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Enterprise

HPE Operations Bridge Reporter

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Windows® and Linux operating systems

Operations Events Content Pack Reference

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About This Document

This document provides an overview of HPE OBR and Operations Events Content Pack. This document provides the list of Operations (HPOM) reports available with the Operations Events Content Pack. This document helps you to install and configure the data source for the Operations Events Content Pack. It provides information on report navigation.

For information on HPE Operations Bridge Reporter tools and contents, go to URL: <https://hpln.hpe.com/product/operations-bridge-reporter>.

Getting Started

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

HPE Operations Bridge Reporter (OBR) Overview

HPE OBR 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 cross domain reports to detailed domain level reports.

Deployment Scenarios

Following are the deployment scenarios supported on HPE OBR:

- **Deployment with BSM/OMi** - In this deployment, Run-time Service Model (RTSM) is the source of topology information. HPE OBR 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, HPE OBR 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. HPE OBR uses the node groups from HPOM for its topology computation.

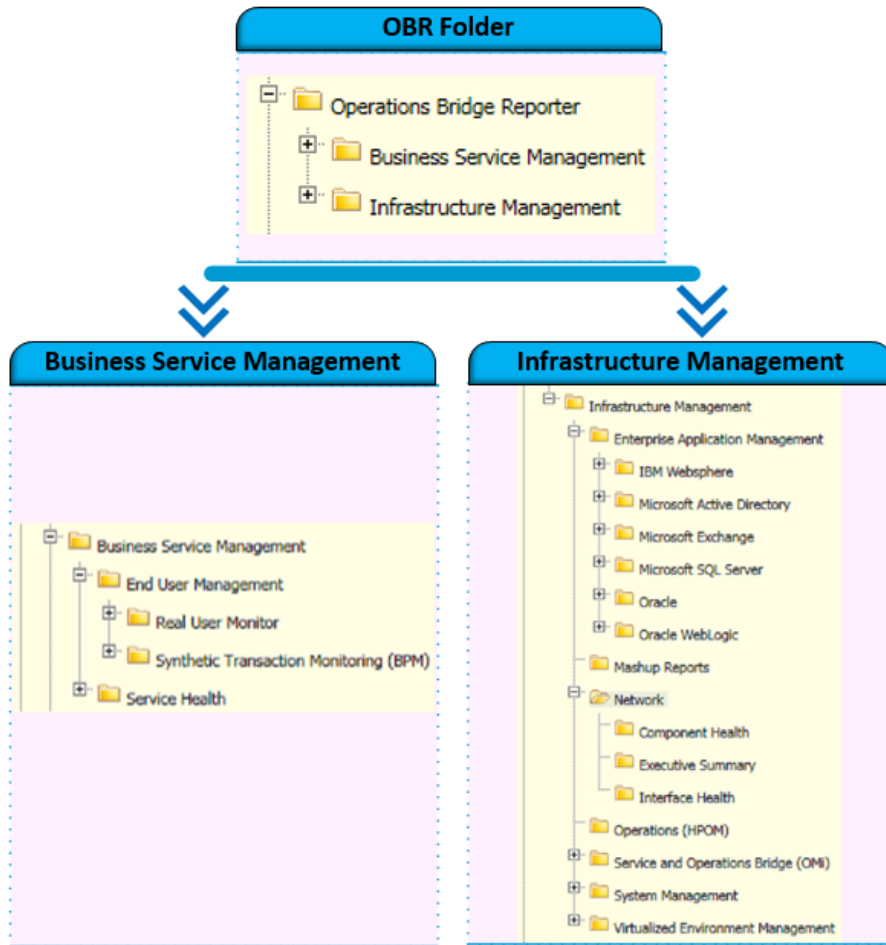
- **Deployment with VMware vCenter** - VMware vCenter is a distributed server-client software solution that provides a central and a flexible platform for managing the virtual infrastructure in business-critical enterprise systems. VMware vCenter centrally monitors performance and events, and provides 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 HPE Operations Bridge Reporter (OBR) 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 Operations Events Content Pack, see [Report Navigation](#).

