OMi Management Pack for SAP

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Operations Manager i for Linux and Windows® operating systems

User Guide

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Contents

Chapter 1: OMi Management Pack for SAP

The OMi Management Pack for SAP (OMi MP for SAP) works with Operations Manager i (OMi) and enables you to monitor primary and advanced components of your SAP environment and the underlying infrastructure.

It includes Health Indicators (HIs) and Event Type Indicators (ETIs) that analyze the events that occur in your SAP Configuration Items (CIs) and report the health status of the SAP environment. It also includes two sets of out of the box Management Templates for monitoring the availability, health, and performance of ABAP and Java Application Servers in your SAP landscape. These Management Templates consists of a two separate sets of Aspects which enable easy monitoring of both ABAP and Java Application Servers in your SAP landscape.The Management Templates can be deployed by administrators for monitoring your SAP landscape. The Management Templates can also be easily customized by Subject Matter Experts (SMEs) and developers to suit different monitoring requirements.

The SAP ABAP Monitoring Templates features Remote Monitoring which extends the scope of monitoring ABAP Application Servers by enabling you to monitor SAP ABAP Application Servers on nodes which does not have Operations Agent installed. You can set up and perform the remote monitoring of ABAP Application Servers from an SAP CI, where Operations Agent is installed and OMi MP for SAP Management Templates are deployed.

The OMi MP for SAP includes the following artifacts for monitoring your SAP environment:

- Two separate sets of Management Templates for ABAP and Java Application Servers
- Separate Aspects for ABAP and Java Application Servers
- ABAP Monitoring Templates
- J2EE Policy Templates
- Instrumentation

OMi MP for SAP works with OMi and provides the following salient features:

- Ready-to-deploy, management solutions to suit different monitoring requirements
- Separate set of Management Templates and Aspects covering ABAP and Java Application Servers for creating customized solutions
- Remote Monitoring solution for ABAP Application Servers

Chapter 2: Getting Started

You want to monitor a business critical SAP environment comprising of ABAP and Java Application Server instances.

Your SAP environment can have either ABAP, Java or both Application Server instances. You want to check the availability and performance of either ABAP, Java or both Application Servers and also monitor the basic functionality of your SAP Environment.

Task 1: Adding Remote Managed Node to BSM 9.2x or OMi 10.x Console

Before you begin monitoring, follow these steps to add the nodes.

1. Open the Monitored Nodes pane from Administration:

   On BSM 9.2x, click **Admin > Operations Management > Setup > Monitored Nodes**.

   On OMi 10.x, click **Administration > Setup and Maintenance > Monitored Nodes**.

2. In the Node Views pane, click **Predefined Node Filter > Monitored Nodes** and then click  and then select the required OS type. The Create New Monitored Nodes dialog box appears.
3. Specify the Primary DNS Name, IP address, Operating System, and Processor Architecture of the node and click **OK**.

Task 2: Enabling the Enrichment Rules

You must enable the following enrichment rules to populate the SAP CI's display label with additional information about container or the hostname:

- **SoftwareElementDisplayLabelForNewHost**
- **SoftwareElementDisplayLabelForExistingHost**
- **SoftwareElementDisplayLabelPopulator**

To enable the Enrichment rules, follow these steps:

1. Open the Enrichment manager pane:

   On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Enrichment manager**.

   On OMi 10.x, click **Administration > RTSM Administration > Modeling > Enrichment manager**.
2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list.
3. Right-click and select **Properties**.

   The Enrichment Rule Properties window appears.
4. Click **Next**.
5. Select **Rule is Active**.
6. Click **Finish**.
7. In the Enrichment Rules pane, click  **Save** to save the changes.
8. Select **SoftwareElementDisplayLabelForExistingHost** and repeat steps 3 to 7.
9. Select **SoftwareElementDisplayLabelPopulator** and repeat steps 3 to 7.

Task 3: Deploying the SAP Discovery Aspect

To discover the SAP CI on the added SAP managed nodes, you must deploy the SAP Discovery aspect. OMi MP for SAP has two separate set of Discovery aspects for ABAP and J2EE Application Server. You can deploy the Discovery aspect depending on the type of CI you want to discover.

Deploying SAP J2EE Discovery Aspect

To discover the J2EE Applications Servers in your SAP Landscape, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Aspects

3. In the JAVA Aspects folder, select the **SAP J2EE Discovery** Aspect, and then click  to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, select the SAP managed node to which you want to deploy the SAP J2EE Discovery Aspect.
5. Click **Next** to go to **Required Parameters** tab.
6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x.

   > **Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To view expert parameters, click  **Show Expert Parameters**.

7. Click **Next**.
8. *(Optional)*. If you do not want to enable the assignment immediately, Enable Assigned Objects On BSM 9.2x or On OMi 10.x Enable Assignment(s) check box

   On BSM 9.2x, clear the **Enable Assigned Objects** check box.

   On OMi 10.x, clear the **Enable Assignment(s)** check box.

   You can then enable the assignment later using the Assignments & Tuning pane.
9. Click **Finish**.

Deploying SAP ABAP Discovery Aspect

To discover the SAP ABAP Applications Servers in your SAP Landscape, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Aspects
3. In the ABAP Aspects folder, select the **SAP ABAP Discovery** Aspect, and then click  to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, click the SAP managed node to which you want to deploy the

SAP ABAP Discovery Aspect.

5. Click **Next** to go to **Required Parameters** tab.
6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x.

   > **Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To view expert parameters, click **Show Expert Parameters**.

