF80DA2, where data type (SMF80TP2) is 259.</td>
</tr>
<tr>
<td>SAVED_GID</td>
<td>INTEGER</td>
<td>The OpenEdition saved GID. From SMF80DA2, where data type (SMF80TP2) is 262.</td>
</tr>
<tr>
<td>FILE_OWNER_UID</td>
<td>INTEGER</td>
<td>The owner UID of OpenEdition file. From SMF80DA2, where data type (SMF80TP2) is 265.</td>
</tr>
<tr>
<td>FILE_OWNER_GID</td>
<td>INTEGER</td>
<td>The owner GID of OpenEdition file. From SMF80DA2, where data type (SMF80TP2) is 266.</td>
</tr>
<tr>
<td>AUDITOR</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition command was issued by a user with the RACF AUDITOR attribute. This is Y (yes) if bit 3 of SMF80ATH is on; otherwise, N (no).</td>
</tr>
<tr>
<td>SUPERUSER</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition services require SUPERUSER authority. This is Y (yes) if bit 1 of SMF80AU2 is on; otherwise, N (no).</td>
</tr>
<tr>
<td>EVENT</td>
<td>CHAR(10)</td>
<td>Event description. From EVENT in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_QUAL</td>
<td>SMALLINT</td>
<td>Event code qualifier. From SMF80EVQ. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</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>AUD_USER_READ</td>
<td>CHAR(8)</td>
<td>New user audit options for READ action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 1 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>AUD_USER_WRITE</td>
<td>CHAR(8)</td>
<td>New user audit options for WRITE action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 2 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>AUD_USER_EXEC</td>
<td>CHAR(8)</td>
<td>New user audit options for EXECUTE or SEARCH action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 3 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>AUD_AUDITOR_READ</td>
<td>CHAR(8)</td>
<td>New auditor audit options for READ action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 5 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>AUD_AUDITOR_WRITE</td>
<td>CHAR(8)</td>
<td>New auditor audit options for WRITE action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 6 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>AUD_AUDITOR_EXEC</td>
<td>CHAR(8)</td>
<td>New auditor audit options for EXECUTE or SEARCH action. This can be NONE, SUCCESS, FAIL, or ALL. From byte 7 of SMF80DA2, where data type (SMF80TP2) is 294.</td>
</tr>
<tr>
<td>S_ISGID</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition set-group-ID bit is on for the object. This is Y (yes) if bit 21 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>S_ISUID</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition set-user-ID bit is on for the object. This is Y (yes) if bit 22 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>S_ISVTX</td>
<td>CHAR(1)</td>
<td>Indicates whether the OpenEdition sticky bit is on for the object. This is Y (yes) if bit 23 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>OWNER_READ</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for owner READ authority for the object. This is Y (READ on) if bit 24 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>OWNER_WRITE</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for owner WRITE authority for the object. This is Y (WRITE on) if bit 25 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>OWNER_EXEC</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for owner EXEC authority for the object. This is Y (EXEC on) if bit 26 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>GROUP_READ</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for group READ authority for the object. This is Y (READ on) if bit 27 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>GROUP_WRITE</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for group WRITE authority for the object. This is Y (WRITE on) if bit 28 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>GROUP_EXEC</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for group EXEC authority for the object. This is Y (EXEC on) if bit 29 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>OTHER_READ</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for other READ authority for the object. This is Y (READ on) if bit 30 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>OTHER_WRITE</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for other WRITE authority for the object. This is Y (WRITE on) if bit 31 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
</tbody>
</table>
## RACF data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTHER_EXEC</td>
<td>CHAR(1)</td>
<td>Indicates the new mode for other EXEC authority for the object. This is Y (EXEC on) if bit 32 of SMF80DA2 is on, where data type (SMF80TP2) is 290; otherwise, N (no).</td>
</tr>
<tr>
<td>CHOWN_UID</td>
<td>INTEGER</td>
<td>The UID input parameter on the CHOWN command. From SMF80DA2, where data type (SMF80TP2) is 280.</td>
</tr>
<tr>
<td>CHOWN_GID</td>
<td>INTEGER</td>
<td>The GID input parameter on the CHOWN command. From SMF80DA2, where data type (SMF80TP2) is 281.</td>
</tr>
<tr>
<td>PATHNAME</td>
<td>VARCHAR(254)</td>
<td>The OpenEdition requested pathname. From SMF80DA2, where data type (SMF80TP2) is 263.</td>
</tr>
</tbody>
</table>
This table provides details about resource accesses by users or jobs with the OPERATIONS attribute. Rows with user ID = HSM are excluded. It contains data from SMF type 80 records. You can use this table to report on authorized accesses or unauthorized access attempts.

This table is updated by the RACF_EVENT_CODE lookup table.

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>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time of the event. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the operation is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>EVENT_CODE</td>
<td>SMALLINT</td>
<td>Event code. From SMF80EVT. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</td>
</tr>
<tr>
<td>CLASS</td>
<td>CHAR(8)</td>
<td>Resource class. From SMF80DTA, where data type (SMF80DTP) is 17.</td>
</tr>
<tr>
<td>EVENT</td>
<td>CHAR(10)</td>
<td>Event description. From EVENT in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in the RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>GENERIC</td>
<td>CHAR(1)</td>
<td>Indicates whether the data-set profile is generic. This can be Y (generic) or N (discrete). This is set to Y if data type (SMF80DTP) 33 is present.</td>
</tr>
<tr>
<td>PROFILE_NAME</td>
<td>VARCHAR(44)</td>
<td>Generic profile name. This is null if a discrete profile is used. From SMF80DTA, where data type (SMF80DTP) is 33.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>VARCHAR(44)</td>
<td>Name of the RACF-protected resource accessed. From SMF80DTA, where data type (SMF80DTP) is 1.</td>
</tr>
<tr>
<td>TERMINAL_ID</td>
<td>CHAR(8)</td>
<td>Terminal ID of the foreground user. This is set to zero if the terminal ID is not available. From SMF80TRM.</td>
</tr>
</tbody>
</table>
RACF data tables

RACFRESOURCE_T

This table provides details about access attempts on RACF-protected system resources. Rows with user ID = HSM are excluded. It contains data from SMF type 80 records. You can use this table to report on authorized accesses or unauthorized attempts to access RACF-protected resources.

This table is updated by the RACF_EVENT_CODE lookup table.

The default retention period for this table is 35 days.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMESTAMP</td>
<td>TIMESTAMP</td>
<td>Date and time of the event. From SMF80DTE and SMF80TME.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>SMF system ID. From SMF80SID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>ID of the user for whom the access or access attempt is recorded. This contains the job name if the user is not defined to RACF. From SMF80USR.</td>
</tr>
<tr>
<td>ACCESS_ALLOWED</td>
<td>CHAR(8)</td>
<td>Access authority allowed. This can be ALTER, CONTROL, UPDATE, READ, or NONE. From SMF80DTA, where data type (SMF80DTP) is 4.</td>
</tr>
<tr>
<td>ACCESS_REQUESTED</td>
<td>CHAR(8)</td>
<td>Access authority requested. This can be ALTER, CONTROL, UPDATE, READ, or NONE. From SMF80DTA, where data type (SMF80DTP) is 3.</td>
</tr>
<tr>
<td>CLASS</td>
<td>CHAR(8)</td>
<td>Resource class. From SMF80DTA, where data type (SMF80DTP) is 17.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier. From EVENT_DESC in RACF_EVENT_CODE lookup table. This is derived using fields SMF80EVT and SMF80EVQ from the record as key.</td>
</tr>
<tr>
<td>EVENT_QUAL</td>
<td>SMALLINT</td>
<td>Event code qualifier. From SMF80EVQ. For detailed information on RACF event codes, refer to RACF Macros and Interfaces.</td>
</tr>
<tr>
<td>GENERIC</td>
<td>CHAR(1)</td>
<td>Indicates whether the data-set profile is generic. This can be Y (generic) or N (discrete). This is set to Y if data type (SMF80DTP) 33 is present.</td>
</tr>
<tr>
<td>PROFILE_NAME</td>
<td>VARCHAR(44)</td>
<td>Generic profile name. This is null if a discrete profile is used. From SMF80DTA, where data type (SMF80DTP) is 33.</td>
</tr>
<tr>
<td>RESOURCE_NAME</td>
<td>VARCHAR(44)</td>
<td>Name of the RACF-protected resource accessed. From SMF80DTA, where data type (SMF80DTP) is 1.</td>
</tr>
<tr>
<td>TERMINAL_ID</td>
<td>CHAR(8)</td>
<td>Terminal ID of the foreground user. This is set to zero if the terminal ID is not available. From SMF80TRM.</td>
</tr>
</tbody>
</table>
Lookup tables

This section describes the lookup tables specific to the RACF component.

**RACF_EVENT_CODE**

This lookup table converts RACF event codes and event code qualifiers to descriptions. For detailed information on RACF event codes, refer to *RACF Macros and Interfaces*.

This table updates the RACF_COMMAND_T, RACF_LOGON_T, RACF_OPERATION_T, and RACF_RESOURCE_T tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVENT_CODE</td>
<td>k SMALLINT</td>
<td>RACF event code to be converted to text.</td>
</tr>
<tr>
<td>EVENT_QUAL</td>
<td>k SMALLINT</td>
<td>RACF event code qualifier to be converted to text.</td>
</tr>
<tr>
<td>EVENT</td>
<td>CHAR(10)</td>
<td>Description for the event code.</td>
</tr>
<tr>
<td>EVENT_DESC</td>
<td>CHAR(20)</td>
<td>Description for the event code qualifier.</td>
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**Example of table contents**

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<th>EVENT</th>
<th>EVENT_DESC</th>
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</tr>
<tr>
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<td>INIT/LOGON</td>
<td>INVALID GROUP</td>
</tr>
<tr>
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<td>3</td>
<td>INIT/LOGON</td>
<td>INVALID OIDCARD</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>INIT/LOGON</td>
<td>INVALID TERMINAL</td>
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<td>AUTOMATIC REVOKE</td>
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<td>NOT AUTH SECLABEL</td>
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2 2 RES ACCESS PROFILE NOT FOUND
2 3 RES ACCESS WARNING MSG ISSUED
2 4 RES ACCESS FAILED PROTECTALL
2 5 RES ACCESS WARN: PROTECTALL
2 6 RES ACCESS INSUFF CATEG/SECLEV
2 7 RES ACCESS INSUFF SECLABEL AUTH
2 8 RES ACCESS WARN: SECLBL MISSING
2 9 RES ACCESS WARN: INSUFF SECLBL
210 RES ACCESS WARN: DS NOT CATALOG
211 RES ACCESS DATASET NOT CATALOGD
212 RES ACCESS PROFILE NOT FOUND
213 RES ACCESS WARN: CATEG/SECLEV
3 0 ADD/CHGVOL SUCCESSFUL EOV
3 1 ADD/CHGVOL INSUFFICIENT AUTH
3 2 ADD/CHGVOL INSUFF SECLABEL AUTH
3 3 ADD/CHGVOL DIFFERENT SECLABEL
4 0 RENAME DS SUCCESSFUL RENAME
4 1 RENAME DS INVALID GROUP
4 2 RENAME DS USER NOT IN GROUP
4 3 RENAME DS INSUFFICIENT AUTH
4 4 RENAME DS RESOURCE ALREADY DEF
4 5 RENAME DS USER NOT DEFINED
4 6 RENAME DS RESOURCE NOT PROTECT
4 7 RENAME DS WARN: RES NOT PROT
4 8 RENAME DS USER (2ND) NOT DEF
4 9 RENAME DS DIFFERENT SECLABEL
410 RENAME DS INSUFF SECLABEL AUTH
411 RENAME DS NOT PROTECT BY SECLB
412 RENAME DS NEW NAME NOT SECLB
413 RENAME DS OLD SECLB IN EFFECT
414 RENAME DS WARN: INS SECLB AUTH
415 RENAME DS WARN: RES NOT PROT
416 RENAME DS WARN: NEWN NOT PROT
417 RENAME DS WARN: OLD SECLB ACT
5 0 DEL RES SUCCESSFUL SCRATCH
5 1 DEL RES RESOURCE NOT FOUND
5 2 DEL RES INVALID VOLUME IDENT
6 0 DEL 1 VOL SUCCESSFUL DELETE
7 0 DEF RES SUCCESSFUL DEFINE
7 1 DEF RES GROUP UNDEFINED
7 2 DEF RES USER NOT IN GROUP
7 3 DEF RES INSUFFICIENT AUTH
7 4 DEF RES RESOURCE ALREADY DEF
7 5 DEF RES USER NOT DEFINED
7 6 DEF RES RESOURCE NOT PROTECT
7 7 DEF RES WARN: RES NOT PROT
7 8 DEF RES WARN: SECLBL MISSING
7 9 DEF RES WARN: INSUFF SECLBL
710 DEF RES USER (2ND) NOT DEF
711 DEF RES INSUFF SECLBL AUTH
712 DEF RES DIFFERENT SECLBL
8 0 ADDSD SUCCESSFUL AD
8 1 ADDSD INSUF AUTH,NO UPDATE
8 2 ADDSD INSUF AUTH, PART UPD
8 3 ADDSD SUCC (SECLBL CHANGE)
8 4 ADDSD ERR (SECLBL CHANGE)
9 0 ADDGROUP SUCCESSFUL AG
9 1 ADDGROUP INSUF AUTH,NO UPDATE
9 2 ADDGROUP INSUF AUTH, PART UPD
10 0 ADDUSER SUCCESSFUL AU
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<td>INSUF AUTH, PART UPD</td>
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<td>ALTGROUP</td>
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</table>
RACF lookup tables

48 0 RMDIR  RMDIR SUCCESSFULL
49 0 SETGID REAL GID CHANGED
49 1 SETGID INSUFF SETGID AUTH
50 0 SETEUID REAL UID CHANGED
50 1 SETEUID INSUFF SETEUID AUTH
51 0 SETGID GID CHANGED
51 1 SETGID INSUFF SETGID AUTH
52 0 SETUID UID CHANGED
52 1 SETUID INSUFF SETUID AUTH
53 0 SYMLINK SYMLINK SUCCESSFUL
54 0 UNLINK UNLINK SUCCESSFULL
55 0 UNMOUNT UNMOUNT HFS SUCCESS
56 0 CHK FILE USER IS OWNER
56 1 CHK FILE USER IS NOT OWNER
57 0 CH_PRIV USER IS AUTHORIZED
57 1 CH_PRIV INSUFF AUTH
58 0 OPEN TTY ACCESS ALLOWED
58 1 OPEN TTY INSUFF PROCESS AUTH
59 0 RACLINK NO VIOLATION
59 1 RACLINK INSUFF AUTH
59 2 RACLINK KEYWORD VIOLATION
59 3 RACLINK ASSOC. ALREADY DEF.
59 4 RACLINK ASSOC. ALREADY APPR.
59 5 RACLINK ASSOC. DOESN'T MATCH
59 6 RACLINK ASSOC. DOESN'T EXIST
59 7 RACLINK INV. PW OR REVOKE ID
60 0 CHK IPC ACCESS ALLOWED
60 1 CHK IPC INSUFF AUTH
61 0 MAKE ISP ISP SUCCESS CREATED
62 0 R_IPC CTRL ACCESS ALLOWED
62 1 R_IPC CTRL INSUFF AUTH
63 0 SETGROUPS SUCCESS SETGROUPS
63 1 SETGROUPS INSUFF AUTH
64 0 OWN 2 FILE USER IS THE OWNER
64 1 OWN 2 FILE USER IS NOT OWNER
65 0 R_AUDIT R_AUDIT SUCCESSFULL
66 0 RADCERT SUCCESS RADCERT
66 1 RADCERT INSUFF AUTH
67 0 initACEE CERTIFICATE REG.
67 1 initACEE CERTIFICATE DEREG.
67 2 initACEE INSUFF REGISTER AUTH
67 3 initACEE INSUFF DEREG. AUTH

Chapter 42. Data tables and lookup tables  321
**RACF lookup tables**

**RACF_OMVS_AUDCODE**

This lookup table converts OS/390 UNIX audit function codes to descriptions. For detailed information about audit function codes, refer to the RACF data area.

This table updates the RACF_OMVS_RES_T table.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT_CODE</td>
<td>SMALLINT</td>
<td>OS/390 UNIX System Services audit function codes to convert in text.</td>
</tr>
<tr>
<td>AUDIT_NAME</td>
<td>CHAR(20)</td>
<td>OS/390 UNIX System Services audit function name.</td>
</tr>
<tr>
<td>AUDIT_DESC</td>
<td>CHAR(20)</td>
<td>Description of OS/390 UNIX System Services audit function code.</td>
</tr>
</tbody>
</table>

**Example of table contents**

<table>
<thead>
<tr>
<th>Audit code</th>
<th>Audit Name</th>
<th>Audit descr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ACCESS</td>
<td>CHECK FILE ACCESS</td>
</tr>
<tr>
<td>2</td>
<td>CHAUDIT_U</td>
<td>CHG USER AUDIT OPT</td>
</tr>
<tr>
<td>3</td>
<td>CHDIR</td>
<td>CHG CURRENT WORK DIR</td>
</tr>
<tr>
<td>4</td>
<td>CHMOD</td>
<td>CHG FILE MODES</td>
</tr>
<tr>
<td>5</td>
<td>CHOWN</td>
<td>CHG OWNER AND GROUP</td>
</tr>
<tr>
<td>6</td>
<td>DUB</td>
<td>INITIALIZE PROCESS</td>
</tr>
<tr>
<td>7</td>
<td>EXEC</td>
<td>EXECUTE A FILE</td>
</tr>
<tr>
<td>8</td>
<td>FCHAUDIT_U</td>
<td>CHG USER AUDIT OPEN</td>
</tr>
<tr>
<td>9</td>
<td>FCHMOD</td>
<td>CHG FILEMODE OPEN</td>
</tr>
<tr>
<td>10</td>
<td>FCHOWN</td>
<td>CHG OWNER GROUP OPEN</td>
</tr>
<tr>
<td>11</td>
<td>GETCWD</td>
<td>GET WORKING DIR</td>
</tr>
<tr>
<td>12</td>
<td>GETPSENT</td>
<td>GET PROCESS ENTRY</td>
</tr>
<tr>
<td>13</td>
<td>KILL</td>
<td>SIGNAL A PROCESS</td>
</tr>
<tr>
<td>14</td>
<td>LINK</td>
<td>LINK TO A FILE</td>
</tr>
<tr>
<td>15</td>
<td>LSTAT</td>
<td>GET FILE STATUS</td>
</tr>
<tr>
<td>16</td>
<td>MKDIR</td>
<td>MAKE A DIRECTORY</td>
</tr>
<tr>
<td>17</td>
<td>MNOD</td>
<td>MAKE A FILE NODE</td>
</tr>
<tr>
<td>18</td>
<td>MOUNT</td>
<td>MOUNT A FILE SYSTEM</td>
</tr>
<tr>
<td>19</td>
<td>OPEN</td>
<td>OPEN A FILE</td>
</tr>
<tr>
<td>20</td>
<td>OPENDIR</td>
<td>OPEN A DIRECTORY</td>
</tr>
<tr>
<td>21</td>
<td>PATHCONF</td>
<td>GET PATHNAME VAR</td>
</tr>
<tr>
<td>22</td>
<td>PTRACE</td>
<td>DEBUG A PROCESS</td>
</tr>
<tr>
<td>23</td>
<td>READLINK</td>
<td>READ A Symbolic NAME</td>
</tr>
<tr>
<td>24</td>
<td>RENAME</td>
<td>RENAME A FILE</td>
</tr>
<tr>
<td>25</td>
<td>RMDIR</td>
<td>REMOVE A DIRECTORY</td>
</tr>
<tr>
<td>26</td>
<td>SETEGID</td>
<td>SET EFFECTIVE GID</td>
</tr>
<tr>
<td>27</td>
<td>SETEUID</td>
<td>SET EFFECTIVE UID</td>
</tr>
<tr>
<td>28</td>
<td>SETGID</td>
<td>SET GID</td>
</tr>
<tr>
<td>29</td>
<td>SETUID</td>
<td>SET UID</td>
</tr>
<tr>
<td>30</td>
<td>STAT</td>
<td>GET FILE STATUS</td>
</tr>
<tr>
<td>31</td>
<td>SYMLINK</td>
<td>CRT A SYMBOLIC LINK</td>
</tr>
<tr>
<td>32</td>
<td>UNLINK</td>
<td>REMOVE DIRECTORY</td>
</tr>
<tr>
<td>33</td>
<td>UNMOUNT</td>
<td>UNMOUNT A FILE</td>
</tr>
<tr>
<td>34</td>
<td>UTIME</td>
<td>SET FILE TIME</td>
</tr>
<tr>
<td>35</td>
<td>UNDUB_EXIT</td>
<td>TERMINATE A PROCESS</td>
</tr>
<tr>
<td>36</td>
<td>WRITE</td>
<td>WRITE TO A FILE</td>
</tr>
<tr>
<td>37</td>
<td>CHAUDIT_A</td>
<td>CHG AUD AUDIT OPTS</td>
</tr>
<tr>
<td>38</td>
<td>FCHAUDIT_A</td>
<td>CHG AUD AUD OPT OPEN</td>
</tr>
<tr>
<td>39</td>
<td>LOOKUP</td>
<td>PATHNAME RESOLUTION</td>
</tr>
<tr>
<td>40</td>
<td>TTYNAME</td>
<td>GET TERMINAL PATH</td>
</tr>
<tr>
<td>41</td>
<td>IOCTL</td>
<td>GET PATHNAME</td>
</tr>
<tr>
<td>42</td>
<td>GETMNT</td>
<td>GET MOUNT ENTRY</td>
</tr>
<tr>
<td>43</td>
<td>QUIESCE</td>
<td>QUIESCE A FILE</td>
</tr>
<tr>
<td>44</td>
<td>UNQUIESCE</td>
<td>UNQUIESCE A FILE</td>
</tr>
<tr>
<td>45</td>
<td>VREGISTER</td>
<td>SERVER REGISTRATION</td>
</tr>
<tr>
<td>46</td>
<td>VRESOLVEPN</td>
<td>SERVER RESOLVE PATH</td>
</tr>
<tr>
<td>47</td>
<td>VLOOKUP</td>
<td>SERVER LOOKUP</td>
</tr>
<tr>
<td>48</td>
<td>VREADWRITE</td>
<td>SERVER READ WRITE</td>
</tr>
</tbody>
</table>
RACF lookup tables

Chapter 42. Data tables and lookup tables 323
RACF lookup tables

**RACF_RES_OWNER**

This lookup table links the RACF-protected resource to the responsible user of the resource, that is, the receiver of the report. The table can be automatically built from an unloaded RACF database.

The information in this table is used only during reporting.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM_ID</td>
<td>k</td>
<td>CHAR(4) System ID.</td>
</tr>
<tr>
<td>CLASS</td>
<td>k</td>
<td>CHAR(8) Resource class.</td>
</tr>
<tr>
<td>PROFILE_NAME</td>
<td>k</td>
<td>VARCHAR(44) Profile name.</td>
</tr>
<tr>
<td>GENERIC</td>
<td>k</td>
<td>CHAR(1) Indicates whether the data set profile is generic. This can be Y (generic) or N (discrete).</td>
</tr>
<tr>
<td>RESPONSIBLE_USER</td>
<td></td>
<td>CHAR(8) Responsible user. This is the receiver of the report.</td>
</tr>
<tr>
<td>SECLEVEL</td>
<td></td>
<td>SMALLINT A number designating the security level assigned to the resource. This is zero if the security level is not defined.</td>
</tr>
<tr>
<td>SECLEVEL_NAME</td>
<td></td>
<td>VARCHAR(44) Security-level name describing the numeric security level. This is blank if the security level is not defined.</td>
</tr>
</tbody>
</table>

Example of table contents

<table>
<thead>
<tr>
<th>SYSTEM ID</th>
<th>CLASS</th>
<th>PROFILE NAME</th>
<th>GENERIC</th>
<th>RESPONSIBLE_USER</th>
<th>SECLEVEL</th>
<th>SECLEVEL NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS1</td>
<td>DATASET</td>
<td>DRL160.*</td>
<td>Y</td>
<td>STROMBK</td>
<td>50</td>
<td>RESTRICTED USE</td>
</tr>
</tbody>
</table>
RACF_USER_OWNER

This lookup table links a RACF-defined user to the responsible user, that is, the receiver of the report. The table can be automatically built from an unloaded RACF database.

The information in this table is used only during reporting.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM_ID</td>
<td>k</td>
<td>System ID.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>k</td>
<td>User ID.</td>
</tr>
<tr>
<td>RESPONSIBLE_USER</td>
<td></td>
<td>Responsible user. This is the receiver of the report.</td>
</tr>
<tr>
<td>SECLEVEL</td>
<td>SMALLINT</td>
<td>A number designating the security level assigned to the user. This is zero if the security level is not defined.</td>
</tr>
<tr>
<td>SECLEVEL_NAME</td>
<td>VARCHAR(44)</td>
<td>Security-level name describing the numeric security level. This is blank if the security level is not defined.</td>
</tr>
</tbody>
</table>

Example of table contents

<table>
<thead>
<tr>
<th>SYSTEM_ID</th>
<th>USER_ID</th>
<th>RESPONSIBLE_USER</th>
<th>SECLEVEL</th>
<th>SECLEVEL_NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS1</td>
<td>STROMBK</td>
<td>LASZLOM</td>
<td>100</td>
<td>CONFIDENTIAL</td>
</tr>
</tbody>
</table>
RACF lookup tables
Chapter 43. Reports

The RACF component provides these reports:

- RACF Logon/Job Failures report
- RACF Command Failures — Auditor report
- RACF SPECIAL User Commands — Auditor report
- RACF AUDITOR User Commands — Auditor report
- RACF OPERATIONS User Access — Auditor report
- RACF Resource Accesses report
- RACF Resource Accesses Failures report
- RACF SUPERUSER Security Commands - Auditor report
- RACF OpenEdition Resource Accesses report
- RACF OpenEdition Resource Accesses Failures report
RACF reports

RACF Logon/Job Failures report

This report shows logon and job failures, by responsible user and user ID.

This information identifies the report:

Report ID        RACF01
Report group     RACF reports
Source           RACF_LOGON_T,
Attributes       RACF, Security, Logon, Job, Exception
Variables        From_date, To_date, System_ID

The report contains this information:

Responsible user  The user responsible for the auditing and follow-up of the event. This is a question mark (?) if no match is found in the RACF_USER_OWNER lookup table.

User ID           The ID of the user for whom the event (logon or job violation) was recorded. The job name is used if the user is not defined to RACF.

Date              The date when the failed logon or job attempt occurred.

Time              The time when the failed logon or job attempt occurred.

Terminal ID       The terminal ID (if available) of the foreground user.

Application name  The name of the application.

Event desc        The description for the event code qualifier.

Figure 112. Example of a RACF Logon/Job Failures report

The report contains this information:

<table>
<thead>
<tr>
<th>Responsible User</th>
<th>Terminal Application Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>user ID</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td></td>
</tr>
<tr>
<td>desc</td>
<td></td>
</tr>
</tbody>
</table>

JERRY 1999-12-08 07.37.21 IS1S1815 - INVALID PASSWORD
WILLIAM 1999-12-08 08.12.16 - INVALID PASSWORD
WILLIAM 1999-12-08 08.14.03 IS1V9E61 - INVALID PASSWORD

Figure 112. Example of a RACF Logon/Job Failures report
RACF Command Failures—Auditor report

This report shows RACF command failures, by user, command, and resource.

This information identifies the report:

- **Report ID**: RACF02
- **Report group**: RACF reports
- **Source**: RACF_COMMAND_T
- **Attributes**: RACF, Security, Command, Exception
- **Variables**: From_date, To_date, System_ID

The report contains this information:

- **User ID**: The ID of the user for whom the command failure is recorded.
- **Command**: The name of the RACF command used.
- **Resource name**: The name of the resource on which the RACF command was to operate.
- **Date**: The date when the user entered the RACF command.
- **Time**: The time when the user entered the RACF command.
- **Event desc**: The description for the event code qualifier.

Figure 113. Example of a RACF Command Failures—Auditor report

The report contains this information:

<table>
<thead>
<tr>
<th>User ID</th>
<th>Command</th>
<th>Resource name</th>
<th>Date</th>
<th>Time</th>
<th>Event desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>LASZLO</td>
<td>ADDGROUP</td>
<td>DEV22</td>
<td>1999-12-08</td>
<td>12:51:41</td>
<td>INSUF AUTH,NO UPDATE</td>
</tr>
<tr>
<td></td>
<td>PERMIT</td>
<td>DEV22</td>
<td>1999-12-08</td>
<td>12:53:09</td>
<td>INSUF AUTH,NO UPDATE</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: RACF02
RACF reports

RACF SPECIAL User Commands—Auditor report

This report shows commands issued by users with the SPECIAL or Group-SPECIAL attribute, by command and user.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>RACF03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>RACF reports</td>
</tr>
<tr>
<td>Source</td>
<td>RACF_COMMAND_T</td>
</tr>
<tr>
<td>Attributes</td>
<td>RACF, Security, Command, Special, Detail</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date, System_ID</td>
</tr>
</tbody>
</table>

The report contains this information:

<table>
<thead>
<tr>
<th>Command</th>
<th>User ID</th>
<th>Resource name</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDSD</td>
<td>HLPDESK</td>
<td>RICHARD.*</td>
<td>1999-12-08</td>
<td>09.26.22</td>
</tr>
<tr>
<td>ADDSD</td>
<td>HLPDESK</td>
<td>SCHRAB.*</td>
<td>1999-12-08</td>
<td>09.24.51</td>
</tr>
<tr>
<td>ADDUSER</td>
<td>HLPDESK</td>
<td>RICHARD</td>
<td>1999-12-08</td>
<td>09.26.21</td>
</tr>
<tr>
<td>ADDUSER</td>
<td>HLPDESK</td>
<td>SCHRAB</td>
<td>1999-12-08</td>
<td>09.24.49</td>
</tr>
<tr>
<td>CONNECT</td>
<td>HLPDESK</td>
<td>EUAPL</td>
<td>1999-12-08</td>
<td>09.28.02</td>
</tr>
<tr>
<td>CONNECT</td>
<td>HLPDESK</td>
<td>EUAPL</td>
<td>1999-12-08</td>
<td>09.28.11</td>
</tr>
<tr>
<td>PERMIT</td>
<td>HLPDESK</td>
<td>TRANSMIT</td>
<td>1999-12-08</td>
<td>09.36.36</td>
</tr>
<tr>
<td>PERMIT</td>
<td>HLPDESK</td>
<td>XMIT</td>
<td>1999-12-08</td>
<td>09.36.12</td>
</tr>
<tr>
<td>PERMIT</td>
<td>HLPDESK</td>
<td>XMIT</td>
<td>1999-12-08</td>
<td>09.36.26</td>
</tr>
</tbody>
</table>

Figure 114. Example of a RACF SPECIAL User Commands—Auditor report

The report contains this information:

- **Command**: The name of the RACF command used.
- **User ID**: The ID of the user for whom the special user command is recorded.
- **Resource name**: The name of the resource on which the RACF command was to operate.
- **Date**: The date when the user entered the RACF command.
- **Time**: The time when the user entered the RACF command.
RACF AUDITOR User Commands—Auditor report

This report shows commands issued by users with the AUDITOR or Group-AUDITOR attribute, by command and user.

For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:
- **Report ID**: RACF04
- **Report group**: RACF reports
- **Source**: RACF_COMMAND_T
- **Attributes**: RACF, Security, Command, Auditor, Detail
- **Variables**: From_date, To_date, System_ID

The report contains this information:
- **Command**: The name of the RACF command used.
- **User ID**: The ID of the user for whom the auditor command is recorded.
- **Resource name**: The name of the resource on which the RACF command was to operate.
- **Date**: The date when the user entered the RACF command.
- **Time**: The time when the user entered the RACF command.

Figure 115. Example of a RACF AUDITOR User Commands—Auditor report

<table>
<thead>
<tr>
<th>Command</th>
<th>User ID</th>
<th>Resource name</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETROPTS</td>
<td>SVENNEG</td>
<td></td>
<td>1999-12-08</td>
<td>08.50.46</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: RACF04
RACF OPERATIONS User Access—Auditor report

This report shows resource accesses performed by users with the OPERATIONS attribute, by responsible user, user, and resource. All accesses against resources with a security level higher than the specified one are included.

This information identifies the report:

- **Report ID**: RACF05
- **Report group**: RACF reports
- **Source**: RACF_OPERATION_T, RACF_RES_OWNER
- **Attributes**: RACF, Security, Access, Operations, Detail
- **Variables**: From_date, To_date, System_ID, Min_seclevel

The report contains this information:

- **Responsible user**: The responsible user. This is the receiver of the report and is a question mark (?) if no match is found in the RACF_USER_OWNER lookup table.
- **User ID**: The ID of the user for whom the operation is recorded. The job name is used if the user is not defined to RACF.
- **Resource name**: The name of the RACF-protected resource accessed.
- **Seclevel**: The number designating the security level assigned to the resource. This is zero if the security level is not defined or if no match is found in the RACF_RES_OWNER lookup table.
- **Generic**: The character indicating whether the data set profile is generic. This can be Y (generic) or N (discrete).
- **Event**: The event description.
- **Date**: The date of the event.

---

**Figure 116. Example of a RACF OPERATIONS User Access—Auditor report**

The report contains this information:

- **Responsible user ID**: OPERATO
  - **Resource name**: SYS1.PPCAT
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL ACCESS
  - **Date**: 1999-12-08
  - **Time**: 07.45.01
- **Responsible user ID**: OPERATO
  - **Resource name**: SYS1.PPCAT
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL ACCESS
  - **Date**: 1999-12-08
  - **Time**: 08.33.49
- **Responsible user ID**: OPERATO
  - **Resource name**: SYS1.PPCAT
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL ACCESS
  - **Date**: 1999-12-08
  - **Time**: 08.36.55
- **Responsible user ID**: OPERATO
  - **Resource name**: SYS1.PPCAT
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL ACCESS
  - **Date**: 1999-12-08
  - **Time**: 08.39.35
- **Responsible user ID**: PROCUSER
  - **Resource name**: ZAWISZA.LOADLIB
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL EOV
  - **Date**: 1999-12-08
  - **Time**: 09.28.09
- **Responsible user ID**: PROCUSER
  - **Resource name**: ZAWISZA.PLI.OBJ
  - **Seclevel**: 0
  - **Generic**: Y
  - **Event**: SUCCESSFUL EOV
  - **Date**: 1999-12-08
  - **Time**: 09.26.55

Report: RACF05
<table>
<thead>
<tr>
<th>Time</th>
<th>The time of the event.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event desc</td>
<td>The description for the event code qualifier.</td>
</tr>
</tbody>
</table>
RACF Resource Access Failures report

This report shows resource access failures, by responsible user, class, resource, and user. All access against resources with a security level higher than the specified one are included.

For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: RACF06
- **Report group**: RACF reports
- **Source**: RACF_RESOURCE_T, RACF_RES_OWNER
- **Attributes**: RACE, Security, Access, Exception
- **Variables**: From_date, To_date, System_ID, Min_seclevel

The report contains this information:

- **Responsible user**: The responsible user. This is the receiver of the report and is a question mark (?) if no match is found in the RACF_RES_OWNER lookup table.
- **Class**: The resource class.
- **Seclevel**: The number designating the security level assigned to the resource. This is zero if the security level is not defined or if no match is found in the RACF_RES_OWNER lookup table.
- **Resource name**: The name of the RACF-protected resource accessed.
- **Generic**: The character indicating whether the data set profile is generic. This can be Y (generic) or N (discrete).

---

**Figure 117. Example of a RACF Resource Access Failures report**

The report contains this information:

<table>
<thead>
<tr>
<th>Responsible user</th>
<th>Class</th>
<th>Sec-level</th>
<th>Resource name</th>
<th>Generic</th>
<th>User</th>
<th>Access request allowed</th>
<th>Access</th>
<th>Event desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td>DATASET 0</td>
<td>0</td>
<td>CCC.BEX.CLIST</td>
<td>Y</td>
<td>ROGER</td>
<td>READ</td>
<td>NONE</td>
<td>1999-12-08 WARNING MSG I</td>
</tr>
<tr>
<td>DATASET 0</td>
<td>IN.GDOM.SMPACDS</td>
<td>0</td>
<td></td>
<td>Y</td>
<td>WILLIAM</td>
<td>ALTER</td>
<td>READ</td>
<td>1999-12-08 INSUFFICIENT AUTH</td>
</tr>
<tr>
<td>DATASET 0</td>
<td>MAP.SLVV1R1.PLSV</td>
<td>0</td>
<td></td>
<td>N</td>
<td>CORNALE</td>
<td>ALTER</td>
<td>CONTROL</td>
<td>1999-12-08 INSUFFICIENT AUTH</td>
</tr>
<tr>
<td>DATASET 0</td>
<td>PS.V3R2.FORMATS</td>
<td>0</td>
<td></td>
<td>Y</td>
<td>WIELATH</td>
<td>UPDATE</td>
<td>READ</td>
<td>1999-12-08 INSUFFICIENT AUTH</td>
</tr>
<tr>
<td>PRODTEST</td>
<td>DATASET 5</td>
<td>PROD.TEST2.LOAD</td>
<td>N</td>
<td>JERRY</td>
<td>READ</td>
<td>NONE</td>
<td>1999-12-08 INSUFFICIENT AUTH</td>
<td></td>
</tr>
<tr>
<td>DATASET 5</td>
<td>PROD.TEST2.LOAD</td>
<td>N</td>
<td></td>
<td>JERRY</td>
<td>READ</td>
<td>NONE</td>
<td>1999-12-08 INSUFFICIENT AUTH</td>
<td></td>
</tr>
</tbody>
</table>

---

* 4

**Report: RACF06**

---

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User ID</td>
<td>The ID of the user who attempted to access a RACF-protected resource system.</td>
</tr>
<tr>
<td>Access request</td>
<td>The access authority requested. This can be ALTER, CONTROL, UPDATE, READ, or NONE.</td>
</tr>
<tr>
<td>Access allowed</td>
<td>The access authority allowed. This can be ALTER, CONTROL, UPDATE, READ, or NONE.</td>
</tr>
<tr>
<td>Date</td>
<td>The date of the event.</td>
</tr>
<tr>
<td>Event desc</td>
<td>The description for the event code qualifier.</td>
</tr>
</tbody>
</table>


RACF Resource Accesses report

This report shows resource accesses, by responsible user, class, resource, and user. All accesses against resources with a security level higher than the specified one are included.

This information identifies the report:

**Report ID**  RACF07  
**Report group**  RACF reports  
**Source**  RACF_RESOURCE_T,  
**Attributes**  RACF, Security, Access, Detail  
**Variables**  From_date, To_date, System_ID, Min_seclevel

---

RACF Resource Accesses  
System: 'MVS1'  
Date: '1999-12-08' to '1999-12-09'  
Minimum security level: 0

<table>
<thead>
<tr>
<th>Responsible user</th>
<th>Class</th>
<th>Seclevel</th>
<th>Resource name</th>
<th>Generic</th>
<th>User ID</th>
<th>Access request</th>
<th>Access allowed</th>
<th>Date</th>
<th>Event desc</th>
</tr>
</thead>
<tbody>
<tr>
<td>?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APPL</td>
<td>0</td>
<td>0</td>
<td>OPCH</td>
<td>N</td>
<td>JERRY</td>
<td>UPDATE</td>
<td>ALTER</td>
<td>1999-12-08</td>
<td>SUCCESSFUL AC</td>
</tr>
<tr>
<td>DATASET</td>
<td>0</td>
<td>0</td>
<td>ACCT_LOGREC</td>
<td>Y</td>
<td>OPERATO</td>
<td>UPDATE</td>
<td>ALTER</td>
<td>1999-12-09</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
<tr>
<td>DATASET</td>
<td>0</td>
<td>0</td>
<td>ACCT_LOGREC.G0425V00</td>
<td>Y</td>
<td>OPERATO</td>
<td>ALTER</td>
<td>ALTER</td>
<td>1999-12-09</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
<tr>
<td>DATASET</td>
<td>0</td>
<td>0</td>
<td>DBL1.DSNDBC.DSNDB04.FLIGHT.100</td>
<td>Y</td>
<td>PROCUSER</td>
<td>ALTER</td>
<td>ALTER</td>
<td>1999-12-08</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
<tr>
<td>DATASET</td>
<td>0</td>
<td>0</td>
<td>DBL1.DSNDBC.DSNDB04.FLIGHT.100</td>
<td>Y</td>
<td>PROCUSER</td>
<td>ALTER</td>
<td>ALTER</td>
<td>1999-12-08</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
<tr>
<td>SURROGAT</td>
<td>0</td>
<td>0</td>
<td>HLPDESK.MVS</td>
<td>N</td>
<td>WILLIAM</td>
<td>CONTROL</td>
<td>CONTROL</td>
<td>1999-12-09</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
<tr>
<td>SURROGAT</td>
<td>0</td>
<td>0</td>
<td>OPERATO.MVS</td>
<td>N</td>
<td>THOMAS</td>
<td>CONTROL</td>
<td>CONTROL</td>
<td>1999-12-09</td>
<td>SUCCESSFUL ACCESS</td>
</tr>
</tbody>
</table>

* 12,376

---

Report: RACF07

**Figure 118. Example of a RACF Resource Accesses report**

The report contains this information:

**Responsible user**  The responsible user. This is the receiver of the report and is a question mark (?) if no match is found in the RACF_USER_OWNER lookup table.

**Class**  The resource class.

**Seclevel**  The number designating the security level assigned to the resource. This is zero if the security level is not defined or if no match is found in the RACF_RES_OWNER lookup table.

**Resource name**  The name of the RACF-protected resource accessed.

**Generic**  The character indicating whether the data set profile is generic. This can be Y (generic) or N (discrete).

**User ID**  The ID of the user who accessed the RACF-protected system resources.
<table>
<thead>
<tr>
<th>Access request</th>
<th>The access authority requested. This can be ALTER, CONTROL, UPDATE, READ, or NONE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access allowed</td>
<td>The access authority allowed. This can be ALTER, CONTROL, UPDATE, READ, or NONE.</td>
</tr>
<tr>
<td>Date</td>
<td>The date of the event.</td>
</tr>
<tr>
<td>Event desc</td>
<td>The description for the event code qualifier.</td>
</tr>
</tbody>
</table>
RACF SUPERUSER Security Commands - Auditor report

This report shows OpenEdition security services (CHAUDIT, CHMOD, CHOWN) that required SUPERUSER authority.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>RACF08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>RACF reports</td>
</tr>
<tr>
<td>Source</td>
<td>RACF_OMVS_SEC_T</td>
</tr>
<tr>
<td>Attributes</td>
<td>RACF, Security, Command, OMVS, OpenEdition, Superuser</td>
</tr>
<tr>
<td>Variables</td>
<td>From_date, To_date, System_ID</td>
</tr>
</tbody>
</table>

The report contains this information:

- **Os/390 Unix security service**: The OpenEdition security service that was issued.
- **User ID**: The ID of the user with superuser authority.
- **Date**: The date when the user invoked OpenEdition services.
- **Time**: The time when the user invoked OpenEdition services.
- **Resource pathname**: The pathname of the resource.
RACF OpenEdition Resource Accesses report

This report shows OpenEdition failures of resource accesses by user.

