HERMES SoftLab EMC Documentum SMART Plug-In for HP Operations Manager
(SPI for EMC Documentum)

Version 02.10

User's Guide

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HERMES SoftLab d.d.
Litijska 51
SI-1000 Ljubljana
Slovenia, Europe
www.hermes-softlab.com
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Chapter 1

Document Overview

Edition History

New editions are complete revisions of the manual. The printing dates for each edition are listed below.

Edition	Date
First Edition	April 2006
Second Edition	October 2006
Third Edition	December 2007
Fourth Edition	December 2008

Conventions

The following typographical conventions are used in this manual:

Font	Definition	Example
Italic	Product names, book or manual titles, man page names, and section, table, and figure titles.	Refer to the *SPI for EMC Documentum Installation and Configuration Guide* for additional information.
	Emphasis.	You *must* follow these steps.
	Window and dialog box names.	In the *HPOM Application Bank* window, select an application.
Bold	Commands on menus and buttons, dialog box titles and options, menu and icon names.	Expand **Services** and select **SPI for EMC Documentum**.
`Computer`	File names, syntax, directory names, or text that should be entered on screen or that is displayed on the monitor.	The following file is located on the root directory of the SPI for EMC Documentum installation CD: `readme.txt`.

Product Documentation

With SPI for EMC Documentum, the following documentation is provided:

- *HERMES SoftLab EMC Documentum SMART Plug-In for HP Operations Manager Installation and Configuration Guide*
  Installation and Configuration Guide is available in printed and PDF format (*DMSPI_Install_GuideUNIX.pdf*).
- *HERMES SoftLab EMC Documentum SMART Plug-In for HP Operations Manager User's Guide*
  This guide is available in printed and PDF format (*DMSPI_User_GuideUNIX.pdf*).
- Release notes
  Release notes are available in TXT format (*dmspi-release-notes-unix.txt*).
- Readme
  Readme file is available in TXT format (*dmspi-readme-unix.txt*).
- License file
  License file is available in TXT format (*hsl_license_terms.txt*)

Customer Support

Use the following e-mail and Web page addresses if you need help with the licensing process or while using the product, and if you would like additional information about this or other HERMES SoftLab products.

Licensing

To obtain the license activation file you can visit HERMES SoftLab licensing portal:

http://spi.hermes-softlab.com/licensing/

or send an e-mail to the following address:

spi-licensing@hermes-softlab.com

For more information on licensing and licensing procedure refer to *SPI for EMC Documentum Installation and Configuration Guide.*

If you encounter any problems with the licensing process, contact the HERMES SoftLab licensing department at:

spi-licensing@hermes-softlab.com

Contacting Support

IMPORTANT NOTE

Should you require additional assistance or information while using the product, contact the vendor that shipped the software.

If you have purchased the software directly from HERMES SoftLab, send e-mail to:

support-dmspi@hermes-softlab.com

Before Contacting Support

Before you contact the support department, have the following information available so that a technical support analyst can work on your problem more efficiently:

- the support file `dmspi_supp.zip`
  To create the support file `dmspi_supp.zip`, run the **Collect Support Information** application on one or more nodes. To run the application, perform the following

steps:

Go to **Application Bank/SPI for EMC Documentum/DMSPI-Maintenance/ DMSPI-Support** application group and run the **Collect Support Information** application on the managed nodes for which you would like to collect the information. The files with the support information are created in the following directory on the node(s):

```
%OvDataDir%\dmspi\support (Windows nodes)
$OvAgentDir/dmspi/support (Unix nodes)
```

- sequence of events leading to the problem
- commands and options that you used
- messages you have received (a description with the time and date)

General Information

For marketing or business-related issues in reference to this or other HERMES SoftLab SPIs, send e-mail to:

spi-info@hermes-softlab.com

Product Web Sites

Visit HERMES SoftLab SMART Plug-In Web site at:

http://www.hermes-softlab.com/products/SPI/about_SPI.html

and the company Web site at:

http://www.hermes-softlab.com/

Chapters Summary

This guide describes how to use HERMES SoftLab EMC Documentum SMART Plug-In for HP Operations Manager to monitor and manage Documentum application resources.

The guide contains the following chapters:

- "Getting Started" on page 9
  This chapter gives you a short overview of SPI for EMC Documentum functionality and describes four main components of the product.
- "Setting Up the Environment" on page 22
  This chapter provides information on how to perform autodiscovery and where to deploy the SPI for EMC Documentum templates.
- "Monitoring Documentum Content Server" on page 25
  This chapter provides information on how to monitor Documentum content server.
- "Monitoring Documentum Connection Broker" on page 31
  This chapter provides information on how to monitor Documentum connection broker.
- "Monitoring Database Availability" on page 35
  This chapter provides information on how to monitor database availability.
- "Monitoring Jobs" on page 39
  This chapter provides information on how to monitor Documentum administrative jobs.
- "Monitoring Documentum Sessions and User Activity" on page 49
  This chapter provides information on how to monitor Documentum sessions and user activity.
- "Monitoring Client Response" on page 55
  This chapter provides information on how to monitor client response.
- "Monitoring Log Files" on page 61
  This chapter provides information on how to monitor log files.
- "Monitoring File Stores" on page 67
  This chapter provides information on how to monitor file stores.
- "Monitoring Database Tables" on page 71
  This chapter provides information on how to monitor database tables.

- "Monitoring Index Server" on page 77
  This chapter provides information on how to monitor index server.
- "SPI for EMC Documentum Integration with HP Reporter" on page 91
  This chapter provides instructions on how to use the product for monitoring, how to integrate SPI for EMC Documentum with HP Reporter, and how to create reports.
- "Analyzing Historical Data Using HP Performance Manager" on page 109
  This chapter provides instructions on how to use HP Performance Manager to analyze historical data.
- "Troubleshooting" on page 117
  This chapter provides instructions on what to do if you encounter any problems while using the SPI for EMC Documentum.
- Appendix A, "Metric Lists" on page 122
  This chapter provides metrics lists that are created for SPI for EMC Documentum reports.

Chapter 2

Getting Started

About SPI for EMC Documentum

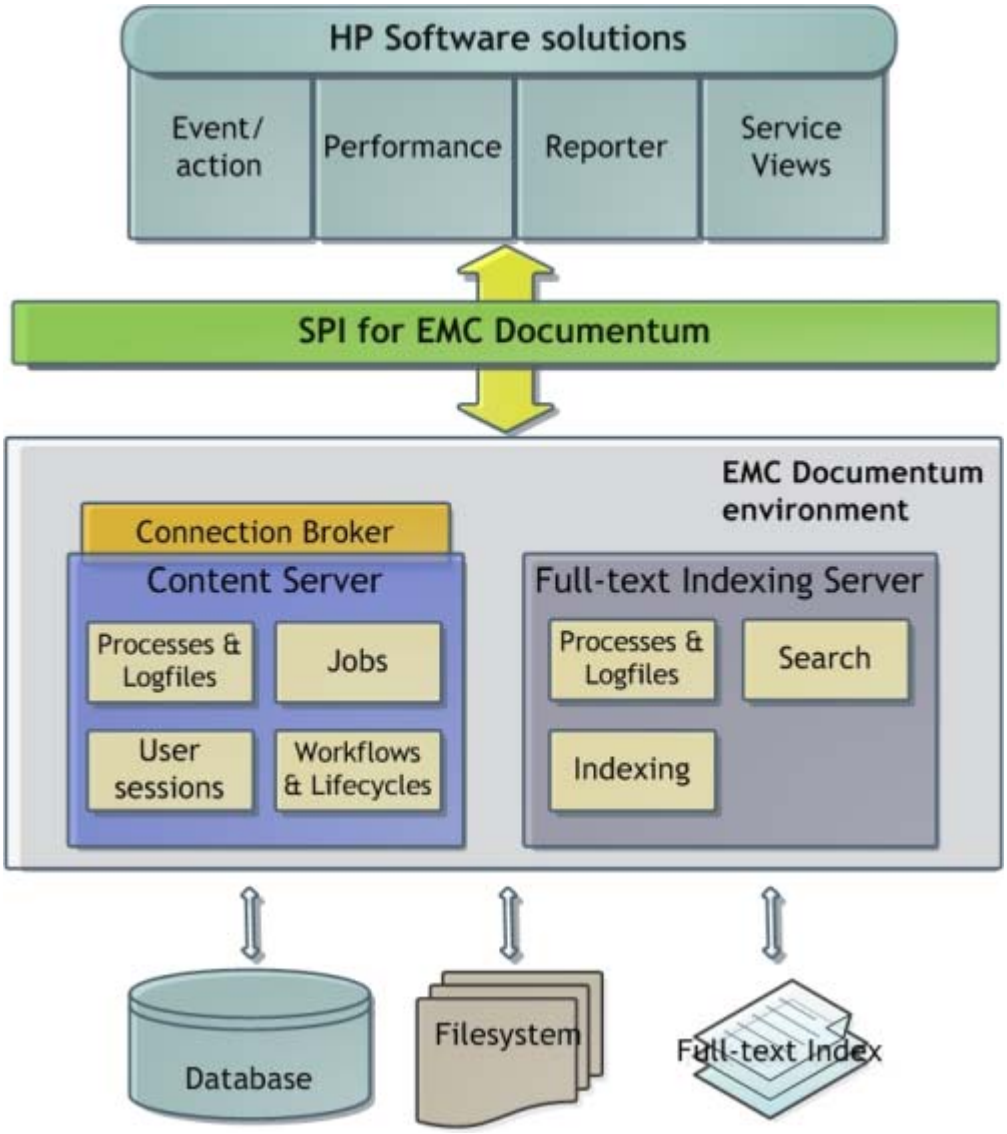
HERMES SoftLab EMC Documentum SMART Plug-In for HP Operations Manager (SPI for EMC Documentum) is designed specifically for use with EMC Documentum products from HP Software environments. Developed by HERMES SoftLab Group, it proactively and securely manages a distributed, Documentum environment from one, centralized point. SPI for EMC Documentum works with other HP Software solutions to help you gain control over your EMC Documentum environment. Additionally, it helps you to manage your IT infrastructure in order to increase your system availability and performance. Benefits of using SPI for EMC Documentum include the following:

- Alerts on failures of critical Documentum processes. Server, connection broker, and job processes are monitored for availability and performance.
- Tracks the time that has elapsed since the server's last check-in and the total time that connection broker will wait before dropping the server from the list of known servers.
- Alerts on Documentum job failures.
- Monitors job execution time and detects possible hung jobs.
- Monitors jobs that were scheduled to run but never started.
- Collects job execution statistics.
- Measures response times for business transactions from end-user perspective. Sources of potential response time problems can be detected.
- Identifies user sessions that are causing excessive CPU and memory consumption.
- Monitors file stores and helps with capacity planning.
- Alerts if database is not available or connection time takes too long.
- Immediately identifies internal Documentum issues by forwarding relevant log messages.
- Monitors table size growth and the number of unprocessed renditions, the number of failed indexing items, and other events specified by user.
- Monitors if index server is available and all necessary components are running.
- Monitors if it is possible to search for documents, add new documents to full-text index, and how fast is the search.
- Monitors index server performance (save-to-search latency).
- Collects indexing performance.

- Monitors index agent health, availability, and resource consumption.
- Enhances an administrator's toolbox by providing various informational applications including information about client response time, file stores capacity, user sessions, and so on.
- Regularly records resource consumption of critical Documentum processes.
- Collects information about session activity (number of active/inactive sessions, session resource consumption).
- Collects and reports client response time statistics.
- Collects and reports information about file store and database table growth.
- Reports resource consumption for Documentum processes.
- Provides insight into session activity by generating numerous reports.
- Automatically discovers Documentum environment, creates a corresponding service map model, and displays dependencies between servers, repositories, and connection brokers.

High-level Architecture

Below is a high-level architecture diagram of SPI for EMC Documentum.



Quick Introduction to SPI for EMC Documentum

SPI for EMC Documentum integrates the following HP Operations Manager components:

- HP Operations Manager/UNIX Templates
- HP Operations Manager/UNIX Applications
- HP Operations Manager/UNIX Reports
- HP Operations Manager/UNIX Service Map

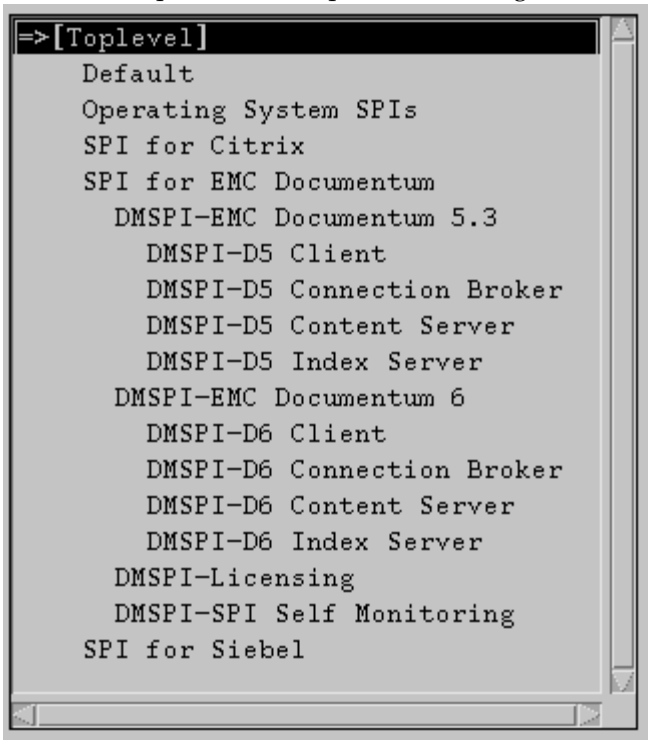
Templates

Templates instruct HP Operations Manager how to solve system management issues, for example, "Monitor CPU Utilization".

SPI for EMC Documentum templates enable you to define complex rules and instructions for monitoring different systems and services. Templates are instructions for HP Operations Manager (HPOM) agents that monitor your Documentum environment. When an issue is detected, a message is sent to the HPOM console.

In addition, you can define automated actions to be performed upon detecting a specific issue, or include instructions for operators as part of the message. Every templates can start automatic or operator initiated action when issue is detected. You can check which actions were launched when issue was detected, and check the action outcome in the message annotation.

SPI for EMC Documentum adds a **SPI for EMC Documentum** template group and several templates to HP Operations Manager for UNIX.



