# HPE Operations Bridge Reporter

Software Version: 10.10

## IBM WebSphere Application Server Content Pack Reference

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# Contents

# About This Document

This document provides an overview of HPE OBR and IBM WebSphere Application Server Content Pack. The document introduces you to deployment scenarios. This document also lists the prerequisite aspects and policies required for HPE Operations Bridge Reporter (OBR) to integrate with HP Operations Smart Plug-ins (SPIs) and HP OMi Management Packs.

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

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:
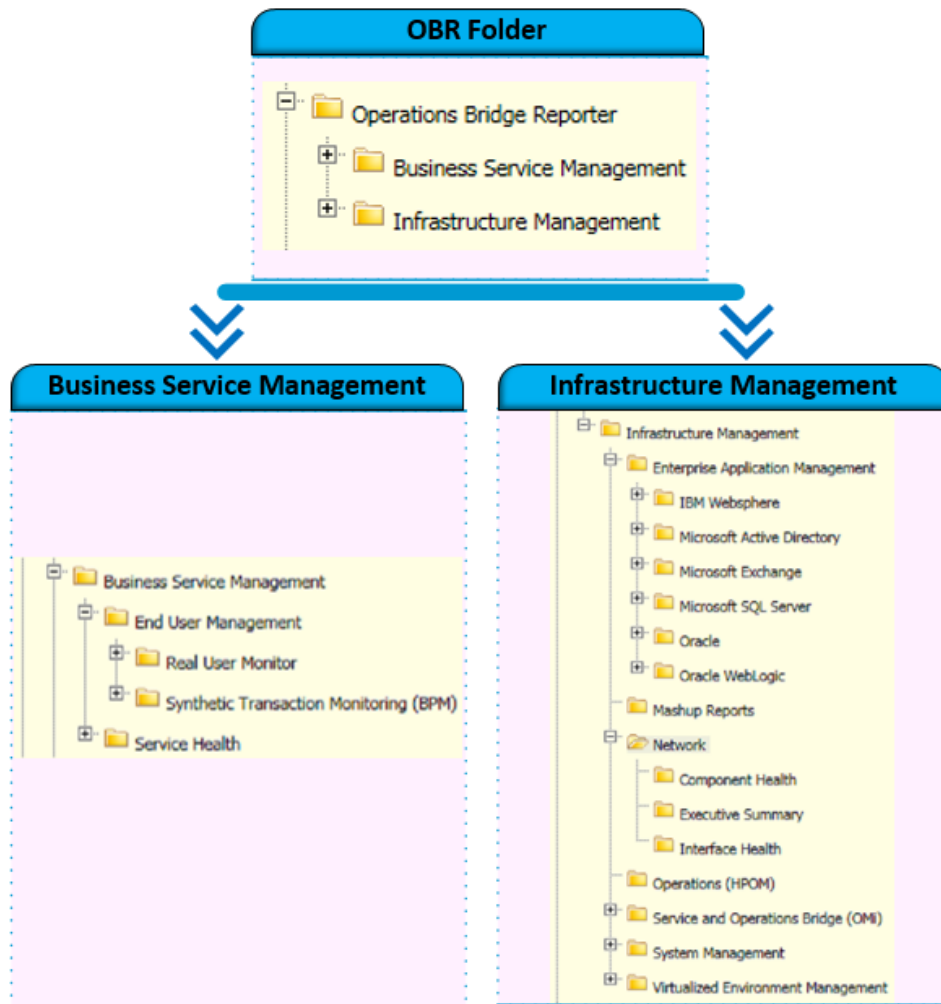
To view a map of all the reports available in the IBM WebSphere Application Server Content Pack, see
Report Navigation.

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

# IBM WebSphere Application Server Content Pack Overview

This section provides an overview of IBM WebSphere Application Server Content Pack, target audience, and supported data sources.

The IBM WebSphere Application Server 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 IBM WebSphere Application Server Content Packs depends on the type of deployment scenario used.

# Target Audience

Target audience for the IBM WebSphere Server reports are Operations Center Managers and WebSphere Application Administrators, who help to setup and maintain the database systems in the IT infrastructure. IBM WebSphere reports help to identify and analyze the performance of WebSphere server instances, in a specific period, based on availability, space usage, and I/O metrics. These instances and metrics help users to optimize the server parameters and appropriately consolidate the applications.

# Data Sources for WebSphere Data

OBR integrates and collects historical and ongoing database performance metrics from the HP Operations Smart Plug-In and HP OMi Management Pack for IBM WebSphere Server datastores in BSM Run-time Service Model (RTSM) and HPOM deployment scenarios.