This information identifies the report:

- **Report ID**: RACF09
- **Report group**: RACF reports
- **Source**: RACF_OMVS_RES_T
- **Attributes**: RACF, Access, OMVS, OpenEdition
- **Variables**: From_date, To_date, System_ID

The report contains this information:

- **User ID**: The ID of the user for whom the operation is recorded.
- **Date**: The date when the user invoked OpenEdition services.
- **Time**: The time when the user invoked OpenEdition services.
- **Class**: The RACF class used for auditing.
- **Audit description**: The description of the required OpenEdition services.

<table>
<thead>
<tr>
<th>User ID</th>
<th>Super</th>
<th>Date</th>
<th>Time</th>
<th>Class</th>
<th>Audit description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBMUSER</td>
<td>Y</td>
<td>2000-03-09</td>
<td>21.13.00</td>
<td>FSOBJ</td>
<td>OPEN A FILE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000-03-09</td>
<td>21.13.00</td>
<td>FSOBJ</td>
<td>OPEN A FILE</td>
</tr>
<tr>
<td>Y</td>
<td>2000-03-09</td>
<td>21.13.00</td>
<td>FSOBJ OPEN A FILE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>2000-03-09</td>
<td>21.13.00</td>
<td>FSOBJ OPEN A FILE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>2000-03-09</td>
<td>21.30.35</td>
<td>FSOBJ OPEN A FILE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>2000-03-09</td>
<td>21.30.36</td>
<td>FSOBJ OPEN A FILE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access Event description</th>
<th>Access type requested</th>
<th>Access allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCCESS CHECK FILE</td>
<td>NONE</td>
<td>EXECUTE</td>
</tr>
<tr>
<td>SUCCESS CHECK FILE</td>
<td>NONE</td>
<td>READ/EXECUTE</td>
</tr>
<tr>
<td>SUCCESS CHECK FILE</td>
<td>NONE</td>
<td>EXECUTE</td>
</tr>
<tr>
<td>SUCCESS CHECK DIR</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>SUCCESS CHECK FILE GROUP</td>
<td>EXECUTE</td>
<td>READ/EXECUTE</td>
</tr>
<tr>
<td>SUCCESS CHECK FILE</td>
<td>NONE</td>
<td>EXECUTE</td>
</tr>
</tbody>
</table>

Pathname

/bin/fomtlinc
/dev/tty0000
/bin/fomtlinc
/dev/tty0000
/bin/fomtlout
/etc/utmpx

Figure 120. Example of a RACF OpenEdition Resource Accesses report

The report contains this information:

- **User ID**: The ID of the user for whom the operation is recorded.
- **Date**: The date when the user invoked OpenEdition services.
- **Time**: The time when the user invoked OpenEdition services.
- **Class**: The RACF class used for auditing.
- **Audit description**: The description of the required OpenEdition services.
### RACF reports

<table>
<thead>
<tr>
<th>Event description</th>
<th>The event description.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access type</td>
<td>Type of access. It can be Owner, Group, Other, or None.</td>
</tr>
<tr>
<td>Access requested</td>
<td>The authorization required for OpenEdition service.</td>
</tr>
<tr>
<td>Access allowed</td>
<td>The authorization allowed for OpenEdition service.</td>
</tr>
<tr>
<td>Pathname</td>
<td>The pathname of the resource.</td>
</tr>
</tbody>
</table>
RACF OpenEdition Resource Accesses Failures report

This report shows OpenEdition failures of resource accesses by user.

This information identifies the report:

- **Report ID**: RACF10
- **Report group**: RACF reports
- **Source**: RACF_OMVS_RES_T
- **Attributes**: RACF, Access, OMVS, OpenEdition
- **Variables**: From_date, To_date, System_ID

The report contains this information:

- **User ID**: The ID of the user for whom the operation is recorded.
- **Date**: The date when the user invoked OpenEdition services.
- **Time**: The time when the user invoked OpenEdition services.
- **Class**: The RACF class used for auditing.
- **Audit description**: The description of the required OpenEdition services.
- **Event description**: The event description.
- **Access type**: Type of access. It can be Owner, Group, Other, or None.

RACF OpenEdition Resource Accesses Failures Report
System: 'ES88'
Date: '2000-03-01' to '2000-03-10'

<table>
<thead>
<tr>
<th>User ID</th>
<th>Super user</th>
<th>Date</th>
<th>Time</th>
<th>Class</th>
<th>Audit description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>2000-03-09</td>
<td>21.17.44</td>
<td>DIRACC</td>
<td>RENAME A FILE</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>2000-03-09</td>
<td>21.18.01</td>
<td>DIRACC</td>
<td>RENAME A FILE</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>2000-03-09</td>
<td>21.18.40</td>
<td>DIRACC</td>
<td>RENAME A FILE</td>
<td></td>
</tr>
</tbody>
</table>

Event description
Access type requested | Access type allowed
---------------------- | ----------------------
INSUFF AUTH GROUP READ/WRITE | NONE
INSUFF AUTH GROUP WRITE | READ/EXECUTE
INSUFF AUTH GROUP WRITE | READ/EXECUTE
INSUFF AUTH GROUP WRITE | READ/EXECUTE

Pathname
---------------------
/.sh_history
pgm1
pgm2
/u/racfid2/who

Tivoli Decision Support for OS/390 Report: RACF10

Figure 121. Example of a RACF OpenEdition Resource Accesses Failures report

The report contains this information:

- **User ID**: The ID of the user for whom the operation is recorded.
- **Date**: The date when the user invoked OpenEdition services.
- **Time**: The time when the user invoked OpenEdition services.
- **Class**: The RACF class used for auditing.
- **Audit description**: The description of the required OpenEdition services.
- **Event description**: The event description.
- **Access type**: Type of access. It can be Owner, Group, Other, or None.
### RACF reports

<table>
<thead>
<tr>
<th>Access requested</th>
<th>The authorization required for OpenEdition service.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access allowed</td>
<td>The authorization allowed for OpenEdition service.</td>
</tr>
<tr>
<td>Pathname</td>
<td>The pathname of the resource.</td>
</tr>
</tbody>
</table>
## Part 10. VM accounting component

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Chapter 44. Customization

Before you can use the VM accounting component to collect data and create useful reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the VM accounting component:

1. Make input data available.
2. Modify DRLJCOLL.
3. Update lookup tables.

Make input data available

Make sure the VM accounting component collects accounting data on a daily basis. You must transmit VM accounting data to the MVS system on which you run Tivoli Decision Support for OS/390.

Data in DB2 tables that Tivoli Decision Support for OS/390 uses for the VM accounting component is originally generated by the VM accounting function of a VM/ESA or VM/XA system. VM accounting data includes general resource usage statistics for virtual machines and the VM system. You can use this data for charge back or for a breakdown of user or user group activity.

Refer to VM/ESA System Operation for information on generating VM accounting data. Refer to VM/ESA CP Planning and Administration for complete information on the accounting data collected by VM.

Modify DRLJCOLL

Before running the Tivoli Decision Support for OS/390 collect job, you must update the DRLJCOLL member, as described in “Setting up the collect job” in Volume I.

Update lookup tables

Before you can create useful reports with the VM accounting component, you must update Tivoli Decision Support for OS/390 lookup tables to specify parameters specific to your installation. The VM accounting component uses the common lookup table USER_GROUP.

You can use the USER_GROUP lookup table to specify groups for your VM users. For example, all user IDs starting with ENG might belong to the engineering department, and you might want to make them one group. If you use VMPRF, consider updating the lookup table to use the same groups as in the UCLASS file used by VMPRF. Doing so lets you more easily compare data in VM Accounting and VMPRF component reports.

For a complete description of this common lookup table and an example of its contents, refer to the Administration Guide.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 45. Data flow

Figure 122 shows an overview of the flow of data from VM/ESA or VM/XA through to the Tivoli Decision Support for OS/390 reports.

Figure 122. VM accounting component data flow
VM accounting records are generated by CP to record how virtual machines use system resources.

The VM accounting component processes this record:

Table 15. Input records to the VM accounting component

<table>
<thead>
<tr>
<th>VM accounting record</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>VMACCT_01</td>
<td>A type 01 record is produced whenever a user logs off or whenever the ACNT command is issued.</td>
</tr>
</tbody>
</table>

For complete information on the VM accounting records generated by CP, refer to VM/ESA CP Planning and Administration.
Chapter 47. Data tables

This section describes the data tables used by the VM accounting component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature, refer to the Administration Guide.

Data tables

This section describes the data tables specific to the VM accounting component.

VMACCT_SESSION_D, _M

These tables provide daily and monthly statistics on the resources used by users or groups of users during a VM terminal session. They contain data from type 01 records created by the accounting function in VM/XA or VM/ESA.

These tables are updated by the USER_GROUP lookup table.

The default retention periods for these tables are:

<table>
<thead>
<tr>
<th>Table</th>
<th>Retention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMACCT_SESSION_D</td>
<td>30 days</td>
</tr>
<tr>
<td>VMACCT_SESSION_M</td>
<td>765 days</td>
</tr>
</tbody>
</table>

<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 when the sessions were ended. For the _M table, this is the date of the first day of the month. From ACODATE.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>VM system ID. From the Tivoli Decision Support for OS/390 collect job.</td>
</tr>
<tr>
<td>ACCOUNT_NUMBER</td>
<td>CHAR(8)</td>
<td>VM account number. From ACONUM.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>User ID. From ACOUSER.</td>
</tr>
<tr>
<td>USER_GROUP</td>
<td>CHAR(8)</td>
<td>Name of the group that the user belongs to. From GROUP_NAME in the USER_GROUP lookup table; if no match is found, this column gets its value from USER_ID. For a description of the USER_GROUP lookup table, refer to the Administration Guide.</td>
</tr>
<tr>
<td>CARDS_PUNCHED</td>
<td>INTEGER</td>
<td>Number of cards spooled to the virtual punch. This is the sum of ACOPNCH.</td>
</tr>
<tr>
<td>CARDS_READ</td>
<td>INTEGER</td>
<td>Number of cards read from the virtual reader. This is the sum of ACOCRDS.</td>
</tr>
<tr>
<td>CPU_SECONDS</td>
<td>FLOAT</td>
<td>Processor time used, in seconds. Calculated as the sum of ACOTIME/1000.</td>
</tr>
<tr>
<td>IO_COUNT</td>
<td>INTEGER</td>
<td>Number of virtual machine SIO instructions for nonspooled I/O. This is the sum of ACOI OCT.</td>
</tr>
<tr>
<td>LINES_PRINTED</td>
<td>INTEGER</td>
<td>Number of lines spooled to the virtual printer (this includes one line for each carriage control command). This is the sum of ACOLINS.</td>
</tr>
<tr>
<td>PAGES_READ</td>
<td>INTEGER</td>
<td>Number of page reads. This is the sum of ACOPGRD.</td>
</tr>
<tr>
<td>PAGES_WRITTEN</td>
<td>INTEGER</td>
<td>Number of page writes. This is the sum of ACOPGWT.</td>
</tr>
</tbody>
</table>

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### VM accounting data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SESSION_HOURS</td>
<td>FLOAT</td>
<td>Session time, in hours. This is the number of hours the user was connected to the VM system. Calculated as the sum of ACOCONT/3600.</td>
</tr>
<tr>
<td>SESSIONS</td>
<td>INTEGER</td>
<td>Number of VM logon sessions. This is the count of accounting records.</td>
</tr>
<tr>
<td>VF_OVERHEAD_SEC</td>
<td>FLOAT</td>
<td>Vector facility overhead time, in seconds. This is the total time spent using the vector facility, including supervisor functions, to give service to the virtual machine. Calculated as the sum of ACOVECTT/1000.</td>
</tr>
<tr>
<td>VF_SECONDS</td>
<td>FLOAT</td>
<td>Vector facility time, in seconds. This is the time the virtual machine spent using the vector facility to do work. Calculated as the sum of ACOVECTM/1000.</td>
</tr>
<tr>
<td>VIRTUAL_CPU_SEC</td>
<td>FLOAT</td>
<td>Virtual processor time used, in seconds. Calculated as the sum of ACOVTIM/1000.</td>
</tr>
</tbody>
</table>
Chapter 48. Reports

The VM accounting component provides these reports:

- VM Accounting Users Grouped by Account Number report
- VM Accounting Users Grouped by CPU Usage report
- VM Accounting Total and Virtual CPU Usage report
- VM Accounting Users Grouped by Group Name report
- VM Accounting Summary Based on Group Name report
VM Accounting Users Grouped by Account Number report

This report shows a summary of resources used by each user on the system for the months you specify.

This information identifies the report:
- **Report ID**: VMACCT01
- **Report group**: VM accounting reports
- **Source**: VMACCT_SESSION_M
- **Attributes**: VM, Accounting, Service, CPU, Overview, Monthly
- **Variables**: From_month, To_month, VM_system_ID, User_ID, Account_number, User_group

<table>
<thead>
<tr>
<th>Month</th>
<th>Account number</th>
<th>User ID</th>
<th>Sessions</th>
<th>Session hours</th>
<th>CPU hours</th>
<th>I/O count</th>
<th>Cards punched</th>
<th>Cards read</th>
<th>Cards printed</th>
<th>I/O Cards punched</th>
<th>Lines printed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-05-01</td>
<td>913SST</td>
<td>MSSERV</td>
<td>60</td>
<td>1.9</td>
<td>0.0</td>
<td>0.0</td>
<td>3480</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CROSSTC</td>
<td>30</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DISKACNT</td>
<td>30</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
<td>52200</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOGGAR</td>
<td>30</td>
<td>4.3</td>
<td>1.2</td>
<td>1.1</td>
<td>357510</td>
<td>0</td>
<td>7 238 760</td>
<td>1 950</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RACFMAP</td>
<td>30</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
<td>570</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RACFSMF</td>
<td>30</td>
<td>0.2</td>
<td>0.1</td>
<td>0.0</td>
<td>27240</td>
<td>160</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* 210 10.4 1.3 1.1 441000 160 200 7 238 760
** 210 10.4 1.3 1.1 441000 160 200 7 238
210 10.4 1.3 1.1 441000 160 200 7 238 760

Report: VMACCT01

**Figure 123. Example of a VM Accounting Users Grouped by Account Number report**

The report contains this information:
- **Month**: The date of the first day of the month of the measurement.
- **Account number**: The VM account number.
- **User ID**: The user ID.
- **Sessions**: The number of VM logon sessions. This is the count of accounting records. VM creates a record when a user logs off the system and for every user logged on when the operator issues the ACNT command.
- **Session hours**: The session time, in hours. This is the number of hours the user was connected to the VM system.
- **CPU hours**: The processor time used, in hours. Calculated as: CPU_SECONDS / 3600.
- **Virtual CPU hours**: The virtual processor time used, in hours. Calculated as: VIRTUAL_CPU_SEC / 3600.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O count</td>
<td>The number of virtual machine SIO instructions for nonspooled I/O.</td>
</tr>
<tr>
<td>Cards punched</td>
<td>The number of cards spooled to the virtual punch.</td>
</tr>
<tr>
<td>Cards read</td>
<td>The number of cards read from the virtual reader.</td>
</tr>
<tr>
<td>Lines printed</td>
<td>The number of lines spooled to the virtual printer. This includes one line for each carriage control command.</td>
</tr>
</tbody>
</table>
VM Accounting Users Grouped by CPU Usage report

This report shows the users that put the most load on the system for the specified months. The report is sorted on CPU hours used.

This information identifies the report:

**Report ID**  VMACCT02

**Report group**  VM accounting reports

**Source**  VMACCT_SESSION_M

**Attributes**  VM, Accounting, Service, CPU

**Variables**  From_month, To_month, VM_system_ID

---

The report contains this information:

**Month**  The date of the first day of the month of the measurement.

**User ID**  The user ID.

**CPU hours**  The processor time used, in hours. Calculated as: CPU_SECONDS / 3600.

**Virtual CPU hours**  The virtual processor time used, in hours. Calculated as: VIRTUAL_CPU_SEC / 3600.

**Sessions**  The number of VM logon sessions. This is the count of accounting records. VM creates a record when a user logs off the system and for every user logged on when the operator issues the ACNT command.

**Session hours**  The session time, in hours. This is the number of hours the user was connected to the VM system.
**VM Accounting Total and Virtual CPU Usage report**

This report shows total and virtual CPU usage for the specified days.

This information identifies the report:

- **Report ID**: VMACCT03
- **Report group**: VM accounting reports
- **Source**: VMACCT_SESSION_D
- **Attributes**: VM, Accounting, Service, CPU, Trend
- **Variables**: From_date, To_date, VM_system_ID

The report contains this information:

- **Date**: The date of the measurement.
- **Total CPU hours**: The total processor time used, in hours. Calculated as: SUM(CPU_SECONDS) / 3600.
- **Virtual CPU hours**: The virtual processor time used, in hours. Calculated as: SUM(VIRTUAL_CPU_SEC) / 3600.

*Figure 125. Example of a VM Accounting Total and Virtual CPU Usage report*
VM Accounting reports

VM Accounting Users Grouped by Group Name report

This report shows a summary of resources used by each user on the system for the specified months.

This information identifies the report:

- **Report ID**: VMACCT04
- **Report group**: VM accounting reports
- **Source**: VMACCT_SESSION_M
- **Attributes**: VM, Accounting, Service, CPU, Overview, Monthly
- **Variables**: From_month, To_month, VM_system_ID

The report contains this information:

- **Month**: The date of the first day of the month of the measurement.
- **User group**: The group name from the USER_GROUP lookup table.
- **User ID**: The user ID.
- **Sessions**: The number of VM logon sessions. This is the count of accounting records. VM creates a record when a user logs off the system and for every user logged on when the operator issues the ACNT command.

---

**Figure 126. Example of a VM Accounting Users Grouped by Group Name report**

The report contains this information:

<table>
<thead>
<tr>
<th>Month group</th>
<th>Sessions</th>
<th>Session hours</th>
<th>CPU hours</th>
<th>Virtual CPU hours</th>
<th>I/O count</th>
<th>Cards punched</th>
<th>Cards read</th>
<th>Lines printed</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMGROUP1 AMMSERV</td>
<td>60</td>
<td>1.9</td>
<td>0.0</td>
<td>0.0</td>
<td>3480</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ASKTCDM</td>
<td>1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>221</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CROSSCAL</td>
<td>30</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>*</td>
<td>91</td>
<td>3.2</td>
<td>0.0</td>
<td>0.0</td>
<td>3701</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>VMGROUP2 DISKACNT</td>
<td>30</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
<td>52200</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>*</td>
<td>30</td>
<td>1.5</td>
<td>0.0</td>
<td>0.0</td>
<td>52200</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>VMGROUP3 SQLCEA02</td>
<td>1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>64</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>*</td>
<td>1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>64</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>VMGROUP4 ZCPANMN</td>
<td>1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ZEARSRV</td>
<td>1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>96</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ZIDCDSLTC</td>
<td>2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>308</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ZRMSMAC</td>
<td>1</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>108</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>*</td>
<td>5</td>
<td>0.3</td>
<td>0.0</td>
<td>0.0</td>
<td>512</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>**</td>
<td>127</td>
<td>5.3</td>
<td>0.0</td>
<td>0.0</td>
<td>56477</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Report VMACCT04

---

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<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session hours</td>
<td>The session time, in hours. This is the number of hours the user was connected to the VM system.</td>
</tr>
<tr>
<td>CPU hours</td>
<td>The processor time used, in hours. Calculated as: CPU_SECONDS / 3600.</td>
</tr>
<tr>
<td>Virtual CPU hours</td>
<td>The virtual processor time used, in hours. Calculated as: VIRTUAL_CPU_SEC / 3600.</td>
</tr>
<tr>
<td>I/O count</td>
<td>The number of virtual machine SIO instructions for nonspooled I/O.</td>
</tr>
<tr>
<td>Cards punched</td>
<td>The number of cards spooled to the virtual punch.</td>
</tr>
<tr>
<td>Cards read</td>
<td>The number of cards read from the virtual reader.</td>
</tr>
<tr>
<td>Lines printed</td>
<td>The number of lines spooled to the virtual printer. This includes one line for each carriage control command.</td>
</tr>
</tbody>
</table>
VM Accounting Summary Based on Group Name report

This report shows a summary of CPU hours and virtual CPU hours grouped by group name for the specified months.

This information identifies the report:

- **Report ID**: VMACCT05
- **Report group**: VM accounting reports
- **Source**: VMACCT_SESSION_M
- **Attributes**: VM, Accounting, Service, EXCP, Monthly
- **Variables**: From_month, To_month, VM_system_ID

![VM Accounting Summary Based on Group Name report](image)

*Figure 127. Example of a VM Accounting Summary Based on Group Name report*

The report contains this information:

- **User group**: The group name, as defined in the USER_GROUP lookup table.
- **CPU hours**: The processor time used, in hours. Calculated as: SUM(CPU_SECONDS) / 3600.
- **Virtual CPU hours**: The virtual processor time used, in hours. Calculated as: SUM(VIRTUAL_CPU_SEC) / 3600.
Part 11. VMPRF component

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Make input data available
Modify DRLJCOLL
Update lookup tables

Chapter 50. Data flow

Chapter 51. Log and record definitions

Chapter 52. Data tables
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VMPRF_DASD_H, _D, _M
VMPRF_PROCESSOR_H, _D, _M
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VMPRF Processor Busy Distribution, Hourly report
VMPRF Processor Page and Spool Activity, Hourly report
VMPRF Processor Storage Activity, Hourly report
VMPRF Processor Instruction Rate, Hourly report
VMPRF Processor Instruction Counts, Hourly report
User reports
VMPRF User Real and Virt Processor Usage, Monthly report
VMPRF User Paging and Spooling, Monthly report
VMPRF User IUCV and VMCF Counts, Monthly report
VMPRF Heaviest Users of the Processor, Monthly report
VMPRF Heaviest Users of DASD, Monthly report
VMPRF Heaviest Users of Paging, Monthly report

VMPRF Processor Usage by User Class, Monthly report
VMPRF Paging by User Class, Monthly report
VMPRF IUCV and VMCF Usage by User Class, Monthly report
VMPRF Processor Usage by User Class
VMPRF Paging by User Class
VMPRF IUCV and VMCF Usage by User Class

DASD reports
VMPRF Most-Used DASD by Start Subchannel Rate report
VMPRF Slowest DASD by Response Time report
VMPRF DASD With Longest Queues report
VMPRF Least Used or not Used DASD Devices report
VMPRF Least Used DASD Devices report

Configuration reports
VMPRF VM Configuration, Level and Storage, Daily report
VMPRF VM Configuration, Level and IPL, Daily report

VMPRF Processor Usage by User Class
VMPRF Paging by User Class
VMPRF IUCV and VMCF Usage by User Class

DASD reports
VMPRF Most-Used DASD by Start Subchannel Rate report
VMPRF Slowest DASD by Response Time report
VMPRF DASD With Longest Queues report
VMPRF Least Used or not Used DASD Devices report
VMPRF Least Used DASD Devices report

Configuration reports
VMPRF VM Configuration, Level and Storage, Daily report
VMPRF VM Configuration, Level and IPL, Daily report
Chapter 49. Customization

Before you can use the VMPRF component to collect data and create reports, you must customize and test the installation. This chapter describes the steps you must perform to customize the VMPRF component:

1. Make input data available.
2. Modify DRLJCOLL.
3. Update lookup tables.

Make input data available

Data in DB2 tables that Tivoli Decision Support for OS/390 uses for the VMPRF component is originally generated by the VMPRF licensed program running on a VM/ESA or VM/XA system. VMPRF generates data by analyzing VM monitor data. VMPRF records many types of monitor data, including virtual machine processor usage and response times, system performance characteristics, and system configuration. You can use this data for response-time analysis or for a breakdown of user or user group activity.

To make the data available to Tivoli Decision Support for OS/390, collect monitor data and analyze it with VMPRF, creating the VMPRF summary file. Transmit this summary file to the MVS system from which you run Tivoli Decision Support for OS/390.

These steps describe where the data originates and how it becomes available to Tivoli Decision Support for OS/390:

1. The VM monitor, which is part of the VM operating system, creates monitor records in a DCSS in central storage.
2. The utility program MONWRITE moves the data from the DCSS to tape or, more commonly, DASD.
3. VMPRF reads the monitor data from tape or DASD and creates summary files.
4. The administrator transfers the summary files from VM to the MVS system running Tivoli Decision Support for OS/390.
5. The collect step reads the summary files and stores the data in the Tivoli Decision Support for OS/390 database.

Refer to the *VMPRF User’s Guide and Reference* and *VMPRF Primer* for complete information on using VMPRF and creating the summary file used by Tivoli Decision Support for OS/390.

Modify DRLJCOLL

Before running the collect job, you must update the DRLJCOLL member, as described in “Setting up the collect job” in Volume I.
Update lookup tables

The VMPRF component uses the DAY_OF_WEEK and PERIOD_PLAN control tables when updating data tables. The component also uses the USER_GROUP common lookup table. Ensure that these tables specify the days, periods, and user groups you want to report on. For descriptions of these tables and examples of their contents, refer to the Administration Guide.

For information on using the administration dialog to update lookup tables, see “Updating lookup tables” in Volume I.
Chapter 50. Data flow

Figure 128 shows an overview of the flow of data from VM monitor data through to the Tivoli Decision Support for OS/390 reports.

Note: The VMPRF component uses the DAY_OF_WEEK and PERIOD_PLAN control tables when updating all data tables except VMPRF_CONFIG_T. The component also uses the USER_GROUP common lookup table when updating the VMPRF_USER_x data tables.
VMPRF data flow
Chapter 51. Log and record definitions

The VMPRF component processes these records:

**Table 16. Input records to the VMPRF component**

<table>
<thead>
<tr>
<th>VMPRF record type</th>
<th>Record definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 (SYSTEM)</td>
<td>VMPRF_01</td>
<td>Contains all VM system performance data from record type 01 records in the VMPRF summary file.</td>
</tr>
<tr>
<td>02 (PROCESSOR)</td>
<td>VMPRF_02</td>
<td>Contains all VM processor performance data from record type 02 records in the VMPRF summary file.</td>
</tr>
<tr>
<td>11 (CONFIGURATION)</td>
<td>VMPRF_11</td>
<td>Contains all VM system configuration data from record type 11 records in the VMPRF summary file.</td>
</tr>
<tr>
<td>41 (USER)</td>
<td>VMPRF_41</td>
<td>Contains all VM user data from record type 41 records in the VMPRF summary file.</td>
</tr>
<tr>
<td>61 (DASD)</td>
<td>VMPRF_61</td>
<td>Contains all DASD data for VM processors and for any DASD used by VM and other systems in a shared DASD configuration from record type 61 records in the VMPRF summary file.</td>
</tr>
</tbody>
</table>

For complete information on the data generated by VMPRF, refer to the *VMPRF User’s Guide and Reference*. 
Chapter 52. Data tables

This section describes the data tables used by the VMPRF component. For descriptions of common data tables, lookup tables, and control tables used by the System Performance feature, refer to the *Administration Guide*.

Data tables

This section describes the data tables for the VMPRF component.

**VMPRF_CONFIG_T**

This table provides detailed information about the configuration of VM systems. It contains configuration data (type 11) records created by the VM Performance Reporting Facility running under VM/XA or VM/ESA.

The default retention period for this table is 1825 days.

<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 when the data about the VM system was created. From DATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the data about the VM system was created. From TIME.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>System identification. From the SYSTEMID parameter specified in the SETTINGS file or on the VMPRF command line.</td>
</tr>
<tr>
<td>CPU_ID</td>
<td>CHAR(6)</td>
<td>Serial number. This is the system serial number without a processor identifier as the first character. From SYSTEM_SERIAL_NBR.</td>
</tr>
<tr>
<td>ESTOR_INSTALLED</td>
<td>FLOAT</td>
<td>Number of expanded storage blocks installed. From INSTALLED_XSTORE.</td>
</tr>
<tr>
<td>FRAMES_NONPAGEABLE</td>
<td>FLOAT</td>
<td>Number of nonpageable frames. This is the nonpageable storage. From NON_PAGEABLE_FRM.</td>
</tr>
<tr>
<td>FRAMES_OFFLINE</td>
<td>FLOAT</td>
<td>Number of offline frames. This is the offline storage. From OFFLINE_FRAMES.</td>
</tr>
<tr>
<td>FRAMES_PAGEABLE</td>
<td>FLOAT</td>
<td>Number of pageable frames. This is the pageable storage. From PAGEABLE_FRAMES.</td>
</tr>
<tr>
<td>LAST_ABEND_CODE</td>
<td>CHAR(8)</td>
<td>Abend code of the last termination. From LAST_ABEND_CODE.</td>
</tr>
<tr>
<td>STORAGE_REAL</td>
<td>FLOAT</td>
<td>Size of real storage calculated during system initialization, in bytes. From REAL_STORAGE_SIZE.</td>
</tr>
<tr>
<td>STORAGE_SYSGEN</td>
<td>FLOAT</td>
<td>Storage size of the real machine as defined during SYSGEN, in bytes. From SYSGEN_STORAGE_SIZ.</td>
</tr>
<tr>
<td>TIME_OF_LAST_IPL</td>
<td>FLOAT</td>
<td>Time of the last IPL that was performed since January 1, 1900, 00:00 GMT, in seconds. From TIME_OF_LAST_IPL.</td>
</tr>
<tr>
<td>TIME_OF_LAST_TERM</td>
<td>FLOAT</td>
<td>Time of the last termination that occurred since January 1, 1900, 00:00 GMT, in seconds. From TIME_OF_LAST_TERM.</td>
</tr>
<tr>
<td>VM_RELEASE</td>
<td>CHAR(2)</td>
<td>Operating system release number. From SYSTEM_RELEASE.</td>
</tr>
</tbody>
</table>
### VMPRF data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM_SERVICE_LEVEL</td>
<td>CHAR(4)</td>
<td>Operating system service level. From SYSTEM_SERVICE_LVL.</td>
</tr>
<tr>
<td>VM_VERSION</td>
<td>CHAR(2)</td>
<td>Operating system version. From SYSTEM_VERSION.</td>
</tr>
<tr>
<td>VR_FREE</td>
<td>FLOAT</td>
<td>Virtual-equals-real (V=R) reserved free storage, in bytes. From VR_FREE.</td>
</tr>
<tr>
<td>VR_SIZE</td>
<td>FLOAT</td>
<td>Size of the virtual-equals-real (V=R) area excluding V=R reserved free storage, in bytes. This is set to the largest V=R or V=F address. From VR_SIZE.</td>
</tr>
</tbody>
</table>
VMPRF_DASD_H, _D, _M

These tables provide hourly, daily, and monthly statistics on DASD activity on VM systems. They contain DASD data (type 61) records created by the VM Performance Reporting Facility running under VM/XA or VM/ESA.

The default retention periods for these tables are:
- VMPRF_DASD_H: 10 days
- VMPRF_DASD_D: 30 days
- VMPRF_DASD_M: 765 days

<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 when the data about the VM system was created. For the _M table, this is the date of the first day of the month. From DATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SYSTEM_ID, DATE, and TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the data about the VM system was created. It applies only to the _H table. From TIME.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>VM system ID. From the SYSTEMID parameter specified in the SETTINGS file or on the VMPRF command line.</td>
</tr>
<tr>
<td>DEVICE_NUMBER</td>
<td>CHAR(4)</td>
<td>DASD device number. From DEVICE_NUMBER.</td>
</tr>
<tr>
<td>VOLSER</td>
<td>CHAR(6)</td>
<td>Volume serial number. From VOLSER_NUMBER.</td>
</tr>
<tr>
<td>BUSY_PCT</td>
<td>FLOAT</td>
<td>Percentage of elapsed time that the device was busy. Calculated as ((PENDING_TIME + DISCONNECT_TIME + CONNECT_TIME)/DEVICE_ONLINE_TIME)*100.</td>
</tr>
<tr>
<td>CONNECT_MSEC</td>
<td>FLOAT</td>
<td>Device connect time, in milliseconds. This is the time that the device was logically connected to the channel path to transfer information between it and the channel subsystem. Calculated as (CONNECT_TIME/SCM_UPDATES)*1000.</td>
</tr>
<tr>
<td>CONNECT_SEC</td>
<td>FLOAT</td>
<td>Device connect time, in seconds. This is the time that the device was logically connected to the channel path to transfer information between it and the channel subsystem. This is the sum of CONNECT_TIME.</td>
</tr>
<tr>
<td>DEVICE_IO_RATE</td>
<td>FLOAT</td>
<td>Number of SSCH and RSCH instructions executed per second for the device while it was online. Calculated as SSCH_RSCH/DEVICE_ONLINE_TIME.</td>
</tr>
<tr>
<td>DEVICE_QUEUE</td>
<td>FLOAT</td>
<td>Average number of start subchannel requests queued for the device, excluding the active requests. Calculated as SSCH_QUEUE/DEVICE_ONLINE_TIME.</td>
</tr>
<tr>
<td>DISCONN_MSEC</td>
<td>FLOAT</td>
<td>Device disconnect time, in milliseconds. This is the time that the device was logically disconnected from the channel subsystem while the subchannel was active. Calculated as (DISCONNECT_TIME/SCM_UPDATES)*1000.</td>
</tr>
<tr>
<td>DISCONN_SEC</td>
<td>FLOAT</td>
<td>Device disconnect time, in seconds. This is the time that the device was logically disconnected from the channel subsystem while the subchannel was active. This is the sum of DISCONNECT_TIME.</td>
</tr>
<tr>
<td>ELAPSED_SEC</td>
<td>FLOAT</td>
<td>Elapsed time that monitoring was turned on, in seconds. From ELAPSED_TIME.</td>
</tr>
<tr>
<td>HF_SAMPLES</td>
<td>FLOAT</td>
<td>Number of high-frequency samples. From HF_SAMPLES.</td>
</tr>
</tbody>
</table>
## VMPRF data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONLINE_SEC</td>
<td>FLOAT</td>
<td>Elapsed time that the device was online, This is the sum of ONLINE_TIME_D6R3.</td>
</tr>
<tr>
<td>PENDING_MSEC</td>
<td>FLOAT</td>
<td>Device function pending time, in milliseconds. This can be caused by another system using the device in a shared environment. Calculated as (PENDING_TIME/SCM_UPDATES)*1000.</td>
</tr>
<tr>
<td>PENDING_SEC</td>
<td>FLOAT</td>
<td>Device function pending time, in seconds. This can be caused by another system using the device in a shared environment. This is the sum of PENDING_TIME.</td>
</tr>
<tr>
<td>RECORDS_COLLECTED</td>
<td>FLOAT</td>
<td>Number of records collected. This is the count of records with a valid CONNECT_TIME field.</td>
</tr>
<tr>
<td>SERVICE_MSEC</td>
<td>FLOAT</td>
<td>Device service time, in milliseconds. Calculated as ((CONNECT_TIME + DISCONNECT_TIME + PENDING_TIME)/SCM_UPDATES)*1000.</td>
</tr>
<tr>
<td>SSCH_AND_RSCH</td>
<td>FLOAT</td>
<td>Number of start subchannel and resume subchannel instructions executed. This is the sum of SSCH_AND_RSCH.</td>
</tr>
<tr>
<td>SSCH_QUEUED</td>
<td>FLOAT</td>
<td>Number of start subchannel requests queued, excluding the active request. This is the sum of SSCH_QUEUED.</td>
</tr>
</tbody>
</table>
**VMPRF_PROCESSOR_H, _D, _M**

These tables provide hourly, daily, and monthly statistics on processor activity on VM systems. They contain processor data (type 02) records created by the VM Performance Reporting Facility running under VM/XA or VM/ESA.

The default retention periods for these tables are:
- VMPRF_PROCESSOR_H 10 days
- VMPRF_PROCESSOR_D 30 days
- VMPRF_PROCESSOR_M 765 days

<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 when the data about the VM system was created. For the _M table, this is the date of the first day of the month. From DATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SYSTEM_ID, DATE, and TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the data about the VM system was created. It applies only to the _H table. From TIME.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>VM system ID. From the SYSTEMID parameter specified in the SETTINGS file or on the VMPRF command line.</td>
</tr>
<tr>
<td>CPU_ADDRESS</td>
<td>INTEGER</td>
<td>Processor address. From CPU_ADDRESS.</td>
</tr>
<tr>
<td>BUSY_SYSTEM_PCT</td>
<td>FLOAT</td>
<td>Processor busy time, as a percentage of the time the system is online. Calculated as (PROC_SYSTEM_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_TOTAL_PCT</td>
<td>FLOAT</td>
<td>Total busy time, as a percentage of the elapsed time that the processor is online. Calculated as (PROC_SYSTEM_TIME + PROC_USER_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_USER_PCT</td>
<td>FLOAT</td>
<td>User busy time, as a percentage of the time the processor is online. Calculated as (PROC_USER_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_VECTOR_PCT</td>
<td>FLOAT</td>
<td>Vector busy time, as a percentage of the elapsed time the system is online. Calculated as (VECTOR_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>CONNECT_SEC</td>
<td>FLOAT</td>
<td>Time that the processor was busy, in seconds. This is the sum of PROC_USER_TIME and PROC_SYSTEM_TIME.</td>
</tr>
<tr>
<td>CPU_ID</td>
<td>CHAR(6)</td>
<td>Serial number. This is the system serial number without a processor identifier as the first character. From SYSTEM_SERIAL_NO.</td>
</tr>
<tr>
<td>CPU_MODEL_NO</td>
<td>CHAR(4)</td>
<td>Model number. This is the processor machine type. From MACHINE_TYPE.</td>
</tr>
<tr>
<td>CSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of clear subchannel executions. This is the sum of CSCHS.</td>
</tr>
<tr>
<td>DASD_PAGEIN_RATE</td>
<td>FLOAT</td>
<td>Number of disk reads done for system paging. Calculated as the average of PAGE_READS/ELAPSED_TIME.</td>
</tr>
<tr>
<td>DASD_PAGEOUT_RATE</td>
<td>FLOAT</td>
<td>Number of disk writes done for system paging. Calculated as the average of PAGE_WRITES/ELAPSED_TIME.</td>
</tr>
<tr>
<td>DIAG_INSTRUCTIONS</td>
<td>FLOAT</td>
<td>Number of IBM-supplied DIAGNOSE instructions executed. This is the sum of DIAG_INSTRUCTIONS.</td>
</tr>
<tr>
<td>ELAPSED_SECONDS</td>
<td>FLOAT</td>
<td>Elapsed time that the processor was online. From ELAPSED_TIME.</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>ESTOR_PAGEIN_RATE</td>
<td>FLOAT</td>
<td>Number of blocks per second read from expanded storage. Calculated as the average of (FASTPATH_PGINS + NON_FASTPATH_PGINS)/ELAPSED_TIME.</td>
</tr>
<tr>
<td>ESTOR_PGEOUT_RATE</td>
<td>FLOAT</td>
<td>Number of blocks per second written to expanded storage. Calculated as the average of PGOUTS/ELAPSED_TIME.</td>
</tr>
<tr>
<td>EXTERN_INTERRUPTS</td>
<td>FLOAT</td>
<td>Number of external interrupts received. This is the sum of EXTERN_INTERRUPTS.</td>
</tr>
<tr>
<td>FASTPATH_PERCENT</td>
<td>FLOAT</td>
<td>Percentage of page reads from expanded storage that used the fast path. Calculated as (FASTPATH_PGINS/(FASTPATH_PGINS + NON_FASTPATH_PGINS))*100.</td>
</tr>
<tr>
<td>HSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of halt subchannel executions. This is the sum of HSCHS.</td>
</tr>
<tr>
<td>PAGE_READS</td>
<td>FLOAT</td>
<td>Number of page reads from DASD. This is the sum of PAGE_READS.</td>
</tr>
<tr>
<td>PAGES_READ_TO_MS</td>
<td>FLOAT</td>
<td>Number of virtual machine pages read (paged in) from expanded storage to main storage. This is the sum of FASTPATH_PGINS and NON_FASTPATH_PGINS.</td>
</tr>
<tr>
<td>PAGES_WRIT_TO_ES</td>
<td>FLOAT</td>
<td>Number of virtual machine pages written (paged out) from main storage to expanded storage. This is the sum of PGOUTS.</td>
</tr>
<tr>
<td>PAGE_WRITES</td>
<td>FLOAT</td>
<td>Number of page writes to DASD. This is the sum of PAGE_WRITES.</td>
</tr>
<tr>
<td>PROC_EMUL_SEC</td>
<td>FLOAT</td>
<td>Processor time spent in emulation mode, in seconds. This is the sum of PROC_EMUL_TIME.</td>
</tr>
<tr>
<td>PROC_SYSTEM_SEC</td>
<td>FLOAT</td>
<td>Processor time used by the system, in seconds. This time is charged to the system. It includes time that the CP spends on behalf of users doing things such as instruction simulation and page translation. This is the sum of PROC_SYSTEM_TIME.</td>
</tr>
<tr>
<td>PROC_USER_SEC</td>
<td>FLOAT</td>
<td>Processor time spent by the user, in seconds. This is the time charged to the user. It does not include time that the CP spends on behalf of a user doing things such as instruction simulation or page translation. This is the sum of PROC_USER_TIME.</td>
</tr>
<tr>
<td>RECORDS_COLLECTED</td>
<td>FLOAT</td>
<td>Number of records collected. This is the count of records with a valid ELAPSED_TIME field.</td>
</tr>
<tr>
<td>RSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of resume subchannel executions. This is the sum of RSCHS.</td>
</tr>
<tr>
<td>SIGP_INTERRUPTS</td>
<td>FLOAT</td>
<td>Number of external SIGPs issued by this system. This is the sum of SIGP_INTERRUPTS.</td>
</tr>
<tr>
<td>SIMUL_INSTRUCTIONS</td>
<td>FLOAT</td>
<td>Number of simulated instructions executed. This is the sum of SIMUL_INSTRUCTIONS.</td>
</tr>
<tr>
<td>SPOOL_READS</td>
<td>FLOAT</td>
<td>Number of I/Os issued for spool read requests. This is the sum of SPOOL_READS.</td>
</tr>
<tr>
<td>SPOOL_WRITES</td>
<td>FLOAT</td>
<td>Number of I/Os issued for spool write requests. This is the sum of SPOOL_WRITES.</td>
</tr>
<tr>
<td>SSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of start subchannel executions. This is the sum of SSCHS.</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>SYSTEM_ONLINE_SEC</td>
<td>FLOAT</td>
<td>Elapsed time that the processor was online, in seconds. This is the sum of PROC_ONLINE_D0R2.</td>
</tr>
<tr>
<td>SYSTEM_WAIT_SEC</td>
<td>FLOAT</td>
<td>System wait time, in seconds. This is the time that the system had no work to do. It includes active wait times. This is the sum of PROC_WAIT_TIME.</td>
</tr>
<tr>
<td>VECTOR_USER_SEC</td>
<td>FLOAT</td>
<td>Time spent using vector instructions while in SIE, in seconds. This time is included in virtual processor time. This is the sum of VECTOR_TIME.</td>
</tr>
<tr>
<td>VF_OVERHEAD_SEC</td>
<td>FLOAT</td>
<td>Vector facility overhead time, in seconds. This is the time spent switching vector users. This is the sum of VECTOR_SWITCH_TIME.</td>
</tr>
<tr>
<td>WAIT_PCT</td>
<td>FLOAT</td>
<td>Wait time, as a percentage of the elapsed time the system is online. Calculated as (PROC_WAIT_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
</tbody>
</table>
VMPRF data tables

VMPRF_SYSTEM_H, _D, _M

These tables provide hourly, daily, and monthly statistics on VM systems. They contain system data (type 01) records created by the VM Performance Reporting Facility running under VM/XA or VM/ESA.

