

HP Service Health Reporter

Software Version: 9.40

Windows® and Linux operating systems

Network Performance Content Pack Reference

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About This Document

This document provides an overview of SHR and Network Performance Content Pack. This document provides the list of Network Performance reports available with the Network Performance Content Pack.

This document helps you to deploy the topology views and install and configure the data source for the Network Performance Content Pack. It provides information on report navigation and metric mapping for report.

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:

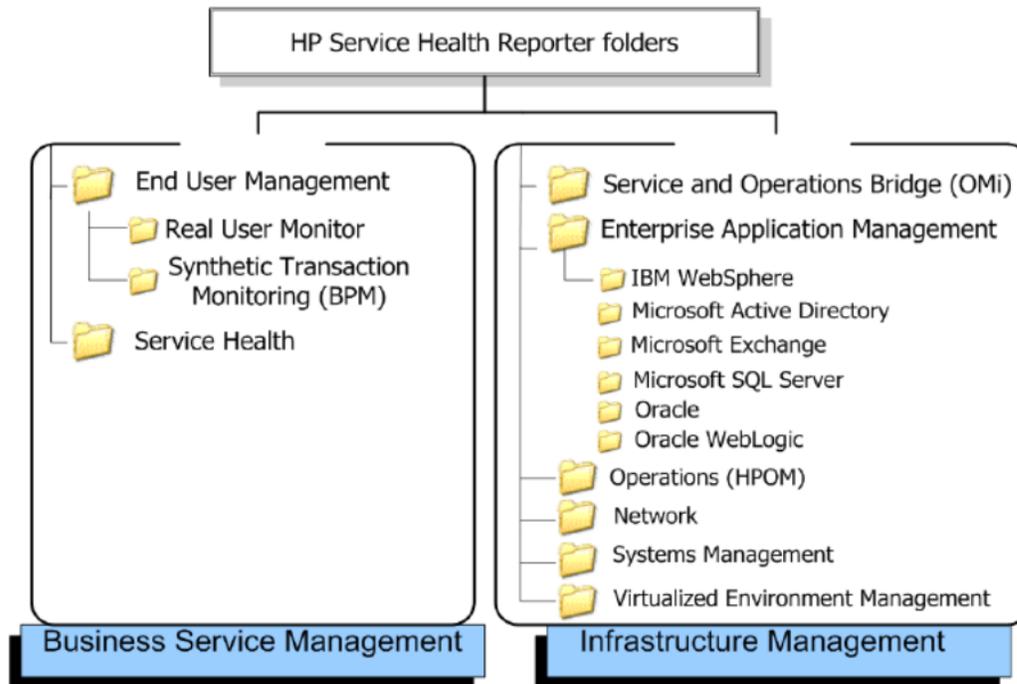
- Deployment with NNMi
- Deployment with a generic database
- Deployment with other applications using CSV

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 Network Performance 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*.

Network Performance Content Pack Overview

This section provides an overview of Network Performance Content Pack, target audience, and supported data sources.

The Network Performance 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 Network Performance Content Packs depends on the type of deployment scenario used.

Target Audience

The target audience for the Network reports is Network Administrators who are responsible for the maintenance of the network infrastructure of their organization. They can use the Network reports to survey the inventory of the network nodes and the allocated hardware resources to support the Business Services, Business Applications, or the Node Groups that are deployed on these nodes. By analyzing the performance, availability, and health information displayed in the reports, Network Administrators can help ensure continuous improvement of these business services and business applications.

Data Sources for Network Data

SHR integrates with and collects historical network-related data for the network nodes from HP Network Node Manager i (NNMi) Network Performance Server (NPS).

The NPS provides the infrastructure that is used in conjunction with NNMi to monitor the operational performance of the network infrastructure. With the performance data collected by different NNMi Software Smart Plug-ins (iSPIs) such as NNM iSPI for Performance, the NPS builds data tables, runs queries in response to user selections, and displays query results in web-based reports that help you diagnose and troubleshoot problems in your network environment. The NPS enables you to effectively store, access, and track performance data.