For more information on HPE Operations Bridge Reporter concepts, see *HPE Operations Bridge Reporter Concepts Guide* and *HPE Operations Bridge Reporter Content Development Guide*.

Operations Events (HPOM) Content Pack Overview

HP Operations Manager (HPOM) is a distributed client-server software solution designed to help system administrators detect, solve, and prevent problems occurring in networks, systems, and applications in your enterprise.

HPOM helps you solve problems in your computing environment proactively. It notifies you when a problem is about to occur or has just occurred by sending messages to the management console of the management server. HPOM also provides you with the resources to avoid or resolve the problem.

For more information about HPOM, see *HP Operations Manager for UNIX Concepts Guide* or the *HP Operations Manager For Windows Console Online Help*.

The Operations Content Pack collects and aggregates message statistics based on various dimensions to provide an overview of the operation of the applications, services, nodes, and node groups in your environment. This Content Pack helps you understand the number of active and acknowledged messages generated for a node, node group, application, service, message group, or operator-wise messages and the time taken to resolve message. With this information, you can identify those applications, nodes, or services that are error-prone and take the necessary corrective or optimization actions.

Target Audience

The target audience for the HPOM reports is:

- **HPOM administrators:** They are Windows users who are members of the HP-OVE-ADMINS group and can perform administrative tasks (for example, adding nodes, or configuring and deploying policies). An HPOM administrator is not the same as a Windows domain administrator. Note that the HPOM administrator must be a trusted user because it has (by way of the agent) near administrative capabilities on all managed nodes.
- **Operators:** They are members of the HP-OVE-OPERATORS group and perform tasks such as monitoring the HPOM console, in particular the message browser, and responding to messages.

An operator or administrator can use the HPOM reports to:

- Know summary and trend of message count by severity and by Management server
- Understand the time taken to resolve the acknowledged messages

- Know the trend of total incoming messages and resolved messages
- Determine the age of the active messages
- Understand the load on each operator and time taken to resolve the messages by the operator
- Identify the best and worst performing application, services, and message groups based on the number of message received

Data Sources for HPOM Data

OBR integrates with and collects historical and ongoing operations data from the HPOM database server in both BSM Run-time Service Model (RTSM) and HPOM deployment scenarios. HPOM centrally monitors performance and events by using agents that are installed on the managed nodes. An agent is a deployment package that helps you manage nodes by collecting data, discovering services, monitoring events, and running actions and commands that control the nodes.

You can configure the connection to the HPOM database through the OBR Administration Console. Once it has been configured, OBR collects event statistics, severity statistics for each of those events, as well as operator statistics, such as how many events were handled by each operator, from the HPOM database.

The Operations Content Pack identifies the list of messages by node, application, operator, service, message group, and node group that OBR must collect from the HPOM database. All dimension and fact data are collected from the Microsoft SQL Server database in the Windows installation of HPOM and from the Oracle database in the Unix installation.

OBR collects data from the HPOM database at periodic intervals based on the collection policies predefined in the Operations Content Pack. The snapshot of the message information is collected every one hour. This data is stored in the OBR database in hourly tables as individual records. OBR then performs aggregation routines on these records and converts the data to daily data. This aggregated data is displayed in the reports.

Install the Content pack

Before you begin to install the Content Packs, check the availability and integrity of the data sources.

Check Availability and Integrity of Data Sources

HPE OBR has Data Source Readiness Check tool that enables you to check the availability and integrity of RTSM and PA data sources before installing Content Packs. The tool is available on Windows and Linux operating systems. You can check the data source readiness using the property file or by database.