These templates enable you to:

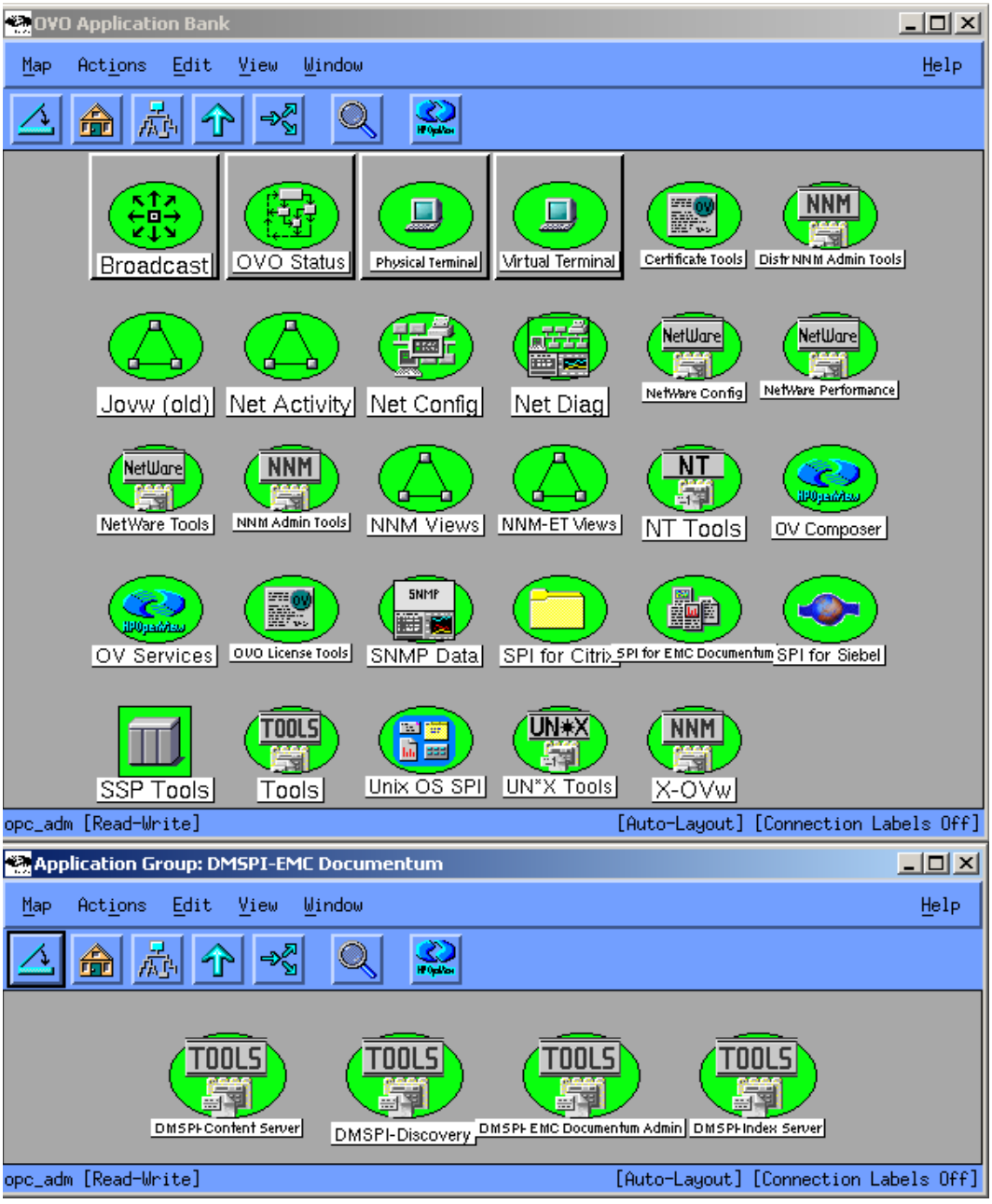
- Monitor Documentum Content Server and connection broker availability and resource consumption.
- Detect job failures and track the number of failed jobs per Repository.
- Monitor job execution time and detect possible hung jobs.
- Monitor user activity and identify user sessions that are causing excessive CPU and memory consumption.
- Monitor client response time for standard operations (for example, connect, check-in, check-out, delete) against Repositories from the client systems.
- Monitor file stores.
- Monitor log files (server, session, job, life-cycle) .
- Monitor the size and growth of Documentum DB tables (for example, dmi_queue_item, dm_audittrail) .

- Monitor the number of unprocessed renditions , number of failed indexing items and other events specified by user.
- Monitor if index server is available and all necessary components are running.
- Monitor if it is possible to search for documents, add new documents to full-text index, and how fast is the search.
- Monitor index server performance (save-to-search latency).
- Monitor index sgent health, availability and resource consumption.
- Collect performance statistics.

Applications

SPI for EMC Documentum supplies powerful applications for monitoring and managing your EMC Documentum environment. SPI for EMC Documentum applications enable you to inspect, analyze and manage your EMC Documentum environment, check the current status, and react to issues in your environment.

SPI for EMC Documentum adds a **SPI for EMC Documentum** applications group and several applications to HP Operations Manager for UNIX.



These applications enable you can perform the following tasks:

- Show users that are causing excessive CPU and memory consumption.
- Display file store info.
- Display documents with largest content and most versions.
- Display workflows that are not finished yet and are older than the specified time period.
- Display current running jobs and their execution times.
- Display full-text index query response.
- Display Index Agent status.
- Display save-to-search time of a document.
- Display jobs that were scheduled to run but never started.
- Display Index Server disk usage.
- Display Index Server status.
- Perform discovery of your EMC Documentum environment and update the Documentum servicemodel.
- Troubleshoot the SPI for EMC Documentum installation and configuration.
- License SPI for EMC Documentum.
- Manage Documentum nodes.

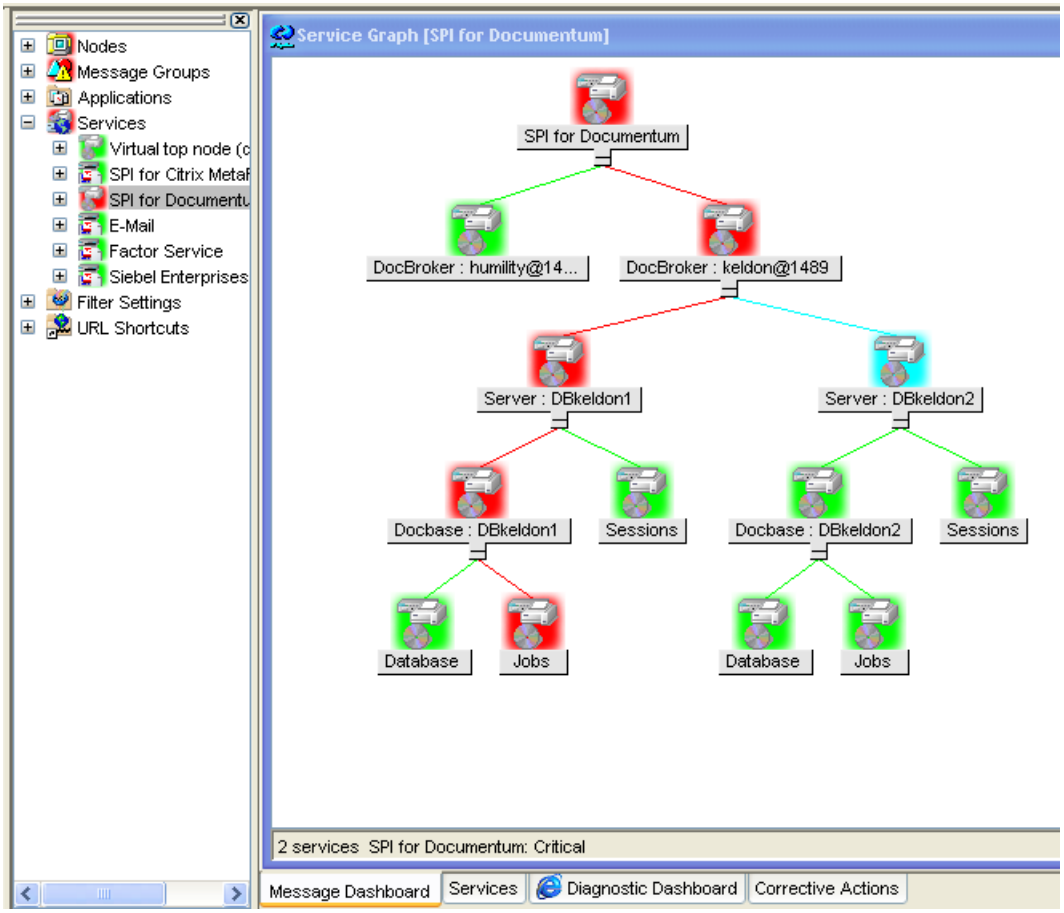
Service Map

Service map is a component of the HP Operations Manager for Windows. This component enables you to manage your IT (information technology) environment while focusing on the IT services that you provide.

SPI for EMC Documentum integrates into the HP Operations Manager for Windows service map component. It automatically generates a Documentum service map, which offers complete graphical representation of your Documentum environment and its hierarchical organization. All Documentum object types (connection brokers, Content Servers, repositories, file stores, and so on) in your environment are displayed in a tree view, which shows the components and their hierarchical dependencies.

In addition, graphical representation of your EMC Documentum environment clearly indicates relations between EMC Documentum environment components, how they impact one another, and which business services are affected. This enables you to effectively manage services within your information technology framework.

Example of the service map view:



Reports and Graphs

SPI for EMC Documentum offers reporting functionality, where collected performance data can be represented in web-based reports or real-time graphs.

SPI for EMC Documentum integrates with the HP Operations Manager for Windows reporting component (Reporter Lite) and with the HP Reporter products.

Additionally, SPI for EMC Documentum integrates with the HP Operations Manager for Windows graphing component (Performance Manager Lite) and with the HP Performance Manager products.

You can generate reports and graphs on the following information:

- Documentum process availability and resource consumption
- File store statistics
- Database availability
- User activity
- Client response time
- Table size growth and the number of unprocessed events (renditions, indexing)
- Job timeline report and top jobs by longest execution time
- The number of running/failed jobs in the specified interval
- Index agent/server process availability and resource consumption
- Save-to-search latency - the time it takes to add a new document into the index and make it searchable
- Full-text index search response time

Chapter 3

Setting Up the Environment

Setting Up the Environment

Setting up your environment involves installing, licensing and configuring SPI for EMC Documentum on the HPOM management server and on the managed nodes. For more information on how to install, license, and configure managed nodes refer to SPI for EMC Documentum Installation and Configuration Guide.

After you successfully configured your environment, you can start using the SPI for EMC Documentum product. For procedural information on how to:

- perform autodiscovery of Documentum components and update your configuration, refer to "How to Perform Autodiscovery" on page 24.

To see the SPI for EMC Documentum templates, open the *Message Source Template* window and expand the **SPI for EMC Documentum** group.

Where to Deploy the Templates

- **DMSPI-Client**
  This template group contains templates for monitoring response time from server or end-user systems. Install the templates from this group on the servers or on the nodes where the dmcl API is installed.
- **DMSPI-Connection Broker**
  This template group contains templates for monitoring Documentum connection broker process. Install the templates from this group only on the nodes where one or more connection brokers reside.
- **DMSPI-Content Server**
  This template group contains templates for monitoring Documentum server and server components. Install the templates from this group only on the nodes where one or more Documentum servers reside.
- **DMSPI-Index Server**
  This template group contains templates for monitoring Documentum Indexing Server. Install the templates from this group only on the nodes where Documentum index servers reside.
- **DMSPI-Licensing**
  This template group contains templates for generating, merging, installing license Install the templates from this group on all nodes where SPI for EMC Documentum is installed.
-

- **DMSPI-SPI Self Monitoring**
  This template group contains templates for intercepting error messages from SPI for EMC Documentum. Install the templates from this group on all nodes where SPI for EMC Documentum is installed.

Autodiscovery

To perform automatic discovery of the Documentum topology and generate a service view that displays your Documentum environment, you can use the **DMSPI-SvcDiscMapUplExt** template. The template is located in the Discovery group under Connection Broker, Content Server, or Index Server group.

How to Perform Autodiscovery

To perform autodiscovery, do the following:

1. Deploy the **DMSPI-SvcDiscMapUplExt** template on the node where SPI for EMC Documentum is installed.
2. On the system where **DMSPI-SvcDiscMapUplExt** template was deployed, go to **Application Bank/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Discovery** and run the **Autodiscovery** application. The application will send a message with the Documentum environment topology to the HPOM server. Automatic action on the HPOM server will upload the Documentum service tree.

By default, services are assigned to the `opc_op` user. If you want these services to also be assigned to another operator or user, you must execute the following command:

```
/opt/OV/bin/OpC/opcservice -ass operator dmspi_root
```

Chapter 4

Monitoring Documentum Content Server

About Monitoring Documentum Content Server

Servers are processes that provide client access to the repository. Every repository must have at least one active server. If a repository does not have an active server, then users cannot access that repository. Servers are accessible for users via connection broker, which keeps a list of active Servers. To stay on the list, each Server has to check-in with the connection broker at regular intervals otherwise it is dropped from the list after a specified period of time. Availability of the Server process is vital for the health of your Documentum environment.

To monitor the Documentum server with SPI for EMC Documentum, you can use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3 /DMSPI-D5 ContentServer and SPI for EMC Documentum/ DMSPI-EMC Documentum 6 /DMSPI-D6 ContentServer template groups:

DMSPI-DxCS Quick Start template group

- **DMSPI-SrvrProcess**
  This is a Monitor template that monitors Documentum Server service and daemon availability.
- **DMPSI-SrvrAvailability**
  It is a Measurement Threshold template that monitors the current state of the Documentum server.
- **DMPSI-SrvrCheckIn**
  It is a Measurement Treshold template that monitors server's last chec-in time before the server will be dropped from the list of known servers.

DMSPI-DxCS Additional template group.

- **DMSPI-SrvrProcessCpu**
  It is a Measurement Threshold template that monitors CPU utilization of the Documentum server process.
- **DMSPI-SrvrProcessMem**
  It is a Measurement Threshold template that monitors memory usage of the Documentum server process.

DMSPI-DxCS Data Collection template group

- **DMSPI-SrvrProcessPerf**
  It is a Scheduled Task template that collects server process MEM and CPU usage and stores this information to HP Performance Agent.

How to Monitor the Status of the Documentum Server Process

To check if the Documentum server process is running, deploy the **DMSPI-SrvrProcess** template on the system. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --srvr_proc
```

A message is sent each time the process state changes:

- **Not running** - critical message
- **Running** - normal message

If no servers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more servers reside on the system" on page 29.

How to Monitor CPU Utilization of the Documentum Server Process

To monitor CPU utilization of the server process, use the **DMSPI-SrvrProcessCpu** template. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --srvr_proc --cpu
```

A message is sent if:

- Server process CPU utilization > 50% - warning message
- Server process CPU utilization > 70% - minor message
- Server process CPU utilization > 90% - critical message

If no servers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more servers reside on the system" on page 29.

How to Monitor Memory Usage of the Documentum Server Process

To monitor memory usage of the server process, use the **DMSPI-SrvrProcessMem** template. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --srvr_proc --mem
```

A message is sent if:

- Server process memory usage > 30000 kb - warning message
- Server process memory usage > 50000 kb - minor message

- Server process memory usage > 100000 kb - major message

If no servers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more servers reside on the system" on page 29..

How to Collect Resource Consumption Information of the Documentum Server Process

To collect performance data about server CPU and memory utilization, deploy the **DMSPI-SrvrProcessPerf** template to the node. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_ proc(.exe) --srvr_proc --perf
```

Information about server process CPU and memory usage will be logged to HP Performance Agent where `DMSPI_SRVR_PROCESS` class will be added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Server name`
- `Server process status`
- `Server process memory usage (KB)`
- `Server process virtual memory usage (KB)`
- `Server process CPU utilization (%)`

If no servers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more servers reside on the system" on page 29.

How to Check the Status of the Documentum Server

To check the current state of the server, deploy the **DMSPI-SrvrAvailability** template on the node. The template runs `dmspi_srvr(.exe)` with the following arguments:

```
dmspi_srvr(.exe) --availability
```

A message will be generated each time the server status changes. The following states are possible:

- Starting, Open
- Stopped
- Presumed down

If no servers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more servers reside on the system" on page 29.

How to Check Last Check-in of the Documentum Server and if the Server will be Dropped from the List of Known Servers

To check if the server did not check in and will be dropped from the connection broker's list of known servers, deploy the **DMSPI-SrvrCheckIn** template on the node. This tracks the time that has elapsed since the server's last check-in (**LastCheckInTime**) and the total time that connection broker will wait before dropping the server from the list of known servers (**WaitTime**). The template runs `dmspi_srvr(.exe)` with the following arguments:

```
dmspi_srvr(.exe) -checkin
```

The percentage of how much **WaitTime** has been used by **LastCheckInTime** is calculated as:

```
ElapsedTimePerc = ((CurrentTime - LastCheckInTime) / WaitTime) * 100
```

A message is sent if **ElapsedTimePerc** exceeds:

- 1% of total keep entry interval - warning message
  The threshold is so low because we want to notify the administrator immediately if the server does not check-in.
- 70% of total keep entry interval - minor message
- 90% of total keep entry interval - major message

The message also contains information about how much time (in minutes) remains until the server will be dropped.

How to use a template if more servers reside on the system

It is possible to have more than one server on the same system. By default, all templates for monitoring Documentum server check only the first server specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems) or the first one found on the system.

To monitor a specific server on the system, make a copy of the template and add `--server` and `--template` arguments to the program name.

Example:

```
dmspi_srvr(.exe) --availability --server=server_name --
template=my_new_template_name
```

If the wrong server is specified, a DMSPI internal error message is sent.

Chapter 5

Monitoring Documentum Connection Broker

About Monitoring Documentum Connection Broker

The Documentum connection broker is a process that provides client sessions with connection information. When a client session is opened, the client contacts the connection broker and requests the information it needs to connect with a server for the requested repository.

To monitor Documentum connection broker with SPI for EMC Documentum, use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Connection Broker and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Connection Broker template groups:

DMSPI-DxCB Quick Start template group

- **DMSPI-BrokerProcess**
  It is a Measurement Threshold template that monitors availability of the Documentum connection broker process.

DMSPI-DxCB Additional template group

- **DMSPI-BrokerProcessCpu**
  It is a Measurement Threshold template that monitors CPU utilization of the Documentum connection broker process.
- **DMSPI-BrokerProcessMem**
  It is a Measurement Threshold template that monitors memory usage of the Documentum connection broker process.