SHR supports the collection of network data from the NPS by extending the functionality of the database collector. The Network Content Pack identifies the list of metrics or facts¹ that SHR must collect from each of these data sources. The corresponding dimension² data is collected from the RTSM or HPOM topology source, depending on SHR's deployment scenario.

SHR collects hourly data from the NPS based on the collection policies defined in the Network Content Pack. This data is stored in the database in hourly tables as individual records. SHR then performs

¹In data warehousing, a fact is a value or measurement of a business process. This fact data is stored in a fact table in the database.

²In data warehousing, a dimension is a data element that categorizes the fact data. For example, customer, date, product are all dimensions under which specific fact values are organized. Dimension data is stored in the dimension table in the database.

aggregation routines on these records and converts the data to daily data. This aggregated data is displayed in the reports.

Note: The Network data that is collected from NPS is enriched with the downtime information. SHR does not perform any additional downtime enrichment on this data when displaying it in the reports.

Deploy Topology Views

To configure SHR to collect domain-specific data, you need to deploy the topology views for Network Performance Content Pack. These topology views contain specific CI attributes that Network Performance 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 Network Performance Content Pack:

Content Pack	View Name	Location
On Windows		
Network	SHR_Network_Views.zip	%PMDb_HOME%\packages\Network\ETL_Network_NPS92_RTSM.ap\source\cmdb_views
On Linux		
Network	SHR_Network_Views.zip	\$PMDb_HOME/packages/Network/ETL_Network_NPS92_RTSM.ap/source/cmdb_views

HP BSM Server

To deploy the topology model views for the Network Performance Content Pack in the HP BSM server, follow these steps:

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

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

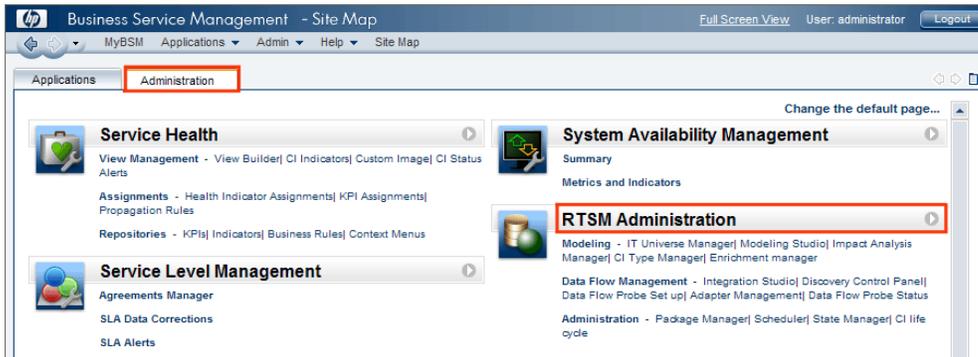
where, <BSM system FQDN> is the FQDN of the HP BSM server.

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.

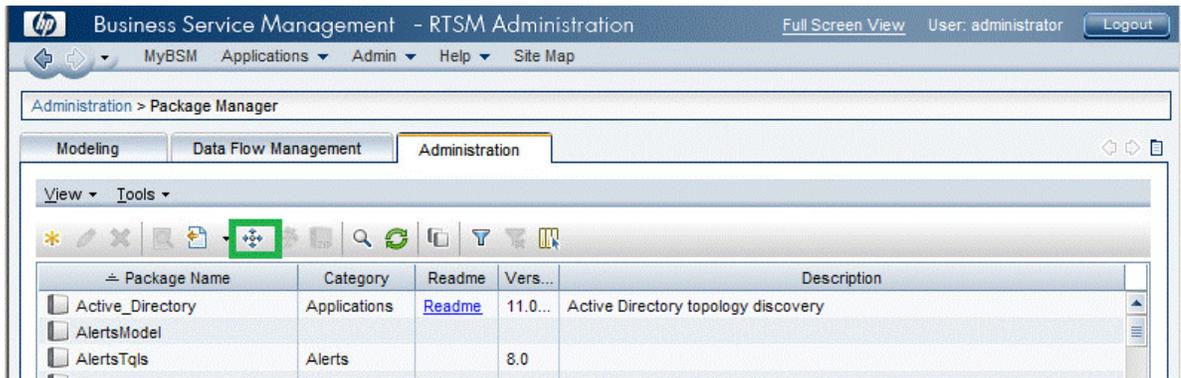
The Business Service Management Login page appears.

