HP Service Health Reporter

Software Version: 9.40
Windows ® and Linux operating systems

Microsoft Active Directory Content Pack Reference

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Contents

About This Document

This document provides an overview of SHR and Microsoft Active Directory Content Pack. This document provides the list of Microsoft Active Directory reports available with the Microsoft Active Directory Content Pack. The document also lists the prerequisite aspects and policies required for Service Health Reporter (SHR) to integrate with HP Operations Smart Plug-ins (SPIs) and HP OMi Management Packs.

This document helps you to deploy the topology views, install and configure the data source for the Microsoft Active Directory Content Pack and configure the data source. It provides information on report navigation, metric mapping for report and calculate instance availability.

Getting Started

This section provides SHR overview, deployment scenarios, and types of reports.

Service Health Reporter (SHR) Overview

SHR is a cross-domain historical infrastructure performance reporting solution. It displays top-down reports from Business Service Management (BSM) Business Service and Business Application, HP Operations Manager (HPOM) Node Group or HP OMi10 perspective to the underlying infrastructure. It also displays bottoms-up reports from the infrastructure to the impacted Business Services and Business Applications or Node Groups. It leverages the topology information to show how the underlying infrastructure health, performance and availability affects your Business Services and Business Applications or Node Groups in the long term. You can navigate from higher level crossdomain reports to detailed domain level reports.

Deployment Scenarios

Following are the deployment scenarios supported on SHR:

- **Deployment with BSM/OMi** - In this deployment, Run-time Service Model (RTSM) is the source of topology information. SHR discovers and synchronizes topology information from OMi. In a BSM environment with underlying HPOM servers, this synchronization technique receives discovered topology data from multiple HPOM systems and updates the Configuration Items (CIs) and CI relationships in the RTSM as soon as changes are discovered. However, you can also use the HPOM D-MoM dynamic topology synchronization technique to discover and synchronize the topology information in RTSM. In an environment with OMi 10.00, SHR uses RTSM to obtain topology information and metrics from HP Operations Agent or HP SiteScope systems that are configured with OMi.

- **Deployment with HP Operations Manager** - In this deployment, the topology information is a group of managed nodes defined in HPOM that are logically combined for operational monitoring. These logical node groups are created by HPOM users to classify the nodes as specific organizations or entities within their enterprise. For example, a group called `Exchange Servers` can be created in HPOM to organize the specific Exchange Servers and Active Directory nodes for reporting or monitoring purposes. SHR uses the node groups from HPOM for its topology computation.

- **Deployment with VMware vCenter** - VMware vCenter is a distributed server-client software solution that provides a central and a flexible platform for managing the virtual infrastructure in business-critical enterprise systems. VMware vCenter centrally monitors performance and events, and provides an enhanced level of visibility of the virtual environment, thus helping IT administrators to control the environment with ease.

- **Other deployments** - Apart from the basic deployment scenarios, you can collect data from the following sources independently:

- Deployment with NNMi
- Deployment with a generic database
- Deployment with other applications using CSV

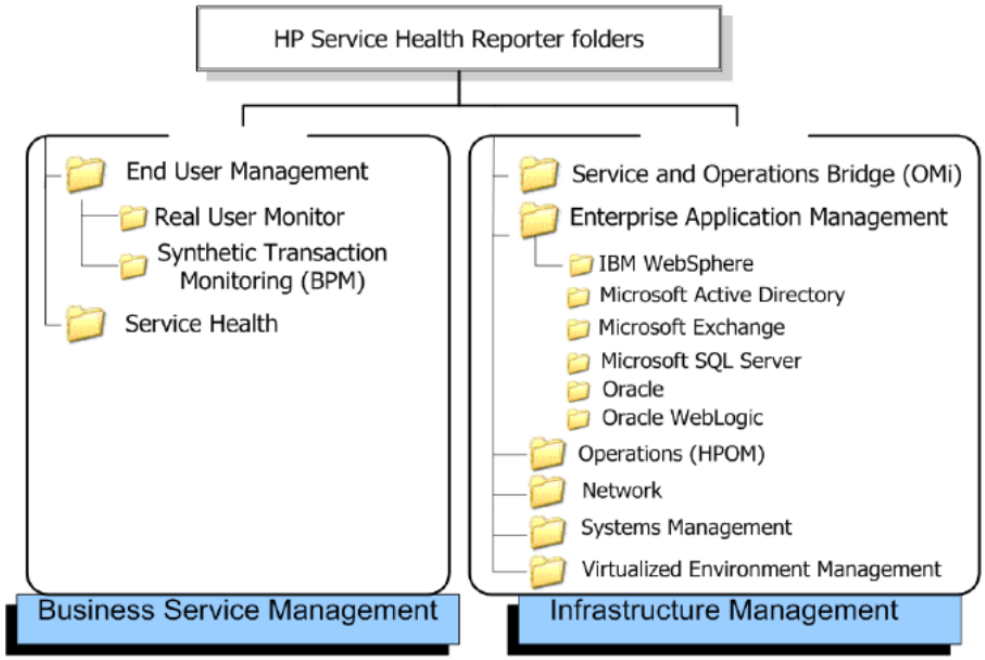
Types of Reports

The reports available in HP Service Health Reporter (SHR) are divided into two broad categories:

• Business Service Management

• Infrastructure Management

The following image shows the supported list of reports folders under both these categories:



To view a map of all the reports available in the Microsoft Active Directory Content Pack, see Report Navigation.

For more information on HP Service Health Reporter concepts, see *HP Service Health Reporter Concepts Guide* and *HP Service Health Reporter Content Development Guide*.

Microsoft Active Directory Content Pack Overview

This section provides an overview of Microsoft Active Directory Content Pack, target audience, and supported data sources.

The Microsoft Active Directory Content Packs determine the fact data that are to be collected from the various data sources, and the interval at which the data is collected. Configuration of the data source connections for the Microsoft Active Directory Content Packs depends on the type of deployment scenario used.