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

OBR collects data from different data sources at periodic intervals based on the collection policies predefined in the **IBMWebSphere_ETL_WebSphereSPI 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. OBR 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 IBM WebSphere Application Server, OBR relies on the metrics collected by collectors of HP Operations Smart Plug-ins for IBM WebSphere Application Server (IBM WebSphere Application Server SPI). SPI collectors store the data into the data store provided by the HP Operations agent. OBR's integration with SPI data sources facilitate transfer of data from HP Operations agent's data store to OBR's database. This integration is established when you deploy OBR in the HPOM deployment scenario.

OBR provides performance reports for the IBM WebSphere Application Server enterprise applications.

## Prerequisite

The following is the prerequisite to integrate with data source for HP Operations Smart Plug-ins:

- CODA logging is a prerequisite for HPE OBR to be able to collect data from multiple instances.

## 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 IBM WebSphere Application Server 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 OBR to collect data from a data source and installing IBM WebSphere Application Server, OBR starts collecting historical data from agent's data store.

# Prerequisite Policies for IBM WebSphere Reports

The following table lists the IBM WebSphere Smart Plug-in (SPI) policies required by each IBM WebSphere report in HPE OBR:

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

| Report Name | Data Source | Data Class | Required SPI Policy |
|---|---|---|---|
| WebSphere Top N summary | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | WBSSPI_0812<br><br>WBSSPI_0220<br><br>WBSSPI_0260<br><br>WBSSPI_0263 |
| WebSphere Servlet Performance Overview | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | |
| WebSphere Thread Pool Performance Overview | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | |
| WebSphere JDBC Pool Throughput and Wait Time Details | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | |
| WebSphere EJB Performance Details | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | |
| WebSphere JDBC Utilization Details | WBSSPI | WBSSPI_ METRICS<br><br>WBSSPI_ RPT_ METRICS | |
| WebSphere Executive Summary | WBSSPI | WBSSPI_ RPT_ METRICS | WBSSPI_0001<br><br>WBSSPI_0246 |
| WebSphere Servlet Performance Details | WBSSPI | WBSSPI_ RPT_ | WBSSPI_0245 |

| Report Name | Data Source | Data Class | Required SPI Policy |
|---|---|---|---|
| | | METRICS | |
| WebSphere Server Availability Details | WBSSPI | WBSSPI_ RPT_ METRICS | |
| WebSphere Transaction Performance Details | WBSSPI | WBSSPI_ METRICS | WBSSPI_0074<br>WBSSPI_0072<br>WBSSPI_0073<br>WBSSPI_0075 |
| WebSphere JVM Utilization Details | WBSSPI | WBSSPI_ METRICS | WBSSPI_0077<br>WBSSPI_0078<br>WBSSPI_0076<br>WBSSPI_0005 |

**Note:** The HPE OBR also collects data from the following policies:

WBSSPI_0040, WBSSPI_0042, WBSSPI_0026, WBSSPI_0810, WBSSPI_0811, WBSSPI_ 0814, WBSSPI_0808, WBSSPI_0809, WBSSPI_0813, WBSSPI_0045, WBSSPI_0048, WBSSPI_0041, WBSSPI_0261, WBSSPI_0262, WBSSPI_0265, WBSSPI_0265, WBSSPI_ 0266, WBSSPI_0221.

Using these policies, you can create OOTB custom reports.

# Integrating with Data Sources for HP OMi Management Packs

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

OBR provides performance reports for the WebSphere Management Pack enterprise application.

# Working of the Integration

1.  Installation and configuration of an HP OMi Management Pack 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 OMi Management Pack 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. HP OMi Management Pack creates at least one *data source* in agent's data store.

4.  After configuring OBR to collect data from a data source and installing Content Packs, OBR starts collecting historical data from agent's data store.

# Prerequisite Policies for IBM WebSphere Reports

The following table lists the IBM WebSphere Management Pack policies and aspects required for each IBM WebSphere report in HPE OBR:

| Report Name | Aspect Name | Policy Templates in Aspect | HP Operations agent | |
| --- | --- | --- | --- | --- |
| | | | Data Source Name | Data Class Name |
| WebSphere Servlet Performance Overview | WebSphere Servlet Performance | WebSphere_ WebAppServletRespTime<br><br>WebSphere_ WebAppServReqRtApp | WEBSPHERE_ DATA | WebSphere_ Servlet |
| WebSphere Thread Pool Performance Overview | WebSphere Thread Status | WebSphere_ ThreadPoolActThreads<br><br>WebSphere_ ThreadPoolAveSize | WEBSPHERE_ DATA | WebSphere_ Thread |
| WebSphere Top N Summary | WebSphere JVM Heap Memory | WebSphere_ JVMMemUtilPct | WEBSPHERE_ DATA | WebSphere_ JVM_Perf |
| WebSphere | WebSphere | WebSphere_ | WEBSPHERE_ | WebSphere_ |