The default retention periods for these tables are:

<table>
<thead>
<tr>
<th>Table</th>
<th>Retention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMPRF_SYSTEM_H</td>
<td>10 days</td>
</tr>
<tr>
<td>VMPRF_SYSTEM_D</td>
<td>30 days</td>
</tr>
<tr>
<td>VMPRF_SYSTEM_M</td>
<td>765 days</td>
</tr>
</tbody>
</table>

<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 when the data about the VM system was created. For the _M table, this is the date of the first day of the month. From DATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SYSTEM_ID, DATE, and TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the data about the VM system was created. This applies only to the _H table. From TIME.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>VM system ID. From the SYSTEMID parameter specified in the SETTINGS file or on the VMPRF command line.</td>
</tr>
<tr>
<td>BUSY_SYSTEM_PCT</td>
<td>FLOAT</td>
<td>Processor busy time, as a percentage of the time the system is online. Calculated as (PROC_SYSTEM_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_TOTAL_PCT</td>
<td>FLOAT</td>
<td>Total busy time, as a percentage of the elapsed time that the processor is online. Calculated as (PROC_SYSTEM_TIME + PROC_USER_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_USER_PCT</td>
<td>FLOAT</td>
<td>User busy time, as a percentage of the time the processor is online. Calculated as (PROC_USER_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>BUSY_VECTOR_PCT</td>
<td>FLOAT</td>
<td>Vector busy time, as a percentage of the elapsed time the system is online. Calculated as (VECTOR_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
<tr>
<td>CONNECT_SEC</td>
<td>FLOAT</td>
<td>Time that the processor was busy, in seconds. This is the sum of PROC_USER_TIME and PROC_SYSTEM_TIME.</td>
</tr>
<tr>
<td>CPU_ID</td>
<td>CHAR(6)</td>
<td>Serial number. This is the system serial number without a processor identifier as the first character. From SYSTEM_SERIAL_NO.</td>
</tr>
<tr>
<td>CPU_MODEL_NO</td>
<td>CHAR(4)</td>
<td>Model number. This is the processor machine type. From MACHINE_TYPE.</td>
</tr>
<tr>
<td>CPU_ONLINE_COUNT</td>
<td>FLOAT</td>
<td>Number of processors online. Calculated as PROC_ONLINE_D0R2/ELAPSED_TIME.</td>
</tr>
<tr>
<td>CSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of clear subchannel executions. This is the sum of CSCHS.</td>
</tr>
<tr>
<td>DASD_PAGEIN_RATE</td>
<td>FLOAT</td>
<td>Number of disk reads done for system paging. Calculated as the average of PAGE_READS/ELAPSED_TIME.</td>
</tr>
<tr>
<td>DASD_PAGEOUT_RATE</td>
<td>FLOAT</td>
<td>Number of disk writes done for system paging. Calculated as the average of PAGE_WRITES/ELAPSED_TIME.</td>
</tr>
<tr>
<td>DIAG_INSTRUCTIONS</td>
<td>FLOAT</td>
<td>Number of IBM-supplied DIAGNOSE instructions executed. This is the sum of DIAG_INSTRUCTIONS.</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>ELAPSED_SECONDS</td>
<td>FLOAT</td>
<td>Elapsed time that the processor was online. From ELAPSED_TIME.</td>
</tr>
<tr>
<td>ESTOR_PAGEIN_RATE</td>
<td>FLOAT</td>
<td>Number of blocks per second read from expanded storage. Calculated as the average of (FASTPATH_PGINS + NON_FASTPATH_PGINS)/ELAPSED_TIME.</td>
</tr>
<tr>
<td>ESTOR_PGEOUT_RATE</td>
<td>FLOAT</td>
<td>Number of blocks per second written to expanded storage. Calculated as the average of PGOUTS/ELAPSED_TIME.</td>
</tr>
<tr>
<td>EXTERN_INTERRUPTS</td>
<td>FLOAT</td>
<td>Number of external interrupts received. This is the sum of EXTERN_INTERRUPTS.</td>
</tr>
<tr>
<td>FASTPATH_PERCENT</td>
<td>FLOAT</td>
<td>Percentage of page reads from expanded storage that used the fast path. Calculated as (FASTPATH_PGINS/(FASTPATH_PGINS + NON_FASTPATH_PGINS))*100.</td>
</tr>
<tr>
<td>HSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of halt subchannel executions. This is the sum of HSCHS.</td>
</tr>
<tr>
<td>PAGE_READS</td>
<td>FLOAT</td>
<td>Number of page reads from DASD. This is the sum of PAGE_READS.</td>
</tr>
<tr>
<td>PAGES_READ_TO_MS</td>
<td>FLOAT</td>
<td>Number of virtual machine pages read (paged in) from expanded storage to main storage. This is the sum of FASTPATH_PGINS and NON_FASTPATH_PGINS.</td>
</tr>
<tr>
<td>PAGES_WRIT_TO_ES</td>
<td>FLOAT</td>
<td>Number of virtual machine pages written (paged out) from main storage to expanded storage. This is the sum of PGOUTS.</td>
</tr>
<tr>
<td>PAGE_WRITES</td>
<td>FLOAT</td>
<td>Number of page writes to DASD. This is the sum of PAGE_WRITES.</td>
</tr>
<tr>
<td>PROC_EMUL_SEC</td>
<td>FLOAT</td>
<td>Processor time spent in emulation mode, in seconds. This is the sum of PROC_EMUL_TIME.</td>
</tr>
<tr>
<td>PROC_SYSTEM_SEC</td>
<td>FLOAT</td>
<td>Processor time used by the system, in seconds. This time is charged to the system. It includes time that the CP spends on behalf of users doing things such as instruction simulation and page translation. This is the sum of PROC_SYSTEM_TIME.</td>
</tr>
<tr>
<td>PROC_USER_SEC</td>
<td>FLOAT</td>
<td>Processor time spent by the user, in seconds. This is the time charged to the user. It does not include time that the CP spends on behalf of a user doing things such as instruction simulation or page translation. This is the sum of PROC_USER_TIME.</td>
</tr>
<tr>
<td>RECORDS_COLLECTED</td>
<td>FLOAT</td>
<td>Number of system data records collected. This is the count of records with a valid ELAPSED_TIME field.</td>
</tr>
<tr>
<td>RSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of resume subchannel executions. This is the sum of RSCHS.</td>
</tr>
<tr>
<td>SIGP_INTERRUPTS</td>
<td>FLOAT</td>
<td>Number of external SIGPs issued by this system. This is the sum of SIGP_INTERRUPTS.</td>
</tr>
<tr>
<td>SIMUL_INSTRUCTIONS</td>
<td>FLOAT</td>
<td>Number of simulated instructions executed. This is the sum of SIMUL_INSTRUCTIONS.</td>
</tr>
<tr>
<td>SPOOL_READS</td>
<td>FLOAT</td>
<td>Number of I/Os issued for spool read requests. This is the sum of SPOOL_READS.</td>
</tr>
<tr>
<td>SPOOL_WRITES</td>
<td>FLOAT</td>
<td>Number of I/Os issued for spool write requests. This is the sum of SPOOL_WRITES.</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>SSCH_COUNT</td>
<td>FLOAT</td>
<td>Number of start subchannel executions. This is the sum of SSCHS.</td>
</tr>
<tr>
<td>SYSTEM_ONLINE_SEC</td>
<td>FLOAT</td>
<td>Elapsed time that the processor was online, in seconds. This is the sum of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROC_ONLINE_D0R2.</td>
</tr>
<tr>
<td>SYSTEM_WAIT_SEC</td>
<td>FLOAT</td>
<td>System wait time, in seconds. This is the time that the system had no work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to do. It includes active wait and enabled wait times. This is the sum of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROC_WAIT_TIME.</td>
</tr>
<tr>
<td>USERS_DORMANT</td>
<td>FLOAT</td>
<td>Number of users in the dormant list. These are inactive users. They might</td>
</tr>
<tr>
<td></td>
<td></td>
<td>be in a wait state or have no work pending. This includes users found in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SVM wait. Calculated as the average of DORMANT_USERS/INTERVALS_D0R8.</td>
</tr>
<tr>
<td>USERS_LOGGED</td>
<td>FLOAT</td>
<td>Number of users logged on to the system. Calculated as the average of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOGGED_USERS/INTERVALS_D0R8.</td>
</tr>
<tr>
<td>VECTOR_USER_SEC</td>
<td>FLOAT</td>
<td>Time spent using vector instructions while in SIE, in seconds. This time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is included in virtual processor time. This is the sum of VECTOR_TIME.</td>
</tr>
<tr>
<td>VF_OVERHEAD_SEC</td>
<td>FLOAT</td>
<td>Vector facility overhead time, in seconds. This is the time spent switching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vector users. This is the sum of VECTOR SWITCH_TIME.</td>
</tr>
<tr>
<td>WAIT_PCT</td>
<td>FLOAT</td>
<td>Wait time, as a percentage of the elapsed time the system is online.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calculated as (PROC_WAIT_TIME/PROC_ONLINE_D0R2)*100.</td>
</tr>
</tbody>
</table>
These tables provide hourly, daily, and monthly statistics on users of VM systems. They contain user data (type 41) records created by the VM Performance Reporting Facility running under VM/XA or VM/ESA.

The default retention periods for these tables are:
- VMPRF_USER_H: 10 days
- VMPRF_USER_D: 30 days
- VMPRF_USER_M: 765 days

<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 when the data about the VM system was created. For the _M table, this is the date of the first day of the month. From DATE.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SYSTEM_ID, DATE, and TIME from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour) when the data about the VM system was created. It applies only to the _H table. From TIME.</td>
</tr>
<tr>
<td>VM_SYSTEM_ID</td>
<td>CHAR(8)</td>
<td>VM system ID. From the SYSTEMID parameter specified in the SETTINGS file or on the VMPRF command line.</td>
</tr>
<tr>
<td>USER_CLASS</td>
<td>CHAR(8)</td>
<td>Name of the group that the user belongs to. From GROUP_NAME in the USER_GROUP lookup table; if no match is found, this column gets its value from USER_ID. For a description of the USER_GROUP lookup table, refer to the Administration Guide.</td>
</tr>
<tr>
<td>USER_ID</td>
<td>CHAR(8)</td>
<td>User ID. From USER_ID.</td>
</tr>
<tr>
<td>ACTIVE_SEC</td>
<td>FLOAT</td>
<td>Time that the user was active on the system. An active user is one who consumed virtual CPU time or is not in the dormant list at end of the interval. This is the sum of ACTIVE_TIME.</td>
</tr>
<tr>
<td>CONNECT_SEC</td>
<td>FLOAT</td>
<td>Time that the user was connected, in seconds. This is the sum of CONNECT_TIME.</td>
</tr>
<tr>
<td>CONSOLE_IO</td>
<td>FLOAT</td>
<td>Number of start requests issued to the virtual machine console. This is the sum of CONSOLE_IO.</td>
</tr>
<tr>
<td>CPU_TOTAL_SEC</td>
<td>FLOAT</td>
<td>Total processor time spent by the user, in seconds. This includes time that the user spent on doing his own work, and time that the CP spent doing work on behalf of the user. This is the sum of TOTAL_CPU_TIME.</td>
</tr>
<tr>
<td>CPU_VIRTUAL_SEC</td>
<td>FLOAT</td>
<td>Virtual processor usage, in seconds. This is the time the user was running and doing productive work. It does not include time spent on behalf of the user doing things such as instruction simulation or page translation. From VIRTUAL_CPU_TIME.</td>
</tr>
<tr>
<td>CTC_IO</td>
<td>FLOAT</td>
<td>Number of start requests issued to the virtual machine channel-to-channel adapters. This is the sum of CTC_IO.</td>
</tr>
<tr>
<td>DASD_IO</td>
<td>FLOAT</td>
<td>Number of I/O requests the virtual machine issued to DASD devices. This is the sum of DASD_IO.</td>
</tr>
<tr>
<td>DASD_IO_RATE</td>
<td>FLOAT</td>
<td>Number of I/O requests per second the virtual machine issued to DASD devices. Calculated as DASD_IO/USER_LOGGED_D4R4.</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>IUCV_DATA_FAILED</td>
<td>FLOAT</td>
<td>Number of unsuccessful IUCV data transfers. This is the sum of IUCV_DATA_FAILED.</td>
</tr>
<tr>
<td>IUCV_DATA_RECEIVED</td>
<td>FLOAT</td>
<td>Number of successful IUCV data transfers to the virtual machine. This is the sum of IUCV_DATA_RECEIVED.</td>
</tr>
<tr>
<td>IUCV_DATA_SENT</td>
<td>FLOAT</td>
<td>Number of successful IUCV data transfers from the virtual machine. This is the sum of IUCV_DATA_SENT.</td>
</tr>
<tr>
<td>IUCV_MSGQ_SEND</td>
<td>FLOAT</td>
<td>Number of messages on the IUCV SEND queue. This is the sum of IUCV_MSGQ_SEND.</td>
</tr>
<tr>
<td>LOGGED_SEC</td>
<td>FLOAT</td>
<td>Time that the user was logged on, in seconds. This is the sum of USER_LOGGED_D4R3.</td>
</tr>
<tr>
<td>OTHER_IO</td>
<td>FLOAT</td>
<td>Number of start requests issued to device for which no other counter is defined. This is the sum of OTHER_IO.</td>
</tr>
</tbody>
</table>
| PAGE_IO_RATE       | FLOAT     | Number of page reads and writes per second. Calculated as 
                      (PAGE_READ_IO + PAGE_WRITE_IO)/USER_LOGGED_D4R4. |
| PAGE_READS         | FLOAT     | Number of page reads from DASD. This is the sum of PAGE_READ_IO. |
| PAGES_READ_TO_MS   | FLOAT     | Number of virtual machine pages read (paged in) from expanded storage to main storage. This is the sum of PAGES_READ_TO_MS. |
| PAGES_WRIT_TO_ES   | FLOAT     | Number of virtual machine pages written (paged out) from main storage to expanded storage. This is the sum of PGOUTS. |
| PAGE_WRITES        | FLOAT     | Number of page writes to DASD. This is the sum of PAGE_WRITE_IO. |
| RECORDS_COLLECTED  | FLOAT     | Number of records collected. This is the count of records with a valid ACTIVE_TIME field. |
| SPOOL_READS        | FLOAT     | Number of I/Os issued for spool read requests. This is the sum of SPOOL_READ_IO. |
| SPOOL_WRITES       | FLOAT     | Number of I/Os issued for spool write requests. This is the sum of SPOOL_WRITE_IO. |
| UR_IO              | FLOAT     | Number of start requests issued to the virtual machine unit record devices. This is the sum of UR_IO. |
| VECTOR_USER_SEC    | FLOAT     | Time spent using vector instructions while in SIE, in seconds. This is included in CPU_VIRTUAL_SEC. This is the sum of VECTOR_TIME. |
| VMCF_DATA_FAILED   | FLOAT     | Number of unsuccessful VMCF data transfers. This is the sum of VMCF_DATA_FAILED. |
| VMCF_DATA_RECEIVED | FLOAT     | Number of successful VMCF data transfers to the virtual machine. This is the sum of VMCF_DATA_RECEIVED. |
| VMCF_DATA_SENT     | FLOAT     | Number of successful VMCF data transfers from the virtual machine. This is the sum of VMCF_DATA_SENT. |
Chapter 53. Reports

The VMPRF component provides these reports:

- **System reports**
  - VMPRF System Processor Usage, Hourly report
  - VMPRF System Busy Distribution, Hourly report
  - VMPRF System Page and Spool Counts, Hourly report
  - VMPRF System Exp Stor and Paging Activity, Hourly report
  - VMPRF System Instruction Rate, Hourly report
  - VMPRF System Instruction Counts, Hourly report

- **Processor reports**
  - VMPRF Processor Usage Distribution, Hourly report
  - VMPRF Processor Busy Distribution, Hourly report
  - VMPRF Processor Page and Spool Activity, Hourly report
  - VMPRF Processor Storage Activity, Hourly report
  - VMPRF Processor Instruction Rate, Hourly report
  - VMPRF Processor Instruction Counts, Hourly report

- **User reports**
  - VMPRF User Real and Virt Processor Usage, Monthly report
  - VMPRF User Paging and Spooling, Monthly report
  - VMPRF User IUCV and VMCF Counts, Monthly report
  - VMPRF Heaviest Users of the Processor, Monthly report
  - VMPRF Heaviest Users of DASD, Monthly report
  - VMPRF Heaviest Users of Paging, Monthly report
  - VMPRF Processor Usage by User Class, Monthly report
  - VMPRF Paging by User Class, Monthly report
  - VMPRF IUCV and VMCF Usage by User Class, Monthly report

- **DASD reports**
  - VMPRF Most-Used DASD by Start Subchannel Rate report
  - VMPRF Slowest DASD by Response Time report
  - VMPRF DASD With Longest Queues report
  - VMPRF Least Used or not Used DASD Devices report
  - VMPRF Least Used DASD Devices report

- **Configuration reports**
  - VMPRF VM Configuration, Level and Storage, Daily report
  - VMPRF VM Configuration, Level and IPL, Daily report
System reports

The system reports show processor usage and distribution, and also system paging and instruction rates.

**VMPRF System Processor Usage, Hourly report**

This report shows the total percentage usage of all processors in the VM system.

This information identifies the report:

- **Report ID**: VMPRF_S1
- **Report group**: VMPRF reports
- **Source**: VMPRF_SYSTEM_H
- **Attributes**: VM, VMPRF, CPU, Hourly, Performance, Trend
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

![Figure 129. Example of a VMPRF System Processor Usage, Hourly report](image)

The report contains this information:

**Hour**

The time, rounded down to the hour, of the measurement.

**Busy time (%)**

The total busy time, as a percentage of the elapsed time that the processor is online.
| Wait time (%) | The wait time, as a percentage of the elapsed time that the processor is online. |
VMPRF System Busy Distribution, Hourly report

This report shows how processor time is distributed.

This information identifies the report:

- **Report ID**: VMPRF_S2
- **Report group**: VMPRF reports
- **Source**: VMPRF_SYSTEM_H
- **Attributes**: VM, VMPRF, CPU, Hourly, Performance, Trend
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

![VMPRF System Busy Distribution, Hourly report](image)

Figure 130. Example of a VMPRF System Busy Distribution, Hourly report

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.

- **User time (sec)**: The processor time spent by the user, in seconds. This time is charged to the user. It does not include time that CP spent on behalf of a user doing such things as instruction simulation and page translation.

- **System time (sec)**: The processor time used by the system, in seconds. This time is charged to the system. It includes time
that CP spent on behalf of a user doing such things as instruction simulation and page translation.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulator time (sec)</td>
<td>The time that the system processors spent in emulation mode, in seconds.</td>
</tr>
<tr>
<td>Vector time (sec)</td>
<td>The time spent using vector instructions while in start interpretative execution (SIE) mode, in seconds. This time is included in virtual processor time.</td>
</tr>
</tbody>
</table>
VMPRF System Page and Spool Counts, Hourly report

This report shows paging to DASD and spooling rates.

This information identifies the report:

Report ID          VMPRF_S3
Report group       VMPRF reports
Source             VMPRF_SYSTEM_H
Attributes         VM, VMPRF, Paging, Hourly, Performance, Trend
Variables          Date, Period_name_list, VM_system_ID, From_time, To_time

The report contains this information:

Hour               The time, rounded down to the hour, of the measurement.
Spool writes       The number of writes done for system spooling.
Spool reads        The number of reads done for system spooling.
Page writes        The number of pages written to DASD.
Page reads         The number of pages read from DASD.

Figure 131. Example of a VMPRF System Page and Spool Counts, Hourly report
VMPRF System Exp Stor and Paging Activity, Hourly report

This report shows paging rates to DASD and to expanded storage.

This information identifies the report:

- **Report ID**: VMPRF_S4
- **Report group**: VMPRF reports
- **Source**: VMPRF_SYSTEM_H
- **Attributes**: VM, VMPRF, Paging, Hourly, Performance, Storage, Trend
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.
- **DASD page-outs/sec**: The number of DASD writes per second done for paging.
- **DASD page-ins/sec**: The number of DASD reads per second done for paging.
- **Expanded page-outs/sec**: The number of pages per second written to expanded storage.

Figure 132. Example of a VMPRF System Exp Stor and Paging Activity, Hourly report
**VMPRF reports**

| Expanded page-ins/sec | The number of pages per second read from expanded storage. |
VMPRF System Instruction Rate, Hourly report

This report shows the rates for different types of instruction. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_S5
- **Report group**: VMPRF reports
- **Source**: VMPRF_SYSTEM_H
- **Attributes**: VM, VMPRF, CPU, Hourly, Performance, Trend
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.
- **External interrupt rate/sec**: The number of external interrupts received per second.
- **SIGP interrupt rate/sec**: The number of external SIGPs (SIGnal Processor interrupts) issued per second.
- **Simulation rate/sec**: The number of simulated instructions executed per second.

![VMPRF System Instruction Rate, Hourly report](image)

Figure 133. Example of a VMPRF System Instruction Rate, Hourly report
VMPRF reports

Diagnose rate/sec  The number of IBM-supplied DIAGNOSE instructions executed per second.
VMPRF System Instruction Counts, Hourly report

This report shows the distribution of different types of instruction.

This information identifies the report:

- **Report ID**: VMPRF_S6
- **Report group**: VMPRF reports
- **Source**: VMPRF_SYSTEM_H
- **Attributes**: VM, VMPRF, CPU, Hourly, Performance, Trend
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

![Graph showing instruction counts over hours]

**Figure 134. Example of a VMPRF System Instruction Counts, Hourly report**

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.
- **External interrupts**: The number of external interrupts received.
- **SIGP interrupts**: The number of external SIGPs (SIGnal processor interrupts) issued.
- **Simulations**: The number of simulated instructions executed.
- **Diagnose instructions**: The number of IBM-supplied DIAGNOSE instructions executed.
Processor reports

The processor reports show processor usage and distribution, and paging and instruction rates.

VMPRF Processor Usage Distribution, Hourly report

The report shows how each processor in the complex is used. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

Report ID VMPRF_P1
Report group VMPRF reports
Source VMPRF_PROCESSOR_H
Attributes VM, VMPRF, CPU, Hourly, Performance, Detail
Variables Date, Period_name_list, VM_system_ID, From_time, To_time

VMPRF Processor Usage Distribution, Hourly
System: ‘XYZVM’ Period: (’PRIME’)
Date: ‘2000-01-04’

<table>
<thead>
<tr>
<th>Hour</th>
<th>Processor address</th>
<th>Busy time (%)</th>
<th>Processor user (sec)</th>
<th>Processor emulation (sec)</th>
<th>Processor system (sec)</th>
<th>System wait (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0</td>
<td>18.75</td>
<td>610</td>
<td>432</td>
<td>66</td>
<td>2823</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>29.55</td>
<td>765</td>
<td>370</td>
<td>298</td>
<td>2151</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>16.65</td>
<td>542</td>
<td>382</td>
<td>58</td>
<td>2910</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>13.86</td>
<td>453</td>
<td>322</td>
<td>46</td>
<td>3030</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>10.78</td>
<td>355</td>
<td>253</td>
<td>33</td>
<td>3160</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>8.82</td>
<td>294</td>
<td>220</td>
<td>23</td>
<td>3242</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>18.99</td>
<td>625</td>
<td>447</td>
<td>59</td>
<td>2803</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>34.26</td>
<td>939</td>
<td>464</td>
<td>295</td>
<td>1869</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>17.59</td>
<td>581</td>
<td>419</td>
<td>52</td>
<td>2867</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>14.58</td>
<td>484</td>
<td>351</td>
<td>41</td>
<td>2996</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>11.44</td>
<td>382</td>
<td>278</td>
<td>30</td>
<td>3128</td>
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<td></td>
<td>5</td>
<td>9.26</td>
<td>311</td>
<td>232</td>
<td>22</td>
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</tr>
<tr>
<td>11</td>
<td>0</td>
<td>17.42</td>
<td>568</td>
<td>395</td>
<td>59</td>
<td>2865</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>34.82</td>
<td>955</td>
<td>463</td>
<td>298</td>
<td>1859</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>15.48</td>
<td>505</td>
<td>349</td>
<td>52</td>
<td>2948</td>
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<tr>
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<td>3</td>
<td>12.65</td>
<td>416</td>
<td>289</td>
<td>40</td>
<td>3070</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>10.81</td>
<td>361</td>
<td>267</td>
<td>28</td>
<td>3146</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>7.87</td>
<td>263</td>
<td>193</td>
<td>20</td>
<td>3272</td>
</tr>
</tbody>
</table>

Figure 135. Example of a VMPRF Processor Usage Distribution, Hourly report

The report contains this information:

**Hour**

The time, rounded down to the hour, of the measurement.

**Processor address**

The address of the processor in the processor complex.

**Busy time (%)**

The average percentage of time that each processor was busy.

**Processor user (sec)**

The number of seconds charged to users for each processor. It does not include time that CP spends...
on behalf of users doing things such as instruction simulation and page translation.

**Processor emulation (sec)**

The number of seconds that each processor spent in emulation mode.

**Processor system (sec)**

The number of seconds charged to the system for each processor. It includes time that CP spends on behalf of users doing such things as instruction simulation and page translation. It also includes other system work, such as making scheduling decisions.

**System wait (sec)**

The number of seconds that the processor had no work to do. It includes active wait and enabled CPU wait.
VMPRF Processor Busy Distribution, Hourly report

This report shows the distribution of processor work for each processor in the complex.

This information identifies the report:

**Report ID**  VMPRF_P2

**Report group**  VMPRF reports

**Source**  VMPRF_PROCESSOR_H

**Attributes**  VM, VMPRF, CPU, Hourly, Performance, Detail

**Variables**  Date, Period_name_list, VM_system_ID, From_time, To_time

<table>
<thead>
<tr>
<th>Hour</th>
<th>Processor address</th>
<th>Busy total (%)</th>
<th>Busy user (%)</th>
<th>Busy system (%)</th>
<th>Busy emulation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>0</td>
<td>17.45</td>
<td>15.77</td>
<td>1.68</td>
<td>11.10</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30.44</td>
<td>22.22</td>
<td>8.23</td>
<td>10.87</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>15.79</td>
<td>14.30</td>
<td>1.49</td>
<td>10.11</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>13.09</td>
<td>11.93</td>
<td>1.17</td>
<td>8.51</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>12.40</td>
<td>11.61</td>
<td>0.79</td>
<td>9.23</td>
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<td>8.46</td>
<td>7.89</td>
<td>0.57</td>
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</tr>
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<td>0</td>
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<td>13.81</td>
<td>1.63</td>
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<tr>
<td></td>
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<td>23.11</td>
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</tr>
<tr>
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<td>14.02</td>
<td>12.58</td>
<td>1.44</td>
<td>8.40</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>11.08</td>
<td>10.00</td>
<td>1.08</td>
<td>6.70</td>
</tr>
<tr>
<td></td>
<td>4</td>
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<td>8.70</td>
<td>0.70</td>
<td>6.54</td>
</tr>
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<td></td>
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<td>10.97</td>
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<td>0</td>
<td>17.54</td>
<td>15.81</td>
<td>1.73</td>
<td>11.08</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>31.28</td>
<td>22.99</td>
<td>8.29</td>
<td>10.96</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>15.18</td>
<td>13.66</td>
<td>1.52</td>
<td>9.29</td>
</tr>
<tr>
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<td>3</td>
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<td>10.93</td>
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<td>9.16</td>
<td>0.59</td>
<td>7.35</td>
</tr>
</tbody>
</table>

Figure 136. Example of a VMPRF Processor Busy Distribution, Hourly report

The report contains this information:

**Hour**  The time, rounded down to the hour, of the measurement.

**Processor address**  The address of the processor in the processor complex.

**Busy total (%)**  The average percentage of time that each processor was busy.

**Busy user (%)**  The average percentage of time for each processor that is charged to users. It does not include time that CP spends on behalf of users doing things such as instruction simulation and page translation.

**Busy system (%)**  The average percentage of time for each processor that is charged to the system. It includes time that CP spends on behalf of users doing such things as
instruction simulation and page translation. It also includes other system work, such as making scheduling decisions.

**Busy emulation (%)**

The average percentage of time for each processor that was spent in emulation mode. Calculated as: $\frac{100 \times \text{SUM(PROC_EMUL_SEC)}}{\text{SUM(ELAPSED_SECONDS)}}$. 

VMPRF reports

Chapter 53. Reports 395
VMPRF Processor Page and Spool Activity, Hourly report

The report shows DASD paging and spooling activity for each processor in the complex. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_P3
- **Report group**: VMPRF reports
- **Source**: VMPRF_PROCESSOR_H
- **Attributes**: VM, VMPRF, Paging, Hourly, Performance, Detail
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.
- **Processor address**: The address of the processor in the processor complex.
- **Page read (count)**: The number of DASD reads done for paging, for each processor in the complex.
- **Page write (count)**: The number of DASD writes done for paging, for each processor in the complex.
- **Spool read (count)**: The number of spool reads for each processor in the complex.
- **Spool write (count)**: The number of spool writes for each processor in the complex.

---

<table>
<thead>
<tr>
<th>Hour</th>
<th>Processor address</th>
<th>Page read (count)</th>
<th>Page write (count)</th>
<th>Spool read (count)</th>
<th>Spool write (count)</th>
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</tr>
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</table>

Figure 137. Example of a VMPRF Processor Page and Spool Activity, Hourly report
## VMPRF Processor Storage Activity, Hourly report

The report shows paging activity for each processor in the complex. For more information on using this report, refer to the *System Performance Feature Guide*.

This information identifies the report:

- **Report ID**: VMPRF_P4
- **Report group**: VMPRF reports
- **Source**: VMPRF_PROCESSOR_H
- **Attributes**: VM, VMPRF, Storage, Hourly, Performance, Detail
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

![Table](image)

- **Hour**: The time, rounded down to the hour, of the measurement.
- **Processor address**: The address of the processor in the processor complex.
- **Fastpath (%)**: The percentage of page-ins from expanded storage that were handled by the page fault fastpath, for each processor in the complex.
- **Expanded paging /sec**: The rate of paging (page-ins and page-outs) to expanded storage, for each processor in the complex. Calculated as:  
  \[
  \text{SUM(PAGES\_READ\_TO\_MS + PAGES\_WRIT\_TO\_ES) / SUM(ELAPSED\_SECONDS)}.
  \]

Figure 138. Example of a VMPRF Processor Storage Activity, Hourly report

The report contains this information:
VMPRF reports

**Expanded page-ins /sec**
The rate of page-ins from expanded storage per second, for each processor in the complex. Calculated as: \( \frac{\text{SUM(PAGES_READ_TO_MS)}}{\text{SUM(ELAPSED_SECONDS)}} \).

**Expanded page-outs /sec**
The rate of page-outs to expanded storage per second, for each processor in the complex. Calculated as: \( \frac{\text{SUM(PAGES_WRIT_TO_ES)}}{\text{SUM(ELAPSED_SECONDS)}} \).

**DASD page-ins /sec**
The rate of page-ins from DASD per second, for each processor in the complex. Calculated as: \( \frac{\text{SUM(PAGE_READS)}}{\text{SUM(ELAPSED_SECONDS)}} \).

**DASD page-outs /sec**
The rate of page-outs to DASD per second, for each processor in the complex. Calculated as: \( \frac{\text{SUM(PAGE_WRITES)}}{\text{SUM(ELAPSED_SECONDS)}} \).
VMPRF Processor Instruction Rate, Hourly report

The report shows the distribution of instructions for each processor in the complex.

This information identifies the report:

**Report ID**  VMPRF_P5

**Report group**  VMPRF reports

**Source**  VMPRF_PROCESSOR_H

**Attributes**  VM, VMPRF, CPU, Hourly, Performance, Detail

**Variables**  Date, Period_name_list, VM_system_ID, From_time, To_time

VMPRF Processor Instruction Rate, Hourly
System: 'XYZVM'  Period: ('PRIME')
Date: '2000-01-04'

<table>
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<tr>
<th>Hour</th>
<th>Processor address</th>
<th>Busy total (%)</th>
<th>Diagnose instructions /sec</th>
<th>Simulated instructions /sec</th>
<th>SIGP interrupts /sec</th>
</tr>
</thead>
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</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: VMPRF_P5

Figure 139. Example of a VMPRF Processor Instruction Rate, Hourly report

The report contains this information:

**Hour**  The time, rounded down to the hour, of the measurement.

**Processor address**  The address of the processor in the processor complex.

**Busy total (%)**  The average percentage time that each processor is busy.

**Diagnose instructions /sec**  The number of IBM-supplied DIAGNOSE instructions executed per second. Calculated as: \( \frac{\text{SUM(DIAG_INSTRUCTIONS)}}{\text{SUM(ELAPSED_SECONDS)}} \).

**Simulated instructions /sec**  The number of simulated instructions executed per second. Calculated as: \( \frac{\text{SUM(SIMUL_INSTRUCTIONS)}}{\text{SUM(ELAPSED_SECONDS)}} \).
VMPRF reports

**SIGP interrupts /sec**

The number of external SIGPs (SIGnal Processor interrupts) issued per second. Calculated as:

$$\frac{\text{SUM}(\text{SIGP\_INTERRUPTS})}{\text{SUM}(\text{ELAPSED\_SECONDS})}$$
VMPRF Processor Instruction Counts, Hourly report

This report shows the distribution of processor instructions for each processor in the complex.

This information identifies the report:

- **Report ID**: VMPRF_P6
- **Report group**: VMPRF reports
- **Source**: VMPRF_PROCESSOR_H
- **Attributes**: VM, VMPRF, CPU, Hourly, Performance, Detail
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time

The report contains this information:

- **Hour**: The time, rounded down to the hour, of the measurement.
- **Processor address**: The address of the processor in the processor complex.
- **Busy total (%)**: The average percentage time that each processor is busy.
- **Diagnose instructions**: The number of IBM-supplied DIAGNOSE instructions executed.
- **Simulated instructions**: The number of simulated instructions executed.
- **SIGP interrupts**: The number of external SIGPs (SIGnal Processor interrupts) issued.

### Table: VMPRF Processor Instruction Counts, Hourly

<table>
<thead>
<tr>
<th>Hour</th>
<th>Processor address</th>
<th>Busy total (%)</th>
<th>Diagnose instructions</th>
<th>Simulated instructions</th>
<th>SIGP interrupts</th>
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</tbody>
</table>

Figure 140. Example of a VMPRF Processor Instruction Counts, Hourly report

The report contains this information:
User reports

The user reports show processor resources used for each user and the paging activity for each user. The reports also show IUCV and VMCF activity for each user.

VMPRF User Real and Virt Processor Usage, Monthly report

This report shows the processor resources used by each user, grouped by user class. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_U1
- **Report group**: VMPRF reports
- **Source**: VMPRF_USER_M
- **Attributes**: VM, VMPRF, User, Monthly, Performance, CPU, Overview
- **Variables**: Period_name_list, VM_system_ID, Month

<table>
<thead>
<tr>
<th>User class</th>
<th>User ID</th>
<th>Busy time (sec)</th>
<th>Virtual time (sec)</th>
<th>Capture ratio (%)</th>
<th>Active time (hours)</th>
<th>Logon time (hours)</th>
</tr>
</thead>
<tbody>
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<td>197</td>
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<td>0.73</td>
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<td>8</td>
<td>88.61</td>
<td>0.03</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Figure 141. Example of a VMPRF User Real and Virt Processor Usage, Monthly report

The report contains this information:

- **User class**: The user class.
- **User ID**: The user ID.
- **Busy time (sec)**: The total processor time spent by the user, in seconds. This includes time that the user spent doing work, and time that CP spent doing work on behalf of the user.
- **Virtual time (sec)**: The virtual processor time spent by the user, in seconds. This is the time spent doing productive work, and does not include time that CP spends on behalf of the user doing things such as instruction simulation and page translation.
- **Capture ratio (%)**: The ratio between virtual and total processor...
usage, expressed as a percentage. Calculated as:
\[ 100 \times \frac{\text{SUM}(\text{CPU\_VIRTUAL\_SEC})}{\text{SUM}(\text{CPU\_TOTAL\_SEC})}. \]

**Active time (hours)**

The number of hours that the user was active.

User active time is measured at each monitor interval. If a user was active, the user’s active time for that interval is the elapsed time of the monitor interval. If a user was not active, the user’s active time for that interval is zero.

A user is considered active if either the user consumed some virtual CPU time, or the user was not in the dormant list at the end of the monitor interval. This includes users who are trying to do work, but are getting no service.

**Logon time (hours)**

The number of hours that the user was logged on.
VMPRF User Paging and Spooling, Monthly report

This report shows the paging and spooling used by each user, grouped by user class. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_U2
- **Report group**: VMPRF reports
- **Source**: VMPRF_USER_M
- **Attributes**: VM, VMPRF, User, Monthly, Performance, Paging, Spooling, Overview
- **Variables**: Period_name_list, VM_system_ID, Month

The report contains this information:

- **User class**: The user class.
- **User ID**: The user ID.
- **DASD page reads**: The number of I/Os issued for page read requests.
- **DASD page writes**: The number of I/Os issued for page write requests.
- **Spool reads**: The number of I/Os issued for spool read requests.
- **Spool writes**: The number of I/Os issued for spool write requests.

![Figure 142. Example of a VMPRF User Paging and Spooling, Monthly report](image)
VMPRF User IUCV and VMCF Counts, Monthly report

This report shows the IUCV and VMCF activity for each user, grouped by user class.

This information identifies the report:

**Report ID**  VMPRF_U3

**Report group**  VMPRF reports

**Source**  VMPRF_USER_M

**Attributes**  VM, VMPRF, User, Monthly, Performance, VMCF, IUCV, Overview

**Variables**  Period_name_list, VM_system_ID, Month

The report contains this information:

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<th>VMCF fail (count)</th>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ADCOCK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>AHLGREN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ALLMIND</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>AMMERMAN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>ANDERSON</td>
<td>22</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>AUTOLINK</td>
<td>7152</td>
<td>0</td>
<td>7152</td>
<td>70</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>AVAIL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>BASSETT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>BOOS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 143. Example of a VMPRF User IUCV and VMCF Counts, Monthly report

The report contains this information:

**User class**  The user class.

**User ID**  The user ID.

**IUCV receive (count)**  The number of successful IUCV data transfers to this virtual machine.

**IUCV fail (count)**  The number of unsuccessful IUCV data transfers.

**IUCV send (count)**  The number of successful IUCV data transfers from this virtual machine.

**VMCF receive (count)**  The number of successful VMCF data transfers to this virtual machine.

**VMCF fail (count)**  The number of unsuccessful VMCF data transfers.

**VMCF send (count)**  The number of successful VMCF data transfers from this virtual machine.
VMPRF reports

VMPRF Heaviest Users of the Processor, Monthly report

This report shows the processor resources, DASD I/O, and DASD paging used by each user. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>VMPRF_U4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>VMPRF reports</td>
</tr>
<tr>
<td>Source</td>
<td>VMPRF_USER_M</td>
</tr>
<tr>
<td>Attributes</td>
<td>VM, VMPRF, User, Monthly, Performance, CPU, Overview</td>
</tr>
<tr>
<td>Variables</td>
<td>Period_name_list, VM_system_ID, Month</td>
</tr>
</tbody>
</table>

The report contains this information:

<table>
<thead>
<tr>
<th>User ID</th>
<th>Processor usage (%)</th>
<th>Busy time (sec)</th>
<th>Virtual time (sec)</th>
<th>DASD I/O (count)</th>
<th>DASD paging /sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>GARNER</td>
<td>38.29</td>
<td>688</td>
<td>667</td>
<td>37067</td>
<td>0.02</td>
</tr>
<tr>
<td>CPDOCS</td>
<td>33.21</td>
<td>359</td>
<td>351</td>
<td>13151</td>
<td>0.00</td>
</tr>
<tr>
<td>PATTONW</td>
<td>12.16</td>
<td>95</td>
<td>73</td>
<td>21274</td>
<td>0.00</td>
</tr>
<tr>
<td>LAING</td>
<td>11.58</td>
<td>28</td>
<td>27</td>
<td>597</td>
<td>0.00</td>
</tr>
<tr>
<td>CONSORTI</td>
<td>11.52</td>
<td>623</td>
<td>588</td>
<td>29524</td>
<td>0.05</td>
</tr>
<tr>
<td>LAPIDUS</td>
<td>10.31</td>
<td>17</td>
<td>9</td>
<td>9086</td>
<td>0.00</td>
</tr>
<tr>
<td>VTAM</td>
<td>8.06</td>
<td>2888</td>
<td>641</td>
<td>4</td>
<td>0.01</td>
</tr>
<tr>
<td>AABABLD</td>
<td>7.64</td>
<td>202</td>
<td>197</td>
<td>7087</td>
<td>0.00</td>
</tr>
<tr>
<td>HARRISL</td>
<td>6.86</td>
<td>58</td>
<td>56</td>
<td>1008</td>
<td>0.00</td>
</tr>
<tr>
<td>NETVIEW</td>
<td>4.56</td>
<td>1635</td>
<td>646</td>
<td>1638426</td>
<td>0.01</td>
</tr>
<tr>
<td>DIRMANT</td>
<td>4.39</td>
<td>472</td>
<td>314</td>
<td>254950</td>
<td>0.00</td>
</tr>
<tr>
<td>MVSNM1</td>
<td>4.33</td>
<td>3101</td>
<td>1774</td>
<td>89655</td>
<td>0.12</td>
</tr>
<tr>
<td>TEMPA04</td>
<td>4.30</td>
<td>75</td>
<td>44</td>
<td>6583</td>
<td>0.03</td>
</tr>
<tr>
<td>IRKG</td>
<td>4.23</td>
<td>305</td>
<td>270</td>
<td>32959</td>
<td>0.01</td>
</tr>
<tr>
<td>NEADE</td>
<td>4.22</td>
<td>76</td>
<td>74</td>
<td>3046</td>
<td>0.00</td>
</tr>
<tr>
<td>STAMMER</td>
<td>4.20</td>
<td>605</td>
<td>593</td>
<td>3832</td>
<td>0.00</td>
</tr>
<tr>
<td>ADCOCK</td>
<td>4.10</td>
<td>37</td>
<td>34</td>
<td>1581</td>
<td>0.00</td>
</tr>
<tr>
<td>NENAA</td>
<td>3.95</td>
<td>36</td>
<td>30</td>
<td>3354</td>
<td>0.02</td>
</tr>
<tr>
<td>MVSNM2</td>
<td>3.95</td>
<td>2827</td>
<td>1536</td>
<td>28349</td>
<td>0.08</td>
</tr>
<tr>
<td>SMSSYS</td>
<td>3.88</td>
<td>1390</td>
<td>1221</td>
<td>65521</td>
<td>0.64</td>
</tr>
</tbody>
</table>

Figure 144. Example of a VMPRF Heaviest Users of the Processor, Monthly report

The report contains this information:

**User ID**

The user ID.