DMSPI-DxCB Data Collection template group

- **DMSPI-BrokerProcessPerf**
  It is a Scheduled Task template that collects connection broker process MEM and CPU usage and stores this information to HP Performance Agent.

How to Monitor the Status of the Documentum Connection Broker Process

To check if the Documentum connection broker process is running, deploy the **DMSPI-BrokerProcess** template on the system. This checks if the `dmdocbroker(.exe)` process is running. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --docbroker
```

A message is sent each time the process state changes:

- **Not running** - critical message
- **Running** - normal message

If no connection brokers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more connection brokers reside on the system" on page 34.

How to Monitor CPU Utilization of the Documentum Connection Broker Process

To monitor CPU utilization of the connection broker process, use the **DMSPI-BrokerProcessCpu** template. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --docbroker --cpu
```

A message is sent to the console if:

- process CPU utilization > 50% - warning message
- process CPU utilization > 70% - minor message
- process CPU utilization > 90% - critical message

If no connection brokers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more connection brokers reside on the system" on page 34.

How to Monitor Memory Usage of the Documentum Connection Broker Process

To monitor memory usage of the connection broker process, use the **DMSPI-BrokerProcessMem** template. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --docbroker --mem
```

A message is sent to the console if:

- process memory usage > 30000 kb - a warning message
- process memory usage > 50000 kb - a minor message
- process memory usage > 100000 kb - a major message

If no connection brokerrs are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more connection brokers reside on the system" on page 34.

How to Collect Resource Consumption Information of the Documentum Connection Broker Process

To collect performance data about connection broker CPU and memory utilization, deploy the **DMSPI-BrokerPerf** template to the node. The template runs dmspi_proc(.exe) with the following arguments:

```
dmspi_proc(.exe) --docbroker --perf
```

Information about connection broker process CPU and memory usage is logged to HP Performance Agent where `DMSPI_DOCBROKER_PROC` class is added to the DMSPI datasource with the following metrics:

- `Connection broker process name and port number`
- `Connection broker process status`
- `Connection broker process memory usage (KB)`
- `Connection broker process virtual memory usage (KB)`
- `Connection broker process CPU utilization (%)`

If no connection brokers are found on the system, a DMSPI internal error message is sent.

See also "How to use a template if more connection brokers reside on the system" on page 34.

How to use a template if more connection brokers reside on the system

It is possible to have more than one connection broker on the same system. By default, all templates for monitoring Documentum connection broker check only the first connection broker specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems) or the first one found on the system.

To monitor a specific connection broker on the system, make a copy of the template and add `--port` and `--template` arguments to the program name.

Example:

```
dmspi_proc(.exe) --docbroker --port=port_number --
template=my_new_template_name
```

If the wrong connection broker is specified, a DMSPI internal error message is sent.

Chapter 6

Monitoring Database Availability

About Monitoring Database Availability

Repositories comprise object type tables, type indexes, content files, and full-text indexes. The type tables and type indexes are tables in an underlying relational database. Because the Documentum database usually resides on a standalone machine, it is crucial that the Documentum servers can connect to the database.

To monitor the Documentum database availability, use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server templates groups:

DMSPI-DxCS Quick Start template group

- **DMSPI-DBAvailability**
  It is a Measurement Threshold template that checks if Documentum database is available.
- **DMSPI-DBLogin**
  It is a Measurement Threshold template that checks the database login time from the Documentum server.

DMSPI-DxCS Data Collection template group

- **DMSPI-DBLoginPerf**
  This is a Schedule template that collects the information about the database login time and stores it to HP Performance Agent.

How to Monitor Database Availability

To check the database availability, deploy the **DMSPI-DBAvailability** template on the node. A message is sent each time the process state changes:

- **Available** - normal message
- **Not available** - critical message

The template runs `dmspi_db(.exe)` with the following arguments:

```
dmspi_db(.exe) --availability
```

See also "How to use a template if more servers reside on the system" on page 37.

How to Monitor Database Login Time

To check the login time of the database, deploy the **DMSPI-DBLogin** template on the node. A message will be generated if the database login time from the server exceeds the threshold value:

- login time > 5 seconds - minor message
- login time > 3 seconds - warning message

The template runs `dmspi_db(.exe)` with the following arguments:

```
dmspi_db(.exe) --login
```

See also "How to use a template if more servers reside on the system" on page 37.

How to Collect Database Login Time Performance Data

To collect performance data about database login response, deploy the **DMSPI-DBLoginPerf** template to the node. The template runs `dmspi_db(.exe)` with the following arguments:

```
dmspi_db(.exe) --login --perf
```

Information about database login time is logged to HP Performance Agent where `DMSPI_DB_LOGIN` class is added to the DMSPI datasource with the following metrics:

- `Server name`
- `Repository name`
- `Database login time (ms)`

See also "How to use a template if more servers reside on the system" on page 37.

How to use a template if more servers reside on the system

It is possible to have more than one server on the same system. By default, all templates for monitoring database availability check only database availability of the first server specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems) or the first one found on the system.

To monitor database availability of a specific server on the system, make a copy of the template and add `--server` and `--template` arguments to the program name.

Example:

```
dmspi_db(.exe) --availability --server=server_name --
template=my_new_template_name
```

If the wrong server is specified, a DMSPI internal error message is sent.

Chapter 7

Monitoring Jobs

About Monitoring Jobs

Jobs are repository objects that automate method object execution. Methods associated with jobs are executed automatically on a user-defined schedule. Jobs are invoked by the `dm_agent_exec` process. At regular intervals, the `dm_agent_exec` process examines the job objects in the repository and runs those jobs that are ready for execution.

To monitor Documentum job status, job execution time, the number of running jobs, and processes responsible for the job execution with SPI for EMC Documentum, you can use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server template groups:

DMSPI-DxCS Quick Start template group:

- **DMSPI-JobStatus**
  It is a Scheduled Task template that monitors the status of Documentum jobs.
- **DMSPI-JobStatus**
  It is a Open Message Interface template that monitors the status of Documentum jobs.
- **DMSPI-JobProcess**
  It is a Measurement Threshold template that checks availability of the `dm_agent_exec` process. The `dm_agent_exec` process is responsible for executing jobs.
- **DMSPI-JobTime-dm_DBWarning**
  It is a Measurement Threshold template that checks the Documentum `dm_DBWarning` job execution time.
- **DMSPI-JobTime-dm_DataDictionaryPublisher**
  It is a Measurement Threshold template that checks the Documentum `dm_DataDictionaryPublisher` job execution time.
- **DMSPI-JobTime-dm_ContentWarning**
  It is a Measurement Threshold template that checks the Documentum `dm_ContentWarning` job execution time.
- **DMSPI-JobTime-dm_StateOfDocbase**
  It is a Measurement Threshold template that checks the Documentum `dm_StateOfDocbase` job execution time.

DMSPI-DxCS Additional template group:

- **DMSPI-JobProcessMem**
  It is a Measurement Threshold template that monitors memory usage of the dm_agent_exec process.
- **DMSPI-JobProcessCpu**
  It is a Measurement Threshold template that monitors CPU utilization of the `dm_agent_exec` process.
- **DMSPI-JobsFailedToStart**
  It is a Scheduled Task template that monitors jobs that were scheduled but for some reason failed to start.
- **DMSPI-JobsFailedToStart**
  It is a Open Message Interface template that monitors jobs that were scheduled but for some reason failed to start.

DMSPI-DxCS Data Collection template group:

- **DMSPI-JobProcessPerf**
  This template collects MEM and CPU usage of the `dm_agent_exec` process and stores this information to HP Performance Agent.
- **DMSPI-JobExecTimePerf**
  It is a Scheduled Task template that collects job execution time statistics and stores this information to HP Performance Agent.
- **DMSPI-JobStatusPerf**
  It is a Scheduled Task template that collects statistics about the number of failed jobs and stores this information to HP Performance Agent.
- **DMSPI-RunningJobsPerf**
  It is a Scheduled Task template that collects statistics about the number of jobs that are currently running and stores this information to HP Performance Agent.

How to Check the Job Status

To check the status of the job, deploy the **DMSPI-JobStatus** (Schedule template) and **DMSPI-JobStatus** (Message template) templates on the node. A message is sent if the job finishes with an error.

The template **DMSPI-JobStatus** (Schedule) runs `dmspi_jobs(.exe)` with the following arguments:

```
dmspi_job(.exe) --status
```

See also "How to use a template if more repositories reside on the system" on page 47.

How to Check the Status of the 'dm_agent_exec' Process

To check if the process responsible for executing jobs is running, deploy the **DMSPI-JobProcess** template on the system. This checks if the `dm_agent_exec(.exe)` process is running. The template runs dmspi_proc(.exe) with the following arguments:

```
dmspi_proc(.exe) --job
```

A message is sent each time the process state changes:

- **Not running** - critical message
- **Running** - normal message

See also "How to use a template if more repositories reside on the system" on page 47.

How to Monitor CPU Utilization and Memory Usage of the 'dm_agent_exec' Process

To check the impact of the `dm_agent_exec(.exe)` process on the system, use the **DMSPI-JobProcessCpu** and **DMSPI-JobProcessMem** templates.

With the **DMSPI- JobProcessCpu** template, you can monitor CPU utilization of the `dm_agent_exec` process. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --job --cpu
```

A message is sent if:

- 'dm_agent_exec' process CPU utilization > 50% - warning message
- 'dm_agent_exec' process CPU utilization > 70% - minor message
- 'dm_agent_exec' process CPU utilization > 90% - critical message

With the **DMSPI-JobProcessMem** template, you can monitor virtual memory usage of the `dm_agent_exec` process. The template runs the `dmspi_proc(.exe)` executable with the following arguments:

```
dmspi_proc(.exe) --job --mem
```

A message is sent if:

- 'dm_agent_exec' process memory usage > 5000 kb - warning message

- 'dm_agent_exec' process memory usage > 10000 kb - minor message
- 'dm_agent_exec' process memory usage > 15000 kb - major message

See also "How to use a template if more repositories reside on the system" on page 47.

How to Collect CPU Utilization and Memory Usage Information of the 'dm_agent_exec' Process

To collect performance data about `dm_agent_exec` CPU and MEM utilization, deploy the **DMSPI-JobProcessPerf** template to the node. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) --job --perf
```

Information about the `dm_agent_exec` process CPU and memory usage is logged to HP Performance Agent.

`DMSPI_JOB_PROCESS` class is added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Server name`
- `dm_agent_exec process status`
- `dm_agent_exec process memory usage (KB)`
- `dm_agent_exec process virtual memory usage (KB)`
- `dm_agent_exec process CPU utilization (%)`

See also "How to use a template if more repositories reside on the system" on page 47.

How to Monitor Job Execution Time

To monitor the job execution time and detect possible hung jobs, deploy the following Monitor templates on the node:

- `DMSPI-JobTime-dm_ContentWarning`, if you would like to monitor execution time of the `dm_ContentWarning` job.
- `DMSPI-JobTime-dm_DataDictionaryPublisher`, if you would like to monitor execution time of the `dm_DataDictionaryPublisher` job.
- `DMSPI-JobTime-dm_DBWarning`, if you would like to monitor execution time of the `dm_DBWarning` job.

- `DMSPI-JobTime-dm_StateOfDocbase`, if you would like to monitor execution time of the `dm_StateOfDocbase` job.

To monitor the execution time of any Documentum job, copy one of the listed templates, change the template name (for example, `DMSPI-JobTime-JobName`) and the `--job` and `--template` parameters:

```
dmspi_job (.exe) --exectime --job=job_name --template=DMSPI-JobTime-JobName
```

The message will be sent if execution time of monitored job exceeds the predefined thresholds:

- Job execution time > 3600s - warning message
- Job execution time > 7200s - minor message
- Job execution time > 14400s - major message

See also "How to use a template if more repositories reside on the system" on page 47.

How to Monitor Jobs that were Scheduled but Failed to Start

To monitor jobs that were scheduled but for some reason failed to start, deploy the **DMSPI-JobsFailedToStart** (Scheduled Task) and **DMSPI- JobsFailedToStart** (Open Message Interface) templates on the node.

The template **DMSPI-JobsFailedToStart** (Scheduled Task) `runs dmspi_jobs(.exe)` with the following arguments:

```
dmspi_jobs(.exe) --failed
```

If more repositories reside on the system, the template monitors the jobs only for the first repository specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the jobs for the specific repository, make a copy of the template and add `--docbase argument`.

Example:

```
dmspi_ job(.exe) --failed --docbase_{repository name}
```

How to Collect Job Execution Time Information

To collect the job execution time information, deploy the **DMSPI-JobExecTimePerf** template on the node. The template runs `dmspi_job` with the following parameters:

```
dmspi_job --exectime --perf
```

Information about job execution time is logged to HP Performance Agent, where `DMSPI_JOBS_EXECTIME` class is added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Target server`
- `Job name`
- `Job start time in number of seconds since 01/01/1970`
- `Job stop time in number of seconds since 01/01/1970`
- `Job exit status`
- `Job status message`
- `Job owner`

NOTE

To gather accurate statistics, this template should run more frequently than the most frequent Documentum job.

See also "How to use a template if more repositories reside on the system" on page 47.

How to Collect Information About Failed Jobs

To collect statistics about failed jobs, deploy the **DMSPI-JobStatusPerf** template on the node. The template runs dmspi_job with the following arguments:

```
dmspi_job --status --perf
```

The template collects and stores job statistics to HP Performance Agent where the `DMSPI_JOBS` class is added to the DMSPI datasource with the following metrics:

- `Docbase name`
- `Number of failed jobs`

See also "How to use a template if more repositories reside on the system" on page 47.

How to Collect Information About Running Jobs

To collect statistics about how many jobs are runnning at the moment, deploy the **DMSPI-JobRunningPerf** template on the node. The template runs `dmspi_job` with the following arguments:

```
dmspi_job --current --perf
```

The template collects and stores job statistics to HP Performance Agent where `DMSPI_JOBS_RUNNING` class is added to the DMSPI datasource with the following metrics:

- `Docbase name`
- `Target server`
- `The number of jobs that are running at the moment`

See also "How to use a template if more repositories reside on the system" on page 47.

How to Collect Information about Jobs that were Scheduled but Failed to Start

To collect information about jobs that were scheduled, but for some reason failed to start, deploy the **DMSPI-JobsFailedToStartPerf** template on the node. The template runs `dmspi_job` with the following arguments:

```
dmspi_job --failed --perf
```

The template collects and stores job information to HP Performance Agent where `DMSPI_JOBS_NO_START` class is added to the DMSPI datasource with the following metrics:

- Job name
- Target server
- Expected execution

How to Display the Job's Last Execution Time

To display information about the job's last execution time, go to **Application Bank/ SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Content Server** and run the **Job Execution Times** application. The following information is displayed:

- Job name

- Target server
- Job owner
- Job start time
- Job finish time
- Job duration
- Job exit status
- Job status message

How to Display the Currently Running Jobs

To display jobs that are currenly running, go to **Application Bank/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Content Server** and run the **Running Jobs** application. The following information is displayed:

- Job name
- Target server
- Job owner
- Job start time
- Job duration till now

How to Display Jobs that were Scheduled but Failed to Start

To display jobs that were scheduled but for some reason failed to start, go to **Application Bank/SPI for EMC Documentum/DMSPI Documentum/DMSPI-Content Server** and run the **JobsFailedToStart** application. The following information is displayed:

- Job name
- Object ID
- Target server
- Expected execution

How to use a template if more repositories reside on the system

It is possible to have more than one repository on the system. By default, all templates for monitoring jobs check only jobs for the first repository specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the jobs of a specific repository, make a copy of the template and add `--docbase` and `--template` arguments to the program name.

Example:

```
dmspi_job(.exe) --status --docbase=repository_name --
template=my_new_template_name
```

If the wrong repository is specified, a DMSPI internal error message is sent

Chapter 8

Monitoring Documentum Sessions and User Activity

About Monitoring Documentum Sessions and User Activity

A repository session is opened when an end user or application establishes a connection to a server. Inactive repository sessions are sessions in which the server connection has timed out but the client has not specifically disconnected from the server. If the client sends a request to the server, the inactive session automatically reestablishes its server connection and becomes active.

To monitor Documentum sessions and user activity with SPI for EMC Documentum, you can use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server:

DMSPI-DxCS Quick Start template group:

- **DMSPI-SessionsCpu**
  It is a Measurement Threshold template that monitors CPU utilization of user sessions.

DMSPI-DxCS Additional template group:

- **DMSPI-SessionsMem**
  It is a Measurement Threshold template that monitors memory usage of user sessions (should be deployed on UNIX nodes only).

DMSPI-DxCS Data Collection template group:

- **DMSPI-SessionsPerf**
  It is a Scheduled Task template that collects user session CPU and memory utilization and stores information to HP Performance Agent.
- **DMSPI-NumberOfSessionsPerf**
  It is a Scheduled Task template that collects the number of active and inactive sessions and stores information to HP Performance Agent.

How to Monitor User Sessions for Extensive CPU Utilization

To check the user sessions for extensive CPU utilization and discover the users that make the most load on the Documentum server, deploy the DMSPI-SessionsCpu template on the node. The template runs dmspi_sess with the following arguments:

```
dmspi_sess --cpu
```

A message is sent if CPU utilization of all sessions is over:

- 50% - warning message

- 70% - minor message
- 90% - major message

You can add an additional filter switch `--max_cpu={session cpu threshold}` to turn on monitoring of the most CPU intensive sessions. If the switch is specified, the monitor template will send the message only if sum of all sessions CPU utilization exceeds the threshold and the session with max CPU utilization exceeds the specified --max_cpu option value.

Additionally, an automatic action is prepared that displays top 10 user sessions by CPU utilization.

See also "How to use a template if more servers reside on the system" on page 52.

How to Monitor User Sessions for Extensive Memory Usage

To check the user sessions for extensive memory usage and discover the users that make the highest load on the Documentum server, deploy the **DMSPI-SessionsMem** template on the node. The template runs `dmspi_sess` with the following arguments:

```
dmspi_sess --mem
```

A message is sent if memory usage of the session with highest memory usage exceeds:

- 70000KB - warning message
- 100000KB - minor message
- 150000KB - major message

Additionally, an automatic action is prepared that displays top 10 user sessions by memory usage.

NOTE

This feature is available only for UNIX nodes.

See also "How to use a template if more servers reside on the system" on page 52.

How to Collect User Session CPU and Memory Utilization

To collect performance data about user session CPU utilization, deploy the **DMSPI-SessionsPerf** template on the node. The template runs `dmspi_sess` with the following arguments:

```
dmspi_sess --top_cpu=10 --perf
```

The template collects and stores information about top 10 user sessions with the extensive CPU utilization. The information is stored to HP Performance Agent where `DMSPI_SESS_UTIL` class is added to the DMSPI datasource with the following metrics:

- `Session ID`
- `User name`
- `System name`
- `Server name`
- `Repository name`
- `Session CPU utilization (%)`
- `Session memory usage in KB (for Unix systems only)`

How to Collect Information About User Sessions

To collect performance data about current server sessions, deploy the **DMSPI-NumOfSessionsPerf** template on the node. This Schedule template runs `dmspi_sess` with the following arguments:

dmspi_sess --num_sess --perf

The template stores information about server sessions to HP Performance Agent. The `DMSPI_SESSIONS` class will be added to the DMSPI datasource with the following metrics:

- `Docbase name`
- `Server name`
- `Number of active sessions`
- `Number of inactive sessions`
- `Maximum number of concurrent sessions`

How to use a template if more servers reside on the system

It is possible to have more than one server on the system. By default, all templates for monitoring Documentum sessions monitor only Documentum sessions of the first server specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the Documentum sessions of a specific server, make a copy of the template and `add --server` and `--template` arguments to the program name.

Example:

```
dmspi_sess(.exe) --mem --server=server_name --
template=my_new_template_name
```

If the wrong server is specified, a DMSPI internal error message is sent.

Chapter 9

Monitoring Client Response

About Monitoring Client Response

A client is an end user, application, or process that uses Content Server to access the repository.

To monitor client response time for basic transactions (connect, check-in, check-out, and so on) with SPI for EMC Documentum, you can use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Client and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Client template groups:

DMSPI-DxC Quick Start template group:

- **DMSPI-ClientResponseCheckin**
  It is a Measurement Threshold template that monitors the time needed to checkin the dummy document to the repository.
- **DMSPI-ClientResponseCheckout**
  It is a Measurement Threshold template that monitors the time needed to checkout the dummy document from the repository.
- **DMSPI-ClientResponseConnect**
  It is a Measurement Threshold template that monitors the repository connect time.

DMSPI-DxC Additional template group:

- **DMSPI-ClientResponseDelete**
  It is a Measurement Threshold template that monitors the time needed to delete the dummy document from the repository.
- **DMSPI-ClientResponseDisconnect**
  It is a Measurement Threshold template that monitors the repository disconnect time.
- **DMSPI-ClientResponseImport**
  It is a Measurement Threshold template that monitors the time needed to import the dummy document to the repository.

DMSPI-DxC Data Collection template group:

- **DMSPI-ClientResponsePerf**
  It is a Scheduled Task template that collects information about the response time of standard Documentum operations and stores it to HP Performance Agent.

How to Monitor Client Response Time

To monitor client response time, deploy all or some of the following templates on the system (depends on which operations would you like to monitor):

- **DMSPI-ClientResponseCheckin**
- **DMSPI-ClientResponseCheckout**
- **DMSPI-ClientResponseConnect**
- **DMSPI-ClientResponseDelete**
- **DMSPI-ClientResponseDisconnect**
- **DMSPI-ClientResponseImport**

All templates use the dmspi_conn executable with the different arguments:

`dmspi_conn --checkin`

`dmspi_conn --checkout`, and so on

A message will be sent if the response is longer than:

- **3000 ms** - warning message
- **5000 ms** - minor message

All templates, except **DMSPI-ClientResponseConnect** and **DMSPI-ClientResponseDisconnect**, use the dummy document (`dmspi_test.txt` stored in the HPOM Agent instrumentation directory) to measure the response times from the repository. It is recommended to set the `dm_DMClean` job as active to remove orphaned content objects.

See also "How to monitor response time of a specific server/repository" on page 59.

How to Collect Client Response Time Data

To collect performance data about the client response time, deploy the **DMSPI-ClientResponsePerf** template on the node. The template runs `dmspi_conn` with the following arguments:

`dmspi_conn --perf`

The template collects and stores the following information to HP Performance Agent where `DMSPI_CLIENT_RESP` class is added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Server name`
- `User name`

- `Connect time (ms)`
- `Import time (ms)`
- `CheckOut time (ms)`
- `CheckIn time  (ms)`
- `Delete time  (ms)`
- `Disconnect time (ms)`

See also "How to monitor response time of a specific server/repository" on page 59.

How to Display Client Response Statistics

To display client response time statistics, go to **Application Bank/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Content Server** and run the **Client Response Time** application. The following information is displayed:

- `Repository name`
- `Server name`
- `User name`
- `Connect time (ms)`
- `Disconnect time (ms)`
- `Checkin time (ms)`
- `Checkout time (ms)`
- `Delete time (ms)`
- `Import time (ms)`
- `Total time (ms)`

How to configure end-user or application server systems to monitor client response

If you deploy the templates to end-user systems, you must perform the following steps to configure the systems:

1. Deploy instrumentation (**SPI for EMC Documentum**, **Data Collector**) on the node.
2. Create the `%OvDataDir%\dmspi` directory on Windows or `$OvAgentDir/dmspi` on Unix (for example, `/var/opt/OV/dmspi`).
3. Go to the `%OvDataDir%\dmspi` on Windows or `$OvAgentDir/dmspi` on Unix and extract the `dmspi.zip` file with the following command:

   `unzip %OvInstrumentationDir%\dmspi.zip` (or `$OvInstrumentationDir/dmspi.zip` on Unix).

4. Create the `dmspi.cfg` file and save it to the `%OvDataDir%\dmspi\conf` directory on Windows or `$OvAgentDir/dmspi/conf` directory on Unix.

N O T E

The dmcl.ini file should contain all connection brokers that you specify in the dmspi.cfg configuration file.

Example:

If you want to connect to the `D1_eagle2` repository via `eagle2` server, you will need the following information:

- connection broker system and port number to which eagle2 sends its connection information
- Documentum admin username and password

The `dmspi.cfg` file should look like this:

```
[SERVER_eagle2]
docbrokers=nova@1489
docbase=D1_eagle2
[SERVERS]
servers=eagle2
[DOCBASE_D1_eagle2]
servers=eagle2
docbrokers=nova@1489
user=dmuser
password=2D23E19CF1A07811
[DOCBASES]
docbases=D1_eagle2
```

5. Start the service manually as the Documentum admin user:

```
/$OvAgentDir/dmspi/bin/dmspi_svc --start
```

How to monitor response time of a specific server/repository

By default, all templates for monitoring client response times monitor only the response from the first server (repository) specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

If more servers or repositories are specified in the DMSPI configuration file and you want to monitor response time of a specific server (repository), make a copy of the template and add `--server (--docbase)` and `--template` arguments to the program name.

Example:

```
dmspi_conn(.exe) --checkin --server=server_name --
template=my_new_template_name
```

dmspi_conn(.exe) --checkin --docbase=repository_name --template=my_new_template_name

If the wrong server (repository) is specified, a DMSPI internal error message is sent.

Chapter 10

Monitoring Log Files

About Monitoring Log Files

To periodically monitor Server, connection broker, lifecycle, and user session log files for error messages with SPI for EMC Documentum, use the templates listed below. There are several patterns prepared that are searched in the log files. Additional custom patterns for searching can be added later.

Log file templates are located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server template groups.

DMSPI-DxCS Quick Start template group:

- **DMSPI-ServerLog**
  It is a Logfile Entry template that periodically scans the server log file for new messages (logs) with the content that needs attention.
- **DMSPI-AgentexecLog**
  It is a Logfile Entry template that periodically scans the agentexec log file for new messages (logs) with the content that needs attention.

DMSPI-DxCS Additional template group:

- **DMSPI-LifecycleLog**
  It is a Logfile Entry template that periodically looks for the lifecycle log files and if they exist scans them for new messages (logs) with the content that needs attention.
- **DMSPI-UserSessionLog**
  It is a Logfile Entry template that periodically scans user session log files for new messages (logs) with the content that needs attention.

How to Monitor the Server Log File

To monitor the server log file (`$DOCUMENTUM/dba/log/server_log_name.log` - log file name is usually a server name, but can be a name that you specify in the server `ini` file), deploy the **DMSPI-ServerLog** template on the node. The template is started periodically and scans the server log content. The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --srvr
```

A message is sent if the following strings are found:

- FATAL ERROR - major message
- ERROR - minor message

- WARNING - warning message

It is possible to have more than one server on the same system. By default, **DMSPI-ServerLog** template will scan only the log file of the first server specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems) or the first one found on the system.

To scan the log file of the specific server, make a copy of the template and `add --server` and `--template` arguments to the program name.

Example:

```
dmspi_log(.exe) --srvr --server=server_name --
template=my_new_template_name
```

If the wrong server is specified, a DMSPI internal error message is sent.

How to Monitor the agentexec Log File

To monitor the agentexec log file `agentexec.log` (located in `$DOCUMENTUM/dba/log/docbase_id_hex/agentexec/`), deploy the **DMSPI-AgentexecLog** template on the node. The template is started periodically and scans the agentexec log content. The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --agentexec
```

A message is sent if the following strings will be found:

- FATAL ERROR - major message
- ERROR - minor message
- WARNING - warning message

See also "How to use a template if more repositories reside on the system" on page 65.

How to Monitor the Lifecycle Log File

To monitor the lifecycle log files `bp_transition` and `bp_schedule` (located in `$DOCUMENTUM/dba/log/docbase_id_hex/`), deploy the **DMSPI-LifecycleLog** template on the node. The template is started periodically and scans the lifecycle log content. The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) -lifecycle
```

A message will be sent if the following strings will be found:

- FATAL ERROR - major message

- ERROR - minor message
- WARNING - warning message

By default, the template checks the log files that were created in the last hour only to avoid monitoring of too many files. You can specify how old log files you would like to monitor with an optional argument --hours=number_of_hours. With this parameter, only the log files that were created after the specified hour will be scanned.

The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --lifecycle --hours=NrOfHrs
```

See also "How to use a template if more repositories reside on the system" on page 65.

How to Monitor the User Session Log File

To monitor the user session log file (located in `$DOCUMENTUM/dba/log/docbase_id_hex/user_name/`), deploy the **DMSPI-UserSessionLog** template on the node. The template is started periodically and scans user sessions log content. The template runs `dmspi_log(.exe)` with the following arguments:

`dmspi_log(.exe) --user=dmuser` (replace `dmuser` with an existing Documentum username)

A message will be sent if the following strings will be found:

- FATAL ERROR - major message
- ERROR - minor message
- WARNING - warning message

By default, the template checks the log files that were created in the last hour only to avoid monitoring of too many files. You can specify how old log files you would like to monitor with an optional argument `--hours=number_of_hours`. With this parameter, only the log files that were created after the specified hour will be scanned.

The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --user=dmuser --hours=NrOfHrs
```

You can monitor log files from any user by replacing `dmuser` with the user's name.

See also "How to use a template if more repositories reside on the system" on page 65.

How to use a template if more repositories reside on the system

It is possible to have more than one repository on the system. By default, all templates for monitoring log files scan only log files of the first repository specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the log files of a specific repository, make a copy of the template and add `--docbase` and `--template` arguments to the program name.

Example:

```
dmspi_log(.exe) --dmuser --docbase=repository_name
--template=my_new_template_name
```

If the wrong repository is specified, a DMSPI internal error message is sent.

Chapter 11

Monitoring File Stores

About Monitoring File Stores

File store storage areas are the basic building blocks of your storage strategy. In most installations, the majority of the content files are stored in file store storage areas.

To monitor file store growth with SPI for EMC Documentum, you can use the following templates located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/ DMSPI-EMC Documentum 6/DMSPI-D6 Content Server template groups:

DMSPI-DxCS Quick Start template group:

- **DMSPI-FileStores-filestore_01**
  It is a Measurement Threshold template that monitors available space on Documentum file store filestore_01.

DMSPI-DxCS Additional template group:

- **DMSPI-FileStores-thumbnail_store_01**
  It is a Measurement Threshold template that monitors available space on Documentum file store thumbnail_store_01.

DMSPI-DxCS Data Collection template group:

- **DMSPI-FileStoresPerf**
  It is a Scheduled Task template that collects file stores statistics and stores them to HP Performance Agent.

How to Monitor Documentum File Stores

SPI for EMC Documentum provides two templates to monitor default Documentum file stores (**filestore_01** and **thumbnail_store_01**). To monitor other default or custom-named file stores, you should make a copy of the template and change the parameters of the new template. The template runs `dmspi_filestores` with the following parameters:

```
dmspi_filestores --freespace --filestore="filestore_name"
--template="new_template_name"
```

The file store template periodically scans the disk on which the specified file store resides and returns used space in percentage. The message is sent to the console if:

- Used space > 95% - major message
- Used space > 90% - minor message

The **DMSPI-FileStores-filestore_01** template for monitoring the filestore_01 file store runs `dmspi_filestores` with the following parameters:

```
dmspi_filestores --freespace --filestore="filestore_01"
--template="DMSPI-FileStores-filestore_01"
```

Example:

If you want to monitor the `streaming_storage_01 filestore`, perform the following steps:

1. Make a copy of the **DMSPI-Filestores-flestore_01** template and change its name to **DMSPI-Filestores-streaming_storage_01**.
2. Change the parameters in the new template to:

   ```
   dmspi_filestores --freespace --filestore="streaming_storage_01" --
   template="DMSPI-FileStores-streaming_storage_01"
   ```

See also "How to use a template if more servers reside on the system" on page 70.

How to Collect File Store Statistics

To collect performance statistics about file stores, deploy the **DMSPI-FilestorePerf** template on the node. The template runs `dmspi_filestores` with the following arguments:

```
dmspi_filestores --perf
```

The template collects and stores all file stores statistics to HP Performance Agent.

`The DMSPI_FILESTORES` class is added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Server name`
- `File store name`
- `Name of the distributed store`
- `Available space for the file store` [KB]
- `Total size of the disk on which file store resides` [KB]
- `File store used space` [KB]
- `Percentage of used space occupied by full text index`

If you want to collect statistics for the specific file store, add the parameter `--filestore="filestore_name"` to the dmspi_filestores executable:

```
dmspi_filestores -perf -filestore="filestore_name"
```

See also "How to use a template if more servers reside on the system" on page 70.