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

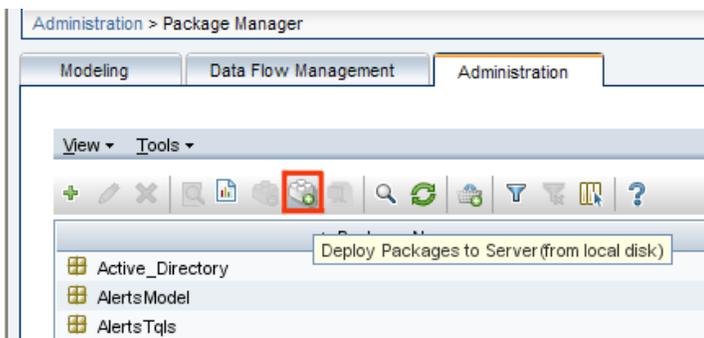
3. Click **Administration > RTSM Administration**. The RTSM Administration page appears.



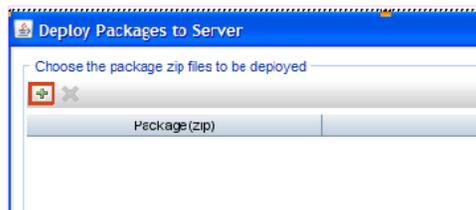
4. Click **Administration > Package Manager**. The Package Manager page appears.



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 Network Performance Content Pack in the HP OMi 10 server, follow these steps:

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

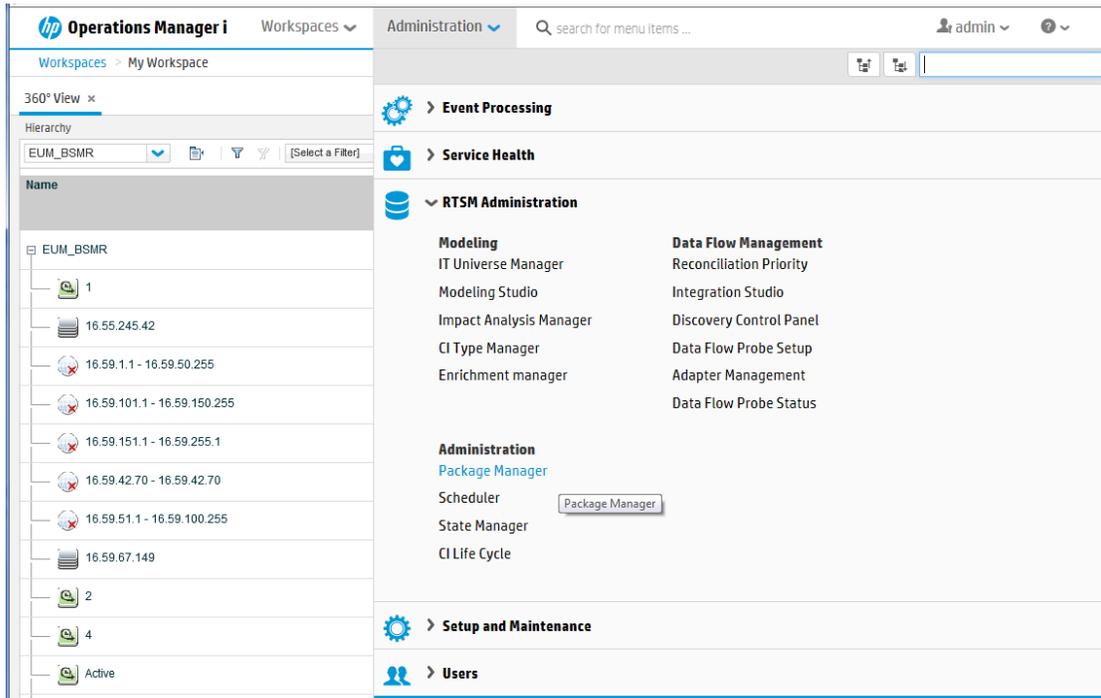
```
http://<OMi system FQDN>/omi
```

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.