| Report Name | Aspect Name | Policy Templates in Aspect | HP Operations agent | |
| --- | --- | --- | --- | --- |
| | | | Data Source Name | Data Class Name |
| Top N Summary | Thread Status | ThreadPoolActThreads<br><br>WebSphere_ ThreadPoolAveSize | DATA | Thread |
| WebSphere Top N Summary | WebSphere EJB Performance | WebSphere_EJBPoolSize<br><br>WebSphere_ JDBCConnPoolUtil | WEBSPHERE_ DATA | WebSphere_ JDBC |
| WebSphere Top N Summary | WebSphere JDBC Connection Pool Status | WebSphere_ JDBCConnPoolSize<br><br>WebSphere_ JDBCConnPoolUtil | WEBSPHERE_ DATA | WebSphere_ JDBC |
| WebSphere EJB Performance Details | WebSphere EJB Performance | WebSphere_EJBPoolSize<br><br>WebSphere_ EJBPoolMissPctApp<br><br>WebSphere_ EJBPoolUtilApp<br><br>WebSphere_ EJBMethRespTime<br><br>WebSphere_ EJBMethCallsRtApp | WEBSPHERE_ DATA | WebSphere_ EJB |
| WebSphere JDBC Pool Throughput and Wait Time Details | WebSphere JDBC Connection Pool Status | WebSphere_ JDBCConPoolThroughput<br><br>WebSphere_ JDBCConPoolWtTime | WEBSPHERE_ DATA | WebSphere_ JDBC |
| WebSphere JDBC Utilization Details | WebSphere JDBC Connection Pool Status | WebSphere_ JDBCConnPoolUtil | WEBSPHERE_ DATA | WebSphere_ JDBC |
| WebSphere JVM Utilization Details | WebSphere JVM Heap Memory | WebSphere_ JVMMemUtilPct | WEBSPHERE_ DATA | WebSphere_ JVM_Perf |
| Websphere Executive Summary | WebSphere Server Status | WebSphere_ServerStatus | WEBSPHERE_ DATA | WebSphere_ SERVER |

| Report Name | Aspect Name | Policy Templates in Aspect | HP Operations agent | |
|---|---|---|---|---|
| | | | Data Source Name | Data Class Name |
| WebSphere Server Availability Details | WebSphere Server Status | WebSphere_ServerStatus | WEBSPHERE_ DATA | WebSphere_ SERVER |
| WebSphere Servlet Performance Details | WebSphere Servlet Performance | WebSphere_ WebAppServletRespTime<br><br>WebSphere_ WebAppServReqRtApp | WEBSPHERE_ DATA | WebSphere_ Servlet |
| WebSphere Transaction Performance Details | WebSphere Transaction Status | WebSphere_TranCommitRt<br><br>WebSphere_TranRollbackRt<br><br>WebSphere_ TranTimeoutRte<br><br>WebSphere_TranStartRt | WEBSPHERE_ DATA | WebSphere_ Transact |

**Note:** When using the *IBMWebSphere_ETL_WebSphereMP* for gathering data from the IBM WebSphere Management Pack, the `NumServSession` measure of the *WebSphere Server Servlet* cube in the WebSphere Universe will not contain data.

# Deploy Topology Views

To configure HPE OBR to collect domain-specific data, you need to deploy the topology views for IBM WebSphere Application Server Content Pack. These topology views contain specific CI attributes that IBM WebSphere Application Server Content Pack uses to collect the relevant data.

> **Note:** The following deployment of topology views in HP BSM server is applicable only if the topology source is RTSM.

# List of Content Pack and Topology Views to Deploy

The following table lists the topology views to deploy for IBM WebSphere Application Server Content Pack:

| Content Pack | View Name | Location |
|---|---|---|
| **On Windows** | | |
| IBM WebSphere Application Server | `J2EEApplication.zip`<br><br>`J2EEApplication_OM.zip` | **For OM/SPI**: `%PMDB_HOME%\packages\ApplicationServer\ETL_AppSrvrWBS_WBSSPI.ap\source\cmdb_views`<br><br>**For OMi/MP**: `%PMDB_HOME%\packages\ApplicationServer\ETL_AppSrvrWBS_WBSMP.ap\source\cmdb_views` |
| **On Linux** | | |
| IBM WebSphere Application Server | `J2EEApplication.zip`<br><br>`J2EEApplication_OM.zip` | **For OM/SPI**: `$PMDB_HOME/packages/ApplicationServer/ETL_AppSrvrWBS_WBSSPI.ap/source/cmdb_views`<br><br>**For OMi/MP**:`$PMDB_HOME/packages/ApplicationServer/ETL_AppSrvrWBS_WBSMP.ap/source/cmdb_views` |