How to Display File Stores Statistics

To display file stores statistics, go to **Application Bank/SPI for EMC Documentum/ DMSPI-Documentum/DMSPI-Content Server** and run the **Filestore Info** application. The following information will be displayed for each file store:

- Repository name
- Server name
- File store name
- Name of the distributed store
- File store Available space [KB]
- Filesystem capacity [KB]
- File store used space [KB]
- Percentage of occupied space:
  - Content storage [%]
  - Full text index [%]

How to use a template if more servers reside on the system

It is possible to have more than one server on the system. By default, all templates for monitoring file stores monitor only file stores of the first server specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the file stores of a specific server, make a copy of the template and `add --server` and `--template` arguments to the program name.

Example:

```
dmspi_filestores(.exe) --freespace --filestore=filestore_name --
server=server_name --template=my_new_template_name
```

If the wrong repository is specified, a DMSPI internal error message is sent.

Chapter 12

Monitoring Database Tables

About Monitoring Database Tables

Documentum database tables can grow rapidly if something goes wrong in your Documentum environment. For example, requests that are sent from client applications to the Documentum Content Server are stored in a special queue called `dm_queue` (database table). Documentum applications (for example, Rendition services) poll `dm_queue` at predefined intervals, and retrieve any pending requests. If Rendition server is down or does not work properly, the requests are accumulating and queue item table can grow rapidly. With SPI for EMC Documentum, you can monitor the size and the growth of any Documentum database table. Additionally, it is possible to get information about events that occurred in your Documentum environment - for example, number of unprocessed renditions, number of login failures, and so on.

Templates for monitoring database tables are located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server template groups:

DMSPI-DxCS Quick Start template group:

- **DMSPI-DmAudittrailSize**
  It is a Measurement Threshold template that monitors the size of the `dm_audittrail` table.
- **DMSPI-DmiQueueItemSize**
  It is a Measurement Threshold template that monitors the size of the `dmi_queue_item` table.
- **DMSPI-LogonFailure**
  It is a Measurement Threshold template that monitors the number of logon failures.
- **DMSPI-RenditionQueue**
  It is a Measurement Threshold template that monitors the number of unprocessed renditions.

DMSPI-DxCS Data Collection template group:

- **DMSPI-DmAudittrailSizePerf**
  This is a Schedule template that collects information about `dm_audittrail` table size growth.
- **DMSPI-DmiQueueItemSizePerf**
  This is a Schedule template that collects information about `dmi_queue_item` table size growth.

- **DMSPI-LogonFailurePerf**
  This is a Schedule template that collects information about number of logon failures.
- **DMSPI-RenditionQueuePerf**
  This is a Schedule template that collects information about the number of unprocessed rendition.
- **DMSPI-UnfinishedWorkflowsPerf**
  It is a Schedule template that collects data on workflows that are not finished yet and are older than the specified time period.

How to Monitor the Table Size

SPI for EMC Documentum provides two templates to monitor the size of the Documentum tables:

- **DMSPI-DmAudittrailSize**
- **DMSPI-DmiQueueItemSize**

Both templates use dmspi_table with the following arguments:

```
dmspi_table --table="dm_audittrail"
```

```
dmspi_table --table="dmi_queue_item"
```

A message will be sent if the table size is bigger than:

- 5000 - warning message
- 8000 - minor message

To monitor the size of any other Documentum table, you should make a copy of the **DMSPI-DmAudittrailSize** or **DMSPI-DmiQueueItemSize** template and change the --table parameter of the new template:

```
dmspi_table --table="new_table_name"
```

See also "How to use a template if more repositories reside on the system" on page 76.

How to Monitor the Number of Specific Events in the Table

The events that occurred in the Documentum environment (for example, rendition requests, logon failures, and so on) are stored to database tables. To monitor the number of such events, SPI for EMC Documentum provides two templates:

- **DMSPI-LogonFailure**, to monitor the number of logon failures

- **DMSPI-RenditionQueue**, to monitor the number of unprocessed renditions

Both templates use dmspi_table with the following arguments:

```
dmspi_table --dql_query="dmspi_logfail.dql"
```

```
dmspi_table --dql_query="dmspi_rendqueue.dql"
```

A message will be sent to the console if:

- number of logon failures > 50 - warning message
- number of logon failures > 80 - minor message
- number of unprocessed renditions > 30 - warning message
- number of unprocessed renditions > 50 - minor message

To monitor the number of events in the Documentum database table, you should write your own DQL query and store it to the instrumentation directory. In this directory, you can also find the DQL example queries that get the number of unprocessed rendition events (`dmspi_rendqueue.dql`) and logon failures (`dmspi_logfail.dql`). Then make a copy of the **DMSPI-LogonFailure** or **DMSPI-RenditionQueue** template and change the following:

- Specify the name of the file that contains your DQL query (`--dql_query="new_dql_query"`)
- Specify the template name (`--template="new_template_name"`)
- In the modified template, change the threshold levels and messages if necessary

```
dmspi_table --dql_query="new_dql_query" --
template="new_template_name"
```

See also "How to use a template if more repositories reside on the system" on page 76.

How to Collect Table Size Growth Information

To collect information about the size and growth of the audittrail and dmi_queue_item database tables, deploy the **DMSPI-DmAudittrailSizePerf** and **DMSPI-DmiQueueItemSizePerf** templates on the node. The templates will run the dmspi_table executable with the following arguments:

```
dmspi_table --table="dm_audittrail" -perf
```

```
dmspi_table --table="dmi_queue_item" --perf
```

To collect the size and growth of any Documentum table, make a copy of the **DMSPI-DmAudittrailSizePerf** or **DMSPI-DmiQueueItemSizePerf** template and change the `--table` parameter of the new template:

dmspi_table --table="table_name" --perf

The `DMSPI_EVENT_SIZE` class will be added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Table name`
- `Table size`

See also "How to use a template if more repositories reside on the system" on page 76.

How to Collect Event Information

To collect information about the number of unfinished renditions and logon failures, deploy the **DMSPI-RenditionQueuePerf** and **DMSPI-LogonFailurePerf** templates on the node. The template will run `dmspi_table` with the following arguments:

dmspi_table --dql_query="dmspi_logfail.dql" --perf

dmspi_table --dql_query="dmspi_rendqueue.dql" --perf

To collect the number of any events in the Documentum database table, you should write your own DQL query and store it to the $OvInstrumentationDir directory. In this directory, you can also find the DQL example queries that get the number of unprocessed events (dmspi_rendqueue.dql) and logon failures (`dmspi_logfail.dql`). Then make a copy of the **DMSPI-LogonFailurePerf** or **DMSPI-RenditionQueuePerf** template and change or add the `--dql_query` and `--event` parameters of the new template:

```
dmspi_table --dql_query="new_dql_query" --event="event_name" --perf
```

The `DMSPI_EVENT_SIZE` class will be added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Table name`
- `Event name`
- `Number of events`

See also "How to use a template if more repositories reside on the system" on page 76.

How to Collect Unfinished Workflows Information

To collect data on workflows that are not finished yet and are older than a specified time period, deploy the **DMSPI-UnfinishedWorkflowsPerf** template on the node. The template runs `dmspi_table` with the following arguments:

```
dmspi_table --perf --workflow=50
```

To change the predefined time period (50 days), change the --workflow parameter value.

The `DMSPI_U_WORKFLOWS` class will be added to the DMSPI datasource with the following metrics:

- `Repository name`
- `Workflow ID`
- `Workflow name`
- `Workflow state`
- `Workflow start date`
- `Supervisor name`
- `Workflow age`

See also "How to use a template if more repositories reside on the system" on page 76.

How to use a template if more repositories reside on the system

It is possible to have more than one repository on the system. By default, all templates for monitoring database tables monitor only tables of the first repository specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the database tables of a specific repository, make a copy of the template and `add --docbase` and `--template` arguments to the program name.

Example:

```
dmspi_table (.exe) --table="table_name" --docbase=repository_name --
template=my_new_template_name
```

If the wrong repository is specified, a DMSPI internal error message is sent.

Chapter 13

Monitoring Index Server

About Monitoring Index Server

Full-text indexes enable users to search a repository for specific text found in stored documents or the attributes of documents. The full-text indexing software consists of three components: Content Server, the index agent, and the index server.

Content Server manages the objects in a repository, generates the events that trigger full-text indexing operations, queries the full-text indexes, and returns query results to client applications.

The index agent exports documents from a repository and prepares them for indexing.

The index server creates full-text indexes and responds to full-text queries from Content Server.

With SPI for EMC Documentum you can monitor:

- If is it possible to add new documents to full-text index
- If is it possible to search for documents and how fast is the search
- What's the index server performance (save-to-search latency)
- Index server availability and resource consumption
- If there are any internal issues
- Full-text index disk usage
- Index agent availability and resource consumption
- Index queue size and number of failed indexing items

To monitor the index server with SPI for EMC Documentum, you can use the following templates that have to be deployed on the Content Server node and are located in the SPI for EMC Documentum/DMSPI-EMC Documentum 5.3/DMSPI-D5 Content Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Content Server template groups:

DMSPI-DxCS Additional template group:

- **DMSPI-FTQueryResponse**
  It is a Measurement Threshold template that monitors full-text query response time.
- **DMSPI-FTSearchAvailability**
  It is a Measurement Threshold template that checks Index Server search availability.
- **DMSPI-IdxAgtStatus**
  It is a Measurement Threshold template that checks index agent status.

- **DMSPI-IdxQueueFailed**
  It is a Measurement Threshold template that checks failed items in index queue.
- **DMSPI-IdxQueueSize**
  It is a Measurement Threshold template that monitors the size of index queue.
- **DMSPI-IndexingLatency**
  It is a Measurement Threshold template that monitors how long does it take for a document to become searchable.

DMSPI-DxCS Additional Data Collection template group:

- **DMSPI-IdxQueueFailedPerf**
  It is a Scheduled Task template that collects failed items statistics.
- **DMSPI-IdxQueueSizePerf**
  It is a Scheduled Task template that collects queue size statistics.
- **DMSPI-IndexingPerf**
  It is a Scheduled Task template that collects full-text indexing performance statistics.

Additionally, the following templates located in the SPI for EMC Documentum/ DMSPI-EMC Documentum 5.3/DMSPI-D5 Index Server and SPI for EMC Documentum/DMSPI-EMC Documentum 6/DMSPI-D6 Index Server template groups have to be deployed on the index server node:

DMSPI-DxIS Quick Start template group:

- **DMSPI-NctrlStatus**
  It is a Measurement Threshold template that checks index server's node controller module status.
- **DMSPI-ProcServerStatus**
  It is a Measurement Threshold template that checks index server's document processor module status.
- **DMSPI-IdxAgtLog**
  It is a Logfile Entry template that periodically scans the index agent log file for new messages (logs) with the content that needs attention.
- **DMSPI-IdxSrvrDiskUsage**
  It is a Measurement Threshold template that checks index server's full-text index disk usage (in %).
- **DMSPI-IdxSrvrLog**
  It is a Logfile Entry template that periodically scans the index server log file for new messages (logs) with the content that needs attention.

DMSPI-DxIS Additional template group:

- **DMSPI-ContentDistributorStatus**
  It is a Measurement Threshold template that checks index server's content distributor module status.
- **DMSPI-QRServerStatus**
  It is a Measurement Threshold template that checks index server's QRServer module status.
- **DMSPI-RTSTopDispatcherStatus**
  It is a Measurement Threshold template that checks index server's RTS Top Dispatcher module status.

DMSPI-DxIS Data Collection template group:

- **DMSPI-IdxAgtProcPerf**
  It is a Scheduled Task template that collects performance data for index agent process.
- **DMSPI-IdxSrvrDiskUsagePerf**
  It is a Scheduled Task template that collects index server's full-text index disk usage.
- **DMSPI-IdxSrvrProcPerf**
  It is a Scheduled Task template that collects performance data for index server processes.

How to Monitor Index Server Availability

To monitor the index server availability and detect possible cases when the index server is not functioning properly, deploy the **DMSPI-{Index Server component}Status** templates to the index server node and the **DMSPI-FTSearchAvailability** template on the Content Server, index server, application server, or Documentum client node. A message is sent if index server does not work properly or there is no connectivity with the host where index server resides.

The template **DMSPI-FTSearchAvailability** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --availability
```

See also "How to use a template if more repositories reside on the system" on page 90.

To monitor the status of main components in the FAST data search system, deploy the following templates to index server node:

- **DMSPI-NctrlStatus** for monitoring Node Controller component
- **DMSPI-QRServerStatus** for monitoring QRServer component
- **DMSPI-RTSTopDispatcherStatus** for monitoring Top Level Fdispatch component
- **DMSPI-ProcServerStatus** for monitoring Document Processors component
- **DMSPI-ContentDistributorStatus** for monitoring Content Distributors component

To monitor the status of any index server component, copy the **DMSPI-NctrlStatus** template and change the `--module={module process name}` parameter of the new template. A general index server component status monitoring template would look like this:

```
dmspi_idxsrvr(.exe) --module={module process name} --status --
template={template_name}
```

The template **DMSPI-NctrlStatus** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe)  --module=nctrl --status --template=DMSPI-
NctrlStatus
```

The template **DMSPI-QRServerStatus** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --module=qrserver --status --template=DMSPI-
QRServerStatus
```

The template **DMSPI-RTSTopDispatcherStatus** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --module=topfdispatch --status --template=DMSPI-
RTSTopDispatcherStatus
```

The template **DMSPI-ProcServerStatus** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe)  --module=procserver_n --status --template=DMSPI-
ProcServerStatus
```

The template **DMSPI-ContentDistributorStatus** runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe)  --module=contentdistributor --status --
template=DMSPI-ContentDistributorStatus
```

How to Monitor Index Server Log File

To monitor the index server log file, deploy the **DMSPI-IdxSrvrLog** template on the index server node. The template is started periodically and scans the index server log content. The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --index_server
```

A message is sent if the following string is found:

- **FATAL** - major message
- **ERROR** - minor message

How to Monitor Indexing Latency

To monitor indexing latency (the time needed to merge a new document into the FT index and to make it searchable), deploy the **DMSPI-IndexingLatency** template on the Content Server node. The template runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --latency
```

A message is sent if:

- **Create/delete latency > 180 seconds** - warning message
- **Create/delete latency > 360 seconds** - minor message
- **Create/delete latency > 600 seconds** - major message

See also "How to use a template if more repositories reside on the system" on page 90.

How to Monitor the FT Query Response Time

To monitor if your full text queries come back in a timely fashion, deploy the **DMSPI-FTQueryResponse** template to the Content Server node. The template runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --query
```

A message is sent if:

- **Query response time > 2 seconds** - warning message
- **Query response time > 5 seconds** - minor message
- **Query response time > 10 seconds** - major message

See also "How to use a template if more repositories reside on the system" on page 90.

How to Monitor the Index Queue Size

To monitor the size of Index queue, deploy the **DMSPI-IdxQueueSize** template on the Content Server node. The template runs `dmspi_table(.exe)` with the following arguments:

```
dmspi_table(.exe) --dql_query=dmspi_indsize.dql
```

A message is sent if:

- **Index queue size > 500** - warning message
- **Index queue size > 5000** - minor message
- **Index queue size > 10000** - major message

See also "How to use a template if more repositories reside on the system" on page 90.

How to Monitor the Index Queue for Failed Items

To monitor the Index queue and detect possible failed queue items, deploy the **DMSPI-IdxQueueFailed** template on the Content Server node. The template runs `dmspi_table(.exe)` with the following arguments:

```
dmspi_table(.exe) --dql_query=dmspi_indfail.dql
```

Message will be sent if there are Index queue items with failed state:

- **Number of failed items > 500** - warning message
- **Number of failed items > 5000** - minor message
- **Number of failed items > 10000** - major message

See also "How to use a template if more repositories reside on the system" on page 90.

How to Monitor the FT Index Disk Usage

To monitor the full-text index disk usage, deploy the **DMSPI-IdxSrvrDiskUsage** template on the index server node. The **DMSPI-IdxSrvrDiskUsage** template runs `dmspi_idxsrvr(.exe)` with the following arguments:

```
dmspi_idxsrvr(.exe) --disk_usage
```

A message is sent if:

- **FT index disk usage > 90%** - minor message
- **FT index disk usage > 95%** - major message

How to Collect Index Server statistics

To collect index server statistics, deploy the **DMSPI-IdxSrvrProcPerf** template on the index server node. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) -perf  --index_server
```

Process performance metrics (CPU & MEM utilization) for the following index server processes will be collected:

ProcessDescription	Module name
FASTDataSearch	Data Search 4.0 Node Controller Service Fast Search & Transfer ASA
ominNames	Name Service
logserver	Log Server
configserver	Config Server
contentdistributor	Content Distributor
frtsobj	RTS Indexer
fsearchctrl	RTS Top Dispatcher
fsearchctrl	RTS Search
qrserver	QRServer
statusserver	Status Server
procserver	Document Processor

Index server information will be stored to HP Performance Agent. The `DMSPI_IDXSRVR_PROC` class is added to the DMSPI datasource with the following metrics:

- Process label
- Process name
- Process description
- Process status

- Process memory usage (KB)
- Process virtual memory usage (KB)
- Process CPU utilization (%)

How to Collect Indexing Performance Statistics

Indexing process consists of three major phases:

- **Waiting to be indexed** - after Save, Checkin, Destroy, Readonlysave, or MoveContent operation is performed on a SysObject in the repository, a new queue item is created in the `dmi_queue_item` table
- **Document preprocessing** - Index agent and index server create their own representation of the document (DFTXML, FIXML) before the document is indexed
- **Indexing** of the content file and its properties

To collect indexing performance statistics, deploy the **DMSPI-IndexingPerf** template to the node. The template runs `dmspi_idxsrvr(.exe)` binary with the following arguments:

```
dmspi_idxsrvr(.exe) --latency --perf
```

Statistics about the different stages of indexing is logged to HP Performance Agent. The `DMSPI_IDX_PERFORMANCE` class is added to the DMSPI datasource with the following metrics:

- Index agent name
- Repository name
- Awaiting time when adding new document to the FT index (ms)
- Preprocessing time when adding new document to the FT index (ms)
- Indexing time when adding new document to the FT index (ms)
- Awaiting time when removing a document from the FT index (ms)
- Preprocessing time when removing a document from the FT index (ms)
- Time to remove a document from the FT index (ms)
- FT query response time (ms)

See also "How to use a template if more repositories reside on the system" on page 90.