**Processor usage (%)**

The processor busy time, as a percentage of the time that the user was logged on. Calculated as: 
100 * SUM(CPU_TOTAL_SEC) / SUM(LOGGED_SEC).

**Busy time (sec)**

The total processor time spent by the user, in seconds. This includes time that the user spent doing work, and time that CP spent doing work on behalf of the user.

**Virtual time (sec)**

The virtual processor time spent by the user, in seconds. This is the time spent doing productive work, and does not include time that CP spends on behalf of the user doing things such as instruction simulation and page translation.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DASD IO (count)</td>
<td>The number of I/O requests that this virtual machine issued to DASD devices.</td>
</tr>
<tr>
<td>DASD paging /sec</td>
<td>The number of I/Os issued for page read and write requests, per second that this user was logged on. Calculated as: SUM(PAGE_READS + PAGE_WRITES) / SUM(LOGGED_SEC).</td>
</tr>
</tbody>
</table>
VMPRF Heaviest Users of DASD, Monthly report

This report shows the processor resource usage, DASD I/O, DASD rate, and DASD paging for each user.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>VMPRF_U5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>VMPRF reports</td>
</tr>
<tr>
<td>Source</td>
<td>VMPRF_USER_M</td>
</tr>
<tr>
<td>Attributes</td>
<td>VM, VMPRF, User, Monthly, Performance, DASD, Overview</td>
</tr>
<tr>
<td>Variables</td>
<td>Period_name_list, VM_system_ID, Month</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User ID</th>
<th>DASD IO (count)</th>
<th>DASD rate /sec</th>
<th>Busy time (sec)</th>
<th>Virtual time (sec)</th>
<th>DASD paging rate /sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETVIEW</td>
<td>1638426</td>
<td>45.74</td>
<td>1635.1</td>
<td>646.4</td>
<td>0.01</td>
</tr>
<tr>
<td>TOOLS</td>
<td>268038</td>
<td>8.56</td>
<td>651.2</td>
<td>358.5</td>
<td>0.02</td>
</tr>
<tr>
<td>DIRMAINT</td>
<td>254950</td>
<td>23.74</td>
<td>471.9</td>
<td>313.9</td>
<td>0.00</td>
</tr>
<tr>
<td>MVSNM1</td>
<td>89655</td>
<td>1.25</td>
<td>3101.4</td>
<td>1774.1</td>
<td>0.12</td>
</tr>
<tr>
<td>EQUALO2</td>
<td>82177</td>
<td>4.82</td>
<td>180.4</td>
<td>108.9</td>
<td>0.08</td>
</tr>
<tr>
<td>SMSSYS</td>
<td>65521</td>
<td>1.83</td>
<td>1389.7</td>
<td>1221.0</td>
<td>0.64</td>
</tr>
<tr>
<td>GARNER</td>
<td>37067</td>
<td>20.59</td>
<td>689.3</td>
<td>667.4</td>
<td>0.02</td>
</tr>
<tr>
<td>EUPO</td>
<td>35346</td>
<td>9.88</td>
<td>44.7</td>
<td>11.2</td>
<td>0.01</td>
</tr>
<tr>
<td>TRKING</td>
<td>32959</td>
<td>4.58</td>
<td>304.7</td>
<td>269.5</td>
<td>0.01</td>
</tr>
<tr>
<td>GOEBELLE</td>
<td>30215</td>
<td>1.60</td>
<td>346.9</td>
<td>320.2</td>
<td>0.01</td>
</tr>
<tr>
<td>CONSOR1</td>
<td>29524</td>
<td>5.47</td>
<td>622.5</td>
<td>587.6</td>
<td>0.05</td>
</tr>
<tr>
<td>MVSNME</td>
<td>28349</td>
<td>0.40</td>
<td>2627.0</td>
<td>1536.2</td>
<td>0.06</td>
</tr>
<tr>
<td>PHILZ</td>
<td>24333</td>
<td>2.27</td>
<td>265.9</td>
<td>245.1</td>
<td>0.03</td>
</tr>
<tr>
<td>EQFAMOSO</td>
<td>23274</td>
<td>8.62</td>
<td>34.1</td>
<td>25.3</td>
<td>0.10</td>
</tr>
<tr>
<td>PATTONW</td>
<td>21274</td>
<td>27.27</td>
<td>94.9</td>
<td>73.4</td>
<td>0.00</td>
</tr>
<tr>
<td>MIDDLET</td>
<td>20643</td>
<td>4.59</td>
<td>100.7</td>
<td>88.1</td>
<td>0.03</td>
</tr>
<tr>
<td>DONN</td>
<td>18057</td>
<td>2.53</td>
<td>159.3</td>
<td>143.7</td>
<td>0.00</td>
</tr>
<tr>
<td>AUTOLINK</td>
<td>16897</td>
<td>0.59</td>
<td>555.1</td>
<td>543.9</td>
<td>0.01</td>
</tr>
<tr>
<td>COLEY</td>
<td>16833</td>
<td>2.36</td>
<td>174.7</td>
<td>137.3</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Figure 145. Example of a VMPRF Heaviest Users of DASD, Monthly report

The report contains this information:

- **User ID**: The user ID.
- **DASD IO (count)**: The number of I/O requests that this virtual machine issued to DASD devices.
- **DASD rate /sec**: The number of I/O requests that this virtual machine issued to DASD devices, per second that this user was logged on. Calculated as: \( \text{SUM(DASD_IO)} / \text{SUM(LOGGED_SEC)} \).
- **Busy time (sec)**: The total processor time spent by the user, in seconds. This includes time that the user spent doing work, and time that CP spent doing work on behalf of the user.
- **Virtual time (sec)**: The virtual processor time spent by the user, in seconds. This is the time spent doing productive work, and does not include time that CP spends on...
behalf of the user doing things such as instruction simulation and page translation.

**DASD paging rate /sec**

The number of I/Os issued for page read and write requests, per second that this user was logged on. Calculated as: \( \text{SUM} \left( \text{PAGE\_READS} + \text{PAGE\_WRITES} \right) / \text{SUM} \left( \text{LOGGED\_SEC} \right) \).
VMPRF reports

VMPRF Heaviest Users of Paging, Monthly report

This report shows the processor resources usage and paging activities for each user.

This information identifies the report:

- **Report ID**: VMPRF_U6
- **Report group**: VMPRF reports
- **Source**: VMPRF_USER_M
- **Attributes**: VM, VMPRF, User, Monthly, Performance, Paging, Overview
- **Variables**: Period_name_list, VM_system_ID, Month

VMPRF Heaviest Users of Paging, Monthly
System: 'XYZVM'  Period: ('PRIME')
Month: '2000-01-01'

<table>
<thead>
<tr>
<th>User ID</th>
<th>DASD paging /sec</th>
<th>Expanded paging /sec</th>
<th>DASD page-in (count)</th>
<th>DASD page-out (count)</th>
<th>Busy total (sec)</th>
<th>Virtual processor total (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMSP2SUP</td>
<td>1.45</td>
<td>2.24</td>
<td>500</td>
<td>5947</td>
<td>61</td>
<td>32</td>
</tr>
<tr>
<td>SMSSYS</td>
<td>0.64</td>
<td>1.57</td>
<td>10770</td>
<td>12009</td>
<td>1390</td>
<td>1221</td>
</tr>
<tr>
<td>INFOUPD</td>
<td>0.28</td>
<td>0.00</td>
<td>255</td>
<td>0</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>EQJews</td>
<td>0.17</td>
<td>0.00</td>
<td>150</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>MVSCAC</td>
<td>0.17</td>
<td>0.47</td>
<td>2777</td>
<td>3179</td>
<td>606</td>
<td>496</td>
</tr>
<tr>
<td>EQNEIGHL</td>
<td>0.16</td>
<td>0.00</td>
<td>145</td>
<td>0</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>RMORSE</td>
<td>0.13</td>
<td>0.32</td>
<td>349</td>
<td>0</td>
<td>51</td>
<td>47</td>
</tr>
<tr>
<td>MVSM1</td>
<td>0.12</td>
<td>1.69</td>
<td>7080</td>
<td>1606</td>
<td>3101</td>
<td>1774</td>
</tr>
<tr>
<td>EQFAMSO</td>
<td>0.10</td>
<td>0.12</td>
<td>208</td>
<td>60</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>PETERSON</td>
<td>0.09</td>
<td>0.01</td>
<td>78</td>
<td>0</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>EQUAL02</td>
<td>0.08</td>
<td>0.05</td>
<td>54</td>
<td>1389</td>
<td>180</td>
<td>109</td>
</tr>
<tr>
<td>CJews</td>
<td>0.08</td>
<td>0.08</td>
<td>283</td>
<td>0</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>MVSNM2</td>
<td>0.08</td>
<td>0.48</td>
<td>2611</td>
<td>2862</td>
<td>2827</td>
<td>1536</td>
</tr>
<tr>
<td>RMSTI</td>
<td>0.07</td>
<td>0.09</td>
<td>154</td>
<td>0</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>SPRINGS</td>
<td>0.07</td>
<td>0.08</td>
<td>61</td>
<td>0</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>GLASS</td>
<td>0.07</td>
<td>0.01</td>
<td>117</td>
<td>0</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>CONSORTI</td>
<td>0.05</td>
<td>0.49</td>
<td>130</td>
<td>130</td>
<td>623</td>
<td>588</td>
</tr>
</tbody>
</table>

Figure 146. Example of a VMPRF Heaviest Users of Paging, Monthly report

The report contains this information:

- **User ID**: The user ID.
- **DASD paging /sec**: The number of I/Os issued for page read and write requests, per second that this user was logged on. Calculated as: \( \text{SUM(PAGE_READS + PAGE_WRITES)} / \text{SUM(LOGGED_SEC)} \).

- **Expanded paging /sec**: The number of pages written from main storage to expanded storage, and read from expanded storage to main storage, per second that this user was logged on. Calculated as: \( \text{SUM(PAGES_READ_TO_MS + PAGES_WRIT_TO_ES)} / \text{SUM(LOGGED_SEC)} \).

- **DASD page-in (count)**: The number of I/Os issued for page read requests.
- **DASD page-out (count)**: The number of I/Os issued for page write requests.
- **Busy total (sec)**: The total processor time spent by the user, in
| Virtual processor (sec) | The virtual processor time spent by the user, in seconds. This is the time spent doing productive work, and does not include time that CP spends on behalf of the user doing things such as instruction simulation and page translation. |
VMPRF Processor Usage by User Class, Monthly report

This report shows the processor usage, grouped by user class.

This information identifies the report:

- **Report ID**: VMPRF_U7
- **Report group**: VMPRF reports
- **Source**: VMPRF_USER_M
- **Attributes**: VM, VMPRF, User, Monthly, Performance, CPU, Overview
- **Variables**: Period_name_list, VM_system_ID, Month

VMPRF Processor Usage by User Class, Monthly
System: 'XYZVM' Period: ('PRIME')
Month: '2000-01-01'

<table>
<thead>
<tr>
<th>User class</th>
<th>Busy time (sec)</th>
<th>Virtual time (sec)</th>
<th>Capture ratio (%)</th>
<th>Active time (hours)</th>
<th>Logon time (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>25469</td>
<td>16746</td>
<td>65.75</td>
<td>214.46</td>
<td>246.67</td>
</tr>
</tbody>
</table>

Figure 147. Example of a VMPRF Processor Usage by User Class, Monthly report

The report contains this information:

**User class**
The user class.

**Busy time (sec)**
The total processor time spent by this user class, in seconds. This includes time spent doing work, and time that CP spent doing work on behalf of the users.

**Virtual time (sec)**
The virtual processor time spent by this user class, in seconds. This is the time spent doing productive work, and does not include time that CP spends on behalf of the users doing things such as instruction simulation and page translation.

**Capture ratio (%)**
The ratio between virtual and total processor usage, expressed as a percentage. Calculated as: $100 \cdot \frac{\text{SUM(CPU_VIRTUAL_SEC)}}{\text{SUM(CPU_TOTAL_SEC)}}$.

**Active time (hours)**
The number of hours that the users in this class were active in the system. An active user is one who consumes processor time, or who is not in the dormant list at the end of the monitoring interval.

**Logon time (hours)**
The number of hours that the users in this class were logged on.
VMPRF Paging by User Class, Monthly report

This report shows the paging and spooling activities by user class.

This information identifies the report:

Report ID    VMPRF_U8
Report group VMPRF reports
Source       VMPRF_USER_M
Attributes   VM, VMPRF, User, Monthly, Performance, Paging, Spooling,
             Overview
Variables    Period_name_list, VM_system_ID, Month

VMPRF Paging by User Class, Monthly
System: 'XYZVM ' Period: ('PRIME')
Month: '2000-01-01'

<table>
<thead>
<tr>
<th>User class</th>
<th>DASD page-in (count)</th>
<th>DASD page-out (count)</th>
<th>Spool read (count)</th>
<th>Spool write (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>30062</td>
<td>30173</td>
<td>276340</td>
<td>205425</td>
</tr>
</tbody>
</table>

Figure 148. Example of a VMPRF Paging by User Class, Monthly report

The report contains this information:

User class    The user class.
DASD page-in (count) The number of I/Os issued for page read requests.
DASD page-out (count) The number of I/Os issued for page write requests.
Spool read (count) The number of I/Os issued for spool read requests.
Spool write (count) The number of I/Os issued for spool write requests.
VMPRF reports

VMPRF IUCV and VMCF Usage by User Class, Monthly report

This report shows the IUCV and VMCF activity by user class. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_U9
- **Report group**: VMPRF reports
- **Source**: VMPRF_USER_M
- **Attributes**: VM, VMPRF, User, Monthly, Performance, IUCV, VMCF, Overview
- **Variables**: Period_name_list, VM_system_ID, Month

The report contains this information:

- **User class**: The user class.
- **IUCV receive (count)**: The number of successful IUCV data transfers to virtual machines in the user class.
- **IUCV fail (count)**: The number of unsuccessful IUCV data transfers.
- **IUCV send (count)**: The number of successful IUCV data transfers from virtual machines in the user class.
- **VMCF receive (count)**: The number of successful VMCF data transfers to virtual machines in the user class.
- **VMCF fail (count)**: The number of unsuccessful VMCF data transfers.
- **VMCF send (count)**: The number of successful VMCF data transfers from virtual machines in the user class.

---

**Figure 149. Example of a VMPRF IUCV and VMCF Usage by User Class, Monthly report**

The report contains this information:

<table>
<thead>
<tr>
<th>User class</th>
<th>IUCV receive (count)</th>
<th>IUCV fail (count)</th>
<th>IUCV send (count)</th>
<th>VMCF receive (count)</th>
<th>VMCF fail (count)</th>
<th>VMCF send (count)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMIN</td>
<td>671005</td>
<td>35</td>
<td>711225</td>
<td>2049</td>
<td>0</td>
<td>1003</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for 05/390 Report: VMPRF_U9
DASD reports

The VMPRF DASD reports show information on the DASD volumes. This information includes the longest DASD response times and the lowest and highest activity based on the number of start subchannel and resume subchannel instruction executions.

VMPRF Most-Used DASD by Start Subchannel Rate report

This report shows the DASD volumes having the most start subchannel and resume subchannel executions per second.

Use the Rows variable to set the number of DASD volumes in the report.

This information identifies the report:

- **Report ID**: VMPRF_D1
- **Report group**: VMPRF reports
- **Source**: VMPRF_DASD_H
- **Attributes**: VM, VMPRF, DASD, Performance, SSCHrate
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time, Rows

```
VMPRF Most-Used DASD by Start Subchannel Rate
System: 'XYZVM' Period: ('PRIME')
Date: '1999-12-29'
Time: '08.00.00' to '20.00.00'

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>SSCH+RSCH (count)</th>
<th>SSCH queued (count)</th>
<th>SSCHrate /second</th>
<th>Response time (msec)</th>
<th>Service time (msec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMX4A6</td>
<td>216513</td>
<td>0</td>
<td>21.9</td>
<td>18.2</td>
<td>18.2</td>
</tr>
<tr>
<td>MDSK21</td>
<td>682572</td>
<td>29</td>
<td>21.7</td>
<td>14.8</td>
<td>14.7</td>
</tr>
<tr>
<td>VMX791</td>
<td>153379</td>
<td>0</td>
<td>17.0</td>
<td>16.3</td>
<td>16.3</td>
</tr>
<tr>
<td>VMX4AF</td>
<td>104235</td>
<td>0</td>
<td>16.5</td>
<td>18.6</td>
<td>18.6</td>
</tr>
<tr>
<td>VMX4AA</td>
<td>155549</td>
<td>0</td>
<td>15.7</td>
<td>19.3</td>
<td>19.3</td>
</tr>
<tr>
<td>VMX790</td>
<td>153731</td>
<td>0</td>
<td>15.5</td>
<td>16.4</td>
<td>16.4</td>
</tr>
<tr>
<td>VMX4AD</td>
<td>223486</td>
<td>0</td>
<td>14.7</td>
<td>21.8</td>
<td>21.8</td>
</tr>
</tbody>
</table>
```

Figure 150. Example of a VMPRF Most-Used DASD by Start Subchannel Rate report

The report contains this information:

- **VOLSER**: The DASD volume serial number.
- **SSCH+RSCH (count)**: The number of start and resume subchannel instructions.
- **SSCH queued (count)**: The number of start subchannel requests queued, excluding the active request.
- **SSCHrate /second**: The average number of start and resume subchannel instructions each second the device was online. Calculated as: \( \frac{\text{SUM(SSCH_AND_RSCH)}}{\text{SUM(ONLINE_SEC)}} \).
- **Response time (msec)**: The average time to complete a DASD I/O operation. This is the time in the queue added to the service time. Calculated as: \( \text{AVG(1000 *} \)
### VMPRF reports

Service time (msec)

SSCH_QUEUED / HF_SAMPLES * ELAPSED_SEC / SSCH_AND_RSCH + SERVICE_MSEC).

The average time between a start subchannel being passed to the channel path and the completion of the input/output.
**VMPRF Slowest DASD by Response Time report**

This report shows the DASD volumes having the longest response time.

Use the Rows variable to set the number of DASD volumes in the report.

This information identifies the report:

<table>
<thead>
<tr>
<th>Report ID</th>
<th>VMPRF_D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report group</td>
<td>VMPRF reports</td>
</tr>
<tr>
<td>Source</td>
<td>VMPRF_DASD_H</td>
</tr>
<tr>
<td>Attributes</td>
<td>VM, VMPRF, DASD, Performance, Response, Worst</td>
</tr>
<tr>
<td>Variables</td>
<td>Date, Period_name_list, VM_system_ID, From_time, To_time, Rows</td>
</tr>
</tbody>
</table>

The report contains this information:

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>SSCH+RSCH (count)</th>
<th>SSCH queued (count)</th>
<th>SSCHRate /second</th>
<th>Response time (msec)</th>
<th>Service time (msec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP2MSC</td>
<td>2525</td>
<td>0</td>
<td>0</td>
<td>53.2</td>
<td>53.2</td>
</tr>
<tr>
<td>VMX24A</td>
<td>163187</td>
<td>0</td>
<td>12.1</td>
<td>50.2</td>
<td>50.2</td>
</tr>
<tr>
<td>VMX240</td>
<td>101863</td>
<td>132</td>
<td>4.7</td>
<td>48.2</td>
<td>47.0</td>
</tr>
<tr>
<td>VMPG08</td>
<td>49</td>
<td>0</td>
<td>0.1</td>
<td>46.4</td>
<td>46.4</td>
</tr>
<tr>
<td>VMX25B</td>
<td>22582</td>
<td>17</td>
<td>1.6</td>
<td>42.4</td>
<td>41.6</td>
</tr>
<tr>
<td>XPM08A</td>
<td>11863</td>
<td>2</td>
<td>0.7</td>
<td>41.8</td>
<td>41.5</td>
</tr>
<tr>
<td>VMX40A</td>
<td>4240</td>
<td>3</td>
<td>0.4</td>
<td>40.9</td>
<td>40.2</td>
</tr>
<tr>
<td>VMX40B</td>
<td>18583</td>
<td>0</td>
<td>1.9</td>
<td>40.2</td>
<td>40.2</td>
</tr>
<tr>
<td>CACAT3</td>
<td>2825</td>
<td>3</td>
<td>0.3</td>
<td>34.3</td>
<td>34.3</td>
</tr>
<tr>
<td>CPB001</td>
<td>4170</td>
<td>0</td>
<td>0.4</td>
<td>33.7</td>
<td>33.7</td>
</tr>
</tbody>
</table>

Figure 151. Example of a VMPRF Slowest DASD by Response Time report

The report contains this information:

**VOLSER**

The DASD volume serial number.

**SSCH+RSCH (count)**

The number of start and resume subchannel instructions.

**SSCH queued (count)**

The number of start subchannel requests queued, excluding the active request.

**SSCHRate /second**

The average number of start and resume subchannel instructions each second the device was online. Calculated as: \(\text{SUM(SSCH\_AND\_RSCH)} / \text{SUM(ONLINE\_SEC)}\).

**Response time (msec)**

The average time to complete a DASD I/O operation. This is the time in the queue added to the service time. Calculated as: \(\text{AVG(1000 * SSCH\_QUEUED / HF\_SAMPLES * ELAPSED\_SEC / SSCH\_AND\_RSCH + SERVICE\_MSEC)}\).

**Service time (msec)**

The average time between a start subchannel being passed to the channel path and the completion of the I/O.
VMPRF reports

VMPRF DASD With Longest Queues report

This report shows the DASD volumes having the most start-subchannel instructions queued. Use the Rows variable to set the number of DASD volumes in the report. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:

- **Report ID**: VMPRF_D3
- **Report group**: VMPRF reports
- **Source**: VMPRF_DASD_H
- **Attributes**: VM, VMPRF, DASD, Performance, Requests, Worst
- **Variables**: Date, Period_name_list, VM_system_ID, From_time, To_time, Rows

The report contains this information:

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>SSCH+RSCH (count)</th>
<th>SSCH queued (count)</th>
<th>SSCHRate /second</th>
<th>Response time (msec)</th>
<th>Service time (msec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMX240</td>
<td>101863</td>
<td>132</td>
<td>4.7</td>
<td>48.2</td>
<td>47.0</td>
</tr>
<tr>
<td>MNK7A9</td>
<td>15593</td>
<td>63</td>
<td>0.6</td>
<td>22.3</td>
<td>18.3</td>
</tr>
<tr>
<td>EXPSUP</td>
<td>62379</td>
<td>38</td>
<td>2.3</td>
<td>20.7</td>
<td>19.6</td>
</tr>
<tr>
<td>MDSK21</td>
<td>652830</td>
<td>34</td>
<td>20.8</td>
<td>14.8</td>
<td>14.7</td>
</tr>
<tr>
<td>VMX2AR</td>
<td>55907</td>
<td>31</td>
<td>1.8</td>
<td>15.8</td>
<td>14.7</td>
</tr>
<tr>
<td>EQL002</td>
<td>80128</td>
<td>25</td>
<td>2.5</td>
<td>17.8</td>
<td>17.2</td>
</tr>
<tr>
<td>MNK7AA</td>
<td>19435</td>
<td>25</td>
<td>0.7</td>
<td>15.0</td>
<td>14.0</td>
</tr>
<tr>
<td>VMX25B</td>
<td>22582</td>
<td>17</td>
<td>1.6</td>
<td>42.4</td>
<td>41.6</td>
</tr>
<tr>
<td>EQL001</td>
<td>102132</td>
<td>11</td>
<td>3.3</td>
<td>17.2</td>
<td>17.0</td>
</tr>
<tr>
<td>MDSK15</td>
<td>19069</td>
<td>7</td>
<td>0.7</td>
<td>22.2</td>
<td>21.7</td>
</tr>
</tbody>
</table>

The DASD volume serial number.

- **SSCH+RSCH (count)**: The number of start and resume subchannel instructions.

- **SSCH queued (count)**: The number of start subchannel requests queued, excluding the active request.

- **SSCHRate /second**: The average number of start and resume subchannel instructions each second the device was online. Calculated as: \( \frac{\text{SUM(SSCH\_AND\_RSCH)}}{\text{SUM(ONLINE\_SEC)}} \).

Figure 152. Example of a VMPRF DASD With Longest Queues report
Response time (msec)  The average time to complete a DASD input/output operation. This is the time in the queue added to the service time. Calculated as: \( \text{AVG}(1000 \times \text{SSCH QUEUED} / \text{HF SAMPLES} \times \text{ELAPSED SEC} / \text{SSCH AND RSCH} + \text{SERVICE MSEC}) \).

Service time (msec)  The average time between a start subchannel being passed to the channel path and the completion of the I/O.
VMPRF Least Used or not Used DASD Devices report

This report shows the DASD volumes having the lowest activity based on the number of start subchannel and resume subchannel instructions executed. Use the Rows variable to set the number of DASD volumes in the report. For more information on using this report, refer to the System Performance Feature Guide.

This information identifies the report:
Report ID VMPRF_D4
Report group VMPRF reports
Source VMPRF_DASD_H
Attributes VM, VMPRF, DASD, Performance, Worst
Variables Date, Period_name_list, VM_system_ID, From_time, To_time, Rows

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>SSCH+RSCH queued (count)</th>
<th>SSCHrate /second</th>
<th>Response time (msec)</th>
<th>Service time (msec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMX4AA</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4AB</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4A1</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4A3</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4A9</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
</tr>
<tr>
<td>MDSK42</td>
<td>30</td>
<td>0</td>
<td>0.0</td>
<td>20.0</td>
</tr>
<tr>
<td>MDSK46</td>
<td>34</td>
<td>0</td>
<td>0.0</td>
<td>16.8</td>
</tr>
<tr>
<td>MDSK28</td>
<td>35</td>
<td>0</td>
<td>0.0</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Figure 153. Example of a VMPRF Least Used or not Used DASD Devices report

The report contains this information:

VOLSER The DASD volume serial number.

SSCH+RSCH (count) The number of start and resume subchannel instructions.

SSCH queued (count) The number of start subchannel requests queued, excluding the active request.

SSCHrate /second The average number of start and resume subchannel instructions each second the device was online. Calculated as: SUM(SSCH_AND_RSCH) / SUM(ONLINE_SEC).

Response time (msec) The average time to complete a DASD input/output operation. This is the time in the queue added to the service time. Calculated as: AVG(1000 * SSCH_QUEUE / HF_SAMPLES * ELAPSED_SEC / SSCH_AND_RSCH + SERVICE_MSEC).

Service time (msec) The average time between a start subchannel being passed to the channel path and the completion of the I/O.
VMPRF Least Used DASD Devices report

This report shows the DASD volumes having the lowest activity based on the number of start subchannel and resume subchannel instructions executed. Volumes with no subchannel instructions executed are excluded. The devices without any subchannel instructions are excluded.

Use the Rows variable to set the number of DASD volumes in the report.

This information identifies the report:

- **Report ID**: VMPRF_D5
- **Report group**: VMPRF reports
- **Source**: VMPRF_DASD_H
- **Attributes**: VM, VMPRF, DASD, Performance, Worst
- **Variables**: Date, Period_name-list, VM_system_ID, From_time, To_time, Rows

The report contains this information:

<table>
<thead>
<tr>
<th>VOLSER</th>
<th>SSCH+RSCH (count)</th>
<th>SSCH queued (count)</th>
<th>SSCHrate /second</th>
<th>Response time (msec)</th>
<th>Service time (msec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMX4AA</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4A3</td>
<td>28</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>MDSK46</td>
<td>34</td>
<td>0</td>
<td>0.0</td>
<td>16.8</td>
<td>16.8</td>
</tr>
<tr>
<td>MDSK05</td>
<td>44</td>
<td>0</td>
<td>0.0</td>
<td>22.7</td>
<td>22.7</td>
</tr>
<tr>
<td>MDSK47</td>
<td>46</td>
<td>0</td>
<td>0.1</td>
<td>21.3</td>
<td>21.3</td>
</tr>
<tr>
<td>VMPG08</td>
<td>49</td>
<td>0</td>
<td>0.1</td>
<td>46.4</td>
<td>46.4</td>
</tr>
<tr>
<td>VMX4AC</td>
<td>58</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>VMX4A4</td>
<td>58</td>
<td>0</td>
<td>0.0</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Figure 154. Example of a VMPRF Least Used DASD Devices report

The report contains this information:

- **VOLSER**: The DASD volume serial number.
- **SSCH+RSCH (count)**: The number of start and resume subchannel instructions.
- **SSCH queued (count)**: The number of start subchannel requests queued, excluding the active request.
- **SSCHrate /second**: The average number of start and resume subchannel instructions each second the device was online. Calculated as: \( \frac{\text{SUM(SSCH_AND_RSCH)}}{\text{SUM(ONLINE_SEC)}} \).
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response time (msec)</td>
<td>The average time to complete a DASD input/output operation. This is the time in the queue added to the service time. Calculated as: <code>AVG(1000 * SSCH_QUEUED / HF_SAMPLES * ELAPSED_SEC / SSCH_AND_RSCH + SERVICE_MSEC)</code></td>
</tr>
<tr>
<td>Service time (msec)</td>
<td>The average time between a start subchannel being passed to the channel path and the completion of the I/O.</td>
</tr>
</tbody>
</table>
Configuration reports

The configuration reports show VM system levels, storage configuration data, and the date of the last IPL.

VMPRF VM Configuration, Level and Storage, Daily report

This report shows the VM system level and storage configuration. The VM monitor writes this data each time it is started.

This information identifies the report:

- **Report ID**: VMPRF_C1
- **Report group**: VMPRF reports
- **Source**: VMPRF_CONFIG_T
- **Attributes**: VM, VMPRF, Configuration, Daily, Detail
- **Variables**: From_date, To_date, VM_system_ID

The report contains this information:

- **Date**: The date of the measurement.
- **Time**: The time of the measurement.
- **VM level**: The version, release number, and service level of the VM system. This is a concatenation of VM_VERSION, VM_RELEASE, and VM_SERVICE_LEVEL, separated by periods.
- **Storage real (MB)**: The size of real storage calculated during system initialization. Calculated as: STORAGE_REAL / 1048576.
- **Storage sysgen (MB)**: The storage size of the real machine as defined during SYSGEN. Calculated as: STORAGE_SYSGEN / 1048576.

---

VMPRF VM Configuration, Level and Storage, Daily
System: 'XYZVM'
Date: '1999-12-28' to '2000-01-08'

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>VM level</th>
<th>real (MB)</th>
<th>sysgen (MB)</th>
<th>V=R expanded (blocks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-28</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>1999-12-29</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>1999-12-30</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>1999-12-30</td>
<td>17.39.14</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-01</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-04</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-04</td>
<td>16.31.14</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-05</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-07</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
<tr>
<td>2000-01-08</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>331.0</td>
<td>331.0</td>
<td>0.0 407552</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report VMPRF_C1

Figure 155. Example of a VMPRF VM Configuration, Level and Storage, Daily report

The report contains this information:

- **Date**: The date of the measurement.
- **Time**: The time of the measurement.
- **VM level**: The version, release number, and service level of the VM system. This is a concatenation of VM_VERSION, VM_RELEASE, and VM_SERVICE_LEVEL, separated by periods.
- **Storage real (MB)**: The size of real storage calculated during system initialization. Calculated as: STORAGE_REAL / 1048576.
- **Storage sysgen (MB)**: The storage size of the real machine as defined during SYSGEN. Calculated as: STORAGE_SYSGEN / 1048576.
### VMPRF reports

<table>
<thead>
<tr>
<th>Storage V=R (MB)</th>
<th>The size of the virtual-equals-real (V=R) area excluding virtual-equals-real reserved free storage. This is set to the largest V=R or V=F address. It is set to 0 when there is no preferred guest defined or when the virtual-equals-real area is unlocked after all preferred guests have logged off. Calculated as: ( \frac{VR_SIZE}{1048576} ).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage expanded (blocks)</td>
<td>The number of expanded storage blocks installed.</td>
</tr>
</tbody>
</table>
VMPRF VM Configuration, Level and IPL, Daily report

This report shows the VM system level, last IPL, and termination dates, and the abend code from the last termination. The VM monitor writes this data each time it is started.

This information identifies the report:

- **Report ID**: VMPRF_C2
- **Report group**: VMPRF reports
- **Source**: VMPRF_CONFIG_T
- **Attributes**: VM, VMPRF, Configuration, Daily, Detail
- **Variables**: From_date, To_date, VM_system_ID

The report contains this information:

- **Date**
- **Time**
- **VM level**
- **Abend code**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>VM level</th>
<th>IPL</th>
<th>Date last termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-12-28</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>1999-12-29</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>1999-12-30</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>1999-12-30</td>
<td>17.39.14</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>2000-01-01</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>2000-01-04</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>2000-01-04</td>
<td>16.31.14</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>2000-01-05</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>1999-12-17</td>
<td></td>
</tr>
<tr>
<td>2000-01-07</td>
<td>08.00.11</td>
<td>21.00.0215</td>
<td>2000-01-07</td>
<td></td>
</tr>
<tr>
<td>2000-01-08</td>
<td>08.00.12</td>
<td>21.00.0215</td>
<td>2000-01-07</td>
<td></td>
</tr>
</tbody>
</table>

Figure 156. Example of a VMPRF VM Configuration, Level and IPL, Daily report

The report contains this information:

- **Date**: The date of the measurement.
- **Time**: The time of the measurement.
- **VM level**: The version, release number, and service level of the VM system. This is a concatenation of VM_VERSION, VM_RELEASE, and VM_SERVICE_LEVEL, separated by periods.
- **Abend code**: The abend code at the last termination. When there is no termination information, the field is blank.

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Part 12. LINUX Component

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Chapter 54. Customization

Tivoli Decision Support for OS/390 supports LINUX for OS/390. This enhancement adds the support for the first bunch of data coming from LINUX SUSE 7.0 for OS/390. The process uses some performance commands available in the LINUX shell and schedules them by using a CRON command. The output is then redirected to a LINUX performance log, which is used by Tivoli Decision Support for OS/390 as input for the collect process, after manipulating the command outputs. The log must have a fixed (F) record format. When the command is issued and the output is ready in the log, it is parsed by the new Tivoli Decision Support for OS/390 LINUX update definitions and the new LINUX tables are filled.

Installation

In the package (tar file) there are the required directories and all the gathering scripts, the crontab file, and the ReadMe file. To install on the LINUX for OS/390 side, transfer via FTP the tar file DRLLNSC in your home directory on your LINUX for OS/390 from the SDRLWS Tivoli Decision Support for OS/390 library.

ATTENTION: Please notice that the file transfer should be performed with BINARY F 128.

Untar the file in this directory, set the cron table (your table or the system one, the ReadMe refers to the system one). When the log is ready, transfer and empty it.

ReadMe file

The ReadMe file is shown in Figure 157 on page 430.
Figure 157. ReadMe file
Chapter 55. Data Flow

The Tivoli Decision Support for OS/390 objects for Linux support are included in the MVS component and this will be installed with Tivoli Decision Support for OS/390.

Figure 158 shows an overview of the flow of Linux Data through the MVS component.

**Figure 158. Linux Data Flow**
Chapter 56. Data tables

This chapter describes the data tables used by the LINUX component.

**LINUX_CPUTIME_D**

This table provides daily statistics on the OS/390 system CPU of LINUX SUSE. It contains data from the summary report of TOP command, which is reformatted to a common layout by the LINUX script.

<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 output from TOP command is gathered. From LNXDATE.</td>
</tr>
<tr>
<td>OP_SYSNAME</td>
<td>k CHAR(5)</td>
<td>Name of the operating system, usually LINUX.</td>
</tr>
<tr>
<td>HOST_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the host system on which OP_SYSNAME is running.</td>
</tr>
<tr>
<td>TIME_USER_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Percentage of time spent running jobs in the user space. From PIUSRJOB.</td>
</tr>
<tr>
<td>TIME_NICE_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Percentage of time spent running niced jobs in the user space. From PINICJOB.</td>
</tr>
<tr>
<td>TIME_SYST_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Percentage of time spent running in the kernel space (not including interrupts). From PISYSJOB.</td>
</tr>
<tr>
<td>TIME_IDLE_PCT</td>
<td>DECIMAL(4,1)</td>
<td>Percentage of time spent idle. From PIIDLJOB.</td>
</tr>
</tbody>
</table>
**LINUX data tables**

**LINUX_FILESYS_H, _D, _M**

These tables provide hourly, daily, and monthly statistics on the OS/390 disk space on the file systems of LINUX SUSE. They contain data from the DF command, which is reformatted to a common layout by the LINUX scripts.

<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 output from TOP command is gathered. From LNXDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time (rounded down to the nearest hour when the output from the TOP command is gathered. Only applies to the _H table. From LNXTIME.</td>
</tr>
<tr>
<td>OP_SYSNAME</td>
<td>k CHAR(5)</td>
<td>Name of the operating system, usually LINUX.</td>
</tr>
<tr>
<td>HOST_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the host system on which OP_SYSNAME is running.</td>
</tr>
<tr>
<td>FILESYS_NAME</td>
<td>k CHAR(20)</td>
<td>Name of the currently mounted file system. From DFFISYST.</td>
</tr>
<tr>
<td>FILESYS_MOUNT</td>
<td>CHAR(10)</td>
<td>Name of the mount point of the current file system. From DFMOUNTO.</td>
</tr>
<tr>
<td>FILESYS_ALLOC</td>
<td>FLOAT</td>
<td>Amount of disk space allocated to the file system, in Megabytes. From DFBLOCKS.</td>
</tr>
<tr>
<td>FILESYS_USE</td>
<td>FLOAT</td>
<td>Amount of disk space in use by the file system, in Megabytes. From DFMEMUSE.</td>
</tr>
<tr>
<td>FILESYS_AVAIL</td>
<td>FLOAT</td>
<td>Amount of disk space not used and available to the file system. From DFMEMFRE.</td>
</tr>
<tr>
<td>FILESYS_USEP</td>
<td>FLOAT</td>
<td>Percentage of disk space in use by the file system. From DFMEMUSP</td>
</tr>
</tbody>
</table>
**LINUX_MEM_H, _D, _M**

These tables provide hourly, daily, and monthly statistics on the OS/390 memory of LINUX SUSE. They contain data from the PI command, which is reformatted to a common layout by the LINUX scripts.

<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 when the output from TOP command is gathered. From LNXDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time (rounded down to the nearest hour when the output from the TOP command is gathered. Only applies to the _H table. From LNXTIME.</td>
</tr>
<tr>
<td>OP_SYSNAME</td>
<td>CHAR(5)</td>
<td>Name of the operating system, usually LINUX.</td>
</tr>
<tr>
<td>HOST_NAME</td>
<td>CHAR(8)</td>
<td>Name of the host system on which OP_SYSNAME is running.</td>
</tr>
<tr>
<td>MEM_TOTAL</td>
<td>FLOAT</td>
<td>Total amount of physical memory in the system, in kilobytes. From PIMEMTOT.</td>
</tr>
<tr>
<td>MEM_USED</td>
<td>FLOAT</td>
<td>Amount of used physical memory, in kilobytes. From PIMEMUSE.</td>
</tr>
<tr>
<td>MEM_FREE</td>
<td>FLOAT</td>
<td>Amount of free physical memory, in kilobytes. From PIMEMFRE.</td>
</tr>
<tr>
<td>MEM_SHARED</td>
<td>FLOAT</td>
<td>Amount of shared memory used by the kernel, in kilobytes. From PIMEMSHR.</td>
</tr>
<tr>
<td>MEM_BUFFER</td>
<td>FLOAT</td>
<td>Amount of buffers memory used by the kernel, in kilobytes. From PIMEMBUF.</td>
</tr>
<tr>
<td>MEM_CACHED</td>
<td>FLOAT</td>
<td>Amount of cached memory used by the kernel, in kilobytes. From PIMEMCCH.</td>
</tr>
<tr>
<td>SWAP_TOTAL</td>
<td>FLOAT</td>
<td>Total amount of swap memory in the system, in kilobytes. From PISWATOT.</td>
</tr>
<tr>
<td>SWAP_USED</td>
<td>FLOAT</td>
<td>Amount of used swap memory, in kilobytes. From PISWAUSE.</td>
</tr>
<tr>
<td>SWAP_FREE</td>
<td>FLOAT</td>
<td>Amount of free swap memory, in kilobytes. From PISWAFRE.</td>
</tr>
<tr>
<td>PAGE_IN</td>
<td>FLOAT</td>
<td>Amount of disk blocks paged from disk, where a block is 1 kilobyte. From PIUSRPIN.</td>
</tr>
<tr>
<td>PAGE_OUT</td>
<td>FLOAT</td>
<td>Amount of disk blocks paged to disk. From PINICPOU.</td>
</tr>
<tr>
<td>SWAP_IN</td>
<td>FLOAT</td>
<td>Number of memory pages paged in from swapspace. From PSYSSIN.</td>
</tr>
<tr>
<td>SWAP_OUT</td>
<td>FLOAT</td>
<td>Number of memory pages paged out to swapspace. From PSYSSOU.</td>
</tr>
<tr>
<td>CONTEXT_SWITCH</td>
<td>FLOAT</td>
<td>Total number of context switches since bootup. From PIUPTCON.</td>
</tr>
</tbody>
</table>
These tables provide hourly, daily, and monthly statistics on the OS/390 processes of LINUX SUSE. They contain data from the summary report of the TOP command, which is reformatted to a common layout by the LINUX scripts.