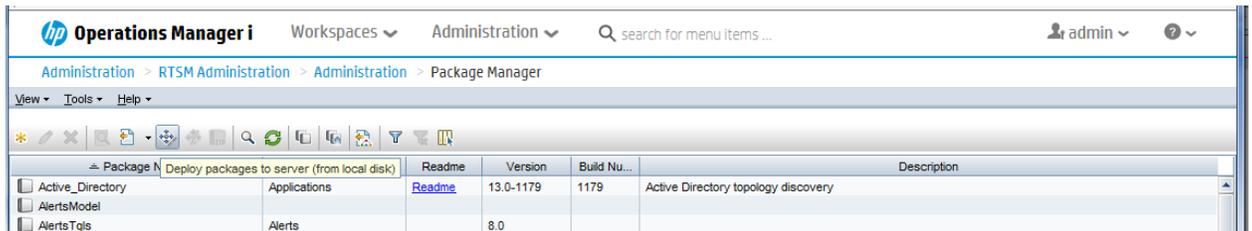
The Operations Manager i Login page appears.

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**.

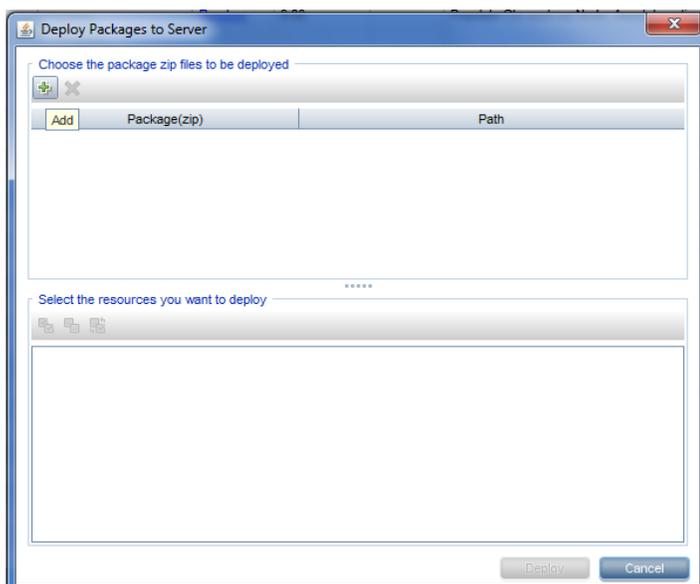


The Package Manager page appears.

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.