How to Collect the Index Queue Size Information

To collect the size of Index queue, deploy the **DMSPI-IdxQueueSizePerf** template on the Content Server node. The template runs `dmspi_table(.exe)` with the following arguments:

```
dmspi_table(.exe) --dql_query=dmspi_indsize.dql --perf
```

Index queue size information will be stored to HP Performance Agent. The `DMSPI_EVENT_SIZE` class is added to the DMSPI datasource with the following metrics:

- Repository name
- Table name
- Event name
- Number of events

See also "How to use a template if more repositories reside on the system" on page 90.

How to Collect Information on Failed Items in the Index Queue

To collect information about the number of failed items in the index queue, deploy the **DMSPI-IdxQueueFailedPerf** template on the Content Server node. The template runs `dmspi_table(.exe)` with the following arguments:

```
dmspi_table(.exe) --dql_query=dmspi_indfail.dql --perf
```

Information about number of failed items in Index queue will be stored to HP Performance Agent. The `DMSPI_EVENT_SIZE` class is added to the DMSPI datasource with the following metrics:

- Repository name
- Table name
- Event name
- Number of events

See also "How to use a template if more repositories reside on the system" on page 90.

How to Collect the FT Index Disk Usage Information

To collect statistics for full-text index disk usage, deploy the **DMSPI-IdxSrvrDiskUsagePerf** template on the index server node. The **DMSPI-IdxSrvrDiskUsagePerf** template executes `dmspi_idxsrvr(.exe)` executable with the following arguments:

```
dmspi_idxsrvr(.exe)  --disk_usage --perf
```

Information about disk usage will be stored to HP Performance Agent. The `DMSPI_IDXSRVR_DU` class is added to the DMSPI datasource with the following metrics:

- Index server node name
- Full-text index location
- Disk usage (%)
- Disk usage (GB)
- Disk size (GB)
- Disk free size (GB)

How to Monitor the Index Agent Availability

To monitor the index agent status (running, not responding), deploy the **DMSPI-IdxAgtStatus** template on the Content Server node. The **DMSPI-IdxAgtStatus** template executes `dmspi_idxsrvr(.exe)` executable with the following arguments:

```
dmspi_idxsrvr(.exe) --index_agent="" --status
```

This template will also detect if the index agent Web application, that is running as Apache Tomcat servlet, is responsive. The default template will monitor only the first found index agent for the first repository in the local configuration file. To monitor another index agent, you will have to create a copy of the **DMSPI-IdxAgtStatus** template and set the following parameters in the new template:

```
--docbase={repository name} and --index_agent={Index Agent name}
```

A message is sent, if the index agent does not work properly or there is no connectivity with the host where index agent resides.

How to Monitor the Index Agent Log File

To monitor the index agent log file, deploy the **DMSPI-IdxAgtLog** template on the index server node. The template is started periodically and scans the index agent log

content for error or warning messages. The template runs `dmspi_log(.exe)` with the following arguments:

```
dmspi_log(.exe) --index_agent="Index Agent name"
```

How to Collect the Index Agent Process Information

To collect index agent process statistics, deploy the **DMSPI-IdxAgtProcPerf** template on the index server node. The template runs `dmspi_proc(.exe)` with the following arguments:

```
dmspi_proc(.exe) -perf  --index_agent={index agent name}
```

Process performance information (CPU & MEM utilization) will be stored to HP Performance Agent. The `DMSPI_IDXAGT_PROC` class is added to the DMSPI datasource with the following metrics:

- Process label
- Process name
- Repository name
- Process status
- Process memory usage (KB)
- Process virtual memory usage (KB)
- Process CPU utilization (%)

How to Display Index Server Status

To display information about the status of index server components, go to **Applications/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Index Server** and run the **Index Server Status** application. The following information is displayed for each index server component:

- Module name
- Process name
- PID
- Statusapplication

How to Display Index Server Disk Usage

To display information about the index server disk usage, go to **Applications/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Index Server** and run the **Index Server Disk Usage** application. The following information is displayed:

- Fulltext location
- Current diska usage
- Used disk space
- Total disk space
- Free disk space

How to Display Index Agent Status

To display index agent status go to **Applications/SPI for EMC Documentum/ DMSPI-Documentum/DMSPI-Content Server** and run the **Index Agent Status** application. The following information is displayed:

- Index agent name
- Index agent URL
- Repository
- Index name
- Status

How to Display Indexing Latency

To display information about indexing latency (the time needed to merge a new document into the FT index and to make it searcheable) go to **Applications/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Content Server** and run the **Indexing latency** application. The following information is displayed:

- Repository
- Index agent
- Awaiting time
- Processing time
- Indexing time

How to Display FT Query Response Time

To display information about current full-text query response time, go to **Applications/SPI for EMC Documentum/DMSPI-Documentum/DMSPI-Content Server** and run the **FT Query Response** application. The following information is displayed:

- Repository
- Index agent
- Query response time

How to use a template if more repositories reside on the system

It is possible to have more than one repository on the system. By default, all templates for monitoring FT index availability and performance monitor only FT index of the first repository specified in the DMSPI configuration file (`%OvDataDir%\dmspi\conf\dmspi.cfg` on Windows or `$OvAgentDir/dmspi/conf/dmspi.cfg` on Unix systems).

To monitor the FT index of a specific repository, make a copy of the template and add `--docbase` and `--template` arguments to the program name.

Example:

```
dmspi_idxsrvr(.exe) --query --docbase=repository_name --
template=my_new_template_name
```

If the wrong repository is specified, a DMSPI internal error message is sent.

Chapter 14

SPI for EMC Documentum Integration with HP Reporter

SPI for EMC Documentum Integration with HP Reporter

Integration Requirements

Before reports can be installed on a system and SPI for EMC Documentum can be integrated with HP Reporter, check if:

- The HP Reporter is installed on the same system as the HPOM Management server or it is installed as a standalone system.
- The Reporter Service is running.
- An HPOM Agent is installed on the managed nodes from which you want to generate reports.

Deploying Templates and Collecting Performance Data

To produce reports, templates must be deployed. All templates related to collecting performance data have the `Perf` extension (for example, **DMSPI-SrvrProcessPerf**). After a template is successfully deployed, the HP Performance Agent begins to collect performance data on regular intervals. HP Reporter can be used to generate reports for all Documentum systems, where HP Performance Agents are collecting data.

How HP Reporter Creates Reports

Reporter performs the following steps when producing reports:

"Perform System Discovery" on page 93

"Gather Performance Data" on page 94

"Generate Reports" on page 95

Perform System Discovery

HP Reporter creates Web-based reports from data derived from the targeted systems that it "discovers". During a system discovery, Reporter looks for systems that are specified in the Discovery Area, and which have a HP Performance Agent installed. It then adds those systems to the **Discovered Systems** group:

Discovered systems are placed in groups for easier access and reporting. Systems can be assigned to groups as they are discovered as specified in the Automatic Grouping facility. By default, systems are automatically assigned to groups based on the name of their operating system. However, you can also manually assign systems to groups.

A system can belong to any number of different groups. You can also create your own groups and assign systems to them manually using the "drag and drop" action.

The following group is created automatically for SPI for EMC Documentum purposes:

- SPI for EMC Documentum

There is also auto-grouping defined for this group. Discovered system which contains a DMSPI Data Source is automatically added to the **SPI for EMC Documentum** discovered systems group in Reporter.

IMPORTANT

The auto-grouping feature only works with newly discovered systems. If your systems have already been discovered by Reporter prior to the Reporter part of SPI for EMC Documentum installation, they may not have been added to the SPI for EMC Documentum Reporter group; it may even occur that the group itself has not been created.

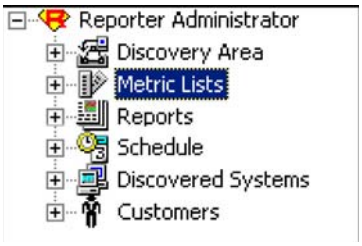
If a **SPI for EMC Documentum** group was not created automatically, you can create it manually:

1. In the left pane, right-click **Discovered Systems**.
2. Select **Add Group**.
3. In the *Add Group* dialog box, enter the new group name **SPI for EMC Documentum** (note that the group name is case-sensitive) and click **Add**.

If a specific Documentum system has not been put under the **SPI for EMC Documentum** group, you can add it manually.

Gather Performance Data

Once Reporter has run through its discovery, it gathers performance data from each discovered system and places it in a local database. Additionally, Reporter gathers data only for those metrics that it knows about. These metrics are specified under Metrics Lists:

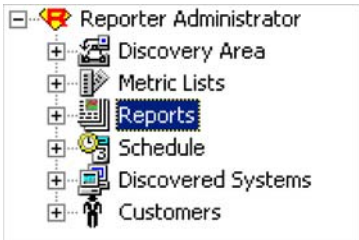


Metric lists control what information is gathered from a system into the Reporter's database. A metric list groups metrics from a single metric class supplied by the performance agent for UNIX or Windows. The metric list can also select the degree of summarization (points every 5 minutes, hour, day, and so on) and how much data to gather and retain in the database. The shorter the interval, the more records collected. The default summarization level is one hour. Metric lists are tightly connected to Data Source and Objects within that Data Source on each system.

For a list of metrics lists, refer to "Metric Lists" on page 121.

Generate Reports

Reporter generates HTML reports based on the data available from the local Reporter database. Additionally, Reporter creates HTML reports from the set of reports that it knows about; reports which are located in the Reports group:



Available reports are listed in families under the **Reports** icon. To see the reports, expand the **Reports** hierarchy in the Reporter window, and click on a report family to display its reports in the right pane.

From the right pane, you can delete a report, display its definition details, and edit the report definition details including the Date Range and Shift Name.

The following report family is created for SPI for EMC Documentum purposes:

- SPI for EMC Documentum

Reports Implemented in SPI for EMC Documentum

Several report categories and related individual reports exist under the SPI for EMC Documentum report family as specified in the following tables.

Category	Report
Documentum process availability	**Server process statistics for yesterday** **Server process statistics for last 28 days** The reports show availability of the Documentum server processes during the previous day or the last 28 days. The first parts of the reports are focused on determining top/bottom 5 servers by server process memory usage, CPU utilization, and availability. The second parts of the reports show in detail how the resource usage and availability of the server processes varied in time. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-SrvrProcessPerf`
Documentum process availability	**Connection broker process statistics for yesterday** **Connection broker process statistics for last 28 days** The reports show availability of the connection broker processes during the previous day or the last 28 days. The first parts of the reports are focused on determining top/bottom 5 connection broker processes by memory usage, CPU utilization, and availability. The second parts of the reports show in detail how the resource usage and availability of the connection broker processes varied in time. **IMPORTANT:** The reports take into account only those Documentum connection broker systems that have the following template deployed (for at least 2 days): `DMSPI-BrokerProcessPerf`

Documentum process availability	**Job process statistics for yesterday** **Job process statistics for last 28 days** The reports show availability of the 'dm_agent_exec' process during the previous day or the last 28 days. The first parts of the reports are focused on determining top/bottom 5 servers by 'dm_agent_exec' process memory usage, CPU utilization, and availability. The second parts of the reports show in detail how the resource usage and availability of the 'dm_agent_exec' processes varied in time. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-JobProcessPerf`
Documentum process availability	**Index server process statistics for yesterday** **Index server process statistics for last 28 days** The reports show availability and resource consumption of the index server processes during the previous day or last 28 days. The first parts of the reports are focused on determining top/bottom index servers by index server process memory usage, CPU utilization, and availability. The second parts of the reports show in detail how the resource usage and availability of the index server processes varied in time. IMPORTANT: The reports take into account only those index servers that have the following template deployed (for at least 2 days): `DMSPI-IdxSrvrProcPerf`
Documentum process availability	**Index agent process statistics for yesterday** **Index agent process statistics for last 28 days** The reports show availability and resource consumption of the index agent processes during the previous day or last 28 days. The first parts of the reports are focused on determining top/bottom index agents by index agent process memory usage, CPU utilization, and availability. The second parts of the reports show in detail how the resource usage and availability of the index agent processes varied in time. IMPORTANT: The reports take into account only those index servers that have the following template deployed (for at least 2 days): `DMSPI-IdxAgtProcPerf`

File store statistics	**File store statistics** This report shows file store distribution and statistics. The first part of the report focuses on determining top 10 file stores with largest content and least available space, and the second part show how much of the total file store space is occupied by individual file store. Additionally, detailed statistics for each file store are provided. They show free and used space for the disk, on which the file store resides. For each file store you can also see how much used space is occupied by content and how much by full text index. Use this report to precisely monitor the file store usage and available disk space. **IMPORTANT:** This report takes into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-FilestoresPerf`
Database availability	**Database availability for yesterday** **Database availability for last 28 days** The reports show average, minimal, and maximal login time for Documentum database during the last day or the last 28 days. Login time is measured with the Documentum **dmdbtest** application and shows the time needed for the Documentum server to login to the Documentum database. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-DBLoginPerf`
User sessions	**User session statistics for yesterday** **User session statistics for last 28 days** The reports present the average session activity on Documentum servers during the previous day or the last 28 days. Based on their state, sessions are categorized as active or inactive. Use these reports to identify trends in server session activity and to compare inter-server session activities. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-NumberOfSessionsPerf`

User sessions	**User session CPU and memory consumption for yesterday**
	User session CPU and memory consumption for last 28 days
	The reports show the load of user sessions on the system where the Documentum server is installed. The graph shows average CPU utilization of user sessions during the previous day or the last 28 days. Additionally, the table shows top 10 users with extensive CPU utilization for each server.
	For UNIX servers the reports also show memory usage for user sessions and a table with top 10 users with extensive memory usage.
	IMPORTANT: The reports take into account only those Documentum servers that have the following templates deployed (for at least 2 days):
	`DMSPI-SessionsPerf`
	`DMSPI-SessionsMemPerf`

Client response	**Client response time for yesterday** **Client response time for last 28 days** The reports present average, minimum, and maximum response time values for standard Documentum user operations from client systems during the previous day or the last 28 days for each Documentum repository. The first parts of the reports are focused on determining top 5 client systems by each Documentum operation, and the second parts of the reports show in detail how the response time varied in time. Use these reports to get insight into how fast the documents are accessed or stored to the repository. **IMPORTANT:** The reports take into account only those Documentum systems that have the following template deployed (for at least 2 days): `DMSPI-ClientResponsePerf`

Client response	**Server availability for yesterday** **Server availability for last 28 days** The reports present the availability of Documentum infrastructure (connection brokers and repositories) from the client perspective. Availability is tested for clients that connect trough DMCL. The top graphs show servers that were unavailable for most of the time. The following graphs show availability of servers during the previous day or the last 28 days. **IMPORTANT:** The reports take into account only those Documentum systems that have the following template deployed (for at least 2 days): `DMSPI-ClientResponsePerf`