<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 output from TOP command is gathered. From LNXDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time (rounded down to the nearest hour when the output from the TOP command is gathered. Only applies to the _H table. From LNXTIME.</td>
</tr>
<tr>
<td>OP_SYSNAME</td>
<td>k CHAR(5)</td>
<td>Name of the operating system, usually LINUX.</td>
</tr>
<tr>
<td>HOST_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the host system on which OP_SYSNAME is running.</td>
</tr>
<tr>
<td>PROCESS_TOTAL</td>
<td>FLOAT</td>
<td>Total number of processes on the system at the time of the last update. From TOPROCT.</td>
</tr>
<tr>
<td>PROCESS_SLE</td>
<td>FLOAT</td>
<td>Number of SLEEPING processes among the total. From TOPROCS.</td>
</tr>
<tr>
<td>PROCESS_RUN</td>
<td>FLOAT</td>
<td>Number of RUNNING processes among the total. From TOPROCR.</td>
</tr>
<tr>
<td>PROCESS_ZOM</td>
<td>FLOAT</td>
<td>Number of ZOMBIES processes among the total. From TOPROCZ.</td>
</tr>
</tbody>
</table>
LINUX USERS_H, _D, _M

These tables provide hourly, daily, and monthly statistics on the OS/390 CPU usage of LINUX SUSE. They contain data from the summary report of the TOP command, which is reformatted to a common layout by the LINUX scripts.

<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 output from TOP command is gathered. From LNXDATE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time (rounded down to the nearest hour when the output from the TOP command is gathered. Only applies to the _H table. From LNXTIME.</td>
</tr>
<tr>
<td>OP_SYSNAME</td>
<td>k CHAR(5)</td>
<td>Name of the operating system, usually LINUX.</td>
</tr>
<tr>
<td>HOST_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the host system on which OP_SYSNAME is running.</td>
</tr>
<tr>
<td>USER_NAME</td>
<td>k CHAR(8)</td>
<td>Login name of the currently ligged on user. From WWUSER.</td>
</tr>
<tr>
<td>TTY_NAME</td>
<td>k CHAR(8)</td>
<td>Name of tty used. From WWTTY.</td>
</tr>
<tr>
<td>REMOTE_HOST</td>
<td>CHAR(16)</td>
<td>Name of the remote host. From WWRHOSTN.</td>
</tr>
<tr>
<td>CPU_IDLE</td>
<td>FLOAT</td>
<td>Amount of time that the system has been idle, in seconds. From WWIDLE.</td>
</tr>
<tr>
<td>CPU_J</td>
<td>FLOAT</td>
<td>Amount of time used by all processes attached to the tty, in seconds. From WWJCPU.</td>
</tr>
<tr>
<td>CPU_P</td>
<td>FLOAT</td>
<td>Amount of time used by the currently running process, in seconds. From WWPCPU.</td>
</tr>
</tbody>
</table>
Chapter 57. Reports

This chapter describes the reports provided with the LINUX component.

LINUX FILESYSTEM Usage Daily Trend

This report shows the daily trend for LINUX file system usage.

The following information identifies the report:

- **Report ID:** LNX01
- **Report group:** LINUX Reports
- **Source:** LINUX_FILESYS_D
- **Attributes:** MVS, TREND, DAILY, AVAILABILITY, LINUX
- **Variables:** FROM-DATE, TO-DATE, OP-SYNAME, HOST-NAME, FILESYS-NAME

The report contains the following information:

<table>
<thead>
<tr>
<th>DATE</th>
<th>OP SYSNAME</th>
<th>HOST NAME</th>
<th>FILESYS NAME</th>
<th>FILESYS USEP MAX</th>
<th>FILESYS USEP MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-10-19</td>
<td>Linux</td>
<td>lnxsused</td>
<td>/dev/dasdt1</td>
<td>4.000E+01</td>
<td>3.000E+01</td>
</tr>
<tr>
<td>2001-10-20</td>
<td>Linux</td>
<td>lnxsused</td>
<td>/dev/dasdt1</td>
<td>6.000E+01</td>
<td>5.000E+01</td>
</tr>
<tr>
<td>2001-10-21</td>
<td>Linux</td>
<td>lnxsused</td>
<td>/dev/dasdt1</td>
<td>8.000E+01</td>
<td>2.000E+01</td>
</tr>
<tr>
<td>2001-10-22</td>
<td>Linux</td>
<td>lnxsused</td>
<td>/dev/dasdt1</td>
<td>6.000E+01</td>
<td>4.000E+01</td>
</tr>
</tbody>
</table>

Figure 159. Example of a LINUX FILESYSTEM Usage Daily Trend report

The report contains the following information:

- **DATE**
  - Date of the measurement.
- **OP SYSNAME**
  - Name of the operating system.
- **HOST NAME**
  - Name of the host system on which the operating system is running.
- **FILESYS NAME**
  - Name of the currently mounted file system.
- **FILESYS USEP MAX**
  - Maximum amount of disk space in use by the file system, in Megabytes.
- **FILESYS USEP MIN**
  - Minimum amount of disk space in use by the file system, in Megabytes.
LINUX reports

LINUX PROCESSES Daily Breakdown

This report shows the daily breakdown for LINUX processes.

The following information identifies the report:

Report ID: LNX02
Report group: LINUX Reports
Source: LINUX_PROCESS_D
Attributes: MVS, TREND, DAILY, LINUX
Variables: FROM-DATE, TO-DATE, OP-SYSNAME, HOST-NAME

The report contains the following information:

- **DATE**: Date of the measurement.
- **OP SYSNAME**: Name of the operating system.
- **HOST NAME**: Name of the host system on which the operating system is running.
- **PROCESS TOT AVG**: Average number of processes on the system at the time of the last update.
- **PROCESS SLE AVG**: Average number of SLEEPING processes.
- **PROCESS RUN AVG**: Average number of RUNNING processes.
- **PROCESS RUN ZOM**: Average number of ZOMBIE processes.

<table>
<thead>
<tr>
<th>DATE</th>
<th>OP SYSNAME</th>
<th>HOST NAME</th>
<th>PROCESS TOT AVG</th>
<th>PROCESS SLE AVG</th>
<th>PROCESS RUN AVG</th>
<th>PROCESS RUN ZOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-10-12</td>
<td>Linux</td>
<td>lnxsused</td>
<td>1.310E+02</td>
<td>1.200E+02</td>
<td>2.000E+00</td>
<td>0.000E+00</td>
</tr>
<tr>
<td>2001-10-13</td>
<td>Linux</td>
<td>lnxsused</td>
<td>3.100E+01</td>
<td>3.000E+01</td>
<td>1.000E+00</td>
<td>0.000E+00</td>
</tr>
<tr>
<td>2001-10-19</td>
<td>Linux</td>
<td>lnxsused</td>
<td>3.600E+01</td>
<td>3.050E+01</td>
<td>1.000E+00</td>
<td>4.500E+00</td>
</tr>
</tbody>
</table>

Figure 160. Example of a LINUX PROCESSES Daily Breakdown report

Tivoli Decision Support for OS/390 Report: LNX002
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Chapter 58. Customization

Before you can use the Domino component to collect data and create reports, you must customize the component by making input data available. You must perform the following steps to customize the Domino component:

1. Make input data available.
2. Update the system tables.
3. Review the DRLJCOLL job.

Make input data available

SMF Type 108 records are generated using the 'C' language function 'smf_record' that is a part of the OS/390 extensions to the language. Records are generated at the expiration of the SMF Global Interval (a combination of the INTVAL and the SYNCVAL parameters in the SMFPRMxx PARMLIB member). To enable the generation of these records, include SYS(TYPE(108) in the SMFPRMxx PARMLIB member. The Domino Server userid must also have READ access to the BPX.SMF Facility class. The generated invocation results in an environment that equates to:

- **Macro**: SMFTWM (SVC level interface) -- record exit = IEFU83
- **Mode**: Task
- **Storage Residency**: 31-bit
- **SUBSYS**: 'STC'

**Security Notice**

Because the processing that generates these records is using the 'C' language interface, some security setup must be done to enable these records to be generated. The RACF commands (or their equivalent) must be issued before these records can be generated:

- `RDEFINE FACILITY BPX.SMF UACC(NONE)` – may have already been done
- `PERMIT BPX.SMF CLASS(FACILITY) ID(<server>) ACCESS(READ)` – allow access
- `SETROPTS RACLIST(FACILITY) REFRESH` – refresh in-core tables

Update the System Tables

After installing the PTF that introduces the new Domino for OS/390 support, and before installing the component, it is necessary to refresh the Tivoli Decision Support for OS/390 system tables for the new objects.

Proceed as follows:

1. Update the system tables:
   a. Select '1. System' from the TDS Administration Dialog
   b. Select '2. System Tables' and press the PF6=Update key.

-OR-
MQSeries customization

2. Select option ‘5. Process TDS statement’ from the ‘Other’ pull-down menu in any primary window of the Administration Dialogs.
3. Type the input data set name and member: 
   &HLQ.SDRLDEFS(DRLIDOM)
4. Type 1 to indicate Log collector and press PF5.
5. Ignore the error messages that are issued for existing objects and ensure that SQLCODE=000 is issued for the new objects.

Review the DRLJCOLL job

Before running the Tivoli Decision Support for OS/390 collect job, you must update the DRLJCOLL job (a member in the DRL160.SDRLCNTL library) to include the collection of Domino log data sets. Follow the instructions in the comments section of this job to modify the appropriate JCL statements.
Chapter 59. Data flow

The Domino component collects records from the SMF data set and stores extracted and summarized data in the Tivoli Decision Support for OS/390 database. The reporting function extracts data from the database and creates the reports that you request through the reporting dialogs. Figure 161 shows an overview of the flow of data through the Domino component.

![Figure 161. Domino component data flow](image-url)
Chapter 60. Log and Record Definitions

The Domino component collects records from the system management facility (SMF) logs.

This record type presents data for a Lotus Notes Domino Server running on an OS/390 system. The specific type of data that is being reported is defined by the subtype field on the record (SMF108STP) in the standard record header.

SMF_108_01 (subtype 1: Server Load)
Contains counts of activity of the server running on the OS/390 system.

SMF_108_02 (subtype 2: User Activity)
Reports Domino user activity for the different protocols that Domino supports.

SMF_108_03 (subtype 3: Monitoring and Tuning)
Monitors some statistics and certain configuration parameters used by the server.

SMF_108_06 (subtype 6: Database Activity)
Reports Domino specific data for Domino databases.
Domino log and record definitions
**Chapter 61. Data tables and lookup table**

This chapter describes the data tables and lookup table used by the Domino component.

**Data tables**

This section describes the data tables for the DOMINO component.

**DOMINO_DB_ACT_H, _D**

These tables provide hourly and daily data for the Domino databases activity. They contain data from the SMF record type 108, subtype 6.

The default retention periods for these tables are:
- **DOMINO_DB_ACT_H**: 10 days
- **DOMINO_DB_ACT_D**: 45 days

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATE</strong></td>
<td>k DATE</td>
<td>Date when the collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td><strong>TIME</strong></td>
<td>k TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to _H.</td>
</tr>
<tr>
<td><strong>PERIOD_NAME</strong></td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td><strong>SYSTEM_ID</strong></td>
<td>k CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td><strong>SYSPLEX_NAME</strong></td>
<td>k CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td><strong>SERVER_NAME</strong></td>
<td>k CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td><strong>DATABASE_NAME</strong></td>
<td>k CHAR(64)</td>
<td>Last 64 characters of the database name. From SMF108DBNAME.</td>
</tr>
<tr>
<td><strong>MEASURED_SEC</strong></td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRISTARTT fields.</td>
</tr>
<tr>
<td><strong>INPUT_RECORDS</strong></td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td><strong>DB_INDEXES</strong></td>
<td>INTEGER</td>
<td>Number of indexing operations started on this database by the server. Calculated as the sum of SMF108DBINDEX.</td>
</tr>
<tr>
<td><strong>DB_REPLICATIONS</strong></td>
<td>INTEGER</td>
<td>Number of replications on this database initiated by this server. Calculated as the sum of SMF108DBREPS.</td>
</tr>
<tr>
<td><strong>DB_DOCUMENTS_ADD</strong></td>
<td>INTEGER</td>
<td>Number of documents added to this database. Calculated as the sum of SMF108DBDOCADD.</td>
</tr>
<tr>
<td><strong>DB_DOCUMENTS_DEL</strong></td>
<td>INTEGER</td>
<td>Number of documents deleted from this database. Calculated as the sum of SMF108DBDOCDELS.</td>
</tr>
</tbody>
</table>
DOMINO_DB_CACHE_H, _D

These tables contain hourly and daily statistics for tuning the Domino server database cache and buffer pool. They contain data from the SMF record type 108, subtype 3.

The default retention periods for these tables are:
- DOMINO_DB_CACHE_H: 10 days
- DOMINO_DB_CACHE_D: 45 days

<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 when the collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to _H.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td>SERVER_NAME</td>
<td>CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td>DATABASE_NAME</td>
<td>CHAR(64)</td>
<td>Last 64 characters of the database name. From SMF108DBNAME.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRISTARTT fields.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td>DB_CACHE_STATUS</td>
<td>CHAR(8)</td>
<td>Database cache status possible value, enabled or disabled. Last occurrences of SMF108MTDBCENAB.</td>
</tr>
<tr>
<td>DB_CACHE_MAX</td>
<td>INTEGER</td>
<td>Maximum number of database cache entries. Calculated as the maximum of SMF108MTDBCMAXE.</td>
</tr>
<tr>
<td>DB_CACHE_CURRENT</td>
<td>INTEGER</td>
<td>Number of db cache (current entries). Calculated as the last occurrence of SMF108MTDBCCE. Applies only to _H.</td>
</tr>
<tr>
<td>DB_CACHE_AVG</td>
<td>REAL</td>
<td>Average number of database cache entries. Calculated as the average of SMF108MTDBCMAXE.</td>
</tr>
<tr>
<td>DB_CACHE_INIT_OPEN</td>
<td>INTEGER</td>
<td>Number of database cache (initial database opens). Calculated as the sum of SMF108MTDBCIDO.</td>
</tr>
<tr>
<td>DB_CACHE_OVCR_REJ</td>
<td>INTEGER</td>
<td>Number of database cache (overcrowding rejections). Calculated as the sum of SMF108MTDBCOCR.</td>
</tr>
<tr>
<td>DB_CACHE_HITS</td>
<td>INTEGER</td>
<td>Number of database cache (hits). Calculated as the sum of SMF108MTDBCHITS.</td>
</tr>
<tr>
<td>DB_CACHE_HIGH_W_M</td>
<td>INTEGER</td>
<td>Database cache (high water mark). Calculated as the maximum of SMF108MTDBCHWM.</td>
</tr>
<tr>
<td>NIFPOOL_SIZE_MIN</td>
<td>REAL</td>
<td>Minimum Database.NIFPool.Size (in bytes). Calculated as the minimum of SMF108MTNIFS.</td>
</tr>
<tr>
<td>NIFPOOL_SIZE_MAX</td>
<td>REAL</td>
<td>Maximum Database.NIFPool.Size (in bytes). Calculated as the maximum of SMF108MTNIFS.</td>
</tr>
<tr>
<td>NIFPOOL_USED_MIN</td>
<td>REAL</td>
<td>Minimum Database.NIFPool.Used (in bytes). Calculated as the minimum of SMF108MTNIFN.</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>NIFPOOL_USED_MAX</td>
<td>REAL</td>
<td>Maximum Database.NIFPool.Used (in bytes). Calculated as the maximum of SMF108MTNIFN.</td>
</tr>
<tr>
<td>NSFPOOL_SIZE_MIN</td>
<td>REAL</td>
<td>Minimum Database.NSFPool.Size (in bytes). Calculated as the minimum of SMF108MTNSFS.</td>
</tr>
<tr>
<td>NSFPOOL_SIZE_MAX</td>
<td>REAL</td>
<td>Maximum Database.NSFPool.Size (in bytes). Calculated as the maximum of SMF108MTNSFS.</td>
</tr>
<tr>
<td>NSFPOOL_USED_MIN</td>
<td>REAL</td>
<td>Minimum Database.NSFPool.Used (in bytes). Calculated as the minimum of SMF108MTNSFN.</td>
</tr>
<tr>
<td>NSFPOOL_USED_MAX</td>
<td>REAL</td>
<td>Maximum Database.NSFPool.Used (in bytes). Calculated as the maximum of SMF108MTNSFN.</td>
</tr>
<tr>
<td>DB_BUFPOOL_READ</td>
<td>REAL</td>
<td>Number of Database.BufferPool reads. Calculated as the sum of SMF108MTDBPR.</td>
</tr>
<tr>
<td>DB_BUFPOOL_WRITE</td>
<td>REAL</td>
<td>Number of Database.BufferPool writes. Calculated as the sum of SMF108MTDBPW.</td>
</tr>
</tbody>
</table>
These tables contain hourly and daily data that is being reported for each TCP/IP port to which the server has connection. They contain data extracted from the SMF record type 108, subtype 1.

The default retention periods for these tables are:
- **DOMINO_PORT_ACT_H**: 10 days
- **DOMINO_PORT_ACT_D**: 45 days

<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 when the collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to <em>H</em>.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td>SERVER_NAME</td>
<td>CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td>TCPIP_PORT</td>
<td>CHAR(8)</td>
<td>First eight bytes of the TCP/IP port. From SMF108PTNAME.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRSTARTT fields.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td>SESSIONS_IN</td>
<td>INTEGER</td>
<td>Number of incoming sessions processed during the interval (client to server connection). Calculated as the sum of SMF108PTINWSESIN.</td>
</tr>
<tr>
<td>KBYTES_RECEIVED</td>
<td>INTEGER</td>
<td>Total number of kilobytes received for this port during the interval. Calculated as the sum of SMF108PTINWBR.</td>
</tr>
<tr>
<td>BYTES_RECV_SEC</td>
<td>REAL</td>
<td>Average number of bytes/second received for this port. Calculated as the average of the ratio between SMF108PTINWBR and collection interval.</td>
</tr>
<tr>
<td>SESSIONS_OUT</td>
<td>INTEGER</td>
<td>Number of outgoing sessions processed during the interval (client to server connection). Calculated as the sum of SMF108PTINWSESOUT.</td>
</tr>
<tr>
<td>KBYTES_SENT</td>
<td>INTEGER</td>
<td>Total number of kilobytes sent for this port during the interval. Calculated as the sum of SMF108PTNWBS.</td>
</tr>
<tr>
<td>BYTES_SENT_SEC</td>
<td>REAL</td>
<td>Average number of bytes/second sent for this port. Calculated as the average of the ratio between SMF108PTNWBS and collection interval.</td>
</tr>
</tbody>
</table>
DOMINO_SERVER_H, _D, _M

These tables contain hourly, daily, and monthly information on global activity at the server level and statistics for tuning the Domino server. They contain data extracted from the SMF record type 108, subtype 1 and subtype 3.

The default retention periods for these tables are:
- DOMINO_SERVER_H: 10 days
- DOMINO_SERVER_D: 45 days
- DOMINO_SERVER_M: 548 days

<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 when the collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to _H.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td>SERVER_NAME</td>
<td>CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRSTARTT fields.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td>MAX_NUMBER_USERS</td>
<td>INTEGER</td>
<td>Maximum number of users. This is the maximum of SMF108MTMAXUSERS.</td>
</tr>
<tr>
<td>USERS_CONNECTED</td>
<td>INTEGER</td>
<td>Current number of users. This is the last occurrence of SMF108SLCU.</td>
</tr>
<tr>
<td>USERS_CONNECT_AVG</td>
<td>REAL</td>
<td>Average number of users. Calculated as the average of SMF108SLCU.</td>
</tr>
<tr>
<td>USERS_CONNECT_MAX</td>
<td>INTEGER</td>
<td>Maximum number of users. Calculated as the maximum of SMF108SLCU.</td>
</tr>
<tr>
<td>USERS_ACT_CURRENT</td>
<td>INTEGER</td>
<td>Number of currently connected users that are currently active. This is the last occurrence of SMF108SLUA.</td>
</tr>
<tr>
<td>USERS_ACT_AVG</td>
<td>REAL</td>
<td>Average number of connected users that are currently active. Calculated as the average of SMF108SLUA.</td>
</tr>
<tr>
<td>USERS_ACT_MAX</td>
<td>INTEGER</td>
<td>Maximum number of connected users that are currently active. Calculated as the maximum of SMF108SLUA.</td>
</tr>
<tr>
<td>USERS_ACT_LAST_1M</td>
<td>INTEGER</td>
<td>Number of currently connected users that have been active within the last minute. This is the last occurrence of SMF108SLUA1M.</td>
</tr>
<tr>
<td>USERS_ACT_LAST_3M</td>
<td>INTEGER</td>
<td>Number of currently connected users that have been active within the last three minutes. This is the last occurrence of SMF108SLUA3M.</td>
</tr>
<tr>
<td>USERS_ACT_LAST_5M</td>
<td>INTEGER</td>
<td>Number of currently connected users that have been active within the last five minutes. This is the last occurrence of SMF108SLUA5M.</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>USERS_ACT_LAST_15M</td>
<td>INTEGER</td>
<td>Number of currently connected users that have been active within the last 15 minutes. This is the last occurrence of SMF108SLUA15M.</td>
</tr>
<tr>
<td>USERS_ACT_LAST_30M</td>
<td>INTEGER</td>
<td>Number of currently connected users that have been active within the last 30 minutes. This is the last occurrence of SMF108SLUA30M.</td>
</tr>
<tr>
<td>TASKS_USE_CURRENT</td>
<td>SMALLINT</td>
<td>Number of tasks currently in use. This is the last occurrence of SMF108SLTASKS.</td>
</tr>
<tr>
<td>TASKS_USE_AVG</td>
<td>REAL</td>
<td>Average number of tasks in use during the interval. Calculated as the average of SMF108SLTASKS.</td>
</tr>
<tr>
<td>TASKS_USE_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of tasks in use during the interval. This is the maximum of SMF108SLTASKSMAX.</td>
</tr>
<tr>
<td>TASKS_UPDATES_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of concurrent update tasks. Calculated as the maximum of SMF108MTUPMAX.</td>
</tr>
<tr>
<td>PHY_THREAD_TOTAL</td>
<td>SMALLINT</td>
<td>Total number of physical thread pool threads for server_pool_tasks. This is the last occurrence of SMF108SLTT.</td>
</tr>
<tr>
<td>PHY_THREAD_USE_CUR</td>
<td>SMALLINT</td>
<td>Number of physical thread pool threads currently in use. This is the last occurrence of SMF108SLPTIU.</td>
</tr>
<tr>
<td>PHY_THREAD_USE_AVG</td>
<td>REAL</td>
<td>Average number of physical thread pool threads in use during the interval. Calculated as the average of SMF108SLPTIU.</td>
</tr>
<tr>
<td>PHY_THREAD_USE_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of physical thread pool threads in use during the interval. This is the maximum of SMF108SLPTIUMAX.</td>
</tr>
<tr>
<td>VIR_THREAD_USE_CUR</td>
<td>SMALLINT</td>
<td>Number of virtual thread pool threads currently in use. This is the last occurrence of SMF108SLVTIU.</td>
</tr>
<tr>
<td>VIR_THREAD_USE_AVG</td>
<td>REAL</td>
<td>Average number of virtual thread pool threads in use during the interval. Calculated as the average of SMF108SLVTIU.</td>
</tr>
<tr>
<td>VIR_THREAD_USE_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of virtual thread pool threads in use during the interval. This is the maximum of SMF108SLVTIUMAX.</td>
</tr>
<tr>
<td>TRD_MAIL_SENT_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of mail transfer threads. Calculated as the maximum of SMF108MTMMXFER.</td>
</tr>
<tr>
<td>TRD_MAIL_DELIV_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of mail delivery threads. Calculated as the maximum of SMF108MTMMXDLV.</td>
</tr>
<tr>
<td>TRD_MAIL_CONCU_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of concurrent mail transfer threads. Calculated as the maximum of SMF108MTMMXCONXFR.</td>
</tr>
<tr>
<td>ASYNC_IO_READ</td>
<td>INTEGER</td>
<td>Number of asynchronous I/O reads during interval. Calculated as the sum of SMF108SLAIOR.</td>
</tr>
<tr>
<td>ASYNC_IO_WRITE</td>
<td>INTEGER</td>
<td>Number of asynchronous I/O writes during interval. Calculated as the sum of SMF108SLAIOW.</td>
</tr>
<tr>
<td>HTTP_READS</td>
<td>INTEGER</td>
<td>Number of HTTP reads during interval. Calculated as the sum of SMF108SLHTTPPR.</td>
</tr>
<tr>
<td>HTTP_WRITE</td>
<td>INTEGER</td>
<td>Number of HTTP writes during interval. Calculated as the sum of SMF108SLHTTPPW.</td>
</tr>
<tr>
<td>POP3_READS</td>
<td>INTEGER</td>
<td>Number of POP3 reads during interval. Calculated as the sum of SMF108SLPOP3.</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>IMAP_READS</td>
<td>INTEGER</td>
<td>Number of IMAP reads during interval. Calculated as the sum of SMF108SLIMAPR.</td>
</tr>
<tr>
<td>MAIL_MSGS_DELIV</td>
<td>INTEGER</td>
<td>Number of Domino mail messages routed. Calculated as the sum of SMF108SLDMSENTL.</td>
</tr>
<tr>
<td>MAIL_MSGS_DELI_AKB</td>
<td>REAL</td>
<td>Average size of Domino mail and SMTP messages delivered, in kilobytes. Calculated as the average of SMF108SLDMSENTLAS.</td>
</tr>
<tr>
<td>MAIL_MSGS_SENT</td>
<td>INTEGER</td>
<td>Number of Domino mail and SMTP messages transferred. Calculated as the sum of SMF108SLDMSENTR.</td>
</tr>
<tr>
<td>MAIL_MSGS_SENT_AKB</td>
<td>REAL</td>
<td>Average size of Domino mail messages transferred, in kilobytes. Calculated as the average of SMF108SLDMSENTRAS.</td>
</tr>
<tr>
<td>MAILBOXES_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of mailboxes. Calculated as the maximum of SMF108MTMAILBOXEs.</td>
</tr>
<tr>
<td>SMTP_MSGS_RECV</td>
<td>INTEGER</td>
<td>Number of SMTP messages received from other servers during interval. Calculated as the sum of SMF108SLSMREC.</td>
</tr>
<tr>
<td>SMTP_MSGS_RECV_AKB</td>
<td>REAL</td>
<td>Average size of SMTP messages received from other servers during interval, in kilobytes. Calculated as the sum of SMF108SLSMRECAS.</td>
</tr>
<tr>
<td>SMTP_MSGS_SENT</td>
<td>INTEGER</td>
<td>Number of SMTP messages sent to other servers during interval. Calculated as the sum of SMF108SLSMSENTR.</td>
</tr>
<tr>
<td>SMTP_MSGS_SENT_AKB</td>
<td>REAL</td>
<td>Average size of SMTP messages sent to other servers during interval, in kilobytes. Calculated as the sum of SMF108SLSMSENTRAS.</td>
</tr>
<tr>
<td>SERVER_TRANSACTION</td>
<td>INTEGER</td>
<td>Total number of transactions processed during interval. Calculated as the sum of SMF108SLTRANS.</td>
</tr>
<tr>
<td>LIMIT_CONCUR_TRANS</td>
<td>REAL</td>
<td>Limit for number of concurrent transactions. This is the last occurrence of SMF108MTMAXCONTR.</td>
</tr>
<tr>
<td>SESSION_CONCUR_MAX</td>
<td>INTEGER</td>
<td>Maximum number of sessions to run concurrently. Calculated as the maximum of SMF108MTMAXCONSES.</td>
</tr>
<tr>
<td>SERVER_REPLICATION</td>
<td>INTEGER</td>
<td>Number of replications initiated by this server. Calculated as the sum of SMF108SLSVREPL.</td>
</tr>
<tr>
<td>REPLICA_CONCUR_MAX</td>
<td>SMALLINT</td>
<td>Maximum number of concurrent replicators. Calculated as the maximum of SMF108MTREPMAX.</td>
</tr>
<tr>
<td>TIMEOUTS_MNUTE</td>
<td>INTEGER</td>
<td>Number of minutes in timeout. This is the last occurrence of SMF108MTSESTIMEOUT.</td>
</tr>
<tr>
<td>NSF_BFPOOL_MAX_4KB</td>
<td>INTEGER</td>
<td>Maximum size of NSF buffer pool, in kilobytes. Calculated as the maximum of SMF108MTNSFPOOL.</td>
</tr>
<tr>
<td>NSF_BFPOOL_USED</td>
<td>INTEGER</td>
<td>Number of bytes being used in the NSF buffer pool. This is the last occurrence of SMF108MTNSFPOOLIU.</td>
</tr>
<tr>
<td>SERVER_AVAIL_THRD</td>
<td>INTEGER</td>
<td>Server availability threshold. A threshold set to determine when a server is considered busy. This is the last occurrence of SMF108MTSATH.</td>
</tr>
<tr>
<td>SERVER_AVAIL_INDEX</td>
<td>INTEGER</td>
<td>Server availability index. This is the last occurrence of SMF108MTSAX.</td>
</tr>
<tr>
<td>NUM_CACHE_COMMAND</td>
<td>INTEGER</td>
<td>The actual number of commands that the command cache contains. Calculated as last occurrence of SMF108SLDMNCCHCMD.</td>
</tr>
</tbody>
</table>
### Domino data tables

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX_CACHE_COMMAND</td>
<td>INTEGER</td>
<td>The maximum number of commands that the command cache contained during the interval. Calculated as max occurrence of SMF108SLDMNCCHCMD.</td>
</tr>
<tr>
<td>MIN_CACHE_COMMAND</td>
<td>INTEGER</td>
<td>The minumum number of commands that the command cache contained during the interval. Calculated as min occurrence of SMF108SLDMNCCHCMD.</td>
</tr>
<tr>
<td>NUM_CACHE_DESIGN</td>
<td>INTEGER</td>
<td>The actual number of designs that the design cache contains. Calculated as last occurrence of SMF108SLDMNCCHDSG.</td>
</tr>
<tr>
<td>MIN_CACHE_DESIGN</td>
<td>INTEGER</td>
<td>The minimum number of designs that the design cache contains. Calculated as min occurrence of SMF108SLDMNCCHDSG.</td>
</tr>
<tr>
<td>MAX_CACHE_DESIGN</td>
<td>INTEGER</td>
<td>The maximum number of designs that the design cache contains. Calculated as max occurrence of SMF108SLDMNCCHDSG.</td>
</tr>
<tr>
<td>NUM_CACHE_SESSION</td>
<td>INTEGER</td>
<td>The actual number of sessions that the session cache contains. Calculated as last occurrence of SMF108SLDMNCCHSSN.</td>
</tr>
<tr>
<td>MIN_CACHE_SESSION</td>
<td>INTEGER</td>
<td>The minimum number of sessions that the session cache contains. Calculated as minimum occurrence of SMF108SLDMNCCHSSN.</td>
</tr>
<tr>
<td>MAX_CACHE_SESSION</td>
<td>INTEGER</td>
<td>The maximum number of sessions that the session cache contains. Calculated as maximum occurrence of SMF108SLDMNCCHSSN.</td>
</tr>
<tr>
<td>NUM_CACHE_USER</td>
<td>INTEGER</td>
<td>The actual number of users that the user cache contains. Calculated as last occurrence of SMF108SLDMNCCHUSR.</td>
</tr>
<tr>
<td>MIN_CACHE_USER</td>
<td>INTEGER</td>
<td>The minimum number of users that the user cache contains. Calculated as min occurrence of SMF108SLDMNCCHUSR.</td>
</tr>
<tr>
<td>MAX_CACHE_USER</td>
<td>INTEGER</td>
<td>The maximum number of users that the user cache contains. Calculated as max occurrence of SMF108SLDMNCCHUSR.</td>
</tr>
<tr>
<td>TOTAL_REQUESTS</td>
<td>REAL</td>
<td>Total number of DOMINO requests during the interval. Calculated as sum of SMF108SLDMNQRQSTST.</td>
</tr>
</tbody>
</table>
DOMINO_TRANS_H, _D

These tables provide hourly and daily data for Domino transactions response time. They contain data from the SMF record type 108, subtype 1.

The default retention periods for these tables are:
- DOMINO_TRANS_H: 10 days
- DOMINO_TRANS_D: 45 days

<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 when the collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to _H.</td>
</tr>
<tr>
<td>PERIOD_NAME</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td>SERVER_NAME</td>
<td>CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td>TRANSACTION_TYPE</td>
<td>VARCHAR(40)</td>
<td>Transaction types. From DOMINO_TRANS_TYPE lookup table.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRISTARTT fields.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td>TRANSACTIONS</td>
<td>REAL</td>
<td>Total number of transactions of type processed during the interval. Calculated as the sum of SMF108TRTYPENP.</td>
</tr>
<tr>
<td>RESPONSE_TIME</td>
<td>REAL</td>
<td>Total accumulated response time, in seconds, for all transactions of type that completed during the interval. Calculated as the sum of SMF108TRTYPETA/1000.</td>
</tr>
<tr>
<td>HOST_TIME</td>
<td>REAL</td>
<td>Total accumulated host time, in seconds, for all transactions of type that completed during the interval. Calculated as the sum of the difference between SMF108TRTYPETA and SMF108TRTYPENW.</td>
</tr>
<tr>
<td>NET_TIME</td>
<td>REAL</td>
<td>Total accumulated net wait time, in seconds, for all transactions of type that completed during the interval. This is the time that the server has been waiting for clients to respond. Calculated as the sum of SMF108TRTYPENW.</td>
</tr>
<tr>
<td>TRANSAC_RATE_MIN</td>
<td>REAL</td>
<td>Minimum number of transactions of type processed in a second. Calculated as the minimum of (SMF108TRTYPENP/collection interval).</td>
</tr>
<tr>
<td>TRANSAC_RATE_AVG</td>
<td>REAL</td>
<td>Average number of transactions of type processed in a second. Calculated as the average of (SMF108TRTYPENP/collection interval).</td>
</tr>
<tr>
<td>TRANSAC_RATE_MAX</td>
<td>REAL</td>
<td>Maximum number of transactions of type processed in a second. Calculated as the maximum of (SMF108TRTYPENP/collection interval).</td>
</tr>
</tbody>
</table>
## DOMINO_USER_ACT_H

This table provides hourly data for the Domino user activity by IP address for different connection types. It contains data from the SMF record type 108, subtype 2.

The default retention periods for this tables is:
- **DOMINO_USER_ACT_H**: 10 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 collection interval expires. From SMF108PRIENDT.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time when the collection interval expires. From SMF108PRIENDT. Applies only to _H.</td>
</tr>
</tbody>
</table>

### Column name | Data type | Description
---|---|---
RESP_TIME_RATE_MIN | REAL | Minimum response time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the minimum of (SMF108TRTYPETA/SMF108TRTYPENP/1000). |
RESP_TYPE_RATE_AVG | REAL | Average response time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the average of (SMF108TRTYPENP/collection interval). |
RESP_TIME_RATE_MAX | REAL | Maximum response time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the maximum of (SMF108TRTYPETA/SMF108TRTYPENP/1000). |
HOST_TIME_RATE_MIN | REAL | Minimum host time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the minimum of the difference between SMF108TRTYPETA and (SMF108TRTYPENW/SMF108TRTYPENP). |
HOST_TIME_RATE_AVG | REAL | Average host time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the average of the difference between SMF108TRTYPETA and (SMF108TRTYPENW/SMF108TRTYPENP). |
HOST_TIME_RATE_MAX | REAL | Maximum host time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the maximum of the difference between SMF108TRTYPETA and (SMF108TRTYPENW/SMF108TRTYPENP). |
NET_TIME_RATE_MIN | REAL | Minimum net time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the minimum of the ratio between SMF108TRTYPENW and SMF108TRTYPENP. |
NET_TIME_RATE_AVG | REAL | Average net time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the average of the ratio between SMF108TRTYPENW and SMF108TRTYPENP. |
NET_TIME_RATE_MAX | REAL | Maximum net time rate, in seconds, for all transactions of type that completed during the interval. Calculated as the maximum of the ratio between SMF108TRTYPENW and SMF108TRTYPENP. |
<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERIOD_NAME</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields SMF108PRIENDT and SM108SID from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identifier. From SMF108SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex name. From SMF108PRSPN.</td>
</tr>
<tr>
<td>SERVER_NAME</td>
<td>k CHAR(32)</td>
<td>Server name. From SMF108PRSVN.</td>
</tr>
<tr>
<td>IP_ADDRESS</td>
<td>k CHAR(16)</td>
<td>IP address presenting the request for service. From SMF108UIPA.</td>
</tr>
<tr>
<td>CONNECTION_TYPE</td>
<td>k CHAR(4)</td>
<td>Type of connection to the Domino server. From SMF108UTYPE.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>INTEGER</td>
<td>Measured time period, in seconds. This is the duration of the Domino measurement intervals. Calculated as the sum of interval differences between SMF108PRIENDT and SMF108PRISTARTT fields.</td>
</tr>
<tr>
<td>INPUT_RECORDS</td>
<td>SMALLINT</td>
<td>Number of input records collected from the input log.</td>
</tr>
<tr>
<td>NOTES_USER_NAME</td>
<td>CHAR(36)</td>
<td>Notes user name for NNRP clients. From SMF108UNAME.</td>
</tr>
<tr>
<td>USER_CPU_TIME</td>
<td>REAL</td>
<td>CPU time in seconds used by this user. From SMF108UCPU.</td>
</tr>
<tr>
<td>BYTES_READ</td>
<td>REAL</td>
<td>Number of bytes read in this interval. From SMF108UBR.</td>
</tr>
<tr>
<td>BYTES_WRITE</td>
<td>REAL</td>
<td>Number of bytes written in this interval. From SMF108UBW.</td>
</tr>
</tbody>
</table>
Lookup table

This section describes the lookup table specific to the Domino component.

### DOMINO_TRANS_TYPE

This lookup table defines the Domino transaction types.

<table>
<thead>
<tr>
<th>Column name</th>
<th>Data type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAN_TYPE</td>
<td>INTEGER</td>
<td>The Domino transaction type.</td>
</tr>
<tr>
<td>TRAN_DESC</td>
<td>VARCHAR</td>
<td>The description of the transaction type.</td>
</tr>
</tbody>
</table>
Chapter 62. Reports

This chapter describes the reports provided with the Domino component.

Domino I/O & Access Statistics, Hourly

This report shows the hourly statistics for Domino I/O and access.

The following information identifies the report:

- **Report ID:** DOM01
- **Report group:** Domino Reports
- **Source:** DOMINO_SERVER_H
- **Attributes:** DOMINO, I/O, HOURLY
- **Variables:** DATE, SYSTEM-ID, SYSPLEX-NAME

---

<table>
<thead>
<tr>
<th>TIME</th>
<th>PERIOD NAME</th>
<th>SERVER NAME</th>
<th>ASYNC IO READ</th>
<th>ASYNC IO WRITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.00.00</td>
<td>NIGHT</td>
<td>SUT1/COCPOK</td>
<td>451547</td>
<td>329964</td>
</tr>
<tr>
<td>22.00.00</td>
<td>NIGHT</td>
<td>SUT1/COCPOK</td>
<td>1230876</td>
<td>557109</td>
</tr>
<tr>
<td>21.00.00</td>
<td>NIGHT</td>
<td>SUT1/COCPOK</td>
<td>762275</td>
<td>408052</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>HTTP READS</th>
<th>HTTP WRITE</th>
<th>POP3 READS</th>
<th>IMAP READS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

---

*Figure 162. Example of a Domino I/O & Access Statistics, Hourly Report*

The report contains the following information:

- **TIME:** The time when the collection interval expires.
- **PERIOD NAME:** Name of the period.
- **SERVER NAME:** Server name.
- **ASYNC IO READ:** Number of asynchronous I/O reads during interval.
- **ASYNC IO WRITE:** Number of asynchronous I/O writes during interval.
- **HTTP READS:** Number of HTTP reads during interval.
- **HTTP WRITE:** Number of HTTP writes during interval.
- **POP3 READS:** Number of POP3 reads during interval.
- **IMAP READS:** Number of IMAP reads during interval.
### Domino Messages Statistics, Daily

This report shows the daily statistics for Domino and SMTP messages.

The following information identifies the report:

- **Report ID:** DOM02
- **Report group:** Domino Reports
- **Source:** DOMINO_SERVER_D
- **Attributes:** DOMINO, MESSAGES, HOURLY
- **Variables:** FROM-DATE, TO-DATE, SYSTEM-ID, SYSPLEX-NAME

The report contains the following information:

<table>
<thead>
<tr>
<th>DATE</th>
<th>SERVER NAME</th>
<th>SYSTEM ID</th>
<th>SYSPLEX NAME</th>
<th>Messages Routed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-30</td>
<td>BLUED1/BIGBLUE</td>
<td>LN21</td>
<td>PLEX21</td>
<td>158435</td>
</tr>
<tr>
<td>2000-01-21</td>
<td>NEPTUNE/ATLANTIS</td>
<td>LN4</td>
<td>PLEXLN2</td>
<td>0</td>
</tr>
<tr>
<td>2000-03-22</td>
<td>SU1/COCPOK</td>
<td>LN20</td>
<td>PLEXLN20</td>
<td>98797</td>
</tr>
<tr>
<td>2000-03-23</td>
<td>SU1/COCPOK</td>
<td>LN20</td>
<td>PLEXLN20</td>
<td>114633</td>
</tr>
<tr>
<td>2000-03-24</td>
<td>SUT1/COCPOK</td>
<td>METD</td>
<td>METPLEX</td>
<td>279296</td>
</tr>
<tr>
<td>2000-03-25</td>
<td>SUT1/COCPOK</td>
<td>METD</td>
<td>METPLEX</td>
<td>95432</td>
</tr>
</tbody>
</table>

**Avg Domino & mail size**

<table>
<thead>
<tr>
<th>Avg &amp; Domino &amp; mail size</th>
<th>Avg &amp; SMTP mail size</th>
<th>Avg SMTP messages transferred (KB)</th>
<th>Avg SMTP messages received (KB)</th>
<th>Avg SMTP messages sent (KB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.115E+00</td>
<td>0</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>0</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
</tr>
<tr>
<td>3.675E+00</td>
<td>11944</td>
<td>2.7544E+00</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
</tr>
<tr>
<td>3.732E+00</td>
<td>28762</td>
<td>3.2931E+00</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
</tr>
<tr>
<td>4.0000E+00</td>
<td>9642</td>
<td>3.0104E+00</td>
<td>0.0000E+00</td>
<td>0.0000E+00</td>
</tr>
</tbody>
</table>

**Avg size SMTP msgs Number of Transaction**

<table>
<thead>
<tr>
<th>Avg size SMTP msgs sent (KB)</th>
<th>Number of Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0000E+00</td>
<td>3229103</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>0</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>2591998</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>1594274</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>3860235</td>
</tr>
<tr>
<td>0.0000E+00</td>
<td>1186632</td>
</tr>
</tbody>
</table>

---

Figure 163. Example of a Domino Messages Statistics, Daily Report

The report contains the following information:

- **DATE**: The date when the collection interval expires.
- **SERVER NAME**: Server name.
- **SYSTEM ID**: System identifier.
- **SYSPLEX NAME**: Sysplex name.
### Domino Mail Messages Routed
Number of Domino mail messages routed.