Target Audience

Target audience for Microsoft Active Directory reports are Operations Center Managers and Database Administrators, who help to setup and maintain the Microsoft Active Directory setup in the IT infrastructure. Microsoft Active Directory reports help users to assess the availability and health of the domain controllers over a specific period. Microsoft Active Directory reports help users to manage the Active Directory proactively and more efficiently.

Data Sources for Active Directory Data

SHR integrates and collects historical and ongoing database performance metrics from the HP Operations Smart Plug-In and HP OMi Management Pack for Microsoft Active Directory data stores in BSM Run-time Service Model (RTSM) and HPOM deployment scenarios.

The Microsoft Active Directory Content Pack identifies the list of metrics or facts that SHR must collect from each of these data sources. The corresponding dimension data is collected from the RTSM or HPOM topology source, depending on the SHR deployment scenario.

SHR collects data from different data sources at periodic intervals based on the collection policies predefined in the **MicrosoftActiveDirectory_ETL_ADSPI Content Pack**. From each data source, summarized fact data is collected at a 5-minute interval. This fact data is called rate data and is stored in the database in rate tables as individual records. For a 60-minute interval, there are 12 records in the tables. SHR aggregates these records and converts the data to hourly and daily data. This aggregated data is displayed in the reports along with monthly and yearly aggregates that are derived by online aggregation.

Integrating with Data Sources for HP Operations Smart Plug-ins

To show reports on the data collected from Microsoft Active Directory, SHR relies on the metrics collected by collectors of HP Operations Smart Plug-in for Microsoft Active Directory (Active Directory SPI). SPI collectors store the data into the data store provided by the HP Operations agent. SHR's integration with SPI data sources facilitate transfer of data from HP Operations agent's data store to

SHR's database. This integration is established when you deploy SHR in the HPOM deployment scenario.

SHR provides performance reports for the Microsoft Active Directory enterprise applications.

Working of the Integration

1. Installation and configuration of the SPI ensures that necessary instrumentation, scripts, programs, and policies are transferred to a node where the application is running and the HP Operations agent is already installed.

   Tip: For successful installation and configuration of the Active Directory SPI, see the SPI documentation.

2. SPI collectors start collecting data on the node based on rules and specifications available with the policies deployed on the node.

3. SPI stores the collected data into HP Operations agent's data store. The SPI creates at least one *data source* in agent's data store.

4. After configuring SHR to collect data from a data source and installing the Microsoft Active directory, SHR starts collecting historical data from agent's data store.

Prerequisite Policies for Microsoft Active Directory Reports

The following table lists the Microsoft Active Directory SPI policies required by each Microsoft Active Directory report.

Note: Not every policy should be deployed to every Microsoft Active Directory node. See *HP Operations Smart Plug-in for Microsoft Active Directory Reference Guide* and/or the *HP Operations Smart Plug-in for Microsoft Active Directory Online Help* to understand what each policy does and determine which policies are appropriate for the role played by each server. Deploying the policies indiscriminately will result in incorrect messages originating from the node.

In addition, see the SPI documentation for information on how the policies should be deployed and what additional configuration steps may be required.

Note: Policy Configuration Requirement is not required; deploy the policy with default settings.

Report Name	Data Source	Data Class	Required SPI Policy
AD Adhoc Comparison	ADSPI	ADSPI_DITDBSIZE	ADSPI-DIT_TotalDitSize
		ADSPI_ DITQUEUELENGTH	ADSPI-DIT_ DITQueueLength
		ADSPI_ LOGDISKSIZE	ADSPI-DIT_ LogFilesPercentFull
		ADSPI_ REPLATENCY	ADSPIRep_ MonitorIntraSiteReplication,
			ADSPI-Rep_ MonitorInterSiteReplication
AD Availability	ADSPI	ADSPI_ RESPONSETIME	ADSPI-Response_Logging
FSMO Role Holder	ADSPI	ADSPI_FSMO_ ROLEMVMT	ADSPI-FSMO_RoleMvmt
DC-GC Replication Delay	ADSPI	ADSPI_ REPLATENCY	ADSPIRep_ MonitorIntraSiteReplication
			ADSPI-Rep_ MonitorInterSiteReplication
DC Capacity	ADSPI	ADSPI_DITDBSIZE	ADSPI-DIT_TotalDitSize
		ADSPI_ DITQUEUELENGTH	ADSPI-DIT_ DITQueueLength
		ADSPI_ LOGDISKSIZE	ADSPI-DIT_ LogFilesPercentFull
		ADSPI_NTDSP	ADSPI_Logging
DC Health	ADSPI	ADSPI_DITDBSIZE	ADSPI-DIT_TotalDitSize
		ADSPI_ DITQUEUELENGTH	ADSPI-DIT_ DITQueueLength
		ADSPI_NTDSP	ADSPI_Logging
		ADSPI_ REPLATENCY	ADSPIRep_ MonitorIntraSiteReplication
			ADSPI-Rep_ MonitorInterSiteReplication
DC Availability Details	ADSPI	ADSPI_ RESPONSETIME	ADSPI-Response_Logging

Integrating with Data Sources for HP OMi Management Packs

To show reports on the data collected from Microsoft Active Directory, SHR relies on the metrics collected by HP OMi Management Pack. The HP OMi Management Pack collectors store the data into the data store provided by the HP Operations agent. SHR's integration with HP OMi Management Pack data sources facilitates transfer of data from HP Operations agent's data store to SHR's database. This integration is established when you deploy SHR views in the RTSM deployment scenario.

SHR provides performance reports for the Microsoft Active Directory enterprise application.

Working of the Integration

1. Installation and configuration of HP OMi Management Packs ensures that necessary instrumentation, scripts, programs, and policies are transferred to a node where the application is running and the HP Operations agent is already installed.