# HP BSM Server

To deploy the topology model views for the IBM WebSphere Application Server Content Pack, follow these steps:

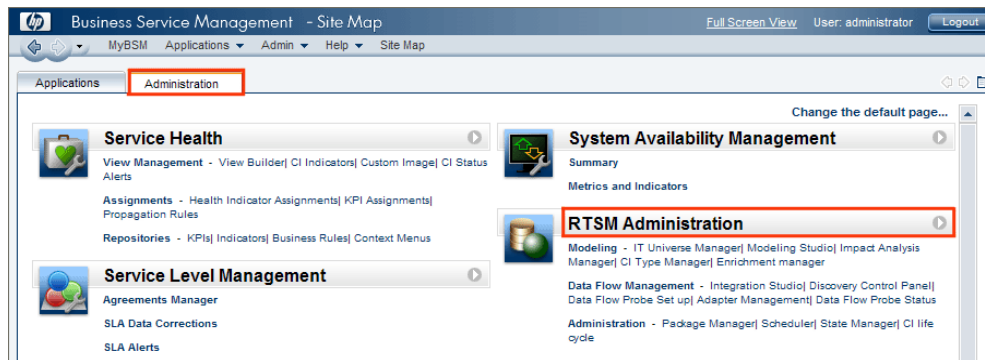1.  In the web browser, type the following URL:

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

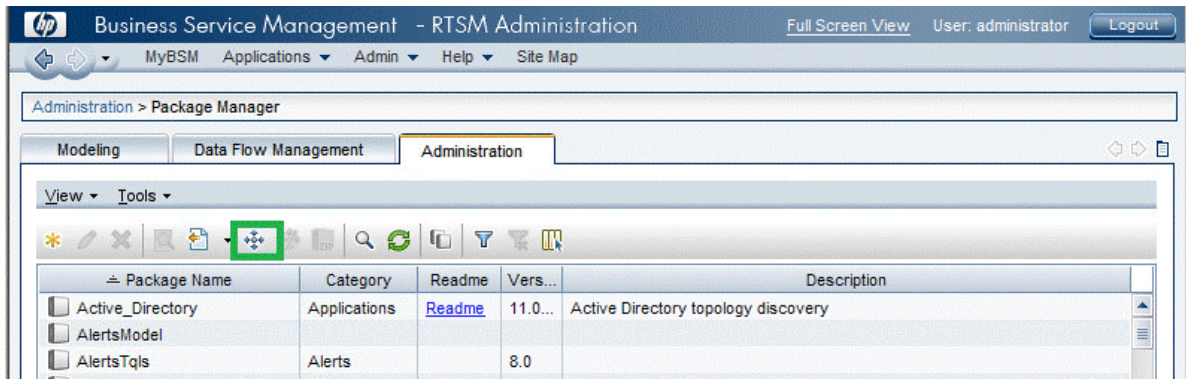    where, `<BSM system FQDN>` is the FQDN of the HP BSM server.

    > **Note:** You can launch the HP BSM server from a system where HPE OBR 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.

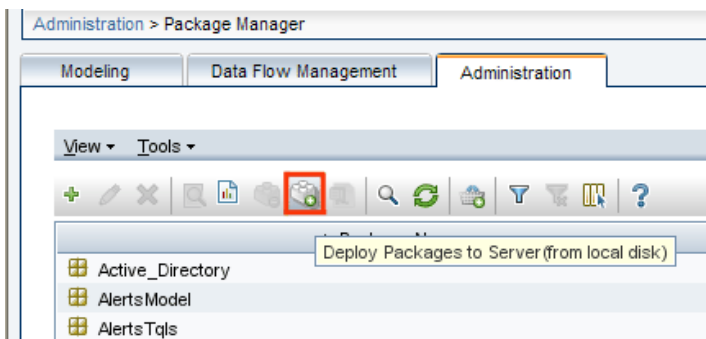    The Business Service Management Login page appears.

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

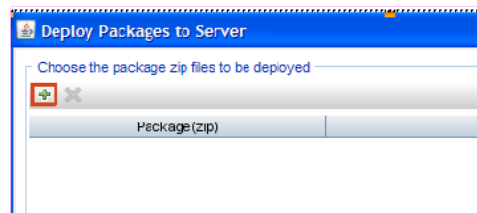3.  Click **Administration > RTSM Administration**. The RTSM Administration page appears.



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 HPE OBR.