Check Data Source Related to RTSM

To check the availability and integrity of data source related to RTSM, follow these steps:

1. Log on to the HPE OBR system.
2. Before you check the data source readiness, ensure the following:
 - a. The **dscheck** folder is available in PMDB_HOME.
 - b. The dscheckRTSM.sh script is available in %PMDb_HOME%\dscheck\bin (**On Windows**) and \$PMDb_HOME/dscheck/bin (**On Linux**).
 - c. Property file is created with the following entries:

```
## RTSM DB connection properties

rtsm.hostname=<hostname>

rtsm.username=<username>

rtsm.password=<password>

rtsm.port=<port>
```

3. To check the data source readiness, run the following command in the command prompt:
 - a. cd {PMDb_HOME}/dscheck/bin
 - b. Check the data source readiness using:

- i. **Property file:**

```
dscheckRTSM.sh -propFile <File_Path>/<property_file>
```

where, *<File_Path>* is the path where property file is created.

<property_file> is the name of the RTSM property file. For example, *rtsm.prp*.

ii. **Database:**

`./dscheckRTSM.sh`

You can open the `.html` file created in **dscheck** folder to check the availability and integrity of the RTSM data source.

The screenshot displays the output of the `dscheckRTSM.sh` command. It consists of two main sections: 'Status Summary' and 'View Summary'.

Status Summary Table:

BSM/OMI Version	Host Name	Connection Status	View Status	Mandatory CI Type Status	Mandatory CI Attributes Status	Number of Duplicate Nodes
Unknown	HWFM02277.hpwlabs.adapps.hp.com	✔	✘	✘	✘	0

Select Views:

Not available in RTSM Missing Mandatory CI Types Missing Mandatory CI Attributes

View Summary Table:

View Name	Available in RTSM?	Mandatory CI Types Missing	Mandatory CI Attributes Missing
SM_PA	Yes	0	4
SM_SIS_BusinessView	Yes	1	1
Exchange_Site_View	Yes	0	0
JZEE_Deployment	Yes	1	0
SM_HyperV_BusinessView	Yes	1	3
SM_SIS_Server	Yes	1	0
SM_Sol_Zones	Yes	0	1
ORA_Deployment	Yes	1	0
MSSQL_BusinessView	Yes	0	0
ORA_BusinessView	Yes	1	0
SM_Sol_Zones_BusinessView	Yes	0	12
SHR_Network	Yes	0	0
SM_LPAP	Yes	1	1
SM_SIS	Yes	0	1

The file displays the following information:

- i. Server status
- ii. Configuration details
- iii. Views available in RTSM
- iv. Mandatory CI types missing in the view
- v. Mandatory CI attributes missing with the CI type

Check Data Source Related to PA

To check the availability and integrity of data source related to PA, follow these steps:

1. Log on to the HPE OBR system.
2. Before you check the data source readiness, ensure the following:
 - a. The **dscheck** folder is available in `PMDB_HOME`.
 - b. The `dscheckPA.sh` script is available in `%PMDB_HOME%\dscheck\bin` (**On Windows**) and `$PMDB_HOME/dscheck/bin` (**On Linux**).
 - c. Property file with the entries of PA nodes is created.
3. To check the data source readiness, run the following command in the command prompt:

- a. `cd {PMDB_HOME}/dscheck/bin`
- b. Check the data source readiness using:
 - i. **Property file:**
`dscheckPA.sh -propFile <File_Path>/<property_file>`
 where, `<File_Path>` is the path where property files is created.
`<property_file>` is the name of the PA property file. For example, `pa.prp`.
 - ii. **Database:**
`./dscheckPA.sh`

You can open the `.html` file created in **dscheck** folder to check the availability and integrity of the PA data source.

The screenshot shows a web interface with two main sections. The top section is titled "Node Status Summary" and contains a table with the following data:

Total	Not Reachable	Policy Missing	Data not logged for last 2 days	DSi/CODA Status
1	0	1	1	1

Below this is a "Select any" section with a "Node Name:" input field and a "Domains:" dropdown menu set to "-- Select All --".