   Tip: For successful installation and configuration of HP OMi Management Packs, see the *HP Operations Manager i Management Packs* documentation.

2. HP OMi Management Pack collectors start collecting data on the node based on rules and specifications available with the policies deployed on the node.

3. HP OMi Management Pack stores the collected data into HP Operations agent's data store. Each HP OMi Management Pack creates at least one *data source* in agent's data store.

4. After configuring SHR to collect data from a data source and installing Microsoft Active Directory, SHR starts collecting historical data from agent's data store.

Prerequisite Aspects and Policies for Microsoft Active Directory Reports

The following table lists the OMi MP for Microsoft Active Directory policies and aspects required for each Microsoft Active Directory report.

Note: Not every policy should be deployed to every Microsoft Active Directory node. See *HP OMi MP for Microsoft Active Directory Online Help* to understand what each policy does and determine which policies are appropriate for the role played by each server. Deploying the policies indiscriminately will result in incorrect messages originating from the node.

In addition, see the OMi MP documentation for information on how the policies should be deployed and what additional configuration steps may be required.

Report Name	Aspect Name	Policy Templates in Aspect	HP Operations agent	
			Data Source Name	Data Class Name
AD Adhoc Comparison	MicrosoftAD DIT	MSAD_TotalDitSize	ADSPI	ADSPI_DITDBSIZE
	MicrosoftAD DIT	MSAD_DITQueueLength		ADSPI_DITQUEUELENGTH
	MicrosoftAD DIT	MSAD_LogFilesPercentFull		ADSPI_LOGDISKSIZE
	MicrosoftAD Replication Auto Baseline	MSAD_Rep_GC_Check_and_Threshold_Monitor_AT		ADSPI_GCREP
AD Availability	MicrosoftAD	MSAD_SCH_ResponseLogging	ADSPI	ADSPI_RESPONSE
DC-GC Replication Delay	MicrosoftAD Replication	MSAD_Rep_MonitorIntraSiteReplication	ADSPI	ADSPI_REPLATENCY
	MSAD_Rep_MonitorInterSiteReplication			
DC Capacity	MicrosoftAD DIT	MSAD_LogFilesPercentFull	ADSPI	ADSPI_LOGPERCENTFULL
	MicrosoftAD DIT	MSAD_DITPercentFull		ADSPI_DITPERCENTFULL
	MicrosoftAD Services	MSAD_NTDSPROCDETAILS		ADSPI_NTDSP
DC Health	MicrosoftAD Replication	MSAD_Rep_MonitorIntraSiteReplication MSAD_Rep_MonitorInterSiteReplication	ADSPI	ADSPI_REPLATENCY
	MicrosoftAD Services	MSAD_NTDSPROCDETAILS		ADSPI_NTDSP

Report Name	Aspect Name	Policy Templates in Aspect	HP Operations agent	
			Data Source Name	Data Class Name
	MicrosoftAD DIT	MSAD_TotalDitSize		ADSPI_DITDBSIZE
		MSAD_DITPercentFull		ADSPI_DITPERCENTFULL
		MSAD_DITQueueLength		ADSPI_DITQUEUELENGTH
DC Availability Details	MicrosoftAD	MSAD_SCH_ResponseLogging	ADSPI	ADSPI_RESPONSE

Deploy Topology Views

To configure SHR to collect domain-specific data, you need to deploy the topology views for Microsoft Active Directory Content Pack. These topology views contain specific CI attributes that Microsoft Active Directory Content Pack uses to collect the relevant data.

List of Content Pack and Topology Views to Deploy

The following table lists the topology views to deploy for Microsoft Active Directory Content Pack:

Content Pack	View Name	Location
On Window		
Microsoft Active Directory	SHR_AD_Business_View.zip SHR_ActiveDirectory_OM.zip	%PMDB_HOME%\packages\ActiveDirectory\ETL_AD_ADSPI.ap\source\cmdb_views
On Linux		
Microsoft Active Directory	SHR_AD_Business_View.zip SHR_ActiveDirectory_OM.zip	$PMDB_HOME/packages/ActiveDirectory/ETL_AD_ADSPI.ap/source/cmdb_views

HP BSM Server

To deploy the topology model views for the Microsoft Active Directory Content Pack in the HP BSM server, follow these steps:

1. In the web browser, type the following URL:

   `http://<BSM system FQDN>/bsm`

   where, *<BSM system FQDN>* is the FQDN of the HP BSM server.

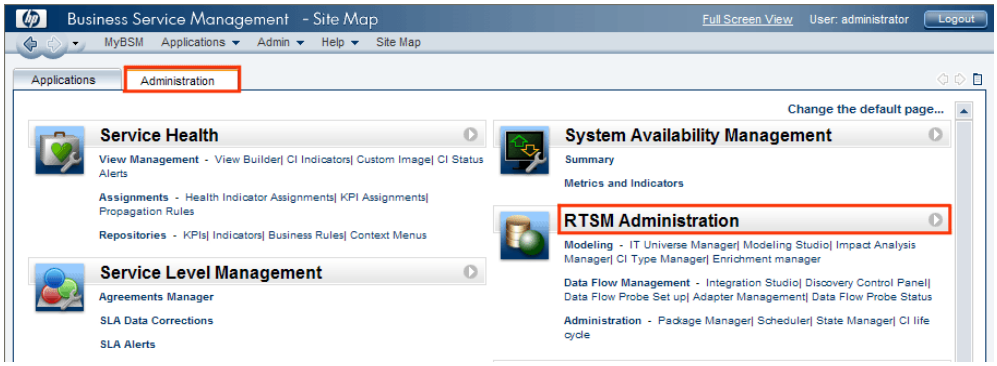
   Note: You can launch the HP BSM server from a system where SHR is installed or any other local system. If you are launching from local system, ensure that you browse to the location

mentioned in List of Content Pack and Topology Views to Deploy and copy the required views to your local system.