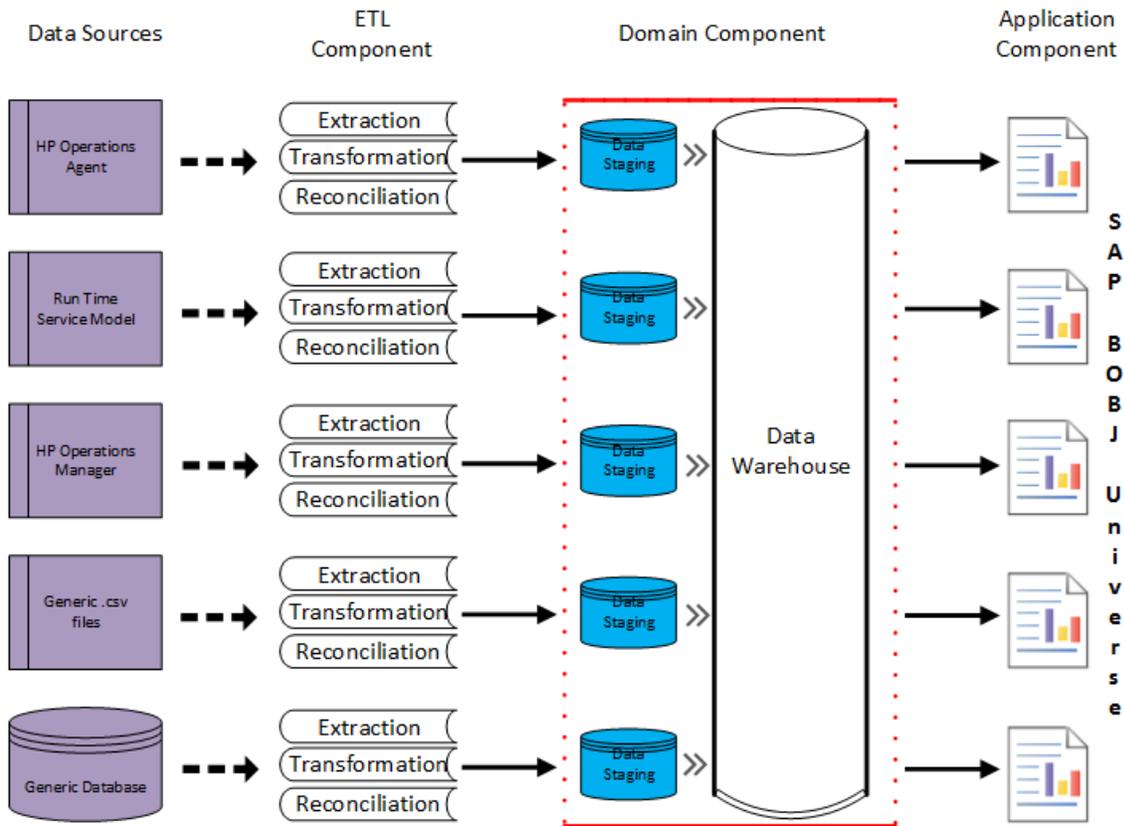
3. To check the data sources in the HP Operations agent, click **PA**.

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 application 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).

The Content Pack components 'NetworkPerf_ETL_PerfiSPI_NonRTSM' and 'NetworkPerf_ETL_PerfiSPI_RTSM' are mutually exclusive. Ensure that only one of them is selected.

Note: If the NNMi topology is integrated to BSM/OMi RTSM, select NetworkPerf_ETL_PerfiSPI_RTSM Content Pack component. If else, select NetworkPerf_ETL_PerfiSPI_NonRTSM Content Pack component.

- **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 Network Performance 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 and to generate reports on data from HPOM, BSM, or OMi, make the following selections:

- NetworkPerf_ETL_PerfiSPI_NonRTSM (9.40.002)
- NetworkPerf_ETL_PerfiSPI_RTSM (9.40.002)
- NetworkPerf_Domain (9.40.002)
- NetworkPerf_Reports (9.40.003)

Note: The Content Pack components for RTSM and non RTSM topology source are mutually exclusive. Ensure that only one of them is selected.

Tip: Install the following dependent content packs (and their components) along with this content pack for it to function:

- Core
 - Core_Domain
- System Performance
 - SysPerf_Reports

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 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 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.

In BSM/OMi deployment scenario, when you configure data source, choose the NNMi integrated with BSM/OMi option to build reports with the data collected by HP Network Node Manager i (NNMi).

In HPOM deployment scenario, HP Operations Agent monitors the physical and virtual nodes. When you configure data source in this scenario, choose the Network Data Source (using Generic Database).

Note: You must have the NNM iSPI Performance for Metrics installed. Do not select this option if you do not have NNMi and the NNM iSPI Performance for metrics available in your environment.

Configuring the Network Data Source (using Generic Database)

If you have install the Network Content Pack, you must configure SHR (Local Data Collector) or Remote Collector to collect network-related data from NNMi. NNMi uses the NPS as the repository for network performance data. Using the Generic Database page in the Administration Console, you can configure SHR to collect the required data from the NPS. This page also allows you to configure connections to generic databases that use Sybase, Oracle, or SQL Server as the database system.