### Avg Domino & SMTP msgs size (KB)
Average size of Domino mail and SMTP messages delivered, in kilobytes.

### Domino mail & SMTP msgs transferred
Number of Domino mail and SMTP messages transferred.

### Avg size Domino mail transferred (KB)
Average size of Domino mail messages transferred, in kilobytes.

### SMTP messages received
Number of SMTP messages received from other servers during interval.

### Avg size SMTP msgs received (KB)
Average size of SMTP messages received from other servers during interval, in kilobytes.

### SMTP messages sent
Number of SMTP messages sent to other servers during interval.

### Avg size SMTP msgs sent (KB)
Average size of SMTP messages sent to other servers during interval, in kilobytes.

### Number of Transaction
Total number of transactions processed during interval.
Domino reports

Domino Transaction Statistics, Hourly

This report shows the hourly statistics for response time of Domino transactions.

The following information identifies the report:

Report ID: DOM03
Report group: Domino Reports
Source: DOMINO_TRANS_H
Attributes: DOMINO, TRANSACTIONS, HOURLY
Variables: DATE, SERVER-NAME, PERIOD-NAME, TRANSACTION-TYPE

<table>
<thead>
<tr>
<th>TIME</th>
<th>PERIOD NAME</th>
<th>TRANSACTION TYPE</th>
<th>TRANSACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00.00 WEEKEND</td>
<td>DB_REPLINFO_GET_RQST</td>
<td>1500</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>OPEN_DB_RQST</td>
<td>1871</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>GET_MODIFIED_NOTES_RQST</td>
<td>1051</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>UPDATE_NOTE_RQST_ALT</td>
<td>931</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>OPEN_NOTE_RQST</td>
<td>352</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>START_SERVER_RQST</td>
<td>1500</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>UPDATE_FOLDER_RQST</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>NAME_LOOKUP_RQST</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>16.00.00 WEEKEND</td>
<td>UPDATE_FILTERS_RQST</td>
<td>208</td>
<td></td>
</tr>
</tbody>
</table>

Figure 164. Example of a Domino Transaction Statistics, Hourly Report

The report contains the following information:

TIME
The time when the collection interval expires.

PERIOD NAME
Name of the period.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSACTION TYPE</td>
<td>Transaction types.</td>
</tr>
<tr>
<td>TRANSACTIONS</td>
<td>Total number of transactions of type processed during interval.</td>
</tr>
<tr>
<td>TRANSAC RATE MIN</td>
<td>Minimum number of transactions of type processed in a second.</td>
</tr>
<tr>
<td>TRANSAC RATE AVG</td>
<td>Average number of transactions of type processed in a second.</td>
</tr>
<tr>
<td>TRANSAC RATE MAX</td>
<td>Maximum number of transactions of type processed in a second.</td>
</tr>
<tr>
<td>RESP TIME RATE MIN</td>
<td>Minimum response time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>RESP TIME RATE AVG</td>
<td>Average response time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>RESP TIME RATE MAX</td>
<td>Maximum response time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>HOST TIME RATE MIN</td>
<td>Minimum host time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>HOST TIME RATE AVG</td>
<td>Average host time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>HOST TIME RATE MAX</td>
<td>Maximum host time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>NET TIME RATE MIN</td>
<td>Minimum net time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>NET TIME RATE AVG</td>
<td>Average net time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
<tr>
<td>NET TIME RATE MAX</td>
<td>Maximum net time rate, in seconds, for all transactions of type that completed during the interval.</td>
</tr>
</tbody>
</table>
### Domino Server DB Cache and Buffer Pool Statistics, Daily

This report shows the daily statistics for counters related to buffer pool.

The following information identifies the report:

- **Report ID:** DOM04
- **Report group:** Domino Reports
- **Source:** DOMINO_DB_CACHE_D
- **Attributes:** DOMINO, SERVER, CACHE, BUFFERPOOL
- **Variables:** FROM-DATE, TO-DATE, SYSTEM-ID, SERVER-NAME

The report contains the following information:

- **DB CACHE MAX:** Maximum number of DB cache entries.
- **DB CACHE AVG:** Average number of DB cache entries.
- **DB CACHE INIT OPEN:** Number of DB cache (initial DB opens).
- **DB CACHE OVCR REJ:** Number of DB cache (overcrowding rejections).
- **DB CACHE HITS:** Number of DB cache (hits).
- **DB CACHE HIGH W M:** DB cache (high water mark).
- **NIFPOOL SIZE MIN:** Minimum Database.NIFPool.Size, in bytes.
- **NIFPOOL SIZE MAX:** Maximum Database.NIFPool.Size, in bytes.
- **NIFPOOL USED MIN:** Minimum Database.NIFPool.Used, in bytes.
- **NIFPOOL USED MAX:** Maximum Database.NIFPool.Used, in bytes.
- **NSFPOOL SIZE MIN:** Minimum Database.NSFPool.Size, in bytes.
- **NSFPOOL SIZE MAX:** Maximum Database.NSFPool.Size, in bytes.
- **NSFPOOL USED MIN:** Minimum Database.NSFPool.Used, in bytes.
- **NSFPOOL USED MAX:** Maximum Database.NSFPool.Used, in bytes.

---

The report contains the following statistics:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX</td>
<td>AVG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.160E+02</td>
<td>2.758E+02</td>
<td>1.317E+05</td>
<td>1.606E+03</td>
<td>1.073E+05</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIN</td>
<td>MAX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.049E+06</td>
<td>2.097E+07</td>
<td>2.289E+05</td>
<td>1.534E+07</td>
<td>3.146E+06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIN</td>
<td>MAX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.750E+06</td>
<td>2.304E+07</td>
<td>9.000E+02</td>
<td>3.660E+02</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 165. Example of a Domino Server DB Cache and Buffer Pool Statistics Report**

The report contains the following information:
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSFPOOL USED MAX</td>
<td>Maximum Database.NSFPool.Used, in bytes.</td>
</tr>
<tr>
<td>DB BUFPOOL READ</td>
<td>Number of Database.BufferPool reads.</td>
</tr>
<tr>
<td>DB BUFPOOL WRITE</td>
<td>Number of Database.BufferPool writes.</td>
</tr>
</tbody>
</table>
Domino General Server Statistics, Daily

This report shows the daily general server statistics for the NSF buffer pool.

The following information identifies the report:

- **Report ID:** DOM05
- **Report group:** Domino Reports
- **Source:** DOMINO_SERVER_D
- **Attributes:** DOMINO, SERVER, DAILY
- **Variables:** FROM-DATE, TO-DATE, SYSTEM-ID, SYSPLEX-NAME

<table>
<thead>
<tr>
<th>DATE</th>
<th>SERVER SYSTEM SYSPLEX</th>
<th>Connected Users</th>
<th>Active Users</th>
<th>Task Users</th>
<th>Total Physical Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01-30</td>
<td>BLUED1/BIGBLUE LN21 PLEX21</td>
<td>8001</td>
<td>3.442E+01</td>
<td>1932</td>
<td>8119</td>
</tr>
<tr>
<td>2000-01-21</td>
<td>NEPTUNE/ATLANTIS LN4 PLEXLN2</td>
<td>0.000E+00</td>
<td>0.000E+00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2000-03-22</td>
<td>SUT1/COCPOK LN20 PLEXLN20</td>
<td>2914</td>
<td>1.084E+02</td>
<td>498</td>
<td>3078</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average Number</th>
<th>Maximum Number</th>
<th>Average Number</th>
<th>Maximum Number</th>
<th>Average Number</th>
<th>Maximum Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected Users</td>
<td>Active Users</td>
<td>Task Users</td>
<td>Task Users</td>
<td>Physical Users</td>
<td>Thread</td>
</tr>
<tr>
<td>8.240E+00</td>
<td>100</td>
<td>4.865E+03</td>
<td>8006</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>0.000E+00</td>
<td>0</td>
<td>0.000E+00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1.701E+01</td>
<td>100</td>
<td>1.812E+03</td>
<td>2964</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Number</th>
<th>Maximum Number</th>
<th>Maximum Number</th>
<th>Limit</th>
<th>Maximum Concurrent Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread Sent</td>
<td>Mail Delivered</td>
<td>Mail Concurrent</td>
<td>Mailboxes</td>
<td>Transaction</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>65535</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum Buffer Pool Availability</th>
<th>Server Pool Used Threshold</th>
<th>Server Availability Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replication Timeouts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 4.893E+04</td>
<td>32768</td>
<td>0</td>
</tr>
<tr>
<td>0 4.893E+04</td>
<td>131072</td>
<td>0</td>
</tr>
<tr>
<td>0 6.374E+04</td>
<td>44032</td>
<td>0</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390 Report: DOM05

**Figure 166. Example of a Domino General Server Statistics, Daily Report**

The report contains the following information:

**DATE**

The date when the collection interval expires.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVER NAME</td>
<td>Server name.</td>
</tr>
<tr>
<td>SYSTEM ID</td>
<td>System identifier.</td>
</tr>
<tr>
<td>SYSPLEX NAME</td>
<td>Sysplex name.</td>
</tr>
<tr>
<td>Average Number Connected Users</td>
<td>Average number of users.</td>
</tr>
<tr>
<td>Maximum Number Connected Users</td>
<td>Maximum number of users.</td>
</tr>
<tr>
<td>Average Number Active Users</td>
<td>Average number of connected users that are currently active.</td>
</tr>
<tr>
<td>Maximum Number Active Users</td>
<td>Maximum number of connected users that are currently active.</td>
</tr>
<tr>
<td>Average Number Task Used</td>
<td>Average number of tasks in use during the interval.</td>
</tr>
<tr>
<td>Maximum Number Task Used</td>
<td>Maximum number of tasks in use during the interval.</td>
</tr>
<tr>
<td>Total Physical Thread</td>
<td>Total number of server_pool_tasks for physical thread pool threads.</td>
</tr>
<tr>
<td>Average Physical Thread Used</td>
<td>Average number of physical thread pool threads in use during the interval.</td>
</tr>
<tr>
<td>Maximum Physical Thread Used</td>
<td>Maximum number of physical thread pool threads in use during the interval.</td>
</tr>
<tr>
<td>Average Virtual Thread Used</td>
<td>Average number of virtual thread pool threads in use during the interval.</td>
</tr>
<tr>
<td>Maximum Virtual Thread Used</td>
<td>Maximum number of virtual thread pool threads in use during the interval.</td>
</tr>
<tr>
<td>Maximum Number Users</td>
<td>Maximum number of users.</td>
</tr>
<tr>
<td>Maximum Tasks Updates</td>
<td>Maximum number of concurrent update tasks.</td>
</tr>
<tr>
<td>Maximum Thread Mail Sent</td>
<td>Maximum number of mail transfer threads.</td>
</tr>
<tr>
<td>Maximum Thread Mail Delivered</td>
<td>Maximum number of mail delivery threads.</td>
</tr>
<tr>
<td>Maximum Thread Mail Concurrent</td>
<td>Maximum number of concurrent mail transfer threads.</td>
</tr>
<tr>
<td>Maximum Mailboxes</td>
<td>Maximum number of mailboxes.</td>
</tr>
<tr>
<td>Limit Concurrent Transaction</td>
<td>Limit for number of concurrent transactions.</td>
</tr>
<tr>
<td>Maximum Concurrent Sessions</td>
<td>Maximum number of sessions to run concurrently.</td>
</tr>
<tr>
<td>Maximum Concurrent Replications</td>
<td>Maximum number of concurrent replicators.</td>
</tr>
</tbody>
</table>
## Domino reports

<table>
<thead>
<tr>
<th>Metric</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timeouts</strong></td>
<td>Number of minutes in timeout.</td>
</tr>
<tr>
<td><strong>NSF Buffer Pool 4KB</strong></td>
<td>Maximum size of NSF buffer pool, in kilobytes.</td>
</tr>
<tr>
<td><strong>NSF Buffer Pool Used</strong></td>
<td>Number of bytes that are being used in the NSF buffer pool.</td>
</tr>
<tr>
<td><strong>Server Availability Threshold</strong></td>
<td>Server availability threshold. The threshold that is set to determine when a server is considered busy.</td>
</tr>
<tr>
<td><strong>Server Availability Index</strong></td>
<td>Server availability index.</td>
</tr>
</tbody>
</table>
Part 14. WebSphere component

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	    - WAS_ACT_METHOD_V ...... 531
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	    - Tables ....................... 534
	    - WAS_ACT_SERVLETS ....... 534
	    - WAS_ACT_WEBAPPL ....... 536
	    - WAS_ACT_HTTPSESS ...... 538
	    - WAS_ACT_BEANMTHD ....... 540
	    - WAS_ACT_J2EECNT ...... 544
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Chapter 63. Customization

Before you can use the WebSphere components to collect data and create reports, you must customize the component by making input data available.

Making input data available

This section describes what you have to do to enable SMF recording. Enabling SMF recording for the WebSphere Application Server can be achieved by performing the following steps:

- Using the Server Definition of the System Management User Interface Administrator application
- Editing the SMFPRMxx parmlib member.

Using the System Management User Interface Administrator application

Before you begin please ensure you the necessary authorization to the Administration application. Follow these steps to enable SMF recording:

1. Open the Administration application and start a new conversation
2. Select the server for which you want to enable SMF recording.
3. Select one or more check boxes for SMF recording. The available choices are the following:
   - **Server activity record.**
     Check the checkbox titled "Write Server Activity SMF Records..."
   - **Container activity record.**
     Check the checkbox titled "Write Container Activity SMF Records..."
   - **Server interval record.**
     Check the checkbox titled "Write Server Interval SMF Records..."
   - **Container interval record.**
     Check the checkbox titled "Write Container Interval SMF Records..."
   - **J2EE Container activity record.**
     Check the checkbox titled "Write Container activity SMF Records...in the J2EE Server properties definition"
   - **J2EE Container interval record.**
     Check the checkbox titled "Write Container interval SMF Records...in the J2EE Server properties definition"
   - **WebContainer activity record.**
     WebContainer activity records are automatically enabled with the enabling of J2EE Container activity records
   - **WebContainer interval record.**
     WebContainer interval records are automatically enabled with the enabling of J2EE Container interval records.
4. Set the interval length.
5. Save the server definition.
6. Validate the new conversation.
7. Mark all tasks completed.
8. Activate the new conversation.

The steps for using the System Management User Interface Administration application are completed when the new conversation is successfully activated.

**Note:** For additional information on enabling SMF recording for WebSphere Application Server through the Server Definition of the System Management User Interface Administrator application see *WebSphere Application Server V4.0.1 for z/OS and OS/390: System Management User Interface*, SA22-7838 or following ones.

---

### Editing the SMFPRMxx parmlib member

Before you begin please make a working copy of the sample PARMLIB member SMFPRMYL. Follow these steps to edit the SMFPRMxx parmlib member and enable SMF recording for WebSphere Application Server:

1. Insert a statement to indicate SMF recording. See the *z/OS MVS Initialization and Tuning Guide*, SA22-7591.
2. Insert a SYS statement to indicate the types of SMF records you want the system to create.
   
   **Example:** Use SYS(TYPE(120:120)) to select WebSphere Application Server type 120 records only.
   
   **Note:** Try to keep the number of selected record types small to minimize the performance impact.
3. If an interval length was not defined on the server definition through the Administration application, then specify the interval in which you want the interval records to be created.
4. The server and container interval records will use either:
   - The value specified in the server/container definition as specified in the SM User Interface
   - The interval specified in the SMF parmlib member (from the SMF product settings) if you specify length 0.

You can specify the interval in which you want the server and containers interval records created in the SMFPRMxx parmlib member (if no interval was specified by the SM EUI for the server or containers definition). The default SMF recording interval is 30 minutes. See *WebSphere Application Server V4.0.1 for z/OS and OS/390: System Management User Interface*, SA22-7838, for details.

---

### Writing records to DASD

Before you begin please make sure you have your modified PARMLIB member SMFPRMxx. Follow this step to start writing records to DASD:

- Launch the following command:

  ```sh
t  smf=xx
  ```

  where `xx` is the suffix of the SMF parmlib member (SMFPRMxx)

**Note:** See *z/OS MVS System Management Facilities* (SMF), SA22-7630, for more information. Writing records to DASD has been completed successfully when the data is recorded in the data set which is specified in the
Chapter 64. Log and Record Definition

The WebSphere component collects records from the system management facility (SMF) logs. WebSphere writes two general types of SMF records:

- **Activity records**
  These consist of data gathered as each activity within a server is completed. An activity is a logical unit of business function. It can be a server or user-initiated transaction. These records can be used to perform basic charge-back, application profiling and, problem determination. They are useful both in the development environment and for problem determination purposes.

- **Interval records**
  These consist of data gathered at installation-specified intervals and provide reliability information. They are useful in the production environment.

### Activity records

- **SMF_120_1 (Server)**
  The server activity SMF record is used to record the activity that is running on a WebSphere for z/OS Application Server. A single record is created for each activity that is run either on a server or on a server instance. If the activity runs on multiple servers, then a record is written for each server. You can activate this record through the server definition of the System Management User Interface by checking the checkbox: "Write Server Activity SMF Records".

- **SMF_120_2 (MOFW Container)**
  The purpose of the container activity SMF record is to record activity that is running inside a container located on a WebSphere transaction Server. A single record is created for each activity that is run inside a container located in a WebSphere transaction server. If the activity runs on multiple servers, then multiple records are written for the activity. You can activate this record through the server definition of the System Management User Interface by checking the checkbox: "Write Container Activity SMF Records".

- **SMF_120_5 (J2EE Container)**
  The purpose of the J2EE container activity SMF record is to record activity within a J2EE container that is located on a WebSphere transaction server. A single record is created for each activity that is run within a J2EE container located on a WebSphere transaction server. You can activate this record through the server definition of the System Management User Interface by checking the checkbox: "Write Container Activity SMF Records".

- **SMF_120_7 (WebContainer)**
  The purpose of the WebContainer activity SMF record is to record activity within a Web container running on a WebSphere for z/OS transaction server. The Web container is deployed within an EJB and runs within the EJB container. The Web container acts as a Web server handling HTTP Sessions and Servlets. The EJB container is not aware of the work the Web container does. Instead, the EJB container only records that the EJB has dispatched. Meanwhile, the Web container gathers the detailed information, such as HttpSessions, Servlets and their respective performance data. A single WebContainer Activity record is created for each activity that is run within a WebContainer. WebContainer SMF recording is activated and deactivated along with the activation and deactivation of SMF recording for the J2EE container.
Interval Records

- **SMF_120_3 (Server)**
  The purpose of the server interval SMF record is to record activity that is running on a WebSphere for z/OS application server. This record is produced at regular intervals and is an aggregation of the work that runs on the server instance during the interval. A single record is created for each server instance that has interval recording activity during the interval. If a server has multiple server instances, then a record for each server instance is written and the records must be merged after processing to get a complete view of the work that runs on the server. You can activate this record through the server definition of the Systems Management User Interface by checking the checkbox: "Write Server Interval SMF Records".

- **SMF_120_4 (MOFW Container)**
  The purpose of the container interval SMF record is to record activity that is running inside a container located inside the WebSphere transaction server. This record is produced at regular intervals and is an aggregation of the activities running inside a container during the interval. A single record is created for each active container located in a WebSphere transaction server within the interval being recorded. If there is more than one server instance associated with a server, there will be a record for the container from each server instance. To get a common view of the work running in the container during the interval, you must merge the records after processing. You can activate this record through the server definition of the Systems Management User Interface by checking the checkbox: "Write Container Interval SMF Records".

- **SMF_120_6 (J2EE Container)**
  The purpose of the J2EE container interval SMF record is to record the activity within a J2EE container that is located on the WebSphere transaction server. This record is produced at regular intervals and is an aggregation of the activities running inside a J2EE container during the interval. A single record is created for each active J2EE container located on a WebSphere transaction server within the interval being recorded. If there is more than one server instance associated with a server, a record for the container will exist for each server instance. To get a common view of the work running in the J2EE container during the interval, you have to merge the records after processing. You can activate this record through the J2EE server definition of the Systems Management User Interface by checking the checkbox: "Write Container Interval SMF Records".

- **SMF_120_8 (Web Container)**
  The purpose of the WebContainer interval SMF record is to record activity within a Web Container running on a WebSphere for z/OS transaction server. The Web container run environment consists of an EJB that is deployed into the EJB container. The Web container acts as a Web Server handling HTTP Sessions and Servlets. The EJB container is not aware of the purpose of the Web Container activity record and it only records that the EJB has been dispatched, but does not gather any of the detailed information, such as HTTP sessions, Servlets, and their respective performance data.

  A single WebContainer record is created for each WebContainer. In addition to data that is associated with an individual activity, there are some cases of Web Container work that are performed outside the scope of an individual request. For example, some instances of HTTP session finalization and HTTP session invalidation are performed asynchronously. In such a case a WebContainer interval record would record data. WebContainer SMF recording is activated and deactivated along with activation and deactivation of SMF recording for the J2EE container.
Chapter 65. Implementing the WebSphere component

This chapter describes how to plan for and set up the WebSphere component. It supplements the procedure in the Administration Guide for installing a component with information specific to the WebSphere feature.

Planning the implementation process

Before installing the WebSphere component, you must follow these steps to plan the implementation process:

- Describe user’s tasks. And, then determine what data the WebSphere component must gather to help users accomplish those tasks.
- Determine which components you must install to meet the user’s needs
- Determine the administration tasks you must perform for the selected components and make any decisions required by these tasks. These tasks help you customize Tivoli Decision Support for OS/390 and the WebSphere component to work efficiently and effectively with your computer system.
- For each selected component, determine the tasks you must perform to customize the supported products to work with Tivoli Decision Support for OS/390 and with the WebSphere component.

If this is your first exercise in implementation planning, follow all these steps to ensure that WebSphere component implementation is consistent. If you are reading this chapter to acquire information to modify your system, you might not need to perform all of these tasks. Use the planning process to prepare for these main customization tasks:

- Customizing WebSphere to gather the performance data that is written to SMF log files. You customize this product to generate the data required by the components you install.
- Defining environment data, which is all the information (besides the input data) that the WebSphere component needs to create reports. Environment data controls the data collection process and provides more information in the reports.

Considering which components to install

Your most critical planning task is determining what kind of information users need from the WebSphere component. For example, users may be interested only in Server statistics data or Web Application response time. Installing only those parts of the needed feature to meet the user requirements ensures that the feature benefits users while it minimizes the performance impact caused by data collection and interpretation activities. The WebSphere component uses these information categories to select the information for components:

- Interval
  It consists of data gathered at installation-specified intervals and provides capacity planning and reliability information. It is suitable for a production environment.
- Activity
  Each activity within a server is completed. An activity is a logical unit of business function. It can be a server or use-initiated transaction. This data can be
used to perform basic charge-back, application profiling and, problem
determination. It is suitable for development-test environment.

WebSphere SMF type 120 records are generated from WebSphere Application
Server 4.0.1 servers in full blown configuration. They can be as detailed as one
record per transaction (although this could harm performance). They are mainly
used to gather application statistics rather than charge-back (for example, CPU
time is not recorded in an SMF type 120 records). Type 120 SMF records contain
information about both the WebSphere Application Server and Containers
performance and usage. If you wish to record activity at the application level on
your WebSphere Application server, type 120 SMF records are a primary source of
information.

As stated earlier, the general recommendation is not to request specific SMF
records unless you are actually going to use them. If knowledge of WebSphere
application performance is important, we recommend that you enable the
recording of type 120 SMF records. You may find that running with SMF type 120
interval records in production is appropriate, since these records give information
specific to WebSphere applications such as response time for J2EE artifacts, bytes
transferred, and so forth.

If you do choose to run with SMF type 120 records enabled, we recommend that
you use Interval SMF records rather than Activity records. Although Tivoli
Decision Support for OS/390 can process data for all these information categories,
you might not need all the data.

The WebSphere component is divided into two main components and each
component is further divided into three subcomponents. Components and
subcomponents provide support for specific subsystems. Consider carefully which
components to install. Components are groups of Tivoli Decision Support for
OS/390 objects (for example, predefined update definitions, data tables, and
reports).

If you find that you need reports from a component that you have not installed,
you must install that component and then wait several days or weeks until enough
data has been collected to create reports. However, if you install more components
than you need, Tivoli Decision Support for OS/390 collects needless data, which
takes up disk space and uses processor time.

Note: You cannot uninstall an individual subcomponent. As described in the
Administration Guide manual, you must uninstall a component, then reinstall
it, selecting only those subcomponents you need. At this point, you might
find it helpful to examine the predefined tables and reports for each
subcomponent. For more information, see Chapters 66 and 67.

Evaluating the WebSphere Interval Component

The WebSphere Interval Component, particularly suitable for a production
environment, provides the performance data from Interval records and contains
three subcomponents.

• Server Interval Subcomponent

This subcomponent contains the Tivoli Decision Support for OS/390 objects
necessary to summarize activity that is running on a WebSphere for z/OS
application server and an aggregation of the work that runs on the server
instance during the interval.
• **MOFW Container Interval Subcomponent**
  This subcomponent contains the Tivoli Decision Support for OS/390 objects necessary to summarize activity that is running on a MOFW container located on the WebSphere transaction server during the interval.

• **J2EE & WebContainer Interval Subcomponent**
  This subcomponent contains the Tivoli Decision Support for OS/390 objects necessary to summarize activity within J2EE and Web Containers that are located on the WebSphere transaction server. This is an aggregation of the activities running inside a J2EE and Web containers during the interval. J2EE and WebContainer have been grouped together because the WebContainer SMF recording activation is totally dependent on the activation of SMF recording for the J2EE container.

---

**Evaluating WebSphere Activity Component**

The WebSphere Activity Component provides the performance data from Activity records and contains three subcomponents:

• **Server Activity Subcomponent**
  This subcomponent contains the Tivoli Decision Support for OS/390 objects necessary to report activity that is running on a WebSphere for z/OS Application Server. A single entry is created for each activity that runs on a server or server instance.

• **MOFW Container Activity Subcomponent**
  This subcomponent contains the Tivoli Decision Support for OS/390 objects necessary to report activity that is running inside a MOFW container located on the WebSphere transaction Server. A single entry is created for each activity that runs on a container located in a WebSphere transaction Server.

• **J2EE & WebContainer Activity Subcomponent**
  This subcomponent contains the Tivoli Decision Support for OS/390 objects necessary to report activity that is running inside J2EE and Web containers located on the WebSphere transaction server. A single entry is created for each activity that is run inside a container located on a WebSphere transaction server. J2EE and WebContainer have been grouped together because the WebContainer SMF recording activation/deactivation is totally dependent on the activation/deactivation of SMF recording for the J2EE container.

---

**Defining the operating environment**

To organize the system data collected from SMF and other logs, you must define the operating environment for Tivoli Decision Support for OS/390. This process (described in the Administration Guide manual) occurs for any component. Tables contain the environment data, and Tivoli Decision Support for OS/390 uses these tables when it processes data and creates reports.

---

**Installing the components**

After the systems programmer has successfully installed the Tivoli Decision Support for OS/390 base and features, you can choose whether to load any feature components and subcomponents. Tivoli Decision support for OS/390 installs the necessary log and record definitions, record procedures, and update definitions for Tivoli Decision Support for OS/390 system tables. Tivoli Decision Support for OS/390 also installs the predefined tables (described in Chapter 66, "Data Tables and Views") and reports (described in Chapter 67, "Reports"). Each component and
subcomponent of the WebSphere component is optional. All Tivoli Decision Support for OS/390 features, components and subcomponents install in the same way. From the administration dialog, display the Component panel and the following WebSphere components will be reported in the component list:

<table>
<thead>
<tr>
<th>Component Space Other Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLDACMP Components Row 40 to 52 of</td>
</tr>
<tr>
<td>Select one or more components. Then press Enter to Open component.</td>
</tr>
<tr>
<td>/ Components Status Date</td>
</tr>
<tr>
<td>/ WebSphere Interval Component</td>
</tr>
<tr>
<td>- WebSphere Activity Component</td>
</tr>
<tr>
<td>Command ==&gt; ______________________________________________________________</td>
</tr>
<tr>
<td>F1=Help F2=Split F3=Exit F5=New F6=Install F7=Bkwd</td>
</tr>
<tr>
<td>F8=Fwd F9=Swap F10=Actions F12=Cancel</td>
</tr>
</tbody>
</table>

Select the component to install (in this case, the WebSphere Interval Component) and press F6. Because the WebSphere component contains subcomponents, Tivoli Decision Support for OS/390 displays the WASPINTC Component Parts window (shown below).

<table>
<thead>
<tr>
<th>Component Space Other Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRLDACPA WASPINTC Component Parts Row 1 to 3 of 3</td>
</tr>
<tr>
<td>Select the parts of the component you want to install. Then press Enter.</td>
</tr>
<tr>
<td>/ Component Part Status Date</td>
</tr>
<tr>
<td>- Server Interval Subcomponent</td>
</tr>
<tr>
<td>- Container Interval Subcomponent</td>
</tr>
<tr>
<td>- J2EE &amp; Web Container Interval Subcomponent</td>
</tr>
<tr>
<td>Command ==&gt; ______________________________________________________________</td>
</tr>
<tr>
<td>F1=Help F2=Split F7=Bkwd F8=Fwd F9=Swap F12=Cancel</td>
</tr>
</tbody>
</table>

Select the subcomponents to install and press Enter to display the Installation Options Window. Whatever the user selects, there are some objects that are common to all the Activity subcomponent. So with this exception each WebSphere subcomponents will install the minimal number of Tivoli Decision Support DB2 objects necessary to support the user requirements. Basically each subcomponent will match our user business needs according to WebSphere SMF subtype records selected by the user.
Chapter 66. Data Flow

The log collector initiates SMF type 120 record processing according to WebSphere record definitions. The log collector uses one of eight record definitions to map data in the SMF log. It selects the appropriate definitions according to the type of data recorded by WebSphere. Although the log collector provides extensive processing capabilities, it might be necessary to create record procedures to process data before it is processed using the stored definitions. In particular, this is necessary when:

- Processing data in unusual formats
- Cross-referencing data between parallel repeated sections.

Processing data in unusual formats

- **Unicode Format**

  The WebSphere SMF type 120 subtypes 5, 6, 7 and 8 records introduce the utilization of fields in Unicode format that coexist with EBCDIC format fields in the same record sections. Unicode is a universal encoding scheme for written characters and text that enables the exchange of data internationally. It provides a character set standard that can be used all over the world. It uses a 16-bit encoding that provides code points for more than 65,000 characters and an extension called UTF-16 that allows as many as a million more characters to be encoded.

  WebSphere uses an extension mechanism called UTF-16BE. Unfortunately the basic symbols of the Tivoli Decision Support for OS/390 log collector language are single-byte EBCDIC characters. Within some language elements, you can also enter sequences of double-byte characters. Each such sequence must be enclosed between (single-byte) shift-out x’0E’ and shift-in x’0F’ characters. Unless otherwise stated, all characters named below are single-byte EBCDIC characters.

  A letter is one of the characters A through Z and a through z, or any of the three alphabetical extenders for national languages. (The three alphabetical extenders are X’5B’, X’7B’ and X’7C’. Using code pages 37 and 500, they display as $, # and @ respectively). A digit is any of the characters 0 through 9. Currently the Tivoli Decision Support for OS/390 1.6.0 log collector does not support the Unicode format fields.

  Currently the WebSphere component record procedures are able to handle only the Unicode Version 3.0 of the Unicode Standard based on ISO 8859-1 (Basic Latin and Latin 1 Supplement: Range 0000-00FF) Unicode Character (ISO 8859-1 is the unique standard extension that includes a number of European alphabetical characters and it is used by HTTP and some operating systems) and to translate a character string from Unicode to EBCDIC.

- **Java Epoch Time Format**

  Some WebSphere SMF record fields (for example SM120WJ3 or SM120WAU) use the Epoch time format (number of milliseconds from 01/01/1970) not supported by Tivoli Decision Support for OS/390 log collector. This time format represents: loadedSince...Timestamp from System.currentTimeMillis() when the servlets was loaded, in EBCDIC Hexadecimal format.
For example: The data as it appears in the record could have the format e7ef7c577c, which needs to be converted to a Java long: 996155348860. The Java long digits can be converted to java.util.Date: Thu Jul. 26 15:49:08 GMT+02:00 2001.

The Tivoli Decision Support for OS/390 log collector will look (considering the example provided) something like the following:

`x'4040404040085F78586F83F5F7F783'`

Basically the Epoch time format is expressed in Hexadecimal using a combination of hexadecimal EBCDIC value corresponding to the alphabetic and numeric signs:

(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f)

The number from 0 to 9 and the first six lower case letters.

The Tivoli Decision Support for OS/390 WebSphere component record procedures convert this date/time format into YYYYDDDF format for the date and TIME (1/100s) hundredths of seconds past midnight.

Records Fields longer than 255 bytes

Some WebSphere SMF record offsets are defined as longer than 256 bytes and so cannot be directly mapped by any Tivoli Decision Support for OS/390 record definition field format (please refer to table 37 on Tivoli Decision Support for OS/390 Language Guide and Reference, that provides a maximum field extension of 254 bytes. The same problem is experienced for DB2 table columns. Many of these record fields must be handled as primary keys of the Tivoli Decision Support for OS/390 WebSphere component tables. This is also true when DB2 provides VARCHAR type columns longer than 255 bytes. Nevertheless the number of identified columns in a DB2 PRIMARY KEY must not exceed 64 and the sum of their lengths attributes must not exceed 255. Some of these fields have been truncated to a reasonable value.

However if the Tivoli Decision Support for OS/390 column length is not sufficient for your environment needs, then you can alterate the table column using the following DB2 statement

**Syntax:**

```
!--------!ALTER TABLE --table-name ----!---ALTER -----column-alteration ---!------
column-alteration:
| -column-name --SET DATA TYPE ---VARCHAR -----(integer)-----------------
```

SET DATA TYPE VARCHAR (integer)

Specifies the new length for the column. The value of integer must be equal to or greater than the current maximum length of the column. The new length must not make the total byte count of all columns in a row exceed the maximum row size. If the column is used in an index, the new length must not make the sum of the length attributes of the specified index columns greater than 255 (for more details please refer to DB2 Manual SQL Reference).
Cross-reference data among parallel repeated sections

Another distinctive feature of the WebSphere component is that the SMF type 120 records contain data in unusual format, in particular the massive utilization of repeated section containing triplets referring to same kind of repeated section should be highlighted. Exit routines that access SMF records with sub-sections are coded using triplets (offset to xxx section, number of xxx sections, length of xxx section) rather than coding the exit to access fields directly. An installation can use the triplets to calculate the location of each section. Records that contain sections are a common occurrence. In many records, sections are repeated.

A repeated section is a section that occurs more than once in a record. The number of times a section appears in the record can be fixed, or it can be specified by data within the record. From the Tivoli Decision Support for OS/390 point of view to specify a repeated section is similar to specifying a section that is not repeated. To identify the section, use the SECTION clause. The value contained in the Offset_expression field specifies the offset of the first occurrence of this section.

The value in length_expression specifies the length of each occurrence and the number_expression the number of occurrences of the section. Unfortunately this WebSphere SMF structure is not currently supported by the Tivoli Decision Support for OS/390 log collector (for more details please refer to the section “Define Record” in the Tivoli Decision Support for OS/390 “Language Guide and Reference”.

**Note:** "...any identifiers used in the expression OFFSET must be names of fields in the containing sections, in the record, or in previously defined non-repeated sub-sections of these."

Table 17 shows the new record procedures introduced with the WebSphere component.

<table>
<thead>
<tr>
<th>SMF Record in Input</th>
<th>Cross-reference data between parallel repeated sections</th>
<th>Fields in unusual Formats</th>
<th>Record Procedure</th>
<th>SMF Record Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF_120_5</td>
<td>Yes</td>
<td>Yes</td>
<td>DRL2SA05</td>
<td>SMF_120_5_X</td>
</tr>
<tr>
<td>SMF_120_6</td>
<td>Yes</td>
<td>Yes</td>
<td>DRL2SI06</td>
<td>SMF_120_6_X</td>
</tr>
<tr>
<td>SMF_120_7</td>
<td>Yes</td>
<td>Yes</td>
<td>DRL2SA07</td>
<td>SMF_120_7_X</td>
</tr>
<tr>
<td>SMF_120_8</td>
<td>Yes</td>
<td>Yes</td>
<td>DRL2SI08</td>
<td>SMF_120_8_X</td>
</tr>
</tbody>
</table>

With the WebSphere component installed, Tivoli Decision Support for OS/390 has system tables information that allows the log collector to:
- Map the different subtypes of SMF type 120 records through its record definitions
- Create intermediate records (prefix=_X) of various types through its record procedures
- Store data in tables through its update definitions.

The log collector uses log and record definitions, record procedures, and update definitions to move data from an SMF type 120 record into Tivoli Decision Support.
for OS/390 tables. The log collector uses a record definition to identify an SMF
type 120 record and to map its data according to the record subtype. When the log
collector finds an SMF type record, it uses WebSphere component record
definitions to map the data for further processing. Some record definitions cause
the log collector to use record procedures that create intermediate records.

Because the WebSphere record procedure conversion is based on ISO 8859-1 (C0
Controls-Basic Latin and C1 Controls and Latin-1 Supplement, Range
x’0000-x’00FF) Unicode Character, the record procedures handle any errors of
Unicode characters having the first byte different from zero. By replacing the
incorrect unicode character with blank x’40’ and letting you choose noe the
program proceeds.

You can do this by specifying the SET statement in the Tivoli Decision Support
collect job, and setting the CONVERSION_ERROR variable to one of values shown
in table 18.

```
SET CONVERSION_ERROR = 'conversion error value';
```

<table>
<thead>
<tr>
<th>CONVERSION ERROR VALUE</th>
<th>RECORD PROCEDURE RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGNORE</td>
<td>Ignore the error and built the record.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Write Error Message and built the record.</td>
</tr>
<tr>
<td>ERROR</td>
<td>Write Error Message and Skip the record</td>
</tr>
<tr>
<td>SEVERE</td>
<td>Write Error Message and Terminate Processing</td>
</tr>
</tbody>
</table>

If a value specified is different from one of those reported in the above list than an
error message is issued in the DRLOUT dataset

**Recordproc_name: Error. The PARM value parm_value passed to procedure is invalid**

A default value (ERROR) is provided using the PARM expression in the define
recordproc statement

```
DEFINE RECORDPROC recordproc_name
FOR record_name
PARM VALUE (: COVERSION_ERROR, 'ERROR');
```

If a conversion error is encountered and CONVERSION_ERROR is different
from ‘IGNORE’ then an error message is issued in the DRLOUT data set:

**Recordproc_name: A Unicode to EBCDIC Conversion error occurred**

Similarly any error due to WebSphere while recording the date in Epoch format or
Tivoli Decision Support for OS/390 to convert it will be handled with the same
logic as for Unicode-EBCDIC conversion. If the CONVERSION_ERROR parameter
is different from ‘IGNORE’, then an error message is issued in the DRLOUT data
set:

**Recordproc_name: A Wrong Epoch format time found in record**
And the record will be handled according to your choice of
CONVERSION_ERROR value, while the first byte of the converted field is set to 'I'
(Invalid) in order to avoid to be used in the UPDATE object in case the record is
not skipped.

Cross-reference among records

This problem exists just for ACTIVITY records for which you can experience the
following problem:

- The Server and WebContainer records contain the necessary information about
the start and stop time of the activity but the Container and J2EE Container
records are missing this key information. Each Container Activity Record
(subtype 2) and J2EE Container Activity record (subtype 5) have a corresponding
Server Activity Record (subtype 1) which does have a start and end time. The
records are related by the ActivityID which should be unique. Since most of the
WebSphere application Server SMF records are used to describe variable-length
data structures (for example, there might be hundreds of classes by container
and hundreds of methods by class), the SMF records may be larger than the
maximum record size supported by SMF (32KB). In this case the logical records
are split into several physical records.

These physical records are all self-describing and self-contained. Self-describing
indicates what is described in the paragraph on triplets before; it is a purely
mechanical structure to help read a record. Self-contained indicates that, even if
only a subset of the physical records available are encountered, they describe the
original logical record. These records to be evaluated, by combining the
information stored in them and setting an "incomplete" flag. This is required
because, the log collector handles a logical record break-up into physical records
written in different SMF dump data sets (one after the other, because SMF can
only fit the first few physical records into the primary SMF dump dataset while
writing the remaining physical records into an alternate SMF dump data set).

At the time the data collection on a formatted SMF dump data set is performed,
we cannot assume that all the physical records that make up one logical record
are present. For example, a self-contained physical container activity record
means that it contains the description of the container, but not necessarily all of
its classes. Note that, in the case of container records (subtype 2 and 4), we
cannot assume that records will be split at a class boundary, but we must
consider the case when the methods that belong to one class also need to be
split over multiple physical records, as shown in the figures on the following
pages. Moreover a Server activity record continuing the fundamental
information about the start/stop activity might be recorded in the previous SMF
dump and missing in the second SMF dump, so it is necessary to find a
mechanism that preserves this information through the sequence of Tivoli
Decision Support collects on SMF logs.

Note: The section length numbers used throughout the following figures are
only for demonstrative purposes. In particular, the arrows indicating 32K
boundaries or the total length of the records are placed at random. You
can fit many more classes and methods into a physical record than
suggested by the figures.
Each Container Activity Record (subtype 2) has a corresponding Server Activity Record (subtype 1) which has a start and end time. The records are related by the ActivityID which must be unique. The same is true for J2EE Container Activity Records.
Records (subtype 5) that can be related back to a Server Activity Record. If it is also possible to toggle the recording of Server and Container or J2EE Container records separately for each server this could result in an activity start stop time not being recorded.

Note: you must enable a Server Activity record for recording if you collect MOFW or J2EE Container Activity records.

The activity field is unique for the sysplex and not reused. It contains the activity start time, the activity stoken and the activity IP address.