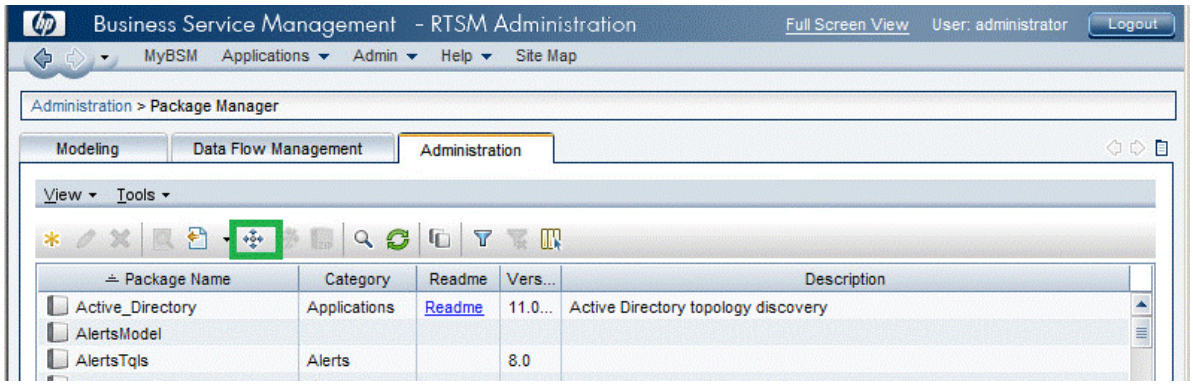
The Business Service Management Login page appears.

2. Type the login name and password and click **Log In**. The Business Service Management - Site Map appears.

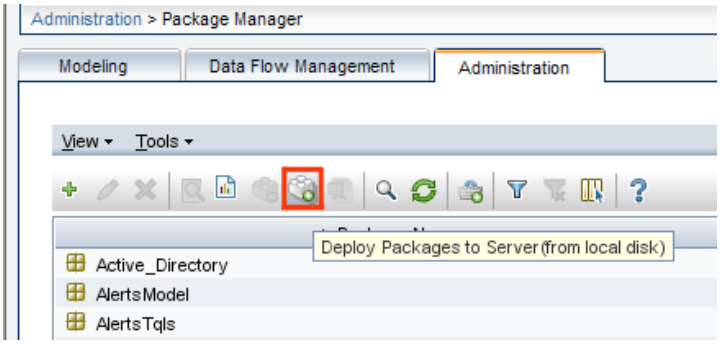
3. Click **Administration > RTSM Administration**. The RTSM Administration page appears.



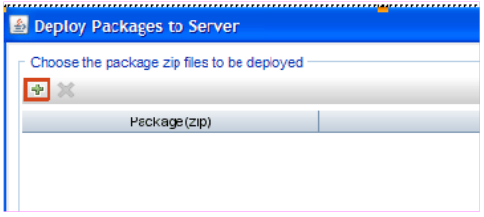
4. Click **Administration > Package Manager**. The Package Manager page appears.



5. Click the **Deploy Packages to Server (from local disk)** icon. The **Deploy Package to Server** dialog box appears.



6. Click the **Add** icon.



The **Deploy Package to Server (from local disk)** dialog box appears.

7. Browse to the location of the Content Pack zip files, select the required files, and then click **Open**.

   You can view and select the TQL and ODB views that you want to deploy under **Select the resources you want to deploy** in the **Deploy Package to Server (from local disk)** dialog box. Ensure that all the files are selected.

8. Click **Deploy** to deploy the Content Pack views.

You have successfully deployed the Content Packs views based on the type of deployment scenario selected for SHR.

HP OMi 10 Server

To deploy the topology model views for the Microsoft Active Directory Content Pack in the HP OMi 10 server, follow these steps:

1. In the web browser, type the following URL:

   `http://<OMi system FQDN>/omi`

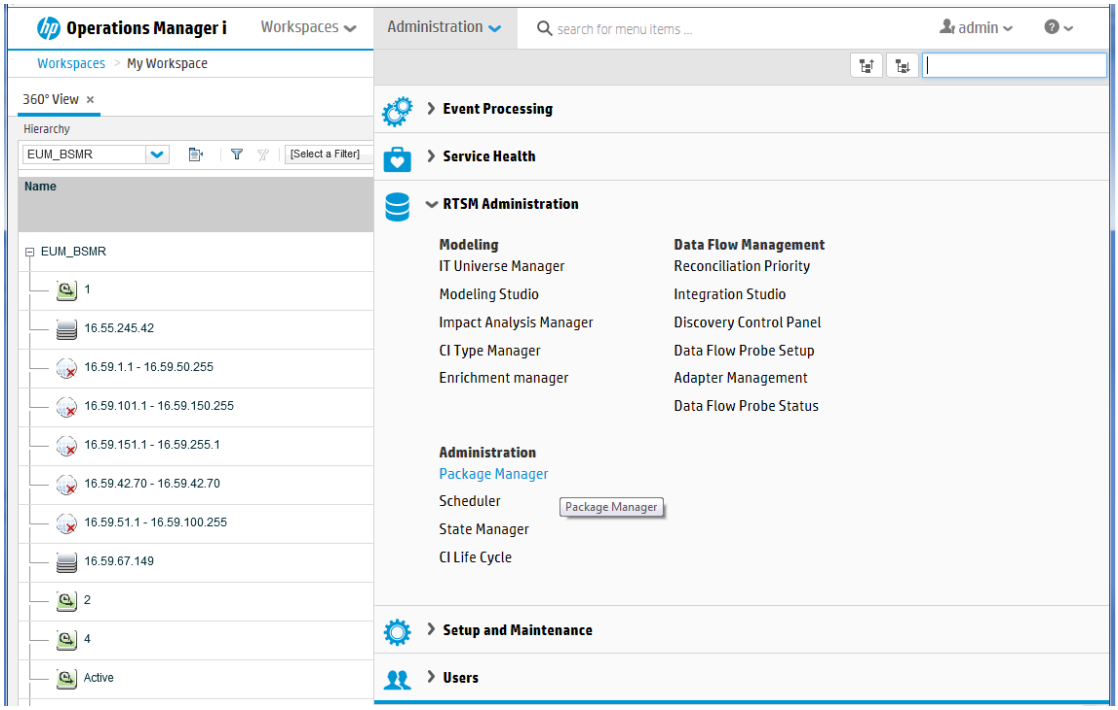
   where, *<OMi system FQDN>* is the FQDN of the HP OMi server.