Table size growth	**Database table size growth for yesterday**
	Database table size growth for last 28 days
	The reports show the table size growth during the previous day or the last 28 days. Tables are grouped by repositories and sorted by table names. Reports show the size of a specific table at the beginning of the reporting period and at the end of the period and calculate the table growth. They also show minimum, maximum, and average table size.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-DmiQueueItemSizePerf`
	`DMSPI-DmAudittrailSizePerf`

Table size growth	**Number of events for yesterday**
	Number of events for the last 28 days
	The reports show the number of events for every event that you are monitoring. Events are grouped by repositories and sorted by the event name. Report show the number of events that have occurred in a repository at the beginning of the period and at the end of the period, and calculates the difference between them. Additionally, the minimum, maximum, and average number of events are shown.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-RenditionQueuePerf`
	`DMSPI-LogonFailurePerf`

Jobs	**Number of failed jobs for yesterday** **Number of failed jobs for last 28 days** The reports show the average number of failed jobs per repository during the previous day or the last 28 days. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-JobStatusPerf`
Jobs	**Job execution time for yesterday** **Job execution time for last 28 days** The reports show the job execution time for all executed jobs during the previous day or the last 28 days. The first parts of the reports show top 5 jobs by job duration. The second parts of the reports show in details when and how long the jobs were running and if the jobs were finished successfully. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-JobExecTimePerf`
Jobs	**Number of running jobs for yesterday** **Number of running jobs for last 28 days** The reports show the number of running jobs per repository during the previous day or the last 28 days. The first parts of the reports show repositories with the most running jobs. The second parts of the reports show in details the number of running jobs per repository during the time interval. **IMPORTANT:** The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-RunningJobsPerf`

Full-Text Indexing	**Indexing latency for yesterday** **Indexing latency for last 28 days** The reports present indexing latency statistics. Save-to-search latency is the time needed to merge a new document into the FT index and to make it searchable. Destroy latency is the time needed to remove a document from the FT index. The first parts of the reports are focused on determining top repositories by indexing latency, and the second parts of the reports show in detail average, minimum and maximum times for all three major phases of indexing process: waiting to be indexed, document preprocessing, and indexing of the content file and it's properties. Use these report to get insight into how fast the documents are stored to or removed from FT index. IMPORTANT: The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-IndexingPerf`
Full-Text Indexing	**FT query response for yesterday** **FT query response for last 28 days** The reports show average, minimal, and maximal FT query response values for Documentum repositories during the previous day or the last 28 days. Full text query response shows if your FT queries come back in a timely fashion. IMPORTANT: The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-IndexingPerf`
Full-Text Indexing	**Jobs that were scheduled but failed to start for yesterday** **Jobs that were scheduled but failed to start for last 28 days** The reports show list of administrative jobs that were scheduled but for some reason failed to start for Documentum repositories during the previous day or the last 28 days. IMPORTANT: The reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-JobsFailedToStartPerf`

Full-Text Indexing	**Index events for yesterday**
	Index events for last 28 days
	The reports show the number of events for every indexing event that you are monitoring. Index events are grouped by repositories and sorted by the event name. Reports show the number of Index events that have occurred in a repository at the beginning of the period and at the end of the period, and calculate the difference between them. Additionally, the minimum, maximum, and average number of events is shown.
	IMPORTANT: The reports take into account only those Documentum servers that have the following templates deployed (for at least 2 days):
	`DMSPI-IdxQueueSizePerf`
	`DMSPI-IdxQueueFailedPerf`

Full-Text Indexing	**FT index disk usage** The reports show index server disk usage statistics. The first parts of the reports are focuses on determining top index servers with largest disk usage and least available space, and the second parts show detailed statistics for each index server. They show free and used space for the disk, on which the FT index resides. Use these reports to precisely monitor the FT index usage and available disk space. **IMPORTANT:** The reports take into account only those index servers that have the following template deployed (for at least 2 days): `DMSPI-IdxSrvrDiskUsagePerf`
Workflow statistics	**Unfinished workflows** This report shows a list of unfinished workflows that are older than the specified time period in the template. **IMPORTANT:** This report takes into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-UnfinishedWorkflows`

Threshold assistant	**Average CPU and MEM consumption of server process for yesterday** **Average CPU and MEM consumption of server process for last 28 days** The reports provide statistical information that helps adjust thresholds in server process monitoring templates for an individual server. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual server (PRIME shift needs to be defined in HP Reporter). With these reports you can determine server-specific threshold levels for server process monitoring templates, fine-tune them for the individual server or group of servers, and greatly reduce the number of false alarms that need administrative attention. **IMPORTANT:** The reports take into account only those Documentum systems that have the following template deployed (for at least 2 days): `DMSPI-SrvrProcessPerf`
Threshold assistant	**Average CPU and MEM consumption of connection broker process for yesterday** **Average CPU and MEM consumption of connection broker process for last 28 days** The reports provide statistical information that helps adjust thresholds in connection broker process monitoring templates for an individual Documentum connection broker. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual connection broker (PRIME shift needs to be defined in HP Reporter). With these reports you can determine connection broker-specific threshold levels for connection broker process monitoring templates, fine-tune them for the individual connection broker or group of connection brokers, and greatly reduce the number of false alarms that need administrative attention. **IMPORTANT:** These reports take into account only those Documentum connection broker systems, that have the following template deployed (for at least 2 days): `DMSPI-BrokerProcessPerf`

Threshold assistant	**Average CPU and MEM consumption of job process for yesterday** **Average CPU and MEM consumption of job process for last 28 days** The reports provide statistical information that helps adjust thresholds in job process monitoring templates for an individual server. For each corresponding monitoring template, the reports dump out the average and minimum/ maximum values for PRIME and ALL shifts for the individual job process (PRIME shift needs to be defined in HP Reporter). With these reports it is possible to determine server-specific threshold levels for job process monitoring templates, fine-tune them for the individual server or group of servers, and greatly reduce the number of false alarms that need administrative attention. **IMPORTANT:** The reports take into account only those Documentum systems that have the following template deployed (for at least 2 days): `DMSPI-JobProcessPerf`
Threshold assistant	**Average database login time for yesterday** **Average database login time for last 28 days** The reports provide statistical information that helps adjust thresholds in database login time monitoring templates for an individual server. For each corresponding monitoring template, the reports dump out the average and minimum/ maximum values for PRIME and ALL shifts for the individual Documentum server (PRIME shift needs to be defined in HP Reporter). With these reports it is possible to determine server-specific threshold levels for database login time monitoring templates, fine-tune them for the individual server or group of servers, and greatly reduce the number of false alarms that need administrative attention. **IMPORTANT:** These reports take into account only those Documentum servers that have the following template deployed (for at least 2 days): `DMSPI-DBLoginPerf`

Threshold assistant	**Average CPU and MEM consumption of user sessions for yesterday**
	Average CPU and MEM consumption of user sessions for last 28 days
	The reports provide statistical information that helps adjust thresholds in session monitoring templates for an individual server. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual server (PRIME shift needs to be defined in HP Reporter).
	With these reports it is possible to determine server-specific threshold levels for session monitoring templates, fine-tune them for the individual server or group of servers, and greatly reduce the number of false alarms that need administrative attention.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-SessionsPerf`
	`DMSPI-SessionsMemPerf`

Threshold assistant	**Average client response time for yesterday** **Average client response time for last 28 days** The reports provide statistical information that helps adjust thresholds in client response monitoring templates for an individual server. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual Documentum servers (PRIME shift needs to be defined in HP Reporter). With these reports it is possible to determine repository-specific threshold levels for client response monitoring templates, fine-tune them for the individual Documentum server or group of servers, and greatly reduce the number of false alarms that need administrative attention. **IMPORTANT:** The reports take into account only those Documentum systems that have the following template deployed (for at least 2 days): `DMSPI-ClientResponsePerf`

Threshold assistant	**Average table size growth for yesterday**
	Average table size growth for last 28 days
	The reports provide statistical information that helps adjust thresholds in table size monitoring templates for an individual repository. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual repository (PRIME shift needs to be defined in HP Reporter).
	With these reports it is possible to determine repository-specific threshold levels for table size monitoring templates, fine-tune them for the individual repository, and greatly reduce the number of false alarms that need administrative attention.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-DmiQueueItemSizePerf`
	`DMSPI-DmAuditTrailSizePerf`

Threshold assistant	**Average number of events for yesterday**
	Average number of events for last 28 days
	The reports provide statistical information that helps adjust thresholds in event monitoring templates for an individual repository. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual repository (PRIME shift needs to be defined in HP Reporter).
	With these reports it is possible to determine repository-specific threshold levels for events monitoring templates, fine-tune it for the individual repository, and greatly reduce the number of false alarms that need administrative attention.
	IMPORTANT: These reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-RenditionQueuePerf`
	`DMSPI-LogonFailurePerf`

Threshold assistant	**Average index queue size growth for yesterday**
	Average index queue size growth for last 28 days
	These reports provide statistical information that helps adjust thresholds in index queue monitoring templates for an individual repository. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual repository (PRIME shift needs to be defined in HP OV Reporter).
	With these reports it is possible to determine repository-specific threshold levels for index queue monitoring templates, fine-tune them for the individual repository, and greatly reduce the number of false alarms that need administrative attention.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-IdxQueueSizePerf`
	`DMSPI-IdxQueueFailedPerf`

Threshold assistant	**Average indexing latency and FT query response for yesterday**
	Average indexing latency and FT query response for last 28 days
	These reports provide statistical information that helps adjust thresholds in indexing performance monitoring templates for an individual repository/index agent. For each corresponding monitoring template, the reports dump out the average and minimum/maximum values for PRIME and ALL shifts for the individual repository (PRIME shift needs to be defined in HP OV Reporter).
	With these report it is possible to determine server-specific threshold levels for indexing performance monitoring templates, fine-tune them for the individual repository, and greatly reduce the number of false alarms that need administrative attention.
	IMPORTANT: The reports take into account only those Documentum systems that have the following templates deployed (for at least 2 days):
	`DMSPI-IndexingLatency`
	`DMSPI-FTQueryResponse`

Chapter 15

Analyzing Historical Data Using HP Performance Manager

Analyzing Historical Data Using HP Performance Manager

HP Performance Manager (HPPM) provides a central point from where you can monitor and manage performance of all networked systems in your environment. Using HP Performance Manager you can analyze historical data from HP Performance Agent systems, receive alarms generated by HP Performance Agent, and predict future resource usage. HP Performance Manager also allows you to perform the following functions:

- Select a data source and list the graphs associated with it
- Choose a graph to view, select how the graph will display, and change the metrics graphed
- Draw graphs
- Drill down to view detail over a period of time
- Export and import systems and graph policies
- Design graphs and save them as policies
- Receive and view alarms
- Create forecasts

For additional information on HP Performance Manager, refer to the HP Performance Manager documentation.

HP Performance Manager User Defined Graph Templates

After installation, performance graphs are added on the management server to the following text files:

`/etc/opt/OV/share/dmspi/graph/VPI_GraphsSPI for EMC Documentum.txt`

`/etc/opt/OV/share/dmspi/graph/VPI_GraphsSPI for EMC Documentum-OVPA-RPC.txt`

Copy the file into your Performance Manager's data directory to fully integrate them. Note that the available graphs are listed under the family SPI for EMC Documentum.

The following table describes SPI for EMC Documentum graphs.

Category	Name	Description
Client response	Client response time	Shows the average client response time for standard user operations
	Documentum availability	Shows the availability of the Documentum from the client perspective
Connection broker process	Connection broker process availability	Shows the availability of the connection broker process
	Connection broker process memory usage	Shows the average memory usage of the connection broker process
	Connection broker process CPU utilization	Shows the average CPU utilization of the connection broker process
Content Server process	Content Server process availability	Shows the availability of the Content Server process
	Content Server process memory usage	Shows the average memory usage of the Content Server process
	Content Server process CPU utilization	Shows the average CPU utilization of the Content Server process
Database availability	Average DB Login time	Shows the average login time for Documentum database
File store statistics	Distribution of used space	Shows the file store distribution for the repository
	Filestore usage	Shows the file store usage and available disk space
Full-Text Indexing	Destroy latency	Shows the destroy latency statistics - the time needed to remove a document from the FT index.
	FT query response	Shows the FT query response values for Documentum repositories
Index agent process	Index agent process availability	Shows the availability of the index agent process
	Index agent process memory usage	Shows the average memory usage of the index agent process

	Index agent process CPU utilization	Shows the average CPU utilization of the index agent process
Index server process	Index server process availability	Shows the availability of the index server process
	Index server process memory usage	Shows the average memory usage of the index server process
	Index server process CPU utilization	Shows the average CPU utilization of the index server process
Job process	Job process availability	Shows the availability of the `dm_agent_exec` process
	Job process average memory usage	Shows the average memory usage of the `dm_agent_exec` process
	Job process average CPU utilization	Shows the average CPU utilization of the `dm_agent_exec` process
Jobs	Average number of failed jobs	Shows the average number of failed jobs per repository
Table size growth	Average database table size	Shows the average size of a specific database table
	Average number of events	Shows the number of events that have occurred in a repository
	User sessions activity	Shows the average session activity on Documentum servers
	User session CPU utilization	Shows the average CPU utilization of user sessions
	Index Server Disk Usage	Show the index server disk usage statistics
	Save-to-search latency	Shows the save-to-search latency statistics - the time needed to merge a new document into the FT index and to make it searchable.

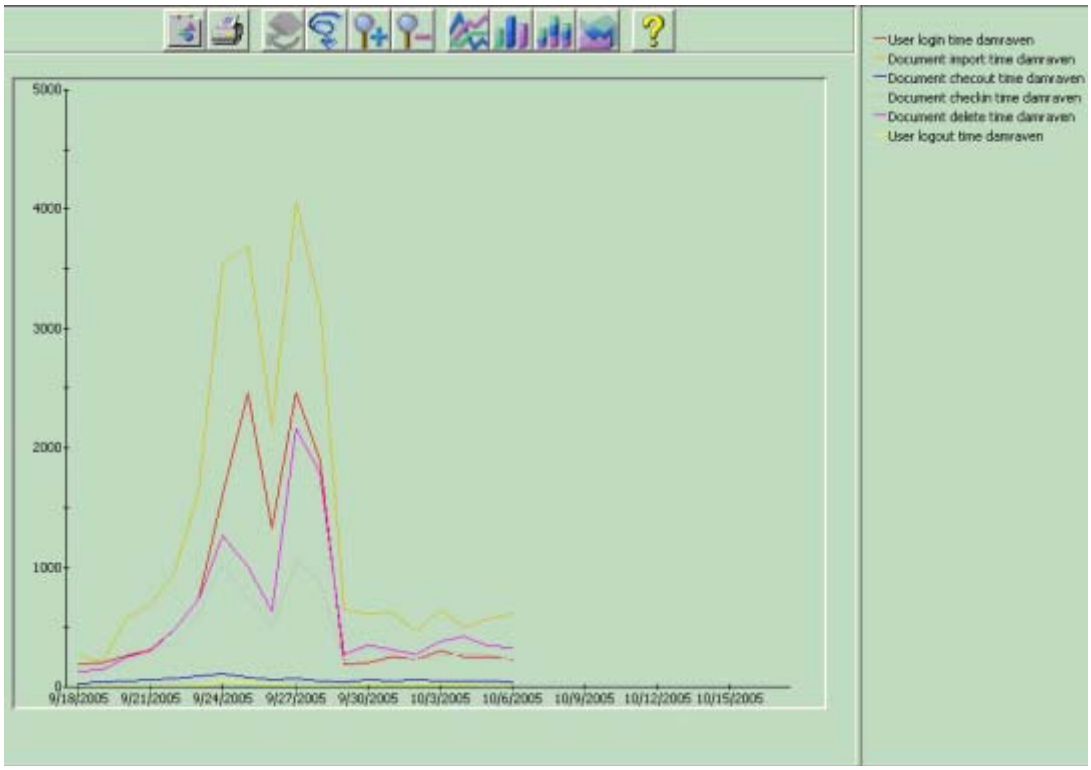
Sample Graphs

Below are some examples of the graphs that can be produced.