The bottom section is titled "Node Status" and contains a table with the following data:

Node Name	ICMP ping	BBC ping	CODA ping	Agent Version	Last Log Time	Number of Missing Policies	Domain	DSi/CODA
WFMVSO17.HPSWLABS.HP.COM	✓	✗	✓	11.11.025	09/28/15 13:38:00	1		✗

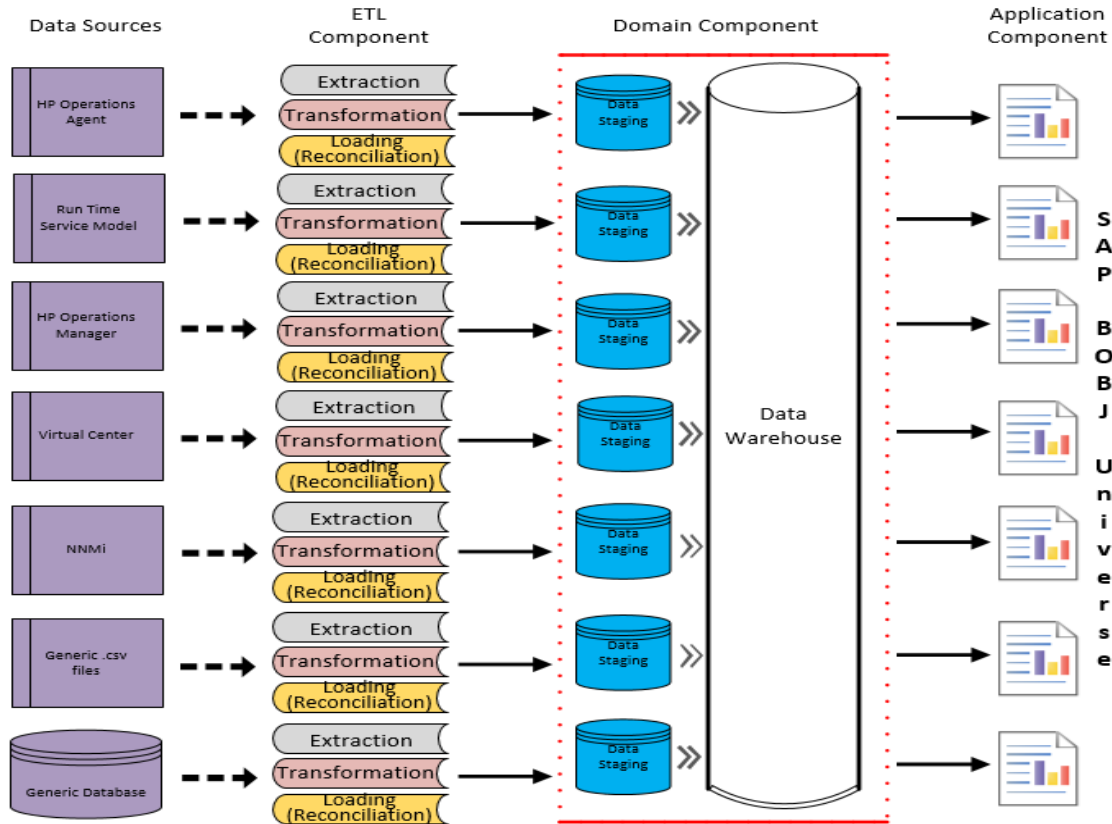
The file displays the following information:

- i. Node status summary
- ii. Node status

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).

- **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 Operations Events Content Pack, follow these steps:

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

```
http://<OBR_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:

- `OprEvent_ETL_HPOM (10.00.000)`
- `OprEvent_Domain_Reports (10.00.000)`

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

- Core
 - `Core_Domain`

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 *HPE Operations Bridge 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.

Uninstalling the Content Pack Components

Use the Deployment Manager utility to uninstall the Content Pack components.


To uninstall the Content Packs, follow these steps:

1. Launch the Administration Console in a web browser:
 - a. Launch the following URL:
`https://<OBR_Server_FQDN>:21412/`
 - b. Type **administrator** in the **Login Name** field and password in the **Password** field. Click **Log In** to continue. The Administration Console page appears.

Note: If you use any other user account to access the Administration Console, make sure that the user account has administrator privileges.

2. On the left pane, click **Administration**, and then click **Deployment Manager**. The **Deployment Manager** page appears.

The Deployment Manager displays the Content Pack components that are installed in the supported deployment scenario.

3. Click  icon for the required Content Pack to be uninstalled. A summary message is displayed.

Note: At a time, only one Content Pack and its dependent Content Packs are uninstalled.

4. Click **OK** to uninstall the Content Pack. The uninstall status is displayed in the **Status** column.

Data Source Collection Configuration

After installing Content Packs, you must configure HPE OBR to collect required data from various data collectors. The data collectors work internally within the HPE OBR 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 Manager Data Source

If you have installed the HP Operations Manager (HPOM) Content Pack and created the topology source connection for HPOM on the Service Definition page, the same data source connection appears on the HP Operations Manager page. You need not create a new data source connection. You can test the existing connection and save it.

However, updating the data source connection on the Service Definition page does not update the connection details on the Operations Manager page.

To configure the database connection, follow these steps:

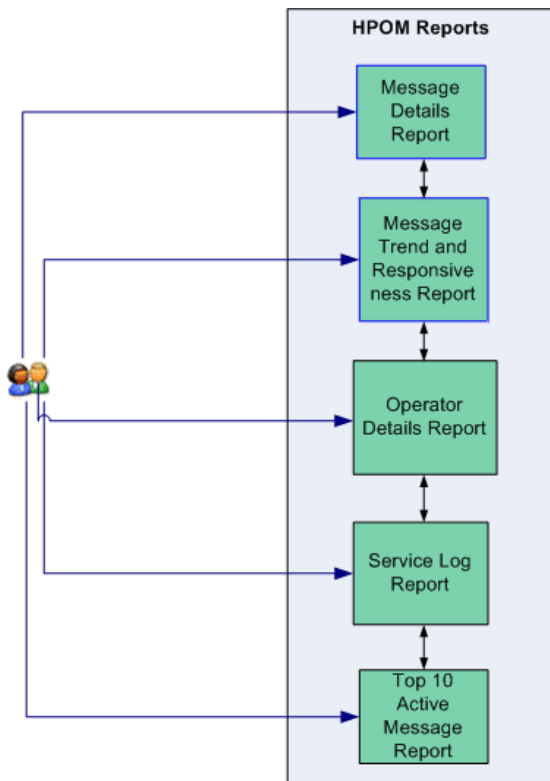
1. In the **Administration Console**, click **Data Source Configuration > HP Operations Manager**. The **HP Operations Manager** page appears.
2. Select the check box next to the host name and then click **Test Connection** to test the connection.
3. Click **Save** to save the changes. A *Saved Successfully* message appears in the information message panel.

You can configure additional HPOM data sources by clicking the **Create New** button. You can modify a specific data source connection by clicking **Configure**.

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

Report Navigation

All the reports in the Operations folder are separate reports that display specific information to the viewer. There is no cross-launch functionality across the reports. Therefore, you cannot navigate from one report to the another for additional information. The following diagram consolidates the reports in the HPOM domain and depicts one possible way of navigating the reports.



 — Executive Summary reports

Use Cases

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

Description	Report Category	Report Name
To know the summary and trend of acknowledged and	Message	HP OM

Description	Report Category	Report Name
active message count by severity	Details	Message Details
To know how long the messages are open and time taken to resolve the messages by severity. Also, the trend of total incoming messages and resolved messages.	Message Details	HP OM Message Trend and Responsiveness
To view the load on each operator and time taken to resolve the messages by operator	Operator Details	HPOM Operator Details
To know how long services are in different states	Service Details	HPOM Service Log
To view the top 10 Application/Service/Node/Node Group having highest number of Active messages	Top N Details	HPOM Top 10 Active Message Report

Appendix

This section provides information on [Terminology](#) and [Calculating message counts, age, and resolution time](#).

Appendix A: Terminology

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

HPOM Administrator: Windows users who are members of the HP-OVE-ADMINS group and can perform administrative tasks (for example, adding nodes, or configuring and deploying policies).

HPOM Operator: Members of the HP-OVE-OPERATORS group and perform tasks such as monitoring the HPOM console, in particular the message browser, and responding to messages.

Management server: The server on which HPOM is installed. The management server includes the HPOM database and the HPOM console, through which the HPOM operator can monitor the managed nodes. The management server acts as the single repository of information collected by HPOM. You can configure multiple management servers in your environment.