Note: You can launch the HP OMi server from a system where SHR is installed or any other local system. If you are launching from local system, ensure that you browse to the location mentioned in List of Content Pack and Topology Views to Deploy and copy the required views to your local system.

The Operations Manager i Login page appears.

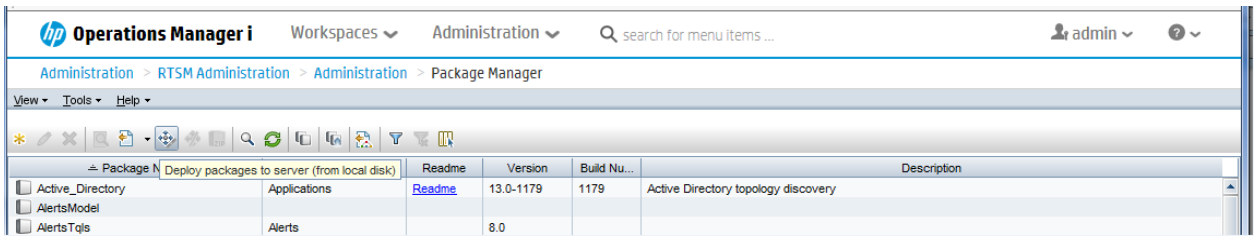
2. Type the login name and password and click **Log In**. The Operations Manager i Workspace page appears.

3. Click **Administration > RTSM Administration > Package Manager**.

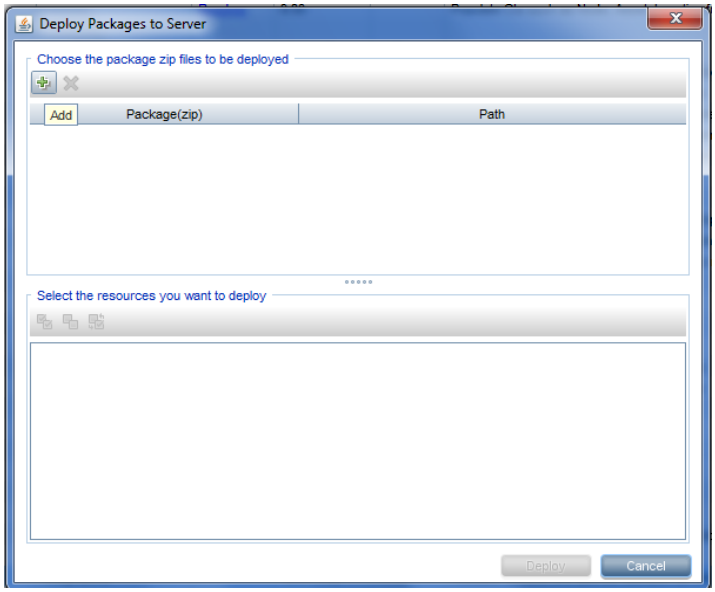


The Package Manager page appears.

4. Click the **Deploy Packages to Server (from local disk)** icon. The **Deploy Package to Server** dialog box appears.



5. Click the **Add** icon.



   The **Deploy Package to Server (from local disk)** dialog box appears.

6. Browse to the location of the Content Pack zip files, select the required files, and then click **Open**.

   You can view and select the TQL and ODB views that you want to deploy under **Select the resources you want to deploy** in the **Deploy Package to Server (from local disk)** dialog box. Ensure that all the files are selected.

7. Click **Deploy** to deploy the Content Pack views.

You have successfully deployed the Content Packs views based on the type of deployment scenario selected for SHR.

Install the Content Pack

Check Availability and Integrity of Data Sources

SHR enables you to check the availability and integrity of data sources prior to installing Content Packs.

1. Launch the following page:

   `http://<SHR Server FQDN>:<port>/BSMRApp/dscheck.jsf`

2. To check the data sources related to RTSM, click **RTSM**.

   Click **View** to see the results. Results include the list of missing mandatory CI types and attributes.