To configure the NPS data source connection, follow these steps:

1. In the **Administration Console**, click **Collection Configuration > Generic Database**. The **Generic Database** page appears.
2. Click **Create New** to create the NPS data source connection. The **Connection Parameters** dialog box appears.
3. Specify or type the following values in the **Connection Parameters** dialog box:

Field	Description
Host name	Address (IP or FQDN) of the NPS database server.
Port	Port number to query the NPS database server.
TimeZone	The time zone in which the database instance is configured.

Field	Description
Database type	The type of database engine that is used to create the NPS database.
Domain	Select the domain(s) for which you want SHR to collect data from the selected database type.
URL	The URL of the database instance.
User name	Name of the NPS database user.
Password	Password of the NPS database user.
Collection Station	To specify whether it is a Local / Remote Collector.

The Domain name `Network_Core` appears for selection only after the installation of `NetworkPerf_ETL_PerfiSPI_RTSM` or `NetworkPerf_ETL_PerfiSPI9.20` Content Pack or `NetworkPerf_ETL_PerfiSPI_NonRTSM`.

4. Click **OK**.
5. Click **Test Connection** to test the connection.
6. Click **Save** to save the changes. A Saved Successfully message appears in the Information message panel.
7. To change the data collection schedule for one or more hosts, in the **Schedule Frequency** column, specify a collection time between 1 and 24 hours in the **Hrs** box.
8. Click **Save** to save the changes. A Saved Successfully message appears in the Information message panel.

Data collection for all the newly created data source connections is enabled by default. For more information about configuring network data source connections, see the *HP Service Health Reporter Online Help for Administrators*.

Report Navigation

The Network reports are categorized into the high-level Executive Summary and the detailed Performance reports to help you easily analyze and identify performance problems with the network nodes in your IT environment. 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 Network Node Health by Group report for an overall picture of the health of the network infrastructure and then navigate to the detailed Quick View or Exception reports to identify specific nodes that breached the utilization thresholds.

Certain Network reports also provide cross-domain functionality where you can cross-launch to the related System Management reports for further investigation. However, report navigation can vary depending on the use-cases around which these reports are designed.

The Network reports provide the following information:

- Historical information about the performance of the different network nodes
- Analyze the health of the monitored network devices
- Single pane of view of consolidated information of both the physical systems and the network nodes for the same business service
- Verify the outcome of network optimization tasks that were performed based on reports from other real-time monitoring tools