Services: These are customer-based, user-oriented, or infrastructure capabilities provided by one or more hardware or software components within a computing environment (such as email, network bandwidth, and application access). Policies help assure that appropriate service levels are provided to designated consumers of the service.

Nodes: A node is a real or virtual computer system or an intelligent device that can be managed from the HPOM management server. HPOM can manage Windows, UNIX, and Linux nodes.

Message group: Group of messages that are classified by the HPOM administrator or operator as specific entities such as system-related messages, service messages, and so on.

Policy: In HPOM, a policy is a set of configuration information that enables you to automate network and system administration. HPOM administrators can deploy policies to computers in a managed network to provide consistent, automated administration across the network.

Agent: An agent is a deployment package that enables you to manage nodes. After you deploy an agent to a node, it enables you to collect data, discover services, monitor events, and run actions and commands that control the node.

Appendix B: Calculating message counts, age, and resolution time

This section explains how OBR calculates the active, acknowledged, and incoming message counts based on the data collected from the HPOM database. It also explains the logic used for calculating the age of the active messages and the resolution time for the acknowledged messages.

Active Message Count

The count of the active messages is calculated based on the hourly snapshots taken right from when OBR starts to collect data from the HPOM database. An hourly snapshot refers to the total number of active message in that hour. For example, a snapshot taken at 11:00 A.M. displays 50 active messages and a snapshot at 12:00 P.M. displays 52. For each hour, the number of active messages can increase or decrease.

When OBR converts the hourly data to daily data, instead of calculating the average of the collected hourly values, OBR takes the last hour's data as the count for that day. For example, if 12:00 P.M. were the last hour of that day, then 52 would be considered as the daily active message count for that day.

Acknowledged Message Count

Unlike active messages, OBR does not collect the historical count of the acknowledged messages. It only collects the hourly count of the acknowledged message from the time it starts to collect data from the HPOM database. It does not consider messages that were acknowledged a day, two days, or even 10 days ago. OBR only considers messages that undergo a state change between the previous and the present hour as acknowledged messages. The time when the state of the message was changed is recorded in the **Timeofstatechange** column in the HPOM database. OBR uses this value in the **Timeofstatechange** column to calculate the total number of acknowledged messages within that hour.

When OBR converts the hourly data to daily data, an aggregation is performed on the collected hourly values and the sum is recorded as the value for that day.

Incoming Message Count

In the HPOM database, the time at which a message was received is recorded in the **TimeReceived** column. OBR considers message received within the previous hour and the present as incoming messages. It does not consider the historical data for the incoming message count. Based on the values in the **TimeReceived** column, OBR calculates the total count of incoming messages for that hour.

When OBR converts the hourly data to daily data, an aggregation is performed on the collected hourly values and the sum is recorded as the value for that day.

Age of the Active Messages

The age of active messages refers to the average length of time the messages were in the queue. OBR calculates the average age for an entire count of messages between the **TimeReceived** to the present hour.

For example, suppose one active message was present in the queue for 10 days, another for 20 days, and another for 30 days.

The average age for all three messages = $(10+20+30)/3 = 20$ days as of that hour.

When OBR converts the hourly data to daily data, an aggregation is performed on the collected hourly values and the (last value is) recorded as the value for that day.

Resolution Time for Acknowledged Messages

The resolution time for acknowledged messages refers to the average time taken to resolve the messages. Between the previous and present hour, OBR calculates the resolution time for a message based on the values in the **TimeReceived** and **Timeofstatechange** columns. An average value is calculated for all messages in that hour.

When OBR converts the hourly data to daily data, an aggregation is performed on the collected hourly values and the average is recorded as the value for that day.

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