- SmfActivityId Char(20)
  - SmfActivity_start_time Char(8)
  - SmfActivity_start_time Char(8)
  - SmfActivityIpAddr Char(4)

The activityID is not reused and activities are written into the SMF dataspace as the activity is completed. They should be written in the SMF scoreboard in the same order. SMF basically gets the activities in the order in which the activities were completed.

The WebSphere component addresses the problem of using View objects that are the joint of a control table populated directly from an SMF_120_1 record (Server Activity) reporting the start and stop activity time on one side and tables populated by records SMF_120_2 (Container Activity) and SMF_120_5 (J2EE Container) on the other side. This new control table will be named WAS_CONNECT_ACTID.

Table 19. WAS_CONNECT_ACTID Control Table

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>k TIMESTAMP</td>
<td>Activity start time. From SM120AID</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k CHAR(16)</td>
<td>IP Server address. From SM120AID</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From lookup table MVS_SYSPLEX.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>k TIMESTAMP</td>
<td>Activity end time. From SM120AET.</td>
</tr>
</tbody>
</table>
Chapter 67. Data Tables and Views

The Tivoli Decision Support for OS/390 database is a collection of DB2 tables, where each table contains a fixed number of columns. The number of rows in each table varies with time, because of rows added by the collect function and because of database maintenance. The process of entering data into the tables consists of several stages. The data from the log is first summarized in one table. Then, the contents of that table are summarized into another table, and so on. An *update definition* specifies how data from one source (a record type or table) is entered into one target (always a table). When the Tivoli Decision Support for OS/390 collect function collects records from the various logs supported, it stores the data in tables. Each component uses several tables. This chapter describes the data tables and control tables used by the WebSphere component. It includes an explanation of the naming standard used. For descriptions of common data tables used by the WebSphere component and other Tivoli Decision Support for OS/390 component, refer to the *Administration Guide*.

**Naming standard for tables**

Names of WebSphere component tables use this format:

```
WAS_prefix_content_suffix
```

where:

- **Prefix** identifies the component or subcomponent type (for example, INT for the Interval component and ACT for the activity subcomponents).
- **Content** is a description (for example, WAS_INT_SERVER_H) of the resource monitored.
- **Suffix** indicates the summarization level of the data in the table (for example, WAS_INT_WEBAPPL_D for Web Application statistics summarized by day).

A table name can have these summarization-level suffixes:

- **missing** The table holds non summarized data (*timestamped* data)
- _H The table holds data summarized by *hour* (hourly data)
- _D The table holds data summarized by *day* (daily data)
- _W The table holds data summarized by *week* (weekly data)
- _M The table holds data summarized by *month* (monthly)
Table descriptions

Each table description includes information about the table, a description of each of the key columns, and a description of each of the data columns:

Key columns are marked like this: k They are sorted in alphabetical order.

Data columns follow the last key column and are in alphabetical order.

The descriptions of most key columns and data columns contain references to the fields from which they are derived in the SMF record. For an explanation of such fields, refer to the applicable product documentation.

Tables with similar contents (that is, tables with the same name but with different suffixes) are described under one heading. For example, the heading “WAS_INT_SERVER_H,_D,_M” covers three similar tables: WAS_INT_SERVER_H, WAS_INT_SERVER_D and WAS_INT_SERVER_W_M. Except for the TIME column, the contents of these tables are identical.

This chapter defines the content of WebSphere component DB2 objects (such as table, view) and explains the relations with all the other objects such as records, updates, tablespaces, and so on. The Tables are grouped into components and subcomponents and the description in the following pages complies with this. All the Tivoli Decision Support for OS/390 WebSphere objects are defined and initialized in the member DRLIWAS.

![WebSphere Support](Figure 168. WebSphere Interval Component)
Table 20. List of Tivoli Decision Support for OS/390 objects installed with WASPINTC

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF</td>
<td>DRLLSMF</td>
</tr>
<tr>
<td>Record</td>
<td>SMF_130_3</td>
<td>DRLRS123</td>
</tr>
<tr>
<td>Tablespace</td>
<td>DRLSWSS1</td>
<td>DRLSWSS3</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_INT_SERVER_H</td>
<td>DRLTWISV</td>
</tr>
<tr>
<td>Update</td>
<td>WAS_INT_SERVER_H</td>
<td>DRLUWISV</td>
</tr>
<tr>
<td>View</td>
<td>WAS_INT_SERVER_HV</td>
<td>DRLVWISV</td>
</tr>
<tr>
<td>Report</td>
<td>WASSI01</td>
<td>DRLOWSI</td>
</tr>
</tbody>
</table>
Tables

This section describes the tables for the WebSphere Interval Component -> Server Interval Subcomponent.

**WAS_INT_SERVER_H, D, M**

These tables provide hourly, daily and monthly statistics on activity that is running on a WebSphere for z/OS application server and it is an aggregate of the work that ran inside a server instance during the interval.

The default retention periods for these tables are:

- **WAS_INT_SERVER_H** 10 Days
- **WAS_INT_SERVER_D** 45 Days
- **WAS_INT_SERVER_M** 475 Days

**Table 21. WAS_INT_SERVER_H, D, M**

<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 of the mid measurement. From SM120SST and SM120SET.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time of the mid measurement. From SM120SST and SM120SET. Valid only for hourly table.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN1.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSL.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SM120SST and SMF120SET from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>KB_RCVD_LCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been transferred to the server from all locally attached clients. Calculated as SUM of SM120BTL/1024.</td>
</tr>
<tr>
<td>KB_RCVD_GCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been transferred to the server from all attached clients. Calculated as SUM of SM120BTS/1024.</td>
</tr>
<tr>
<td>KB_RCVD_RCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been transferred to the server from all remotely attached clients. Calculated as SUM of SM120BTR/1024.</td>
</tr>
<tr>
<td>KB_SENT_GCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been sent from the server to all attached clients. Calculated as SUM of SM120BFS/1024.</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>KB_SENT_LCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been sent from the server to all locally attached clients. Calculated as SUM of SM120BFL/1024.</td>
</tr>
<tr>
<td>KB_SENT_RCLIENTS</td>
<td>REAL</td>
<td>Number of KBytes that have been sent from the server to all remotely attached clients. Calculated as SUM of SM120BFR/1024.</td>
</tr>
<tr>
<td>MAX_GCOM_ACTIV_SES</td>
<td>REAL</td>
<td>Maximum number of communications sessions that have been active during interval. Calculated as MAX of SM120NCA.</td>
</tr>
<tr>
<td>MAX_GCOM_EXIST_SES</td>
<td>REAL</td>
<td>Maximum number of communications sessions that exist at the end of the interval. Calculated as MAX of SM120NCS.</td>
</tr>
<tr>
<td>MAX_LCOM_ACTIV_SES</td>
<td>REAL</td>
<td>Maximum number of active local communications that have been attached and active within the server instance during the interval. Calculated as MAX of SM120NLA.</td>
</tr>
<tr>
<td>MAX_LCOM_EXIT_SES</td>
<td>REAL</td>
<td>Maximum number of local communication sessions that exist at the end of the interval. Calculated as MAX of SM120NLS.</td>
</tr>
<tr>
<td>MAX_RCOM_ACTIV_SES</td>
<td>REAL</td>
<td>Maximum number of active remote communications sessions that have been attached and active within the server instance during the interval. Calculated as MAX of SM120NRA.</td>
</tr>
<tr>
<td>MAX_RCOM_EXIST_SES</td>
<td>REAL</td>
<td>Maximum number of remote communications sessions that exist at the end of the interval. Calculated as MAX of SM120NRS.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120SET and SM120SST.</td>
</tr>
<tr>
<td>MIN_GCOM_ACTIV_SES</td>
<td>REAL</td>
<td>Minimum number of communications sessions that have been active during interval. Calculated as MIN of SM120NCA.</td>
</tr>
<tr>
<td>MIN_GCOM_EXIST_SES</td>
<td>REAL</td>
<td>Minimum number of communications sessions that exist at the end of the interval. Calculated as MIN of SM120NCS.</td>
</tr>
<tr>
<td>MIN_LCOM_ACTIV_SES</td>
<td>REAL</td>
<td>Minimum number of active local communications sessions that have been attached and active within the server instance during the interval. Calculated as MIN of SM120NLA.</td>
</tr>
</tbody>
</table>
### Table 21. WAS_INT_SERVER_H_D_M (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN_LCOM_EXIST_SES</td>
<td>REAL</td>
<td>Minimum number of local communications sessions that exist at the end of the interval. Calculated as MIN of SM120NLS.</td>
</tr>
<tr>
<td>NUM_GCOM_EXIST_SES</td>
<td>REAL</td>
<td>Number of communications sessions that exist at the end of the interval. Calculated as LAST occurrence SM120NCS.</td>
</tr>
<tr>
<td>NUM_GLOBAL_TRANS</td>
<td>REAL</td>
<td>Number of global transactions that have run through the server instance during the interval that have been initiated by the server instance during the interval. Calculated as SUM of SM120NGT.</td>
</tr>
<tr>
<td>NUM_LCOM_EXIST_SES</td>
<td>REAL</td>
<td>Number of local communications sessions that exist at the end of the interval. Calculated as LAST occurrence SM120NLS.</td>
</tr>
<tr>
<td>NUM_LOCAL_TRANS</td>
<td>REAL</td>
<td>Number of local transactions that have been initiated by the server instance during the interval. Calculated as SUM of SM120NLT.</td>
</tr>
<tr>
<td>NUM_RCOM_EXIST_SES</td>
<td>REAL</td>
<td>Number of remote communications sessions that exist at the end of the interval. Calculated as LAST occurrence SM120NRS.</td>
</tr>
<tr>
<td>SERVER_TYPE</td>
<td>CHAR (4)</td>
<td>WebSphere for z/OS server type. Possible value: ‘MOFW’ and ‘J2EE’. From SM120STY.</td>
</tr>
</tbody>
</table>
Views

This section describes the views for the WebSphere Interval Component -> Server Interval Subcomponent.

**WAS_INT_SERVER_HV, DV, MV**

These views provide hourly, daily, and monthly statistics on activity that is running on a WebSphere for z/OS application server and it is an aggregate of the work that run on the server during the interval. If a server has multiple server instances, then a row for each server instance is present.

**Note:** As well as the calculated columns described here, these views also contain all the data columns described in WAS_INT_SERVER_H, D, M tables.

<table>
<thead>
<tr>
<th>Table 22. WAS_INT_SERVER_HV, DV, MV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Column Name</strong></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>TIME</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
</tr>
<tr>
<td>PERIOD</td>
</tr>
<tr>
<td>KB_RECEIVED_RATE</td>
</tr>
<tr>
<td>KB_SENT_RATE</td>
</tr>
<tr>
<td>GLOBAL_TRAN_RATE</td>
</tr>
<tr>
<td>LCOM_EXIST_SES_PCT</td>
</tr>
<tr>
<td>LOCAL_TRAN_RATE</td>
</tr>
</tbody>
</table>
Table 22. WAS_INT_SERVER_HV, DV, MV (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCOM_EXIST_SES_PCT</td>
<td>REAL</td>
<td>Percentage of the remote communications sessions on the total. Calculated as 100*NUM_RCOM_EXIST_SES / NUM_GCOM_EXIST_SES.</td>
</tr>
</tbody>
</table>

Table 23. List of Tivoli Decision Support for OS/390 objects installed with the subcomponent.

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF</td>
<td>DRLLSMF</td>
</tr>
<tr>
<td>Record</td>
<td>SMF_130_4</td>
<td>DRLRS124</td>
</tr>
<tr>
<td>Tablespace</td>
<td>DRLSWSC1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRLSWSC2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRLSWSC3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRLSWSC4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRLSWSC5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRLSWSC6</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>WAS_INT_CONTAIN_H</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_INT_CLASS_H, D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_INT_METHOD_H</td>
<td></td>
</tr>
<tr>
<td>Update</td>
<td>WAS_INT_SERVER_H</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_INT_SERVER_D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_INT_SERVER_M</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report</td>
<td>WASCIO1</td>
<td>DRLLOWCI</td>
</tr>
</tbody>
</table>
Tables

This section describes the tables for the WebSphere Interval Component -> Container Interval Subcomponent.

**WAS_INT_METHOD_H**

This table provide hourly statistics on all methods involved in MOFW Container activity. From SMF record SMF_120_4.

The default retention period for these tables is:
- WAS_INT_METHOD_H 10 Days

*Table 24. WAS_INT_METHOD_H*

<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 of the mid measurement. From SM120SST and SM120SET.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time of the mid measurement. From SM120SST and SM120SET. Valid only for hourly table.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>CLASS_NAME</td>
<td>VARCHAR(64)</td>
<td>Name of the class activated by container. From SM120CLN</td>
</tr>
<tr>
<td>METHOD_NAME</td>
<td>VARCHAR(64)</td>
<td>Name of method. From SM120MNM.</td>
</tr>
<tr>
<td>AVG_RESPONSE_TIME</td>
<td>REAL</td>
<td>Maximum response time in seconds. Calculated as the AVG of SM120ART</td>
</tr>
<tr>
<td>MAX_RESPONSE_TIME</td>
<td>REAL</td>
<td>Maximum response time in seconds. Calculated as the MAX occurrence of SM120MRT</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120SET and SM120SST.</td>
</tr>
<tr>
<td>NUM_INVOCATIONS</td>
<td>REAL</td>
<td>Number of time the method was invoked during interval. Calculated as the SUM of SM120NMI.</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>NUM_NONFRMWRK_EXC</td>
<td>REAL</td>
<td>Number of non-framework exceptions that were detected by container. Calculated as the SUM of SM120NEX.</td>
</tr>
</tbody>
</table>
These tables provide hourly and daily statistics on all classes involved in MOFW Container activity. From SMF record SMF_120_4.

The default retention periods for these tables are:
- WAS_INT_CLASS_H 10 Days
- WAS_INT_CLASS_D 45 Days

Table 25. WAS_INT_CLASS_H,_D

<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 of the mid measurement. From SM120SST and SM120SET.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time of the mid measurement. From SM120SST and SM120SET. Valid only for hourly table.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>CLASS_NAME</td>
<td>VARCHAR(64)</td>
<td>Name of the class activated by container. From SM120CLN</td>
</tr>
<tr>
<td>IST_CLASS_ACTIVATE</td>
<td>INTEGER</td>
<td>Number of instances of the class that were activated. Calculated as SUM of SM120NIA</td>
</tr>
<tr>
<td>IST_CLASS_CREATED</td>
<td>INTEGER</td>
<td>Number of instances of this class that were created. Calculated as SUM of SM120NIC.</td>
</tr>
<tr>
<td>IST_CLASS_PASSIVAT</td>
<td>INTEGER</td>
<td>Number of instances of this class that were passivated. Calculated as SUM of SM120NIP.</td>
</tr>
<tr>
<td>IST_CLASS_REMOVED</td>
<td>INTEGER</td>
<td>Number of instances of this class that were removed (deleted). Calculated as SUM of SM120NIR.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120SET and SM120SST.</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>NUMBER_METHODS</td>
<td>INTEGER</td>
<td>Number of different methods invoked. Calculated as SUM of SM120MN.</td>
</tr>
</tbody>
</table>
These tables provide hourly, daily, and weekly statistics of activities running inside a container located inside a WebSphere MOFW server. From SMF record SMF_120_4.

The default retention periods for these tables are:
- WAS_INT_CONTAIN_H 10 Days
- WAS_INT_CONTAIN_D 45 Days
- WAS_INT_CONTAIN_M 365 Days

<table>
<thead>
<tr>
<th>Table 26. WAS_INT_CONTAIN_H,_D,_M</th>
</tr>
</thead>
</table>

<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 of the mid measurement. From SM120SST and SM120SET</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time of the mid measurement. From SM120SST and SM120SET. Valid only for hourly table.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>k CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>k CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From SM120HNM</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields SM120SST and SMF120SET from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>k VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>TRANSACTION_POLICY</td>
<td>k CHAR(34)</td>
<td>Container Transaction Policy. Possible values: &quot;TRANSACTION_REQUIRED&quot;, &quot;SAME_SERVER_HYBRID_GLOBAL&quot;, &quot;HYBRID_GLOBAL&quot;, &quot;SUPPORTS_SAME_SERVER_HYBRID_GLOBAL&quot;</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Interval in seconds. Calculated as the sum of differences between SM120SET and SM120SST.</td>
</tr>
<tr>
<td>NUM_CLASS_CREATED</td>
<td>INTEGER</td>
<td>Number of classes that were created. Calculated as sum of SM120NIC.</td>
</tr>
<tr>
<td>NUM_CLASS_ACTIVAT</td>
<td>INTEGER</td>
<td>Number of classes that were activated. Calculated as sum of SM120NIA.</td>
</tr>
<tr>
<td>NUM_CLASS_REMOVED</td>
<td>INTEGER</td>
<td>Number of classes that were removed (deleted). Calculated as sum of SM120NIR.</td>
</tr>
<tr>
<td>NUM_CLASS_PASSIVAT</td>
<td>INTEGER</td>
<td>Number of classes that were passivated. Calculated as sum of SM120NIP.</td>
</tr>
</tbody>
</table>
### Table 26. WAS_INT_CONTAIN_H, D, M (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER_METHODS</td>
<td>INTEGER</td>
<td>Number of methods invoked. Calculated as SUM of SM120MN.</td>
</tr>
</tbody>
</table>

### Table 27. List of Tivoli Decision Support for OS/390 objects installed with J2NBINTS subcomponent

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF_120_6 SMF_120_8 SMF_120_6_X SMF_120_8_X</td>
<td>DRLRSJWI</td>
</tr>
<tr>
<td>Record</td>
<td>DRLSWSW(1,2,3,...,9,A)</td>
<td>DRLSWIHS</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_INT_SERVLETS_H WAS_INT_WEBAPPL_H,D WAS_INT_HTTPSESS_H,D,M WAS_INT_BEANMTHD_H WAS_INT_J2EECNT_H,D,W</td>
<td>DRLTWISW DRLTWISW DRLTWIHS DRLTJCIM DRLTJ2CI</td>
</tr>
<tr>
<td>Update</td>
<td>WAS_INT_SERVLETS_H WAS_INT_WEBAPPL_H,D WAS_INT_HTTPSESS_H,D,M WAS_INT_BEANMTHD_H WAS_INT_J2EECNT_H,D,W</td>
<td>DRLUWISW DRLUWISW DRLUWIHS DRLUJCIM DRLUJ2CI</td>
</tr>
<tr>
<td>Report</td>
<td>WASWI01 WASWI02 WASWI03</td>
<td>DRLLOWWI</td>
</tr>
</tbody>
</table>

![Figure 171. WASPINTC-J2WBINTS](image)
Tables

This section describes the tables for the WebSphere Interval Component -> J2EE & Web Container Interval Subcomponent.

**WAS_INT_SERVLETS_H**

This hourly table contains information about each servlet associated with Web Applications during the interval. It is populated by SMF record SMF_120_8_X (built by Tivoli Decision Support for OS/390 record procedure DRL2SI08).

The default retention period for these tables is:

- WAS_INT_SERVLETS_H 10 Days

**Table 28. WAS_INT_SERVLETS_H**

<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 of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WIB.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120WIC.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WIA.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>WEB_APPL_NAME</td>
<td>VARCHAR(70)</td>
<td>The Web Application name. If you are monitoring servlets from multiple Web applications, this value helps you distinguish the servlets from one another. From SM120WIQ.</td>
</tr>
<tr>
<td>SERVLET_NAME</td>
<td>VARCHAR(70)</td>
<td>Indicates the servlet instance being monitored. From SM120WIW.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SM120WID and SMF120WIE from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>DATE_LOADED_SINCE</td>
<td>DATE</td>
<td>Indicates the date at which the class file for the servlet instance was most recently loaded. The value is 0 if the servlet class is not currently loaded. Calculated as LAST occurrence of Load Date.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120WID and SM120WIE.</td>
</tr>
</tbody>
</table>
Table 28. WAS_INT_SERVLETS_H (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER_ERRORS</td>
<td>REAL</td>
<td>Indicates the number of errors associated with this servlet instance as measured during the interval. Calculated as LAST of SM120WJ2.</td>
</tr>
<tr>
<td>REQUEST_RATE</td>
<td>REAL</td>
<td>Indicates the average number of requests per second for the servlet instance, as measured during the interval. Calculated as AVG SM120WIX.</td>
</tr>
<tr>
<td>RESPONSE_TIME_AVG</td>
<td>REAL</td>
<td>Indicates the average time (in seconds) the servlet instance spent performing services such as service(), do Get(), or do Post(), as measured during the interval. Calculated as AVG of SM120WIY.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the maximum time (in seconds) the servlet instance spent performing services such as service(), do Get(), or do Post() as measured during the interval. Calculated as MAX of SM120WJ1.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MIN</td>
<td>REAL</td>
<td>Indicates the minimum time (in seconds) the servlet instance spent performing services such as service(), do Get(), or do Post() as measured during the interval. Calculated as MIN of SM120WIZ.</td>
</tr>
<tr>
<td>SERVLET_UP_TIME</td>
<td>REAL</td>
<td>Indicates the number of consecutive seconds that the servlet was up. Calculated as LAST occurrence of the INTERVAL function applied to Load Date &amp; Load Time and SM120WIE.</td>
</tr>
<tr>
<td>TIME_LOADED_SINCE</td>
<td>TIME</td>
<td>Indicates the time at which the class file for the servlet instance was most recently loaded. The value is 0 if the servlet class is not currently loaded. Calculated as LAST occurrence of Load Time.</td>
</tr>
<tr>
<td>TOTAL_REQUESTS</td>
<td>REAL</td>
<td>Indicates the number of requests this instance of the servlet handled during the interval. Calculated as SUM of SM120WIX.</td>
</tr>
</tbody>
</table>
**WAS_INT_WEBAPPL_H, D**

These tables contain information about all Web Applications during the interval. They are populated by the WAS_INT_SERVLET_H table.

The default retention periods for these tables are:
- WAS_INT_WEBAPPL_H 10 Days
- WAS_INT_WEBAPPL_D 45 Days

Table 29. WAS_INT_WEBAPPL_H, D

<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 of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>TIME</td>
<td>k TIME</td>
<td>Time of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>k CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WIB.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>k CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120WIC.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From SM120WIA.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>WEB_APPL_NAME</td>
<td>k VARCHAR</td>
<td>The Web Application name. If you are monitoring servlets from multiple Web applications, this value helps you distinguish the servlets from one another. From SM120WIQ.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>k CHAR(8)</td>
<td>Name of the period. This is derived using fields SM120WID and SMF120WIE from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>NUMBER_ERRORS</td>
<td>REAL</td>
<td>Indicates the total number of errors associated with this Web Application, as measured during the interval. Calculated as LAST of SM120WJ2.</td>
</tr>
<tr>
<td>NUM_LOADED_SERVLET</td>
<td>INTEGER</td>
<td>Number of Servlets that were loaded. Calculated as Count of Servlet sections.</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>RESPONSE_TIME_AVG</td>
<td>REAL</td>
<td>Indicates the average time (in seconds) that a Web Application servlet spent performing services such as service(), do Get(), or do Post() as measured during the interval. Calculated as AVG of SM120WJY.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the maximum time (in seconds) that a Web Application servlet spent performing services such as service(), do Get(), or do Post() as measured during the interval. Calculated as MAX of SM120WJ1.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MIN</td>
<td>REAL</td>
<td>Indicates the minimum time (in seconds) that a Web application servlet spent performing services such as service(), do Get(), or do Post() as measured during the interval. Calculated as MIN of SM120WIZ.</td>
</tr>
<tr>
<td>TOTAL_REQUESTS</td>
<td>REAL</td>
<td>Indicates the total number of requests all servlets handled during the interval. Calculated as SUM of SM120WIX.</td>
</tr>
</tbody>
</table>
These tables contain information about all HTTP sessions during the interval. They are populated by SMF record SMF_120_8.

The default retention periods for these tables are:
- WAS_INT_HTTPSESS_H 10 Days
- WAS_INT_HTTPSESS_D 45 Days
- WAS_INT_HTTPSESS_M 547 Days

Table 30. WAS_INT_HTTPSESS_H,_D,_M

<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 of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>TIME</td>
<td>TIME</td>
<td>Time of the mid measurement. From SM120WID and SM120WIE.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WIB.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120WIC.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WIA.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>CHAR(8)</td>
<td>Name of the period. This is derived using fields SM120WID and SM120WIE from the record as parameters in the PERIOD function</td>
</tr>
<tr>
<td>ACTIVE_SESSIONS</td>
<td>INTEGER</td>
<td>Current number of http sessions that are actively referenced in the server at the end of the interval. Calculated as LAST occurrence of SM120WIH.</td>
</tr>
<tr>
<td>CREATED_SESSIONS</td>
<td>REAL</td>
<td>Indicates the number of sessions created during the interval. This includes sessions that were available, active, or invalidated. Calculated as SUM of SM120WIF.</td>
</tr>
<tr>
<td>CREATED_SESS_RATE</td>
<td>REAL</td>
<td>Indicates the average number of sessions created per second during the interval. Calculated as AVG of SM120WIF.</td>
</tr>
<tr>
<td>FINALIZED_SESSIONS</td>
<td>INTEGER</td>
<td>Number of sessions that were finalized. Calculated as LAST occurrence of SM120WIM.</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>INVALID_SESSIONS</td>
<td>REAL</td>
<td>Indicates the number of sessions invalidated (removed from available or active state) during the interval. This value is valid only in terms of in-memory sessions, not persistent sessions. Calculated as SUM of SM120WIG.</td>
</tr>
<tr>
<td>INVALID_SESS_RATE</td>
<td>REAL</td>
<td>Indicates the average number of sessions invalidated (removed from available or active state) per second during the interval. This value is valid only in terms of in-memory sessions, not persistent sessions. Calculated as the AVG of SM120WIG.</td>
</tr>
<tr>
<td>INVAL_TIME_SESSION</td>
<td>REAL</td>
<td>Average time in seconds that was required to process the invalidation http sessions as measured during the interval. Calculated as AVG of SMF120WIL/1000.</td>
</tr>
<tr>
<td>LIVE_SESSIONS</td>
<td>REAL</td>
<td>Total number of http sessions being tracked by the server at the end of the interval. This includes both active and inactive sessions. Calculated as LAST occurrence of SM120WIN.</td>
</tr>
<tr>
<td>LIFE_TIME_SESSION</td>
<td>INTEGER</td>
<td>Indicates the average time in seconds of invalidated HTTP sessions have remained alive in memory, as measured during the interval. The value is valid only in terms of in-memory sessions, not persistent sessions. Currently valid sessions are not included in the calculation because their life spans are not yet known. Calculated as AVG of SM120WIK/1000.</td>
</tr>
<tr>
<td>MAX_ACT_SESSIONS</td>
<td>INTEGER</td>
<td>Maximum number of HTTP sessions that are actively referenced in the server during the interval. Calculated as MAX of SM120WIJ.</td>
</tr>
<tr>
<td>MAX_LIVE_SESSIONS</td>
<td>REAL</td>
<td>Maximum number of live HTTP sessions during the interval. Calculated as MAX of SM120WIP.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120WID and SM120WIE.</td>
</tr>
</tbody>
</table>
Table 30. WAS_INT_HTTPSESS_H_D_M (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN_ACT_SESSIONS</td>
<td>INTEGER</td>
<td>Minimum number of http sessions that are actively referenced in the server during the interval. Calculated as MIN of SM120WII.</td>
</tr>
<tr>
<td>MIN_LIVE_SESSIONS</td>
<td>REAL</td>
<td>Minimum number of live http sessions during the interval. Calculated as MIN of SM120WIO.</td>
</tr>
</tbody>
</table>
This hourly table contains information about each BEAN METHOD associated with J2EE container during the interval. It is populated by SMF record SMF_120_6_X (built by Tivoli Decision Support for OS/390 record procedure DRL2SI06).

The default retention period for these tables is:
- WAS_INT_BEANMTHD_H 10 Days

<table>
<thead>
<tr>
<th>Table 31. WAS_INT_BEANMTHD_H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Column Name</strong></td>
</tr>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>TIME</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
</tr>
<tr>
<td>WEB_J2EE_CONTAINER</td>
</tr>
<tr>
<td>BEAN_AMC_NAME</td>
</tr>
<tr>
<td>METHOD_NAME</td>
</tr>
<tr>
<td>PERIOD</td>
</tr>
<tr>
<td>ACT_EXEC_TIME</td>
</tr>
<tr>
<td>Column Name</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>ACT_EXEC_TIME_MAX</td>
</tr>
<tr>
<td>ACT_INVOCATIONS</td>
</tr>
<tr>
<td>BEAN_TYPE</td>
</tr>
<tr>
<td>LOAD_EXEC_TIME_MAX</td>
</tr>
<tr>
<td>LOAD_EXEC_TIME</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
</tr>
<tr>
<td>METHOD_INVOCATION</td>
</tr>
<tr>
<td>PASS_EXEC_TIME</td>
</tr>
<tr>
<td>PASS_EXEC_TIME_MAX</td>
</tr>
<tr>
<td>Column Name</td>
</tr>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>PASS_INVOCATIONS</td>
</tr>
<tr>
<td>REENTRANCE_POLICY</td>
</tr>
<tr>
<td>RESPONSE_TIME_AVG</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
</tr>
<tr>
<td>STORE_EXEC_TME</td>
</tr>
<tr>
<td>STORE_EXEC_TME_MAX</td>
</tr>
<tr>
<td>STORE_INVOCATIONS</td>
</tr>
<tr>
<td>TRANSACTION_POLICY</td>
</tr>
</tbody>
</table>
**WAS_INT_J2EECNT_H, D, W**

These tables contain information about the J2EE container during the interval. It is populated by SMF record SMF_120_6_X (built by Tivoli Decision Support for OS/390 record procedure DRL2SI06).

The default retention periods for these tables are:
- WAS_INT_J2EECNT_H 10 Days
- WAS_INT_J2EECNT_D 45 Days
- WAS_INT_J2EECNT_W 365 Days

Table 32. WAS_INT_J2EECNT_H, D, W

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>k</td>
<td>DATE Date of the mid measurement. From SM120JI8 and SM120JI9.</td>
</tr>
<tr>
<td>TIME</td>
<td>k</td>
<td>TIME Time of the mid measurement. From SM120JI8 and SM120JI9.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>k</td>
<td>CHAR(8) WebSphere for z/OS transaction server name. From SM120JI5.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>k</td>
<td>CHAR(8) WebSphere for z/OS transaction server instance name. From SM120JI6.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k</td>
<td>CHAR(4) System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k</td>
<td>CHAR(8) Sysplex Name. From SM120JI4.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>k</td>
<td>CHAR(4) Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>WEB_J2EE_CONTAINER</td>
<td>k</td>
<td>VARCHAR(8) The WebSphere for z/OS container name. This is hardcoded to &quot;Default&quot; for the 4.0.1 timeframe. FromSM120JI7.</td>
</tr>
<tr>
<td>PERIOD</td>
<td>k</td>
<td>CHAR(8) Name of the period. This is derived using fields SM120JI8 and SM120JI9 from the record as parameters in the PERIOD function.</td>
</tr>
<tr>
<td>ENTITY_ACTIV</td>
<td></td>
<td>REAL Indicates the number of times the enterprise bean containers activated (retrieved from secondary storage) the enterprise beans during the interval. Calculated as SUM of sm120jmk where sm120jb3=0 or 1.</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>ENTITY_CREATE</td>
<td>REAL</td>
<td>Indicates the number of entity bean objects created by the server during the interval. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_LOAD</td>
<td>REAL</td>
<td>Indicates the number of times entity beans loaded information from the database into themselves during the interval. Calculated as SUM of sm120jme.</td>
</tr>
<tr>
<td>ENTITY_PASSIVATE</td>
<td>REAL</td>
<td>Indicates the number of times the enterprise bean containers passivated (transferred to secondary storage) the enterprise beans during the interval. Calculated as SUM of sm120jmn where sm120jb3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_REMOVE</td>
<td>REAL</td>
<td>Indicates the number of times entity bean instances were removed during interval. The enterprise bean instance might have been removed by the remove() method. Calculated as SUM of sm120jm2 for sm120jm1='remove()' where sm120jb3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_STORE</td>
<td>REAL</td>
<td>Indicates the number of times entity beans stored information in the database during the interval. Calculated as SUM of sm120jmh.</td>
</tr>
<tr>
<td>MEASURED_SEC</td>
<td>REAL</td>
<td>Polling interval in seconds. Calculated as the SUM of differences between SM120Jf9 and SM120Jf8.</td>
</tr>
<tr>
<td>METHOD_INVOCATION</td>
<td>REAL</td>
<td>Total number of times the methods were invoked during the interval. Calculated as SUM of SM120JM2.</td>
</tr>
<tr>
<td>RESPONSE_TIME_AVG</td>
<td>REAL</td>
<td>Average response time in seconds. Calculated as AVG of SM120JM3.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
<td>REAL</td>
<td>Maximum response time in seconds. Calculated as MAX of SM120JM4.</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>STATEFUL_Activ</td>
<td>REAL</td>
<td>Indicates the number of times the stateful session bean containers activated (retrieved from secondary storage) the enterprise beans during the interval. Calculated as SUM of sm120jmk where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_CREATE</td>
<td>REAL</td>
<td>Indicates the total number of times the create() method was invoked against the listed state full session beans, as measured during the interval. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_REMOVE</td>
<td>REAL</td>
<td>Indicates the total number of times the remove() method was invoked against the listed stateful session beans, as measured during the interval. Calculated as SUM of sm120jm2 for sm120jm1='remove()' where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_PASSIVATE</td>
<td>REAL</td>
<td>Indicates the number of times the stateful session bean containers passivated (transferred to secondary storage) the enterprise beans during the interval. Calculated as SUM of sm120jmn where sm120jb3=3.</td>
</tr>
<tr>
<td>STATELESS_CREATE</td>
<td>REAL</td>
<td>Indicates the total number of times the create() method was invoked against the listed stateless session beans, as measured during the interval. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=2.</td>
</tr>
</tbody>
</table>
Independently of which WebSphere Subcomponent is installed, the following Tivoli Decision Support for OS/390 objects are installed to guarantee the completeness of information on WebSphere application server data.

Table 33. List of Tivoli Decision Support for OS/390 objects that are always installed for each activity subcomponent.

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF</td>
<td>DRLLSMF</td>
</tr>
<tr>
<td>Record</td>
<td>SMF_120_1</td>
<td>DRLRS121</td>
</tr>
<tr>
<td>Tablespace</td>
<td>DRLSWAS1</td>
<td>DRLSWASS</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_CONNECT_ACTID</td>
<td>DRLTWASV</td>
</tr>
<tr>
<td>Update</td>
<td>WAS_CONNECT_ACTID</td>
<td>DRLUWASV</td>
</tr>
</tbody>
</table>
WAS_CONNECT_ACTID
This table provides the stop activity time to all the other tables populated by WebSphere activity records not containing this value. From SMF_120_1 record.

The default retention period for these tables is:
- WAS_CONNECT_ID 3 Days

Table 34. WAS_CONNECT_ACTID

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>k</td>
<td>TIMESTAMP Activity start time. From SM120AID.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k</td>
<td>CHAR(16) It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k</td>
<td>CHAR(16) IP Server address. From SM120AID</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k</td>
<td>CHAR(4) System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k</td>
<td>CHAR(8) Sysplex Name. From SM120HNHM.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td></td>
<td>TIMESTAMP Activity end time. From SM120AET.</td>
</tr>
</tbody>
</table>
Table 35. List of Tivoli Decision Support for OS/390 objects installed with SERACTS subcomponent.

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablespace</td>
<td>DRLSWAS2</td>
<td>DRLSWASE</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_ACT_SERVER</td>
<td>DRLTWASV</td>
</tr>
<tr>
<td>Update</td>
<td>WAS_ACT_SERVER</td>
<td>DRLUWASV</td>
</tr>
<tr>
<td>View</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 173. WASPACTC-SERACTCS
This section describes the tables for the WebSphere Activity Component -> Server Activity Subcomponent

**WAS_ACT_SERVER**
This table provides data on the activity that is running on a WebSphere for z/OS Application Server. It could be used to perform basic charge-back accounting. A single entry is created for each activity that is run on a server or server instance. Populated from SMF record SMF_120_1.

The default retention period for these tables is:
- WAS_ACT_SERVER 3 Days

**Table 36. WAS_ACT_SERVER**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>k TIMESTAMP</td>
<td>Activity start time. From SM120AST.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k CHAR(16)</td>
<td>IP client address or job name. From SM120CSA</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From SM120HNMM.</td>
</tr>
<tr>
<td>COM_SESSION_ADDR1</td>
<td>k CHAR(8)</td>
<td>Client Ip address or job name. From SM120CSA</td>
</tr>
<tr>
<td>COM_SESSION_ADDR2</td>
<td>k CHAR(4)</td>
<td>Port Number or job asid. From SM120CSA</td>
</tr>
<tr>
<td>COM_SESSION_HANDLE</td>
<td>k CHAR(16)</td>
<td>Communication session handle. From SM120CSH</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity end time. From SM120AET.</td>
</tr>
<tr>
<td>ASID1</td>
<td>INTEGER</td>
<td>First server region address space ID involved to process this activity. From SM120SR1.</td>
</tr>
<tr>
<td>ASID2</td>
<td>INTEGER</td>
<td>Second server region address space ID involved to process this activity. From SM120SR2.</td>
</tr>
<tr>
<td>ASID3</td>
<td>INTEGER</td>
<td>Third server region address space ID involved to process this activity. From SM120SR3.</td>
</tr>
<tr>
<td>ASID4</td>
<td>INTEGER</td>
<td>Fourth server region address space ID involved to process this activity. From SM120SR4.</td>
</tr>
<tr>
<td>ASID5</td>
<td>INTEGER</td>
<td>Fifth server region address space ID involved to process this activity. From SM120SR5.</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>BYTES_RECEIVED</td>
<td>REAL</td>
<td>Number of bytes received by server. From SM120SDR.</td>
</tr>
<tr>
<td>BYTES_TRANSMITTED</td>
<td>REAL</td>
<td>Number of bytes transmitted by server back to the client. From SM120SDT.</td>
</tr>
<tr>
<td>COM_SESSION_TYPE</td>
<td>CHAR(3)</td>
<td>Communication session optimization. From SM120CSO</td>
</tr>
<tr>
<td>GLOBAL_TRANSACTION</td>
<td>INTEGER</td>
<td>Number of global transactions that were started in the server region. From SM120NGT.</td>
</tr>
<tr>
<td>LOCAL_TRANSACTION</td>
<td>INTEGER</td>
<td>Number of local transactions that were started in the server region. From SM120NLT.</td>
</tr>
<tr>
<td>NUMBER_METHODS</td>
<td>INTEGER</td>
<td>Number of input methods. From SM120NIM.</td>
</tr>
<tr>
<td>NUM_SERVER_REGIONS</td>
<td>INTEGER</td>
<td>Total number of server regions that were involved to process this activity. If applicable, up to the first five server region address. From SM120SNR</td>
</tr>
<tr>
<td>SERVER_TYPE</td>
<td>CHAR(4)</td>
<td>WebSphere for z/OS server type. Possible value: ‘MOFW’ and ‘J2EE’. From SM120STY.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>The WLM enclave token. From SM120WLM.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SIN1.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WLM.</td>
</tr>
</tbody>
</table>
Table 37. List of Tivoli Decision Support for OS/390 objects installed with CONACTSC subcomponent.

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF</td>
<td>DRLLSMF</td>
</tr>
<tr>
<td>Record</td>
<td>SMF_120_2</td>
<td>DRLRS122</td>
</tr>
<tr>
<td>Tablespace</td>
<td>DRLSWCA1</td>
<td>DRLSWCA2</td>
</tr>
<tr>
<td></td>
<td>DRLSWCA2</td>
<td>DRLSWCA3</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_ACT_CONTAIN</td>
<td>DRLTWACO</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_CLASS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_METHOD</td>
<td></td>
</tr>
<tr>
<td>Update</td>
<td>WAS_ACT_CONTAIN</td>
<td>DRLUWACO</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_CLASS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_METHOD</td>
<td></td>
</tr>
<tr>
<td>View</td>
<td>WAS_ACT_CONTAIN_V</td>
<td>DRLVWACO</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_CLASS_V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_METHOD_V</td>
<td></td>
</tr>
<tr>
<td>Report</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tables
This section describes the tables for the WebSphere Activity Component -> Container Activity Subcomponent.

**WAS.ACT_METHOD**

This table provides data for each method involved in the activity. From SMF record SMF_120_2.

The default retention period for these tables is:
- WAS.ACT_METHOD 3 Days

*Table 38. WAS.ACT_METHOD*

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TIME</td>
<td>k TIMESTAMP</td>
<td>Activity start time. From SM120AID.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120AID</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>k VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>CLASS_NAME</td>
<td>k VARCHAR(64)</td>
<td>Name of the class activated by container. From SM120CLN</td>
</tr>
<tr>
<td>ASID</td>
<td>k INTEGER</td>
<td>Server region address space ID involved to process this activity. From SM120ASR.</td>
</tr>
<tr>
<td>METHOD_NAME</td>
<td>k VARCHAR(64)</td>
<td>Name of method. From SM120MNM.</td>
</tr>
<tr>
<td>AVG_RESPONSE_TIME</td>
<td>REAL</td>
<td>Average response time in seconds. Calculated as the LAST of SM120MRT.</td>
</tr>
<tr>
<td>MAX_RESPONSE_TIME</td>
<td>REAL</td>
<td>Maximum response time in seconds. Calculated as the MAX occurrence of SM120MRT.</td>
</tr>
<tr>
<td>NUM_INVOCATIONS</td>
<td>REAL</td>
<td>Number of time the method was invoked during interval. Calculated as LAST occurrence of the activity.</td>
</tr>
<tr>
<td>NUM_NONFRMWRK_EXC</td>
<td>REAL</td>
<td>Number of non-framework exceptions that were detected by container. Calculated as LAST occurrence of SM120ART.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN</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>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WLM.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
</tbody>
</table>

**WAS_ACT_CLASS**

This table provides data from SMF record SMF_120_4.