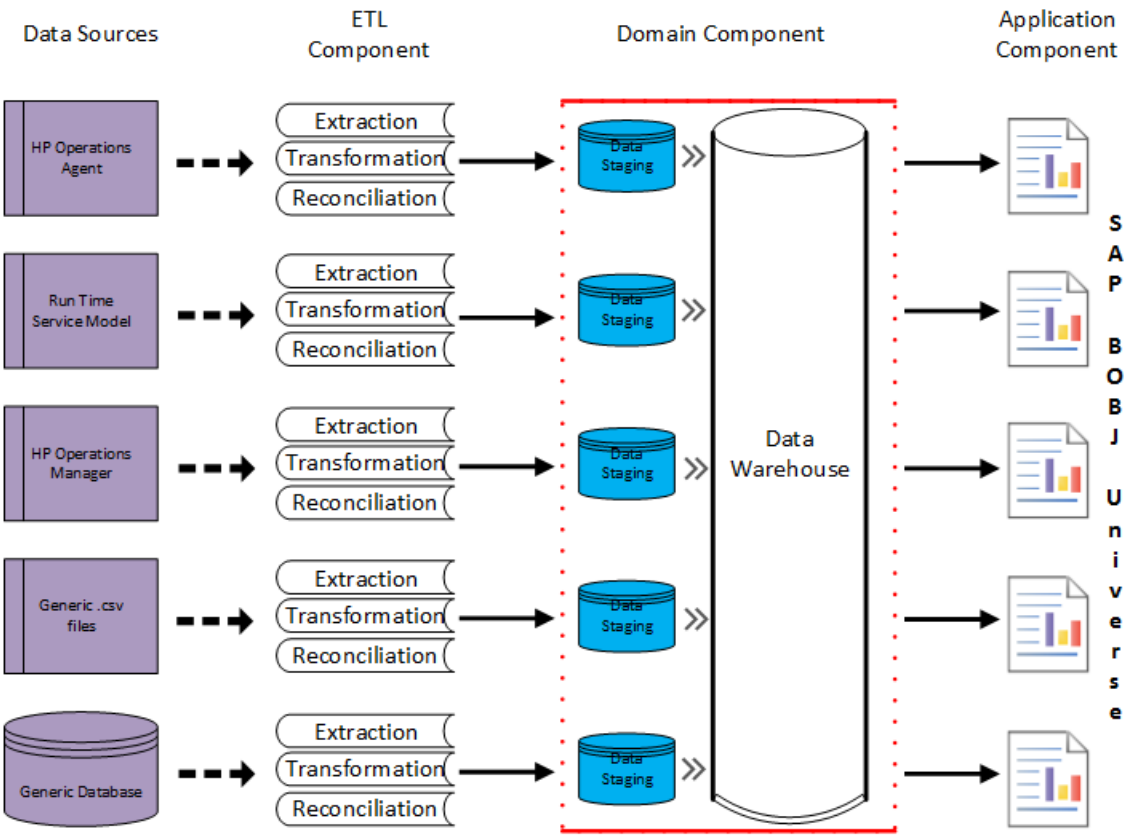
3. To check the data sources in the HP Operations agent, click **PA**.

   Click **View** to see the results. Results include a status summary of nodes and missing policies.

Selecting the Content Pack Components

A typical Content Pack consists of three components - the Domain, Extraction Transformation Loading (ETL), and Application components.

The following figure shows the typical data flow between the components of the Content Pack:



- **Domain component**: The Domain or Core Domain component defines the data model for a particular Content Pack. It contains the rules for generating the relational schema. It also contains the data processing rules, including a set of standard pre-aggregation rules, for processing data into the database. The Domain component can include the commonly-used dimensions and cubes, which can be leveraged by one or more Report Content Pack components. The Domain Content Pack component does not depend on the configured topology source or the data source from where you want to collect data.

- **ETL (Extract, Transform, and Load) component**: The ETL Content Pack component defines the collection policies and the transformation, reconciliation, and staging rules. It also provides the data processing rules that define the order of execution of the data processing steps.

  A single data source app.lication can have multiple ETL components. For example, you can have one ETL component for each virtualization technology supported in Performance Agent such as Oracle Solaris Zones, VMware, IBM LPAR, and Microsoft HyperV. The ETL component can be dependent on one or more Domain components. In addition, you can have multiple ETL components feeding data into the same Domain component.

  The ETL Content Pack component is data source dependent. Therefore, for a particular domain, each data source application has a separate ETL Content Pack component. For example, if you want to collect system performance data from the HP Operations Agent, you must install the `SysPerf_ETL_PerformanceAgent` component. If you want to collect system performance data from

HP SiteScope, you must install either `SysPerf_ETL_SiS_API` (sourcing data logged in API) or `SysPerf_ETL_SiS_DB` (sourcing data logged in BSM Profile database).

- **Application Component**: The Application Content Pack component defines the application-specific aggregation rules, business views, SAP BOBJ universes, and the reports for a particular domain. Report components can be dependent on one or more Domain components. This component also provides the flexibility to extend the data model that is defined in one or more Domain components.

The list of Content Pack components that you can install depends on the topology source that you configured during the post-install configuration phase of the installation. Once the topology source is configured, the Deployment Manager filters the list of Content Pack components to display only those components that can be installed in the supported deployment scenario. For example, if RTSM is the configured topology source, the Deployment Manager only displays those components that can be installed in the SaOB and APM deployment scenarios.

Install the Content Pack in Deployment Manager

To install the required Microsoft Active Directory Content Pack, follow these steps:

1. Launch the Administration Console in a web browser using the following URL:

   `http://<SHR_Server_FQDN>:21411`

2. In the Administration Console, click **Administration > Deployment Manager**.
   The Deployment Manager page is displayed.

   To install this Content Pack to generate reports on data from HPOM, BSM, or OMi, make the following selections:

   - MicrosoftActiveDirectory_ETL_ADSPI (9.40.003)
   - MicrosoftActiveDirectory_Domain (9.40.003)
   - MicrosoftActiveDirectory_Reports (9.40.001)

   Tip: Install the following dependent Content Packs (and their components) along with this Content Pack for it to function:

   - Core
     - Core_Domain
     - MSAppCore

Note: The dependent domain content pack get selected automatically, you have to select only the ETLs based on the topology source.

Note: For more details on ETLs, see *HP Service Health Reporter Content Pack Release Notes*.

3. Click **Install/Upgrade** to install the Content Packs.
   The color of the status column changes for all the selected Content Packs. An `Installation Started` status appears in the **Status** column for Content Pack that is currently being installed. The Deployment Manager page automatically refreshes itself to display the updated status. Once the installation completes, an `Installation Successful` status appears. If the installation fails, an `Installation Failed` status appears.

   Note: The timer service will be stopped automatically during install/uninstall/upgrade operation and will be started once the operation is complete.

4. Click the link in the **Status** column for more information about the installation process.
   The Content Pack Component Status History window is displayed. It displays the details of the current and historical status of that Content Pack component's installation.