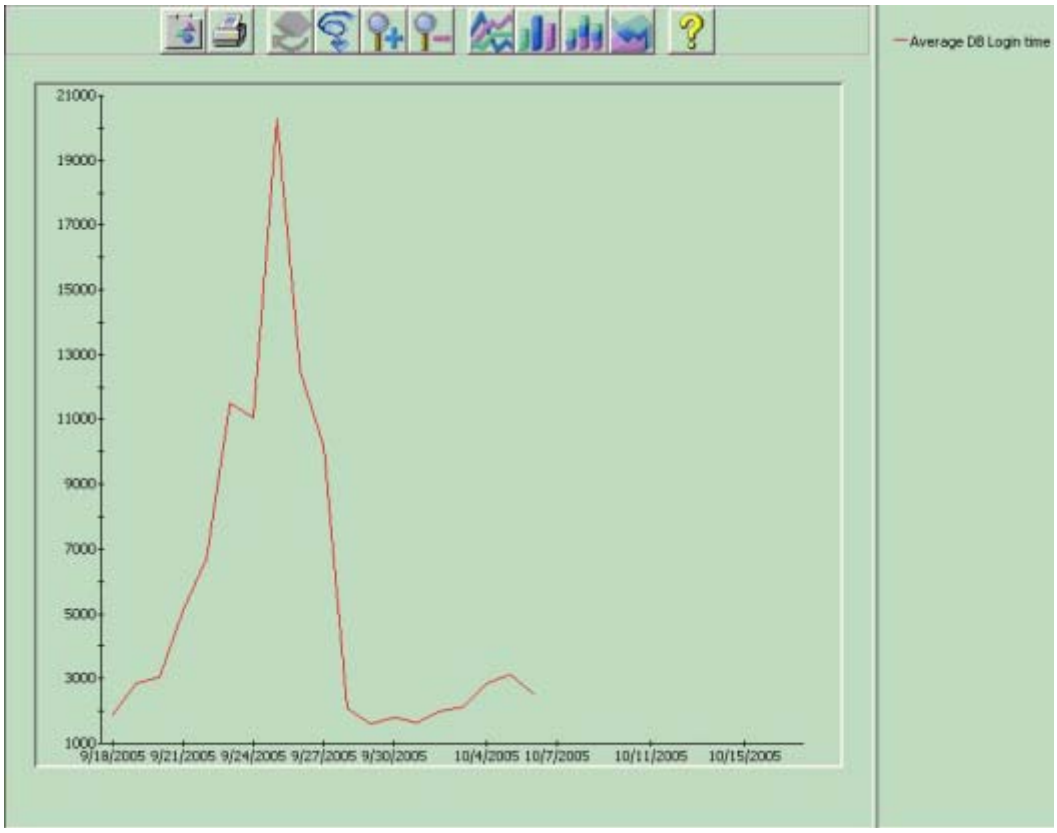
NOTE

All graphs will have the format similar to that shown in the sample graphs here.

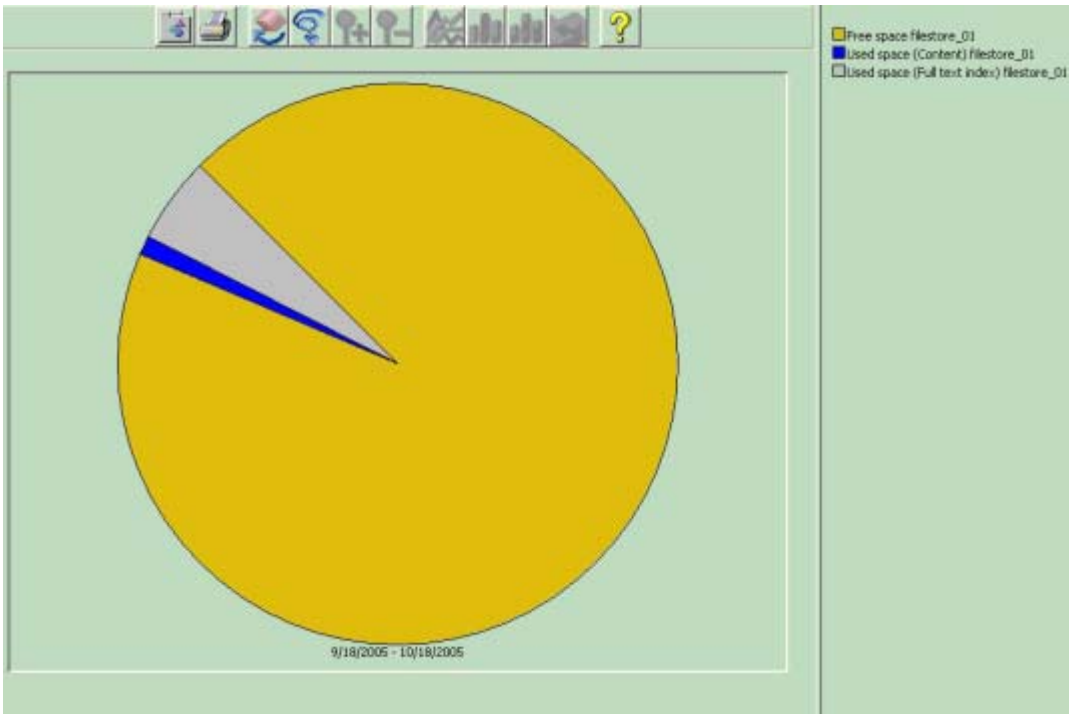
The following graph displays average client response times.



The following graph displays average database login time.



The following graph displays file store statistics.



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Chapter 16

Troubleshooting

Troubleshooting Assistance

This chapter describes possible errors that can occur while using SPI for EMC Documentum and gives instructions on how to solve them.

Documentum SPI Service Stops Responding

Documentum SPI service can stop responding after some time. The reason for this problem is described on Documentum support web site:

http://softwaresupport.emc.com/support/bugs/dmfrmdefectview.asp?id=95130

To solve the problem, install SP4 if you are using Documentum 5.2.5 or SP1 if you are using Documentum 5.3.

Configuration File (dmspi.cfg) Is Overwritten if Redeployment on the Node Is Performed

To prevent automatic updates of the SPI for EMC Documentum configuration, set the *manual_configuration* field under the *DMSPI* tab in the configuration file to `true`. Note that the default value is `false`.

Example:

```
[DMSPI]
manual_configuration=true
```

Autodiscovery on DCE Agents Fails

Autodiscovery automatic action fails to execute on the management server.

The problem is that the opcdeploy binary does not transfer the generated service tree definition file from node to management server correctly.

To solve this do the following:

- manually transfer the `dmspi_svctree.xml` file located in

  `$OvAgentDir/dmspi/bin to the management server folder /opt/OV/dmspi/bin and`

- upload the service tree definition file by executing

  `opcservice -replace /opt/OV/dmspi/bin/dmspi_svctree.xml`

Once the service definition is uploaded, you can assign the service view by executing the following command:

```
opcservice -assign {operator} dmspi_root
```

Autodiscovery Fails if There Are no Application Groups in a Service Tree

You may get the following error:

```
# /opt/OV/dmspi/bin/dmspi_updsvc.sh eximus.hermes.si "/opt/OV/dmspi/
bin/dmspi_svctree.xml"
Error: Service definition file is not ok.
```

Target element SVCDISC:Applications referenced in association does not exist (SVC10-122)

Warning: Check operation found 1 problem(s) in source file:

```
/opt/OV/dmspi/bin/dmspi_svctree.xml'. (SVC10-167) (SVC10- 123)
```

Add an application group to the services root or perform the following to append Documentum service tree directly to the services root:

1. Delete this code from XML on the node:

   ```
   <Association>
   <Composition/>
   <TargetRef>SVCDISC:Applications</TargetRef>
   <SourceRef>dmspi_root</SourceRef>
   </Association>
   ```

2. Run the automatic command on the Management server manually:

   ```
   /opt/OV/dmspi/bin/dmspi_updsvc.sh {node_name} "/opt/OV/dmspi/bin/
   dmspi_svctree.xml"
   ```

3. Assign the service to the suitable operator:

   ```
   opcservice -assign opc_adm dmspi_root
   ```

Appendix A

Metric Lists

Metric Lists

The following metric lists are created for SPI for EMC Documentum reports on Documentum processes:

- `DMSPI_SRVR_PROCESS`
- `DMSPI_DOCBROKER_PROC`
- `DMSPI_JOB_PROCESS`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_SRVR_PROCESS metric list

Metric name	Description
SP_DOCBASE_NAME	Repository name
SP_SERVER_NAME	Server name
SP_PROCESS_STATE	Server process status
SP_MEMORY_USAGE	Server process memory usage (KB)
SP_VMEMORY_USAGE	Server process virtual memory usage (KB)
SP_CPU_UTIL	Server process CPU utilization (%)

DMSPI_DOCBROKER_PROC metric list

Metric name	Description
DP_DOCBROKER	Connection broker process name and port number
DP_PROCESS_STATE	Connection broker process status
DP_MEMORY_USAGE	Connection broker process memory usage (KB)
DP_VMEMORY_USAGE	Connection broker process virtual memory usage (KB)
DP_CPU_UTIL	Connection broker process CPU utilization (%)

DMSPI_JOB_PROCESS metric list

Metric name	Description
JP_DOCBASE_NAME	Repository name
JP_SERVER_NAME	Server name
JP_PROCESS_STATE	dm_agent_exec process status
JP_MEMORY_USAGE	dm_agent_exec process memory usage (KB)
JP_VMEMORY_USAGE	dm_agent_exec process virtual memory usage (KB)
JP_CPU_UTIL	dm_agent_exec process CPU utilization (%)

The following metric lists are created for SPI for EMC Documentum reports on Documentum server sessions:

- `DMSPI_SESSIONS`
- `DMSPI_SESS_UTIL`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_SESSIONS metric list

Metric name	Description
SE_DOCBASE_NAME	Repository name
SE_SERVER_NAME	Server name
SE_ACTIVE_SESSIONS	Number of active sessions
SE_INACTIVE_SESSIONS	Number of inactive sessions
SE_MAX_CONCURRENT	Maximum number of concurrent sessions

DMSPI_SESS_UTIL metric list

Metric name	Description
SU_SESSION_ID	Session ID
SU_USER_NAME	User name
SU_HOST_NAME	System name
SU_SERVER_NAME	Server name

SU_DOCBASE_NAME	Repository name
SU_CPU_UTIL	Session CPU utilization (%)
SU_MEM_UTIL	Session memory usage in KB (for Unix systems only)

The following metric lists are created for SPI for EMC Documentum reports on Documentum database availability:

- `DMSPI_DB_LOGIN`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_DB_LOGIN metric list

Metric name	Description
DL_SERVER_NAME	Server name
DL_DOCBASE_NAME	Repository name
DL_LOGIN_TIME	Database login time (ms)

The following metric lists are created for SPI for EMC Documentum reports on Documentum file stores:

- `DMSPI_FILESTORES`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_FILESTORES metric list

Metric name	Description
FS_DOCBASE_NAME	Repository name
FS_SERVER_NAME	Server name
FS_FILESTORE_NAME	File store name
FS_DISTRIBUTED_STORE	Name of the distributed store
FS_AVAILABLE_SPACE	Available space for the file store (KB)
FS_FS_CAPACITY	Total size of the disk on which file store resides (KB)

FS_USED_SPACE	File store used space (KB)
FS_FULL_TEXT_PERC	Percentage of used space occupied by full text index

The following metric lists are created for SPI for EMC Documentum reports on Documentum client response:

- `DMSPI_CLIENT_RESP`
- `DMSPI_CLIENT_AVAIL`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_CLIENT_RESP metric list

Metric name	Description
CR_DOCBASE_NAME	Repository name
CR_SERVER_NAME	Server name
CR_USER_NAME	User name
CR_CONNECT_TIME	Connect time (ms)
CR_IMPORT_TIME	Import time (ms)
CR_CHECKOUT_TIME	CheckOut time (ms)
CR_CHECKIN_TIME	CheckIn time (ms)
CR_DELETE_TIME	Delete time (ms)
CR_DISCONNECT_TIME	Disconnect time (ms)

DMSPI_CLIENT_AVAIL metric list

Metric name	Description
CA_DOCBASE_NAME	Repository name
CA_SERVER_NAME	Server name
CA_USER_NAME	User name
CA_AVAILABILITY	Repository status (available/not available)

The following metric lists are created for SPI for EMC Documentum reports on Documentum jobs:

- DMSPI_JOBS
- DMSPI_JOBS_EXECTIME
- DMSPI_JOBS_RUNNING

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_JOBS metric list

Metric name	Description
JB_DOCBASE_NAME	Repository name
JB_FAILED	Number of failed jobs

DMSPI_JOBS_EXECTIME metric list

Metric name	Description
JE_DOCBASE_NAME	Repository name
JE_TARGET_SERVER	Target server
JE_JOB_NAME	Job name
JE_JOB_START	Job start time in number of seconds since 01/01/1970
JE_JOB_STOP	Job stop time in number of seconds since 01/01/1970
JE_JOB_EXIT_STATUS	Job exit status
JE_JOB_STATUS_MSG	Job status message
JE_JOB_OWNER	Job owner

DMSPI_JOBS_RUNNING metric list

Metric name	Description
JR_DOCBASE_NAME	Repository name
JR_TARGET_SERVER	Target server
JR_JOBS_RUNNING	The number of jobs that are running at the moment

DMSPI_JOBS_NO_START metric list

Metric name	Description
IN_OBJECT_NAME	Job name
IN_TARGET_SERVER	Target server
IN_NEXT_INVOCATION	Expected execution of the job

The following metric lists are created for SPI for EMC Documentum reports on Documentum database table size growth:

- `DMSPI_TABLE_SIZE`
- `DMSPI_EVENT_SIZE`

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_TABLE_SIZE metric list

Metric name	Description
TS_DOCBASE_NAME	Repository name
TS_TABLE_NAME	Table name
TS_TABLE_SIZE	Table size

DMSPI_EVENT_SIZE metric list

Metric name	Description
ES_DOCBASE_NAME	Repository name
ES_TABLE_NAME	Table name
ES_EVENT_NAME	Event name
ES_NUMBER_OF_EVENTS	Number of events

The following metric list is created for SPI for EMC Documentum reports on Documentum documents and workflows:

- `DMSPI_U_WORKFLOWS`

Points in metric lists are not summarized and retained for 30 days in the Reporter database.

DMSPI_U_WORKFLOWS metric list

Metric name	Description
UW_DOCBASE_NAME	Repository name
UW_WORKFLOW_ID	Workflow ID
UW_WORKFLOW_NAME	Workflow name
UW_RUNNING_STATE	Workflow state
UW_START_DATE	Workflow start date
UW_SUPERVISOR_NAME	Supervisor name
UW_WORKFLOW_AGE	Workflow age

The following metric lists are created for SPI for EMC Documentum reports on index server:

- DMSPI_IDXSRVR_PROC
- DMSPI_IDXAGT_PROC
- DMSPI_IDX_PERF
- DMSPI_IDXSRVR_DU

Points in metric lists are summarized with an 1-hour interval and retained for 30 days in the Reporter database.

DMSPI_IDXSRVR_PROC metric list

Metric name	Description
IS_PROCESS_LABEL	Process label
IS_PROCESS_NAME	Process name
IS_PROCESS_DESC	Process description
IS_PROCESS_STATE	Process status
IS_MEMORY_USAGE	Process memory usage (KB)
IS_VMEMORY_USAGE	Process virtual memory usage (KB)
IS_CPU_UTILProcess	CPU utilization (%)

DMSPI_IDXAGT_PROC metric list

Metric name	Description
IA_PROCESS_LABEL	Process label
IA_PROCESS_NAME	Process name
IA_DOCBASE_NAME	Repository name
IA_PROCESS_STATE	Process status
IA_MEMORY_USAGE	Process memory usage (KB)
IA_VMEMORY_USAGE	Process virtual memory usage (KB)
IA_CPU_UTIL	Process CPU utilization (%)

DMSPI_IDX_PERF metric list

Metric name	Description
IP_AGENT_NAME	Index Agent name
IP_DOCBASE_NAME	Repository name
IP_CREATE_AWAITING	Awaiting time when adding new document to the FT index (ms)
IP_CREATE_PREPROC	Preprocessing time when adding new document to the FT index (ms)
IP_CREATE_INDEXING	Indexing time when adding new document to the FT index (ms)
IP_DESTROY_AWAITING	Awaiting time when removing a document from the FT index (ms)
IP_DESTROY_PREPROC	Preprocessing time when removing a document from the FT index (ms)
IP_DESTROY_INDEXING	Time to remove a document from the FT index (ms)
IP_QUERY_TIME	FT query response time (ms)

DMSPI_IDXSRVR_DU metric list

Metric name	Description
IS_DU_NODE	Index server node name
IS_DU_LOCATION	Full-text index location

IS_DU_USAGE_PERCENT	Disk usage (%)
IS_DU_USAGE	Disk usage (GB)
IS_DU_SIZE	Disk size (GB)
IS_DU_FREE	Disk free size (GB)