# HP OMi 10 Server

To deploy the topology model views for the IBM WebSphere Application Server 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 HPE OBR 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.
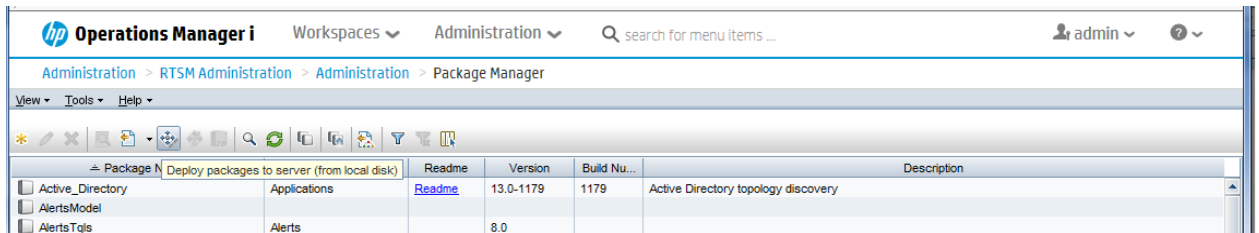
   The Operations Manager i Login page appears.

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**.
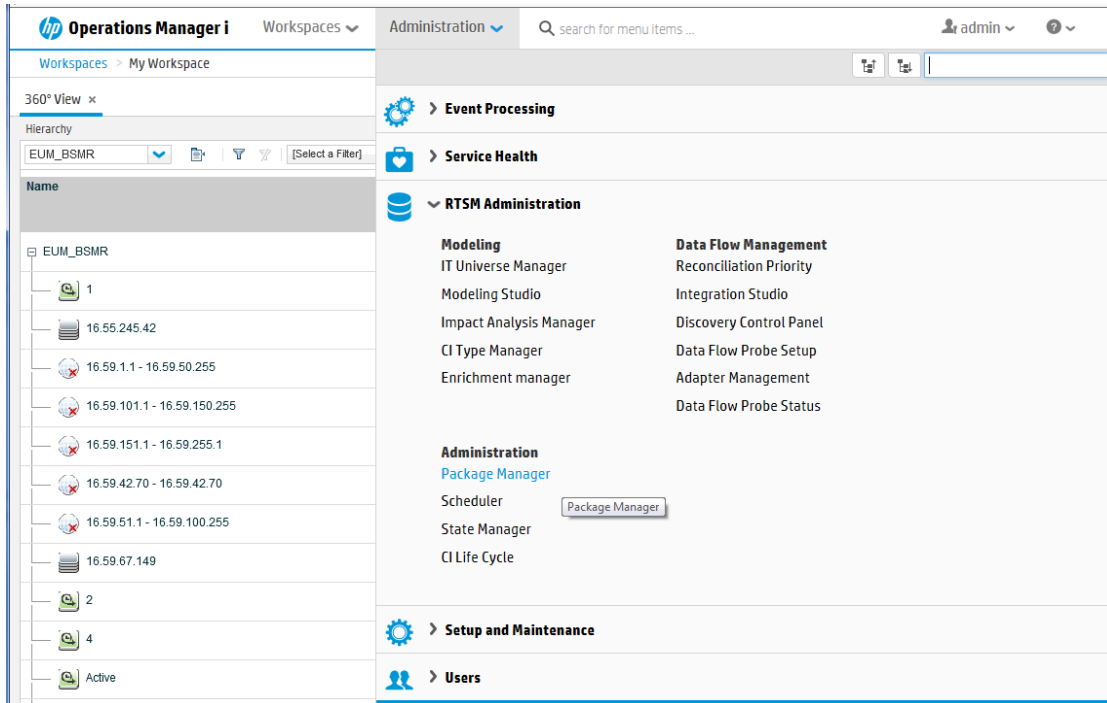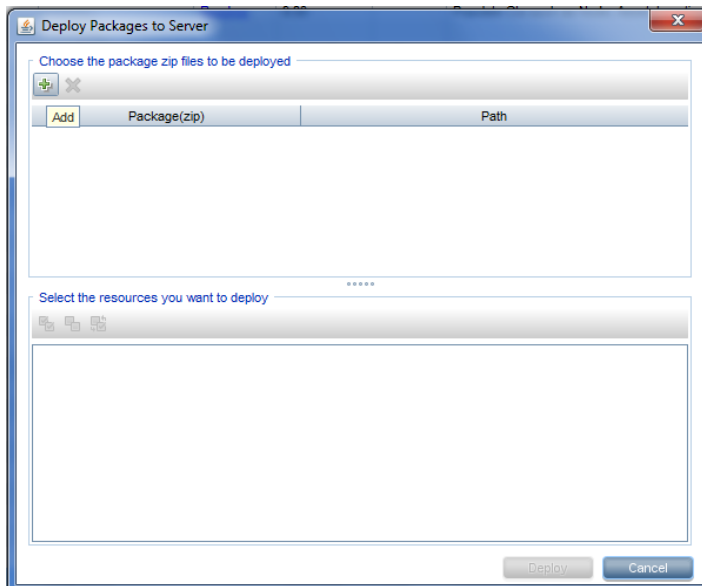
The Package Manager page appears.