New Network Performance Reports

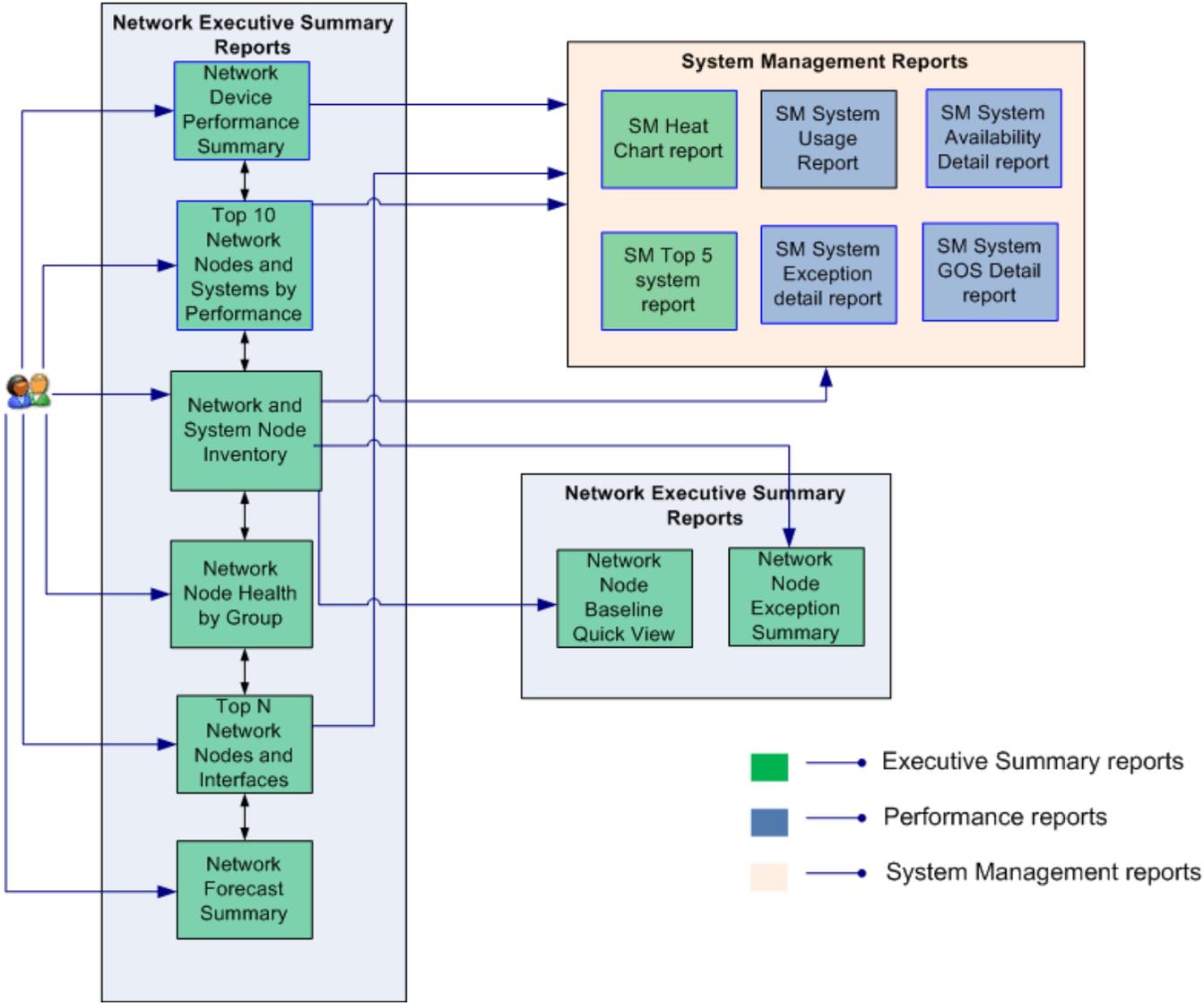
The following is the new Network Performance report:

- **Network Node Availability** - Displays the availability details of the monitored network nodes, as a heat-map based on predetermined thresholds, for every hour across the selected time period.

Availability	Color
< 90	Red
> 90 and < 95	Yellow
> 95	Green

Report Navigation

The following diagram consolidates the reports in the Network domain and depicts one possible way of navigating the reports.



Appendix

This section provides information on [Terminology](#) 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.

Baseline metrics: The Network Performance Server (NPS) provides you the baseline metrics for network-related data to define the normal (expected) range of values for any given metric. The baselines metrics enable you to forecast the future value for a given metric based on the historical data.

Baseline: The value that presents the normal (expected) range of utilization for the selected topology filter based on the historical data.

Baseline sleeve: The upper and lower limit of the baseline range of utilization.

Baseline deviation: Deviation of the samples spread over a specific time range. This value represents the extent of the range of values normally seen for the selected time range in the seasonal cycle, based on historical data.

Baseline slope: Indicates the increase or decrease in the average utilization in one day. Negative slope indicates a declining trend.

Exception count: The total number of sample counts that are marked for an exception. NPS raises an exception for the metric if the a certain number of samples within a sample window are out of normal range.

Exception rate: The percentage of samples that has the exception flag set.

Appendix B: 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\Network
```

On Linux:

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

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 Network Performance Content Pack Reference (Service Health Reporter 9.40)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to HP Service Health Reporter Help Authors: docfeedback@hp.com.

We appreciate your feedback!