Note: During install/uninstall process, Deployment Manager does not allow you to interrupt the process. Instead, you must wait till the current process is complete before you can perform any other operations on the Deployment Manager page.

Data Source Collection Configuration

After installing Microsoft Active Directory Content Packs, you must configure SHR to collect required data from various data collectors. The data collectors work internally within the SHR infrastructure to collect the data. Therefore, you cannot directly interface with these collectors. Instead, you can specify the data sources from where the collectors can collect the data through the Administration Console.

Configuring the HP Operations Agent Data Source

In the RTSM deployment scenario, you do not have to create new HP Operations Agent data source connections. Because, by default, all the nodes on which HP Operations Agent is installed are automatically discovered when the topology information is collected. These data sources or nodes are listed in the HP Operations Agent Data Source page of the Administration Console.

To view the list of HP Operations Agent data sources, follow these steps:

1. In the **Administration Console**, click **Collection Configuration > HP Operations Agent**. The **HP Operations Agent Data Source** page appears.

2. To view detailed information about the HP Operations Agent data sources, click the Domain name or the number in the **HP Operations Agent Data Source Summary** table. The **HP Operations Agent Data Source Details** table appears.

3. To change the data collection schedule for one or more hosts, specify a polling time between 1 and 24 hours in the **Hrs** box in the **Schedule Polling Frequency** column.

4. Click **Save** to save the changes. A Saved Successfully message appears in the Information message panel.

Report Navigation

The Microsoft Active Directory reports are categorized into high-level Executive Summary and detailed reports. You can navigate from the higher-level reports to the detailed reports through the various cross launch and hyperlink features. For example, you may start with the AD Availability report for an overall picture of the health of the domain controllers and then navigate all the way to the detailed reports for specific information. Report navigation can vary depending on the use-cases around which these reports are designed.

The Microsoft Active Directory reports provide the following information:

- Data consistency across all Domain Controllers (DC)
- Global Catalog (GC) replication time and replication status
- Flexible Single Master Operation (FSMO) role transfer status for each role master
- CPU, memory, Directory Information Tree (DIT) disk, and log file disk utilization details for all DCs

New Microsoft Active Directory Report

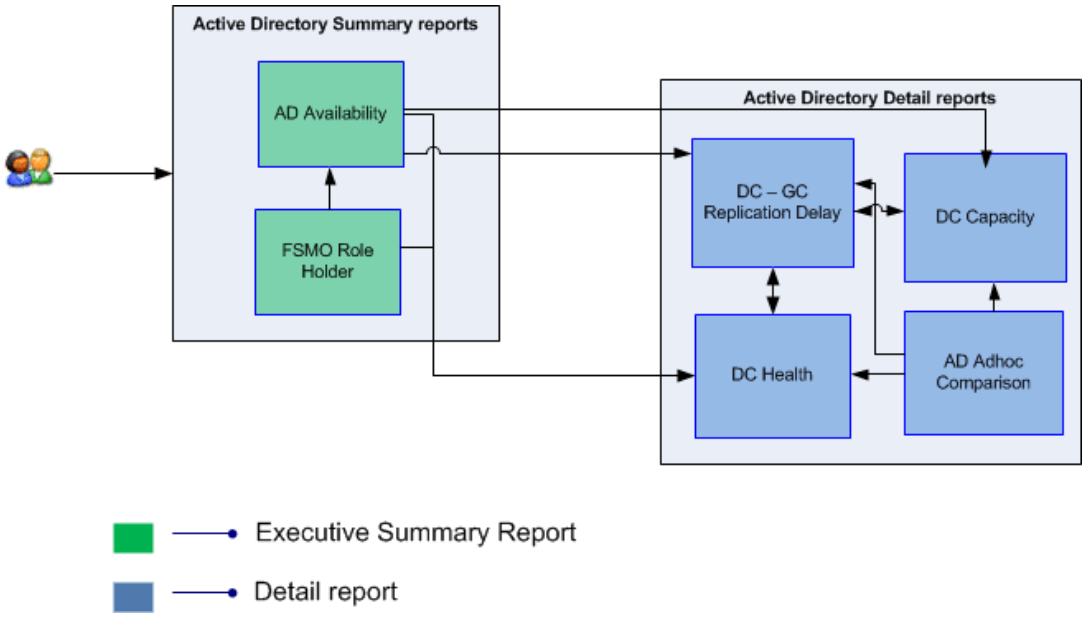
The following is the new Microsoft Active Directory report:

- **DC Availability Details** - Displays the availability details such as up time, down time, unknown time, planned downtime, and excused downtime for the selected DCs for a given Business Service or Business View/Node group.

Availability	Color
< 90	
> 90 and < 95	
> 95	

Report Navigation

The following diagram shows a possible way of navigating the reports:



Use Cases

This section provides information on use cases for Microsoft Active Directory reports. The following table provides description, user, and report name for the use cases:

Description	Report Category	Report Name
To view availability of Domain Controller system over a period of time	Executive Summary	AD Availability
To view history of FSMO role movement across multiple Domain Controllers over a period of time	Executive Summary	FSMO Role Holder
To view resource (CPU, Disk) usage of the Domain Controller along with the forecast values of resource usage	Performance	DC Capacity
To view the health of a Domain Controller from the perspective of CPU, memory and disk usage over a period of time.	Performance	DC Health
To view the replication latency of domain controller over a period of time	Performance	DC - GC Replication Delay
To compare various parameters of selected domain controllers over a period of time	Adhoc	AD Adhoc comparison Delay

Appendix

This section provides information on "Appendix A: Terminology", Calculating Microsoft Active Directory Instance Availability and Metric Mapping for Reports.

Appendix A: Terminology

Business Service: Any service created in BSM Run-time Service Model (RTSM) and is part of your business, such as the online banking service or email service.

Business View: A view deployed on BSM RTSM that provides the topology information of the configuration items in your IT environment.