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 HPE OBR.

# 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 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.

**Node Status Summary**

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

**Select any**

Node Name: [            ]          Domains: -- Select All -- ∨

**Node Status**

| Node Name | ICMP ping | BBC ping | CODA ping | Agent Version | Last Log Time | Number of Missing Policies | Domain | DSi/CODA |
|-----------|-----------|----------|-----------|---------------|----------------|----------------------------|--------|----------|
| IWFMVS017.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:
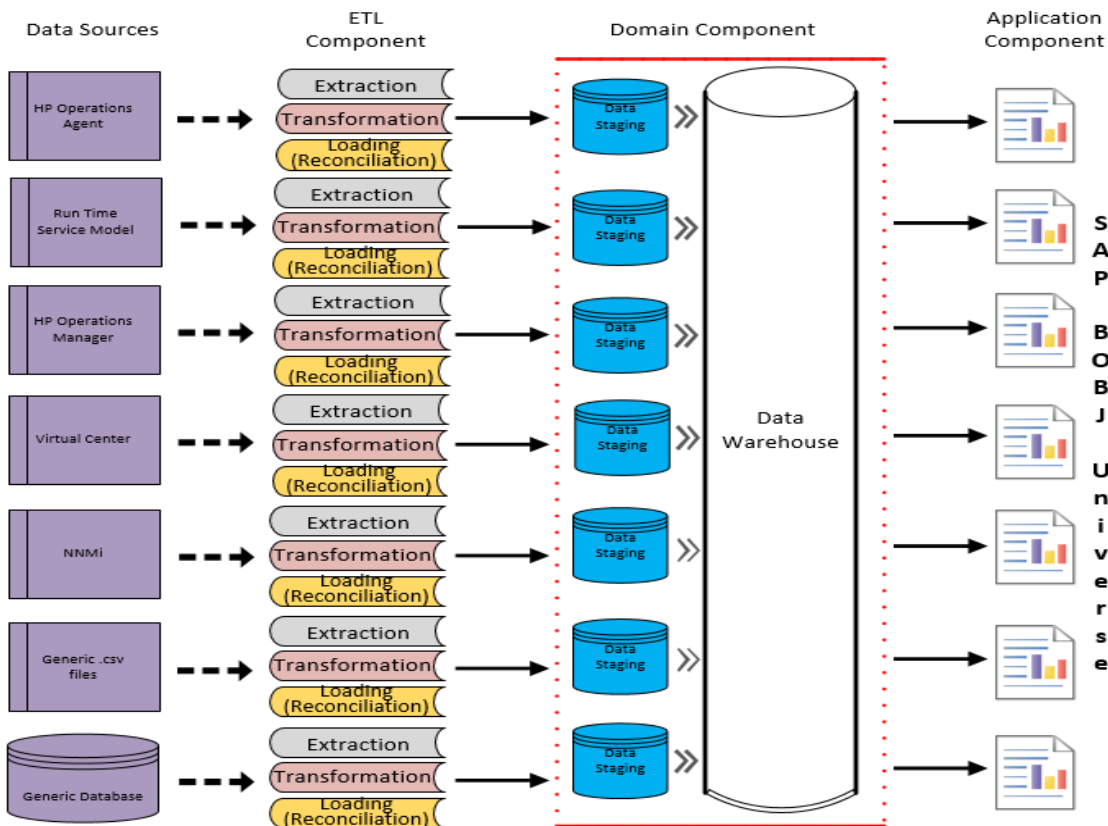


- **Domain component**: The Domain or Core Domain component defines the data model for a particular Content Pack. It contains the rules for generating the relational schema. It also contains the data processing rules, including a set of standard pre-aggregation rules, for processing data into the database. 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 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).

> **Note:** If you have installed IBM WebSphere SPI ETL already and are migrating from OM to OMi10 or upgrading to latest OMi Management Pack for WebSphere, uninstall the IBM WebSphere SPI ETL and deploy the latest IBM WebSphere MP ETL.

- **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 IBM WebSphere Application Server 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:

   - IBMWebSphere_ETL_WebSphereSPI[1] (10.00.000)

   - IBMWebSphere_ETL_WebSphereMP[2] (10.00.000)

   - IBMWebSphere_Domain (10.00.000)

   - IBMWebSphere_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
   >
   >   - Core_Domain_AppServer
   >
   > - Operations Manager
   >
   >   - OprEvent_Domain_Reports
   >
   > - System Performance
   >
   >   - SysPerf_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`

---

[1]Use IBMWebSphere_ETL_WebSphereSPI to gather data from HPOM Smart Plug-in for WebSphere.
[2]Use IBMWebSphere_ETL_WebSphereMP to gather data from OMi Management Pack for WebSphere.