The default retention period for these tables is:
- WAS_ACT_CLASS 3 Days

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>k TIMESTAMP</td>
<td>Activity start time. From SM120AST.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120AID.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>k VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>CLASS_NAME</td>
<td>k VARCHAR(64)</td>
<td>Name of the class activated by container. From SM120CLN</td>
</tr>
<tr>
<td>ASID</td>
<td>k INTEGER</td>
<td>Server region address space ID involved to process this activity. From SM120ASR.</td>
</tr>
<tr>
<td>IST_CLASS_ACTIVATY</td>
<td>INTEGER</td>
<td>Number of instances of the class that were activated. Calculated as SUM of SM120NIA</td>
</tr>
<tr>
<td>IST_CLASS_CREATED</td>
<td>INTEGER</td>
<td>Number of instances of this class that were created. Calculated as SUM of SM120NIC.</td>
</tr>
<tr>
<td>IST_CLASS_PASSIVAT</td>
<td>INTEGER</td>
<td>Number of instances of this class that were passivated. Calculated as SUM of SM120NIP.</td>
</tr>
<tr>
<td>IST_CLASS_REMOVED</td>
<td>INTEGER</td>
<td>Number of instances of this class that were removed (deleted). Calculated as SUM of SM120NIR.</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>NUMBER_METHODS</td>
<td>INTEGER</td>
<td>Number of methods invoked. Calculated as SUM of SM120MN.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
<tr>
<td>WLM ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WLM.</td>
</tr>
</tbody>
</table>
WAS_ACT_CONTAIN

This table provides from SMF record SMF_120_2

The default retention period for these tables is:
- WAS_ACT_CONTAIN 3 Days

Table 40. WAS_ACT_CONTAIN

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120AID.</td>
</tr>
<tr>
<td>ASID</td>
<td>INTEGER</td>
<td>Server region address space ID involved to process this activity. From SM120ASR</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120AID</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120HN.M.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>NUM_CLASS_ACTIVAT</td>
<td>INTEGER</td>
<td>Number of classes that were created. Calculated as SUM of SM120NIC.</td>
</tr>
<tr>
<td>NUM_CLASS_CREATED</td>
<td>INTEGER</td>
<td>Number of classes that were created. Calculated as SUM of SM120NIC.</td>
</tr>
<tr>
<td>NUM_CLASS_PASSIVAT</td>
<td>INTEGER</td>
<td>Number of classes that were passivated. Calculated as SUM of SM120NIP.</td>
</tr>
<tr>
<td>NUM_CLASS_REMOVED</td>
<td>INTEGER</td>
<td>Number of classes that were removed (deleted). Calculated as SUM of SM120NIR</td>
</tr>
<tr>
<td>NUMBER_METHODS</td>
<td>INTEGER</td>
<td>Number of methods invoked. Calculated as SUM of SM120MN.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>TRANSACTION_POLICY</td>
<td>CHAR(34)</td>
<td>Container Transaction Policy. Possible value: 'TRANSACTION_REQUIRED' SAME_SERVER_HYBRID_GLOBAL 'HYBRID_GLOBAL'&quot;SUPPORST_SAME_SERVER_HYBRID_GLOBAL&quot;</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120SIN.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120SNM.</td>
</tr>
</tbody>
</table>
Views

This section describes the views for the WebSphere Activity Component -> Container Activity Subcomponent.

WAS_ACT_METHOD_V

This view provides statistics on all methods involved in an activity. It is based on the WAS_ACT_METHOD table, and its data comes from SMF record SMF_120_2.

Note: As well as the calculated columns described here, this view also contains all the data columns described for the source table.

Table 41. WAS_ACT_METHOD_V

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120AID.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120AID.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>VARCHAR(64)</td>
<td>WebSphere for z/OS Container Name. From SM120CNM</td>
</tr>
<tr>
<td>CLASS_NAME</td>
<td>VARCHAR(64)</td>
<td>Name of the class activated by container. From SM120CLN</td>
</tr>
<tr>
<td>METHOD_NAME</td>
<td>VARCHAR(64)</td>
<td>Name of method. From SM120MNM.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity stop time. From TABLE WAS_CONNECT_ACTID</td>
</tr>
</tbody>
</table>
**WAS_ACT_METHOD_V**

This view provides statistics on all classes involved in an activity. It is based on the WAS_ACT_CLASS table, and its data comes from SMF record SMF_120_2.

**Note:** As well as the calculated columns described here, this view also contains all the data columns described for the source table.

<table>
<thead>
<tr>
<th>Table 42. WAS_ACT_METHOD_V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column Name</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>ACTIVITY_START_TME</td>
</tr>
<tr>
<td>STOKEN</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
</tr>
<tr>
<td>CLASS_NAME</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
</tr>
</tbody>
</table>
### WAS_ACT_CONTAIN_V

This view provides data from SMF record SMF_120_2

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASID</td>
<td>k</td>
<td>INTEGER Server region address space ID involved to process this activity. From SM120ASR</td>
</tr>
<tr>
<td>ACTIVITY_START_TME</td>
<td>k</td>
<td>TIMESTAMP Activity start time. From SM120AID.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>k</td>
<td>CHAR(16) It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120AID.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>k</td>
<td>CHAR(16) IP Server address. From last 4 bytes of SM120AID</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>k</td>
<td>CHAR(4) System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>k</td>
<td>CHAR(8) Sysplex Name. From SM120HNM.</td>
</tr>
<tr>
<td>CONTAINER_NAME</td>
<td>k</td>
<td>VARCHAR(64) WebSphere for z/OS Container Name. From SM120CNM.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td></td>
<td>TIMESTAMP Activity stop time. From TABLE WAS_CONNECT_ACTID</td>
</tr>
</tbody>
</table>
Table 44. List of Tivoli Decision Support for OS/390 objects installed with J2WBACTS subcomponent.

<table>
<thead>
<tr>
<th>Object Type</th>
<th>Object Name</th>
<th>Member Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log</td>
<td>SMF</td>
<td>DRLLSMF</td>
</tr>
<tr>
<td>Record</td>
<td>SMF_120_5</td>
<td>DRLRSJWA</td>
</tr>
<tr>
<td></td>
<td>SMF_120_7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SMF_120_5_X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SMF_120_7_X</td>
<td></td>
</tr>
<tr>
<td>Tablespace</td>
<td>DRLSWJAx (x=1,2,3,4,5)</td>
<td>DRLSWAHS</td>
</tr>
<tr>
<td>Table</td>
<td>WAS_ACT_SERVLETS</td>
<td>DRLTWASW</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_WEBAPPL</td>
<td>DRLTWASW</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_HTTPSESS</td>
<td>DRLTWASHS</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_BEANMTHD</td>
<td>DRLTWASHS</td>
</tr>
<tr>
<td></td>
<td>WAS_AT_J2EECNT</td>
<td>DRLTWASHS</td>
</tr>
<tr>
<td>Update</td>
<td>WAS_ACT_SERVLETS</td>
<td>DRLUWASW</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_WEBAPPL</td>
<td>DRLUWASW</td>
</tr>
<tr>
<td></td>
<td>WAS_ACT_HTTPSESS</td>
<td>DRLUWAHS</td>
</tr>
<tr>
<td></td>
<td>WAS_AT_J2EECNT</td>
<td>DRLUWAHS</td>
</tr>
<tr>
<td>View</td>
<td>WAS_ACT_BEANMTHD_V</td>
<td>DRLUJCAM</td>
</tr>
<tr>
<td></td>
<td>WAS_AT_J2EECNT_V</td>
<td>DRLUJCAM</td>
</tr>
<tr>
<td>Report</td>
<td></td>
<td>DRLVJCAM</td>
</tr>
</tbody>
</table>
Tables

This section describes the tables for the WebSphere Activity Component -> J2EE & Web Container Activity Subcomponent.

**WAS_ACT_SERVLETS**

This table contains information about servlet involved in the activity. It is populated by SMF record SMF_120_7_X (built by Tivoli Decision Support for OS/390 record procedure DRL2S107).

The default retention period for these tables is:
- WAS_ACT_SERVLETS 3 Days

Table 45. WAS_ACT_SERVLETS

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120WAF.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120WAE.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120WAE.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WAA.</td>
</tr>
<tr>
<td>WEB_APPL_NAME</td>
<td>VARCHAR(70)</td>
<td>The Web Application name. If you are monitoring servlets from multiple Web applications, this value helps you distinguish the servlets from one another. From SM120WAL.</td>
</tr>
<tr>
<td>SERVLET_NAME</td>
<td>VARCHAR(70)</td>
<td>SERVLET_NAME</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity stop time. From SM120WAG.</td>
</tr>
<tr>
<td>ACTIVITY_TIME</td>
<td>REAL</td>
<td>Activity time duration in seconds. Calculated as the differences between SM120WAF and SM120WAG.</td>
</tr>
<tr>
<td>DATE_LOADED_SINCE</td>
<td>DATE</td>
<td>Indicates the date at which the class file for the servlet instance was most recently loaded. The value is 0 if the servlet class is not currently loaded. Calculated as LAST occurrence of Load Date.</td>
</tr>
<tr>
<td>NUMBER_ERRORS</td>
<td>REAL</td>
<td>Indicates the number of errors that were encountered during the servlet execution. From SM120WAS.</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>RESPONSE_TIME</td>
<td>REAL</td>
<td>Indicates the response time (in seconds) the servlet instance spent performing services such as service(), do Get(), or do Post(), as measured during the activity. From SM120WAR.</td>
</tr>
<tr>
<td>STATUS_FOR_REQUEST</td>
<td>CHAR(8)</td>
<td>Possible values: ‘LOADED’ ‘UNLOADED’ From SM120WAT.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>TIME_LOADED_SINCE</td>
<td>TIME</td>
<td>Indicates the time at which the class file for the servlet instance was most recently loaded. The value is 0 if the servlet class is not currently loaded. Calculated as LAST occurrence of Load Time.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WEB_SER_INSTA_NAME</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WAB.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WAD.</td>
</tr>
</tbody>
</table>
This table contains information about all Web Applications involved in the activity. It is populated by the WAS_ACT_SERVLETS table.

The default retention period for these tables is:

- **WAS_ACT_WEBAPPL 3 Days**

### Table 46. WAS_ACT_WEBAPPL

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120WAF.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address token of the address space which created the new activity. From SM120WAE.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>Ip Server address. From last 4 bytes of SM120WAE.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WAA.</td>
</tr>
<tr>
<td>WEB_APPL_NAME</td>
<td>VARCHAR(70)</td>
<td>The Web Application name. If you are monitoring servlets from multiple Web applications, this value helps you distinguish the servlets from one another. From SM120WAL.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity stop time. From SM120WAG.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WAD.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WAB.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120WAC.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
<tr>
<td>ACTIVITY_TIME</td>
<td>REAL</td>
<td>Activity time duration in seconds. Calculated as the differences between SM120WAF and SM120WAG.</td>
</tr>
<tr>
<td>TOTAL_RESPONSE_TME</td>
<td>REAL</td>
<td>Indicates the total response time (in seconds) the servlets instance spent performing services such as service(), do Get(), or do Post(), as measured during the activity. Calculated as SUM SM120WAR.</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>TOTAL_ERRORS</td>
<td>REAL</td>
<td>Indicates the total number of errors that were encountered during the servlets execution during this activity. Calculated as the SUM of SM120WAS.</td>
</tr>
<tr>
<td>NUM_SERVLET_LOADED</td>
<td>REAL</td>
<td>Indicates the total number of servlets loaded during the execution of this activity. Calculated as the sum of all occurrences having SM120WAT='1'.</td>
</tr>
</tbody>
</table>
WAS_ACT_HTTPSESS

This table contains information about all HTTP sessions involved in the activity. It is populated by SMF record SMF_120_7.

The default retention period for these tables is
- WAS_ACT_HTTPSESS 3 Days

Table 47. WAS_ACT_HTTPSESS

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120WAF.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120WAE</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>Ip Server address. From last 4 bytes of SM120WAE.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMPFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WAA.</td>
</tr>
<tr>
<td>ACTIVITY_TIME</td>
<td>REAL</td>
<td>Activity time duration in seconds. Calculated as the differences between SM120WAF and SM120WAG.</td>
</tr>
<tr>
<td>ACTIVE_SESSIONS</td>
<td>REAL</td>
<td>Number of http sessions that are actively referenced during this activity. From SM120WAJ.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity stop time. From SM120WAG.</td>
</tr>
<tr>
<td>CREATED_SESSIONS</td>
<td>REAL</td>
<td>Indicates the number of http sessions created during the activity. This includes sessions that were available, active, or invalidated. From SM120WAH.</td>
</tr>
<tr>
<td>INVALIDAT_SESSIONS</td>
<td>REAL</td>
<td>Indicates the number of sessions invalidated (removed from available or active state) during the activity. This value is valid only in terms of in-memory sessions, not persistent sessions. From SM120WAI.</td>
</tr>
<tr>
<td>INVAL_TIME_SESSION</td>
<td>REAL</td>
<td>Indicates the average life time in seconds that was required to process the invalidation http sessions as measured during the activity. From SM120WAK/1000 when SM120WAI&gt;0.</td>
</tr>
<tr>
<td>LIFE_TIME_SESSION</td>
<td>REAL</td>
<td>Indicates the http session life time in seconds during the activity. From SM120WAK/1000 when SM120WAI=0.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
</tbody>
</table>
Table 47. WAS_ACT_HTTPSESS (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120WAC.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120WAB.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120WAD.</td>
</tr>
</tbody>
</table>
This table contains information about each METHOD associated with the J2EE container involved in the activity. It is populated by SMF record SMF_120_5_X (built by Tivoli Decision Support for OS/390 record procedure DRL2SA05).

The default retention period for these tables is
- WAS_ACT_BEANMTHD 3 Days

**Table 48. WAS_ACT_BEANMTHD**

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120JAB.</td>
</tr>
<tr>
<td>ASID</td>
<td>INTEGER</td>
<td>Server region address space ID involved to process this activity from SM120ASR.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTTKN which is the address stoken of the address space which created the new activity. From SM120JAB.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>Ip Server address. From last 4 bytes of SM120JAB.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120JA4.</td>
</tr>
<tr>
<td>ACT_EXEC_TIME</td>
<td>REAL</td>
<td>Indicates the average number of seconds the enterprise bean’s container activated (retrieved from secondary storage) the enterprise bean during the activity. From SM120JML.</td>
</tr>
<tr>
<td>ACT_EXEC_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the maximum number of seconds the enterprise bean’s container activated (retrieved from secondary storage) the enterprise bean during the activity. From SM120JMM.</td>
</tr>
<tr>
<td>ACT_INVOCATIONS</td>
<td>REAL</td>
<td>EJBActivation number of invocations. Indicates the number of times the enterprise bean’s container activated(retrieved from secondary storage) the enterprise bean, during the activity. Note, because stateless session beans are never activated, this data point is not applicable to them. From SM120JMK.</td>
</tr>
<tr>
<td>BEAN_AMC_NAME</td>
<td>VARHAR(66)</td>
<td>AMCName of the bean activated by the container. Truncated to the first right most 66 bytes. From SM120JBI.</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>BEAN_TYPE</td>
<td>CHAR(20)</td>
<td>The bean’s type. Possible value: ‘CMP entity’ ‘BMP entity’ Stateless session’ ‘Stateful session’ From SM120JB3</td>
</tr>
<tr>
<td>LOAD_EXEC_TIME</td>
<td>REAL</td>
<td>Indicates the average number of seconds the enterprise bean has required to load information from the database into themselves during the activity. From SM120JMF</td>
</tr>
<tr>
<td>LOAD_EXEC_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the maximum number of seconds the enterprise bean has required to load information from the database into themselves during the activity. From SM120JMG</td>
</tr>
<tr>
<td>LOAD_INVOCATIONS</td>
<td>REAL</td>
<td>EJB Load number of invocations. Indicates the number of times entity beans loaded information from the database into themselves. From SM120JME.</td>
</tr>
<tr>
<td>METHOD_INVOCATION</td>
<td>REAL</td>
<td>The number of times a method was invoked during the activity. From SM120JM2.</td>
</tr>
<tr>
<td>METHOD_NAME</td>
<td>VARCHAR(66)</td>
<td>The name of the method including its signature in its externalized, human readable form. If the length of the method exceeds 66 bytes in EBCDIC format, the left most 66 characters are recorded. From SM120Jm1.</td>
</tr>
<tr>
<td>PASS_EXEC_TIME</td>
<td>REAL</td>
<td>EJBPassivation number of passivations. Indicates the number of times the enterprise bean’s container passivated (transferred to secondary storage) the bean, during the activity. Note, because stateless session beans are never passivated, they are not included in the total. From SM120JMN.</td>
</tr>
<tr>
<td>PASS_EXEC_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the average number of seconds the enterprise bean’s container passivated (transferred to secondary storage) the bean during the activity. From SM120JMO.</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>PASS_INVOCATIONS</td>
<td>REAL</td>
<td>EJBPassivation number of passivations. Indicates the number of times the enterprise bean’s container passivated (transferred to secondary storage) the bean, during the activity. Note, because stateless session beans are never passivated, they are not included in the total. From SM120JMN.</td>
</tr>
<tr>
<td>REENTRANCE_POLICY</td>
<td>CHAR(3)</td>
<td>The bean’s reentrance policy. Possible value: ‘NO’ Not reentrant within transactions’ Reentrant within transaction. From SM120JB7</td>
</tr>
<tr>
<td>RESPONSE_TIME_AVG</td>
<td>REAL</td>
<td>Average response time in seconds. From SM120JM3.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
<td>REAL</td>
<td>Maximum response time in seconds. From SM120JM4.</td>
</tr>
<tr>
<td>STORE_EXEC_TIME</td>
<td>REAL</td>
<td>Indicates the average number of seconds the entity bean persisted its state in the database during the activity. From SM120JMI.</td>
</tr>
<tr>
<td>STORE_EXEC_TIME_MAX</td>
<td>REAL</td>
<td>Indicates the maximum number of seconds the entity bean persisted its state in the database as measured during the activity. From SM120JMJ.</td>
</tr>
<tr>
<td>STORE_INVOCATIONS</td>
<td>REAL</td>
<td>EJBStore number of invocations. Indicates the number of times an entity bean persisted its state in the database during the activity. From S120SMH.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI</td>
</tr>
<tr>
<td>TRANSACTION_POLICY</td>
<td>CHAR(16)</td>
<td>The bean’s method’s transaction policy. Values from com.ibm.WebSphere for z/OS.csi. TransactionAttribute.java possible value: “TX_NOT_SUPPORTED” “TX_BEAN_MANAGED” “TX_REQUIRED” “TX_SUPPORTS” “TXQUIRES_NEW” “TX_MANDATORY” “TX_NEVER”</td>
</tr>
<tr>
<td>WEB_J2EE_CONTAINER</td>
<td>VARCHAR(8)</td>
<td>The WebSphere for z/OS container name. This is hardcoded to “Default” for the 4.0.1 timeframe. From SM120JA8.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120JA5.</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>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120J06.</td>
</tr>
<tr>
<td>WLM_ENCLAVE_TOKEN</td>
<td>CHAR(16)</td>
<td>The WLM enclave token. From SM120J09.</td>
</tr>
</tbody>
</table>
WAS_ACT_J2EECNT

This table contains information about J2EE container during the activity. It is populated by SMF record SMF_120_5_X (built by Tivoli Decision Support for OS/390 record procedure). DRL2SA05).

The default retention period for these tables is:
- WAS_ACT_J2EECNT 3 Days

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120JAB.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120JAB.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>Ip Server address. From last 4 bytes of SM120WAF.</td>
</tr>
<tr>
<td>ASID</td>
<td>INTEGER</td>
<td>Server region address space ID involved to process this activity. From SM120WAE.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120WAA.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID</td>
</tr>
<tr>
<td>DISTINCT_MTHDS_INV</td>
<td>REAL</td>
<td>Number of distinct methods invocation during the activity. Calculated as COUNT() of bean method section occurrences.</td>
</tr>
<tr>
<td>ENTITY_ACTIV</td>
<td>REAL</td>
<td>Indicates the number of times the enterprise bean containers activated (retrieved from secondary storage) the enterprise beans during the activity. Calculated as SUM of sm120jmkmk where sm120jb3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_CREATE</td>
<td>REAL</td>
<td>Indicates the number of entity bean objects created by the server during the activity. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=0 or 1.</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>ENTITY_LOAD</td>
<td>REAL</td>
<td>Indicates the number of times entity beans loaded information from the database into themselves during the interval. Calculated as SUM of sm120JME.</td>
</tr>
<tr>
<td>ENTITY_PASSIVATE</td>
<td>REAL</td>
<td>Indicates the number of times the enterprise bean containers activated (transferred to secondary storage) the enterprise beans during the activity. Calculated as SUM of sm120JMN where sm120JB3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_REMOVE</td>
<td>REAL</td>
<td>Indicates the number of times entity bean instances were removed during the activity. The enterprise bean instance might have been removed by the remove() method. Calculated as SUM of sm120jm2 for sm120jm1='remove()' where sm120jb3=0 or 1.</td>
</tr>
<tr>
<td>ENTITY_STORE</td>
<td>REAL</td>
<td>Indicates the number of times entity beans stored information in the database during the activity. Calculated as SUM of sm120JMH.</td>
</tr>
<tr>
<td>METHOD_INVOCATION</td>
<td>REAL</td>
<td>The number of methods invocation during the activity. Calculated as SUM of SM120JM2.</td>
</tr>
<tr>
<td>RESPONSE_TIME_AVG</td>
<td>REAL</td>
<td>Average response time in seconds during the activity. Calculated as AVG of SM120JM3 with DISTINCT_MTHDS_INV.</td>
</tr>
<tr>
<td>RESPONSE_TIME_MAX</td>
<td>REAL</td>
<td>Maximum response time in seconds during the activity. Calculated as MAX of SM120JM4.</td>
</tr>
</tbody>
</table>
Table 49. WAS_ACT_J2EECNT (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATEFUL_ACTIV</td>
<td>REAL</td>
<td>Indicates the number of times the stateful session bean containers activated (retrieved from secondary storage) the enterprise beans during the activity. Calculated as SUM of sm120jmk where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_CREATE</td>
<td>REAL</td>
<td>Indicates the total number of times the create() method was invoked against the listed stateful session beans during the activity. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_PASSIVATE</td>
<td>REAL</td>
<td>Indicates the number of times the stateful session bean containers passivated (transferred to secondary storage) the enterprise beans during the activity. Calculated as SUM of sm120jmn where sm120jb3=3.</td>
</tr>
<tr>
<td>STATEFUL_REMOVE</td>
<td>REAL</td>
<td>Indicates the total number of times the remove() method was invoked against the listed stateful session beans during the activity. Calculated as SUM of sm120jm2 for sm120jm1='remove()' where sm120jb3=3.</td>
</tr>
<tr>
<td>STATELESS_CREATE</td>
<td>REAL</td>
<td>Indicates the total number of times the create() method was invoked against the listed stateless session beans during the activity. Calculated as SUM of sm120jm2 for sm120jm1='create()' where sm120jb3=2.</td>
</tr>
<tr>
<td>SUBSYSTEM_ID</td>
<td>CHAR(4)</td>
<td>Subsystem identification from SUBSYS parameter. From SM120SSI.</td>
</tr>
</tbody>
</table>
Table 49. WAS_ACT_J2EECNT (continued)

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEB_J2EE_CONTAINER</td>
<td>VARCHAR(8)</td>
<td>The WebSphere for z/OS container name. This is hardcoded to “Default” for the 4.0.1 timeframe. From SM120JA8.</td>
</tr>
<tr>
<td>WEB_SER_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server name. From SM120JA5.</td>
</tr>
<tr>
<td>WEB_SER_INSTA_NAME</td>
<td>CHAR(8)</td>
<td>WebSphere for z/OS transaction server instance name. From SM120JA6.</td>
</tr>
</tbody>
</table>
Views

This section describes the views for the WebSphere Activity Component -> J2EE & Web Container Activity Subcomponent.

**WAS_ACT_BEANMTHD_V**

This view contains information about each bean method associated with the J2EE container involved in the activity. It is based on the WAS_ACT_BEANMTHD table and its data comes from SMF_120_5.

**Note:** As well as the calculated columns described here, this view also contains all the data columns described in the source table.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY_START_TME</td>
<td>TIMESTAMP</td>
<td>Activity start time. From SM120JAB.</td>
</tr>
<tr>
<td>STOKEN</td>
<td>CHAR(16)</td>
<td>It is set to ASSBSTKN which is the address stoken of the address space which created the new activity. From SM120JAB.</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
<td>CHAR(16)</td>
<td>IP Server address. From last 4 bytes of SM120JAB.</td>
</tr>
<tr>
<td>ASID</td>
<td>INTEGER</td>
<td>Server region address space ID involved to process this activity. From SM120JA7.</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
<td>CHAR(4)</td>
<td>System identification (from the SMFPRMxx SID parameter). From SM120SID.</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
<td>CHAR(8)</td>
<td>Sysplex Name. From SM120JA4.</td>
</tr>
<tr>
<td>WEB_J2EE_CONTAINER</td>
<td>VARCHAR(8)</td>
<td>The WebSphere for z/OS container name. This is hardcoded to &quot;Default&quot; for the 4.0.1 timeframe. From SM120JA8.</td>
</tr>
<tr>
<td>BEAN_AMC_NAME</td>
<td>VARCHAR(66)</td>
<td>BEAN_AMC_NAME</td>
</tr>
<tr>
<td>METHOD_NAME</td>
<td>VARCHAR(66)</td>
<td>The name of the method including its signature in its externalized, human readable form. If the length of the method exceeds 66 bytes in EBCDIC format, the left most 66 characters are recorded. From SM120Jm1.</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
<td>TIMESTAMP</td>
<td>Activity stop time. From TABLE WAS_CONNECT_ACTID</td>
</tr>
</tbody>
</table>
**WAS_ACT_J2EECNT_V**

This view contains information about the J2EE container during the activity. It is based on the WAS_ACT_J2EECNT table and its data comes from SMF_120_5.

**Note:** As well as the calculated columns described here, this view also contains all the data columns described in source table.

<table>
<thead>
<tr>
<th>Table 51. WAS_ACT_J2EECNT_V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Column Name</strong></td>
</tr>
<tr>
<td>ASID</td>
</tr>
<tr>
<td>ACTIVITY_START_TME</td>
</tr>
<tr>
<td>STOKEN</td>
</tr>
<tr>
<td>IP_HOST_ADDRESS</td>
</tr>
<tr>
<td>MVS_SYSTEM_ID</td>
</tr>
<tr>
<td>SYSPLEX_NAME</td>
</tr>
<tr>
<td>WEB_J2EE_CONTAINER</td>
</tr>
<tr>
<td>ACTIVITY_STOP_TIME</td>
</tr>
</tbody>
</table>
Chapter 68. Reports

The reporting function produces reports based on the data in the Tivoli Decision Support for OS/390 database. Reports can show data from tables or from views. You can request reports online or by submitting batch jobs. Typically, you use online reporting for reports that you use once, and batch reporting for regularly required reports. This chapter gives examples of reports that belong to the WebSphere component.

Report format and general description

Tivoli Decision Support for OS/390 WebSphere component presents reports in tables. All reports have the same basic report layout. This section describes the elements that are common among Tivoli Decision Support for OS/390 feature reports:

- ReportID
- Report Group
- Source
- Attributes
- Variables

Report ID

Tivoli Decision Support for OS/390 assigns each report a unique identifier. The WebSphere component uses this format for reports IDs:

WASxyzz

where:

- x is the initial of subcomponent name (Server, Web)
- y is the initial of component name (Interval, Activity)
- zz is a sequential number given to the reports in a component or subcomponent.

Example:

- WASSI01

Report group

Tivoli Decision Support for OS/390 uses several predefined report groups. Typically, each component has one group, but some components have several groups. Some groups are shared by many components (for example, management overview reports, performance reports, problem reports, and exception reports). All reports supplied with the WebSphere component are in the WebSphere report group.

Source

Each report contains information from one or more source tables. The report descriptions in this chapter list source tables. Refer to these source tables, if you are interested in learning where certain data originates.
Attributes

Each report has certain attributes associated with it. Use these attributes as keywords to search for specific reports in the dialog. You can specify any number of attributes for a report, but these attributes are always present for predefined reports: for example, area to which the report belongs (for example, WEBSPHERE).

**Performance**
- Performance control task

**Service**
- Service-level planning task

**Capacity**
- Capacity planning task

**Security**
- Security control task

**Configuration**
- Configuration management discipline

**Operation**
- Operations management discipline

**Change**
- Change management discipline

**Problem**
- Problem management discipline

You can also specify these attributes, when appropriate:
- Resource types, such as storage or CPU
- Performance issues, such as availability or response
- Presentation forms, such as detail, overview, or trend
- Time resolutions, such as hourly, daily, weekly, monthly, or yearly

Variables

Each report has variables associated with it. You specify the values for these variables when you generate the report using the reporting dialog. When you specify a date for a monthly report, specify the first day of the month. When you specify a date for weekly reports, specify the first day (Monday) of the week. Otherwise, there is no match in the data table.

For reports that specify a range of weeks, the data is taken from the summary records for all Mondays in the specified date range. For example, if you specify '2000-04-21' (a Friday) to '2000-04-28', one summary row is selected the one for the week beginning '2000-04-24'. So the report shows summary data for the week '2000-04-24' to '2000-04-30' inclusive.

If a character variable contains only numeric characters, enclose it in single quote marks, otherwise it will not match the data. For example, if you have an MVS system ID (SMF ID) of 3090™, specify it as '3090' on the Variables window.
WebSphere Server statistics, Daily Trend

This report is supplied with the Server Interval Subcomponent, and shows a summary overview of WebSphere server workload by day. This information identifies the report:

**Report ID** WASSI01

**Report Group** WebSphere

**Source** WAS_INT_SERVER_D

**Attributes** WEBSHERE, SERVER, DAILY

**Variables** DATE, WEB_SER_NAME, MVS_SYSTEM_ID, SYSPLEX_NAME, PERIOD

The report contains the following information.

**DATE**  The date of the day for the measurement.

**WEB_SERVER_NAME**  WebSphere for z/OS transaction server name

**MVS_SYSTEM_ID**  MVS System identification

**SYSPLEX_NAME**  Sysplex Name
PERIOD
Name of the period

SERVER_TYPE
WebSphere for z/OS server type

GLOBAL_TRANSACTIONS
Number of global transactions that were started in the server region.

LOCAL_TRANSACTION
Number of local transactions that were started in the server region.

GLOBAL_EXIST_SESSIONS
Number of communications sessions that exist

LOCAL_EXIST_SESSIONS
Number of local communications sessions that exist

REMOTE_EXIST_SESSIONS
Number of remote communications sessions that exist

GLOBAL_CLIENT_RECEIVED_KB
Number of KBytes that have been transferred to the server from all attached clients.

GLOBAL_CLIENT_SENT_KB
Number of KBytes that have been sent from the server to all attached clients

LOCAL_CLIENT_RECEIVED_KB
Number of KBytes that have been transferred to the server from all locally attached clients

LOCAL_CLIENT_SENT_KB
Number of KBytes that have been sent from the server to all locally attached clients

REMOTE_CLIENT_RECEIVED_KB
Number of KBytes that have been transferred to the server from all remotely attached clients

REMOTE_CLIENT_SENT_KB
Number of KBytes that have been sent from the server to all remotely attached clients

WebSphere Web Application statistics, Daily Trend

This report is supplied with the J2EE and Web Interval subcomponent, and shows a summary overview of WebSphere web application performance by day.

This information identifies the report:

Report ID WASWI01

Report Group WebSphere

Source WAS_INT_WEBAPPL_D

Attributes WEBSPHERE, WEBAPPL, DAILY
The report contains the following information:

### DATE
The date of the day for the measurement

### WEB_SERVER_NAME
WebSphere for z/OS transaction server name

### MVS_SYSTEM_ID
MVS System identification

### SYSPLEX_NAME
Syplex Name

### PERIOD
Name of the period

### WEB_APPL_NAME
The WEB Application name

### TOTAL_REQUESTS
The number of requests handled

### NUMBER_LOADED_SERVLET
Number of Servlets loaded

### AVERAGE_RESPONSE_TIME
The average time (in seconds) that a Web Application servlets spent performing services
MINIMUM_RESPONSE_TIME
The minimum time (in seconds) that a Web Application servlet spent performing services

MAXIMUM_RESPONSE_TIME
The maximum time (in seconds) that a Web Application servlet spent performing services

NUMBER_ERRORS
Total number of errors.

WebSphere HTTP statistics, Daily Trend
This report is supplied with the J2EE and Web Interval subcomponent, and shows a summary overview of WebSphere HTTP sessions statistics by day.

This information identifies the report:

Report ID WASWI02
Report Group WebSphere
Source WAS_INT_HTTPSESS_D
Attributes WEBSPHERE, SERVER, DAILY
Variables DATE, WEB_SER-NAME, WEB-SER-INSTA-NAME, MVS_SYSTEM_ID, SYSPLEX_NAME, PERIOD

<table>
<thead>
<tr>
<th>DATE</th>
<th>WEB SERVER NAME</th>
<th>WEB SERVER INSTANCE NAME</th>
<th>MVS SYSTEM ID</th>
<th>SYSPLEX NAME</th>
<th>PERIOD</th>
<th>CREATED SESSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-12-18</td>
<td>IBWJSR2</td>
<td>IBWJSR2A</td>
<td>S1E</td>
<td>SYSPLEX1</td>
<td>NIGHT</td>
<td>7.460E+02</td>
</tr>
<tr>
<td>2002-12-18</td>
<td>IBWJSR2</td>
<td>IBWJSR2A</td>
<td>S1E</td>
<td>SYSPLEX1</td>
<td>PRIME</td>
<td>6.050E+02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INVALIDATED SESSIONS</th>
<th>ACTIVE MINIMUM</th>
<th>ACTIVE MAXIMUM</th>
<th>LIFE TIME</th>
<th>INVALIDATED TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.300E+01</td>
<td>0</td>
<td>0</td>
<td>2.710E+02</td>
<td>0.00000E+00</td>
</tr>
<tr>
<td>3.000E+00</td>
<td>0</td>
<td>0</td>
<td>1.052E+03</td>
<td>0.00000E+00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FINALIZED SESSIONS</th>
<th>LIVE MINIMUM</th>
<th>LIVE MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The report contains the following information:

DATE  The date of the day for the measurement
SERVER_NAME
WebSphere for z/OS transaction server name

INSTANCE_NAME
WebSphere for z/OS transaction server instance name

MVS_SYSTEM_ID
MVS System identification

SYSPLEX_NAME
Sysplex Name

PERIOD
Name of the period

CREATED_SESSIONS
Number of sessions created

INVALIDATED_SESSIONS
Number of sessions invalidated

ACTIVE_SESSIONS
Number of HTTP sessions that are actively referenced

MINIMUM_ACTIVE_SESSIONS
Minimum number of HTTP sessions that are actively referenced

MAXIMUM_ACTIVE_SESSIONS
Maximum number of HTTP sessions that are actively referenced

LIFE_TIME_SESSIONS
Time in seconds of invalidated HTTP sessions remaining in memory.

INVALIDATED_TIME_SESSION
Time in seconds that was required to process invalid of HTTP sessions

FINALIZED_SESSIONS
Number of sessions that were finalized

LIVE_SESSIONS
Total number of HTTP sessions being tracked by the server.

MINIMUM_LIVE_SESSIONS
Minimum number of live HTTP sessions

MAXIMUM_LIVE_SESSIONS
Maximum number of live HTTP sessions.

WebSphere J2EE container statistics, Daily Trend

This report is supplied with the J2EE and Web Interval subcomponent, and shows a summary overview of WebSphere J2EE container statistics by day.

This information identifies the report:

Report ID WASWI03

Report Group WebSphere

Source WA S_INT_J2EECNT_D

Attributes WEBSPHERE, J2EE, DAILY
The report contains the following information:

**DATE**  The date of the day for the measurement

**SERVER_NAME**  
WebSphere for z/OS transaction server name

**MVS_SYSTEM_ID**  
MVS System identification

**SYSPLEX_NAME**  
Sysplex Name

**PERIOD**  
Name of the period

**METHOD_INVOCATION**  
Total number of times the methods were invoked

**AVERAGE_RESPONSE_TIME**  
Bean Method average response time in seconds

**MAXIMUM_RESPONSE_TIME**  
Bean Method maximum response time in seconds

**STATELESS_CREATED**  
Total number of times the create() method was invoked against the listed stateless session beans

**STATEFUL_CREATED**  
Total number of times the create() method was invoked against the listed state full session beans

**ENTITY_CREATED**  
Total number of entity bean objects created

---

<table>
<thead>
<tr>
<th>DATE</th>
<th>PERIOD</th>
<th>SERVER_NAME</th>
<th>METHOD_INVOCATION</th>
<th>AVERAGE_RESPONSE_TIME</th>
<th>MAXIMUM_RESPONSE_TIME</th>
<th>STATELESS_CREATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-12-18</td>
<td>NIGHT</td>
<td>IBWJSR2</td>
<td>1.695E+06</td>
<td>5.461E-01</td>
<td>4.420E+02</td>
<td>1.616E+04</td>
</tr>
<tr>
<td>PRIME</td>
<td></td>
<td>IBWJSR2</td>
<td>6.779E+05</td>
<td>3.141E-01</td>
<td>1.580E+02</td>
<td>6.606E+03</td>
</tr>
</tbody>
</table>

Tivoli Decision Support for OS/390: WASWIO3
| STATEFUL.Removed | Total number of times the remove() method was invoked against the listed state full session beans |
| ENTITY.Removed | Total number of times entity bean instances were removed |
| STATEFUL.Activated | Total number of times the state full session bean containers activated (retrieved from secondary storage) the enterprise beans |
| ENTITY.Activated | Total number of times the enterprise bean containers activated (retrieved from secondary storage) the enterprise beans |
| STATEFUL.Passivated | Total number of times the state full session bean containers passivated (transferred to secondary storage) the enterprise beans |
| ENTITY.Passivated | Total number of times the enterprise bean containers activated (transferred to secondary storage) the enterprise beans |
| ENTITY.Loaded | Total number of times entity beans loaded information from the database into themselves |
| ENTITY.Stored | Total number of times entity beans stored information from the database into themselves. |
Part 15. Appendixes
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List of abbreviations

These abbreviations appear in this book:

ANO    automated network operations
APPC   advanced program-to-program communications
APPL   application
BSDS   bootstrap data set
CICS   Customer Information Control System
CMS    Conversational Monitor System
CP     Control Program
CPU    central processing unit
CTC    channel-to-channel
DASD   direct access storage device
DCSS   discontiguous saved segment
DSN    data set name
EBCDIC extended binary coded decimal interchange code
ERDS   error recording data set
EREP   Environmental Record and Editing Printing
ES     expanded storage
EXCP   execute channel program
GMT    Greenwich mean time
HF     High-frequency
ID     identifier
IMS    Information Management System
I/O    input/output
IPL    initial program load
IUCV   inter-user communication vehicle
JCL    job control language
JES    job entry subsystem
LOGREC logout recorder
LRU    least recently used
LU     logical unit
MCP    modify current plan
MONWRITE monitor writer
MS     main storage
MVS    Multiple Virtual Storage
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<td>MVS/DFP</td>
<td>Multiple Virtual Storage/Data Facility Product</td>
</tr>
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<td>MVS/ESA</td>
<td>Multiple Virtual Storage/Enterprise System Architecture</td>
</tr>
<tr>
<td>NVS</td>
<td>nonvolatile storage</td>
</tr>
<tr>
<td>OBR</td>
<td>outboard record</td>
</tr>
<tr>
<td>OPC</td>
<td>Operations Planning and Control</td>
</tr>
<tr>
<td>OPC/ESA</td>
<td>Operations Planning and Control/Enterprise System Architecture</td>
</tr>
<tr>
<td>OS/2</td>
<td>Operating System/2</td>
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<tr>
<td>RACF</td>
<td>Resource Access Control Facility</td>
</tr>
<tr>
<td>RFT</td>
<td>report format tables</td>
</tr>
<tr>
<td>RMF</td>
<td>Resource Management Facility</td>
</tr>
<tr>
<td>RSCH</td>
<td>resume subchannel</td>
</tr>
<tr>
<td>SIE</td>
<td>start interpretative execution</td>
</tr>
<tr>
<td>SIGP</td>
<td>signal processor interrupts</td>
</tr>
<tr>
<td>SIO</td>
<td>start I/O</td>
</tr>
<tr>
<td>SMF</td>
<td>system management facilities</td>
</tr>
<tr>
<td>SNA</td>
<td>Systems Network Architecture</td>
</tr>
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<td>SQL</td>
<td>Structured Query Language</td>
</tr>
<tr>
<td>SSCH</td>
<td>start subchannel</td>
</tr>
<tr>
<td>SSI</td>
<td>subsystem interface</td>
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<tr>
<td>STC</td>
<td>started task</td>
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<tr>
<td>SVM</td>
<td>service virtual machine</td>
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<td>SYSLOG</td>
<td>system log</td>
</tr>
<tr>
<td>TOD</td>
<td>time-of-day</td>
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<td>TP</td>
<td>transaction program</td>
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<td>TSO</td>
<td>Time Sharing Option</td>
</tr>
<tr>
<td>UR</td>
<td>unit record</td>
</tr>
<tr>
<td>VF</td>
<td>vector facility</td>
</tr>
<tr>
<td>VM</td>
<td>Virtual Machine</td>
</tr>
<tr>
<td>VMCF</td>
<td>Virtual Machine Communication Facility</td>
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<tr>
<td>VMPRF</td>
<td>VM Performance Reporting Facility</td>
</tr>
<tr>
<td>VOLSER</td>
<td>volume serial</td>
</tr>
<tr>
<td>VTAM</td>
<td>virtual telecommunications access method</td>
</tr>
<tr>
<td>WTL</td>
<td>write to log</td>
</tr>
<tr>
<td>XCF</td>
<td>Cross-System Coupling Facility</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 the 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.

DFSMS/MVS. Data Facility Storage Management Subsystem/MVS. An IBM licensed program that consists of DFSMSdfp, DFSMSdss, and DFSMShsm.

**E**

environment information. All of the information that is added to the log data to create reports. This information can include data such as performance groups, shift periods, installation definitions, and so on.

**H**

host. The MVS system where Tivoli Decision Support for OS/390 runs collect and where the Tivoli Decision Support for OS/390 database is installed.

**K**

key columns. The columns of a DB2 table that together constitute the key.

**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 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 table. A Tivoli Decision Support for OS/390 DB2 table that contains grouping, conversion, or substitution information.

**P**

purge condition. Instruction for purging old data from the Tivoli Decision Support for OS/390 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 type. The classification of records in a log data set.

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.

**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.
sysplex. A set of MVS systems communicating and cooperating with each other through certain multisystem hardware components and software services to process customer workloads.

system table. A DB2 table that stores information that controls log collector processing, 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.

threshold. The maximum or minimum acceptable level of usage. Usage measurements are compared with threshold levels.

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 definition. Instructions for entering data into DB2 tables from records of different types or from other DB2 tables.

V

view. An alternative representation of data from one or more tables. A view can include all or some of the columns contained in the table on which it is defined.

W

workstation. For LAN purposes, a workstation is either a client or a LAN server.
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