Node Groups: Group of managed nodes defined by users or available by default in HP Operations Manager (HPOM) to classify as specific organizations or entities within the enterprise. SHR uses the node groups from HPOM for its topology information.

Average DC Availability: The average percentage of time the DCs are available for authentication purposes.

Average DC Bind Time: The average time, in seconds, that the DCs take to respond to a bind request from other DCs.

Average DC Query Time: The average time, in seconds, that the DCs take to respond to a query request.

Average GC Availability: The average percentage of time the GC is available for authenticating the DCs that are installed in the domain.

Average GC Bind Time: The average time, in seconds, that the GC takes to respond to a bind request from DCs.

Average GC Query Time: The average time, in seconds, that the GC requires to respond to a query.

Domain Controller: Name of the domain controller (DC) that holds the FSMO role (FSMO holder name).

FSMO Role Name: Name of the FSMO role assigned to the DC.

Time Stamp: Date and time when a FSMO role is seized or transferred from one role to another.

Status: Status of role movement. The displayed value can either be ACQUIRED or LOST.

Average Replication Latency: The average replication delays, in milliseconds, occurring per GC server for the selected DC(s).

Minimum Replication Latency: The minimum replication delays, in milliseconds, occurring per GC server for the selected DC(s).

Maximum Replication Latency: The maximum replication delays, in milliseconds, occurring per GC server for the selected DC(s).

Average Disk Queue Length: The average disk queue length of the drive hosting the DIT database.

Average DIT Disk Space: The average disk space, in megabytes, of the DIT database that is used for storing the DC data.

Average Logfile Disk Queue Length: The average disk queue length of the drive hosting the DC log file.

Average Logfile Disk Space: The average size, in megabytes, of the disk that stores the DC log file.

Average LSASS CPU Utilization: The average percentage of CPU used by the Local Security Authority Subsystem Service (LSASS) process.

Average LSASS Working Set: The average number of memory pages used per unit of time by the LSASS process that is running on the selected DC.

Average DIT Disk Full %: The average percentage of space used on the drive that is hosting the DIT database.

Average Log File Disk % Full: The average percentage of drive space that is used for hosting the DC log file.

Average Working Set: The average number of memory pages used, per second, by all recent processes running on the selected DC.

Average Page Fault Per Sec: The average number of page faults, per second, for all recent processes running on the selected DC.

Average DIT Disk Queue Length: The average number of operations pending against the DIT drive. When this number is higher than zero for a sustained period of time, it indicates that the DIT database is unable to handle the required amount of updates.

Average DIT DB Disk Size: The average disk size, in megabytes, of the DIT database that is used for storing the DC data.

Average DIT Disk Queue Length: The average number of operations pending against the DIT drive. When this number is higher than zero for a sustained period of time, it indicates that the DIT database is unable to handle the required amount of updates.

Average DIT DB Disk Size: The average disk size, in megabytes, of the DIT database that is used for storing the DC data.

Appendix B: Calculating Microsoft Active Directory Instance Availability

SHR collects five-minute summary data for the Microsoft Active Directory from the HP Performance Agent. This data is in the form of status values as follows:

- Downtime—0
- Uptime—1

The status values are stored in the rate table. The availability calculation procedure in SHR uses this information to calculate the actual uptime, downtime, availability and unknown time values for 5 minute interval. The possible scenarios are as follows:

- If the status value is 1, the procedure interprets it as uptime. The procedure updates the uptime value as 5, and downtime and unknown time values as 0 in the rate table.
- If the status value is 0, the procedure interprets it as downtime. The procedure updates the downtime value as 5, and uptime and unknown time value as 0 in the rate table.
- If, for some reason, SHR is unable to retrieve the status value for particular interval (12 records within an hour, that is, one record each for every five minutes), the procedure interprets it as unknown status. The procedure updates the uptime and downtime values as 0 and unknown time value as 5 in the rate table.

The availability calculation procedure for Microsoft Active Directory instances ensures that 12 records are available for every hour and each record would either represent uptime, downtime, or unknown time. Using this data, the actual uptime, actual downtime, availability and unknown times are calculated as follows:

- **Actual Uptime Percentage**

  Uptime/(Uptime + Downtime)*100

- **Actual Downtime Percentage**

  [(Downtime /(Uptime + Downtime)]*100

- **Availability Computation**

  [(Uptime + Planned Downtime + Excused Downtime)/(Uptime + Downtime)]*100

- **Unknown Time Percentage**

  [(Unknown Time)/(Uptime + Downtime + Unknown Time)]*100

The availability procedure computes the planned downtime and excused downtime based on the configuration provided in the downtime XML file.

For more information on how to configure downtime, see *Configuring downtime in reports* section in *HP Service Health Reporter Online Help for Administrators*.

Appendix C: Metric Mapping for Reports

SHR provides a utility to generate metric flow documents. The utility has strong filtering capabilities and generates the metric flow documents in HTML format. These HTML output files can then be saved in Excel for further filtering and metric tracking.

To generate the metric flow documents, follow these steps:

1. Run the utility using the following command:

   On Windows:

   ```
   %PMDB_HOME%\bin\shr_utility -flow -dir %PMDB_HOME%\packages\ActiveDirectory
   ```

   On Linux:

   ```
   $PMDB_HOME/bin/shr_utility -flow -dir $PMDB_HOME/packages/ActiveDirectory
   ```

   The command generates multiple HTML output files in the current directory.

2. Open the HTML output file in Excel.

   You can apply combination of filters to compare and track a particular metric(s).

Note: The output file in Excel format is published for some of the Content Packs. You can download the files from the following URL:

https://hpln.hp.com/node/24267/attachment

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Feedback on Microsoft Active Directory Content Pack Reference (Service Health Reporter 9.40)

Just add your feedback to the email and click send.

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We appreciate your feedback!