`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.

> **Note:** If you have IBM WebSphere SPI ETL already installed and are migrating from OM to OMi10 or upgrading to latest OMi Management Pack for WebSphere, uninstall the IBM WebSphere SPI ETL and deploy the latest IBM WebSphere MP ETL.

# 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. For the list of Content Pack, see "List of Content Pack and Topology Views to Deploy" on page 16.

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.

OBR integrates and collects historical and ongoing database performance metrics from the HP Operations Smart Plug-In and HP OMi Management Pack for IBM WebSphere Server datastores in BSM Run-time Service Model (RTSM) and HPOM deployment scenarios.

# 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 **Data Source 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 IBM WebSphere reports are categorized into high-level Executive Summary and detailed Performance reports. You can navigate from the higher-level reports to the detailed reports using the cross launch or hyperlink features. For example, you may start with the WebSphere Executive Summary for an overall picture of the health of the WebSphere servers and then navigate to the detailed reports for specific information on availability or database connection pool performance or servlet responsiveness.

The IBM WebSphere server reports display the availability, utilization, and performance information for the following:

- IBM WebSphere servers available in your business service

- Enterprise JavaBeans (EJBs) used by the IBM WebSphere servers

- Java Database Connectivity (JDBC) pools used by the IBM WebSphere servers

- Java Virtual Machines (JVMs) running on the IBM WebSphere servers

- Servlets registered, deployed, and mapped to the IBM WebSphere servers

- Host systems configured to use IBM WebSphere servers

**New IBM WebSphere Server Content Pack Report**

The following is the new IBM WebSphere Server report:

- **WebSphere Server Availability** - Displays information about the average availability of the WebSphere servers that are running on selected node over a period of time. It also displays the availability details of the WebSphere server as a heatmap based on predetermined thresholds, for every hour across the selected time period.

  **Note:** This availability report presents the instance availability information for the application. This report should not to be used for uptime calculation.

The color code for threshold values are as follows:

| Availability | Color |
|---|---|
| < 90 | |
| > 90 and < 95 | |
| > 95 | |

**Report Navigation**

Report navigation can vary depending on the use-cases and the following diagram represents one such way of navigating the reports:
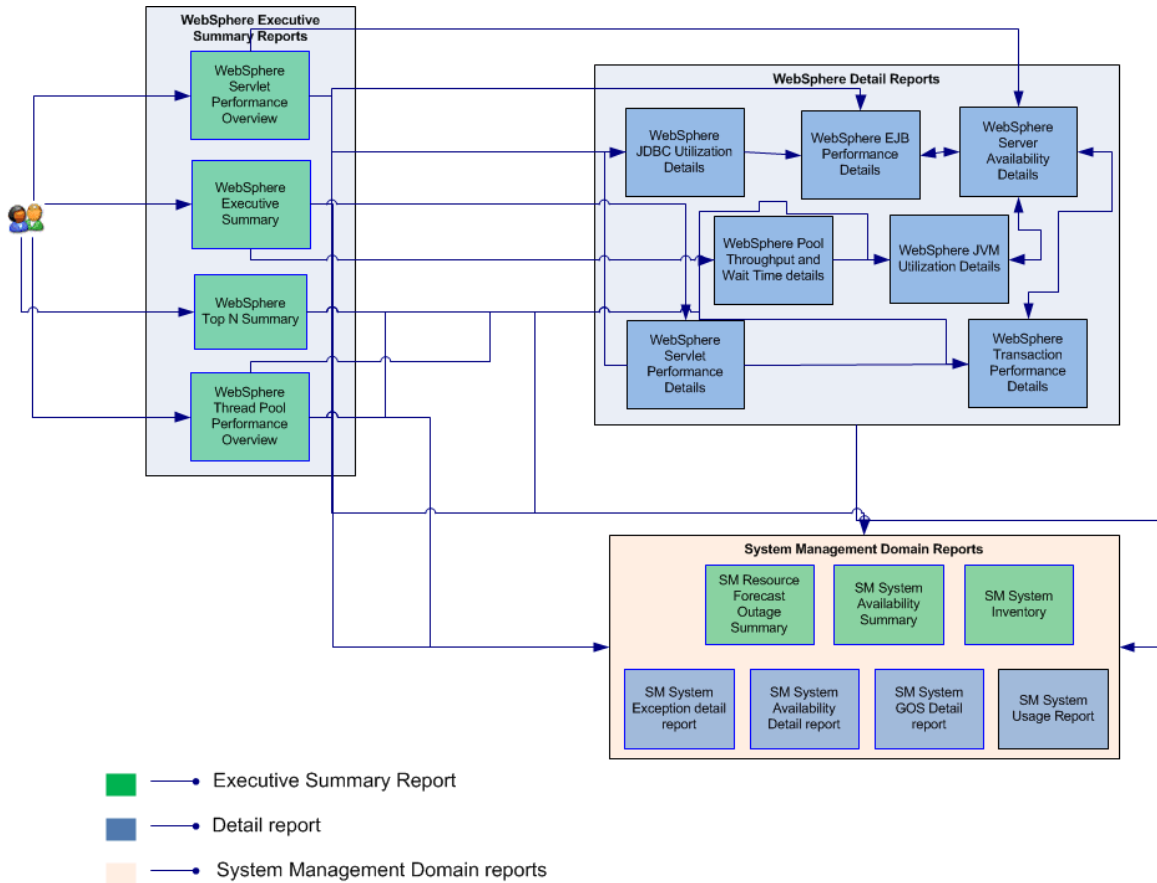


# Use Cases

This section provides information on use cases for IBM WebSphere Application Server reports. The following table provides description, user, and report name for the use cases:

| Description | Report Category | Report Name |
|---|---|---|
| To view the top 5 webserver instances based on JVM memory utilization, thread pool, EJB Pool, JDBC Pool rate for a given service | Executive Summary | WebSphere Top 5 summary |
| To view the response time and request rate for all servlets of the nodes that belong to a given service | Executive Summary | WebSphere Servlet Performance |

| Description | Report Category | Report Name |
|---|---|---|
| | | Overview |
| To view the total and active number of threads in a thread pool for all instances running in a node that belongs to a service | Executive Summary | WebSphere Thread Pool Performance Overview |
| To have a consolidated view of the inventory, availability, current and forecasted capacity usage of all websphere instances hosted on nodes that are part of a given service | Executive Summary | WebSphere Executive Summary |
| To view the performance details in terms of response time and request rate for a servlet, over a period of time, for a given node and instance | Performance | WebSphere Servlet Performance Details |
| To view the availability of a server instance over a period of time, for a given node and instance | Performance | WebSphere Server Availability Details |
| To view the performance of a transaction in terms of commit time and throughput rate over a period of time, for a given node and instance | Performance | WebSphere Transaction Performance Details |
| To view the heap space utilized by a JVM instance over a period of time, for a given node and instance | Performance | WebSphere JVM Utilization Details |
| To view the throughput rate and wait time details of a JDBC connection pool over a period of time, for a given node and instance | Performance | WebSphere JDBC Pool Throughput and Wait Time Details |
| To view the performance details in utilization of JDBC connection pools for a given node and instance | Performance | WebSphere JDBC Utilization Details |
| To view the performance of a EJB with respect to response time, pool size over a period of time, for a given node and instance | Performance | WebSphere EJB Performance Details |

# Appendix

This section provides information on Terminology, Calculating WebSphere Server 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. OBR uses the node groups from HPOM for its topology information.

**Instance Up Time Percentage:** The percentage of time the server instances were up and running.

**Instance Down Time Percentage:** The percentage of time the server instances were down and unavailable for a selected node.

**Instance Unknown Time Percentage:** The percentage of time the availability status of the server instance was unknown to OBR.

**Thread Pool Size:** The number of threads present in the thread pool.

**EJB Method Calls Rate:** The number of EJB method calls per minute. A high number of calls indicate that there is a lot of traffic.

**EJB Method Response Time:** The time taken in minutes by the EJB pools to respond to the EJB call. If the time taken to respond to calls by any EJB pool is more, then it may mean that the EJB pool is overloaded.

**EJB Pool Miss Percentage:** The percentage of times a call failed to retrieve an EJB from the pool. A high value may indicate that the pool is facing high amount of traffic.

**JDBC Connection Pool Throughput Rate (per second):** The number of connections that have been successfully allocated.

**JDBC Connection Pool Wait Time (in millisecond):** The amount of time that a client had to wait for a connection from the JDBC connection pool.

# Appendix B: Calculating WebSphere Server Instance Availability

HPE OBR collects five-minute summary data for the IBM WebSphere Application Server from the HP Performance Agent. This data is in the form of status values as follows:

- Downtime—0

- Uptime—5

The status values are stored in the rate table. The availability calculation procedure in HPE OBR 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 5, 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, HPE OBR 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 IBM WebSphere Application Server 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 *HPE Operations Bridge Reporter Online Help for Administrators*.

# Appendix C: Metric Mapping for Reports

HPE OBR 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\ApplicationServer`

   **On Linux:**

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

   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 IBM WebSphere Application Server Content Pack Reference (Operations Bridge Reporter 10.10)**

Just add your feedback to the email and click send.

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We appreciate your feedback!