7. Click **Next**.
8. *(Optional)*. If you do not want to enable the assignment immediately, .

   On BSM 9.2x, clear the **Enable Assigned Objects** check box.

   On OMi 10.x, clear the **Enable Assignment(s)** check box.

   You can then enable the assignment later using the Assignments & Tuning pane.
9. Click **Finish**.

Deploying SAP ABAP Remote Configuration Aspect

If you want to monitor SAP ABAP Application Servers on nodes which do not have Operations Agent (OA) installed, you can deploy SAP ABAP Remote Configuration Aspect.

To deploy SAP ABAP Remote Configuration Aspect, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Aspects
3. In the ABAP Aspects folder, select the **SAP ABAP Remote Configuration** Aspect, and then click to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, click the SAP managed node you want to use as the monitoring host (where the Agent is installed) and then click **Next**.
5. In the **Required Parameters** tab, you must specify the details about the remote SAP Central

Instance node that you want to monitor using OMi MP for SAP.

a. Select the **SAP ABAP Application Server Instance with HostName and SID** parameter in the list, and then click  . The Edit Parameter: SAP ABAP Application Server Instance number with HostName and SID dialog box opens.

b. Specify the **SAP ABAP Application Server Central Instance** along with Host Name and SID of Remote SAP ABAP Application Server as shown in the following example:

Example:

`testnode.hpe.com_T01_00`

Here `testnode.hpe.com`is the fully qualified SAP Remote Host Name, `T01`is the SID for SAP Remote Host and `00`is the SAP Instance number.

c. Click **OK**.

d. Select the **SAP ABAP Application Server Client** parameter in the list, and then click  .

The Edit Parameter: SAP ABAP Application Server Client opens.

e. Click **Value**, specify the client number of remote SAP ABAP Application Server, and then click **OK**.

6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**. For example, you can change the default username and password for the Remote SAP ABAP Application Server from the Edit Instance Parameter pane. You can also add multiple Remote Host that you want to monitor from the Edit Instance Parameter pane.

To add SAP Remote nodes from within the Edit Instance Parameter pane, follow these steps:

a. In the Instance Values pane, click  . The Edit Parameter dialog box opens.

b. Specify the SAP ABAP Application Server Instance along with Host Name and SID of Remote SAP ABAP Application Server as shown in the following example:

Example:

`testnode.hpe.com_T01_00`

Here `testnode.hpe.com` is the fully qualified SAP Remote Host Name, `T01` is the SID for SAP Remote Host and `00` is the SAP Instance number.

OMi MP for SAP enables you to provide the Remote SAP ABAP Application Server credentials in the following combinations:

i. Remote Host Name (fully qualified) Single SAP SID and Multiple ABAP Application Server Instance.

Example:

```
testnode.hpe.com_T01_00
testnode.hpe.com_T01_01
testnode.hpe.com_T01_03
```

ii. Remote Host Name (fully qualified) Multiple SAP SID and ABAP Application Server Instance.

Example:

```
testnode.hpe.com_T01_00
testnode.hpe.com_T02_00
testnode.hpe.com_T03_00
```

iii. Multiple Remote Host Name (fully qualified) with SAP SID and ABAP Application Server Instance.

Example:

```
testnode.hpe.com_T01_00
testnode01.hpe.com_T01_00
testnode02.hpe.com_T01.3_00
```

> **Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To show expert parameters, click **Show Expert Parameters**.

7. Click **Next**.
8. *(Optional)*. If you do not want to enable the assignment immediately, .

   On BSM 9.2x, clear the **Enable Assigned Objects** check box.

   On OMi 10.x, clear the **Enable Assignment(s)** check box.

   You can then enable the assignment later using the Assignments & Tuning pane.
9. Click **Finish**.

Note: After deploying SAP Discovery Aspect, you must verify if the SAP CIs are populated in the BSM 9.2x or OMi 10.x console. To view discovered CIs:

1. Open the Events Perspective pane:

   On BSM 9.2x, click **Applications > Operations Management > Event Perspective**.

   On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. Select **SAP_Deployment** view. The SAP CIs are populated in the Browse Views.
3. Select **SAP_ABAP_Deployment** and **SAP_J2EE_Deployment** view to visualize the respective SAP Application Server CIs.

Task 4: Configuring SAP Node for ABAP Application Server Monitoring

You must complete the following tasks to enable the OMi MP for SAP for monitoring SAP ABAP Application Server:

1. **Apply OMi MP for SAP Transport**

   You must copy the OMi MP for SAP transport files from instrumentation folder to the SAP transport directories on each SAP NetWeaver central instance and apply them.
2. **Configure SAP User for OMi**

   You must set up an SAP User for OMi so that OMi MP for SAP can log on to SAP whenever OMi MP for SAP applications, monitors, or actions need access to SAP.
3. **Copy lib files to Instrumentation folder**

   You must copy the SAP RFC library files to the instrumentation folder on the SAP managed node.
4. **For Solaris managed node, configure LD_LIBRARY_PATH to 32-bit libgcc_s.so path**

   You must configure **LD_LIBRARY_PATH** to 32-bit `libgcc_s.so` path, if you are monitoring a Solaris managed node.

For more information about Configuring SAP Node for ABAP Application Server Monitoring, see *OMi MP for SAP Installation Guide*.

Task 5: Deploying SAP ABAP Configuration Aspect

> **Note:** You must deploy **SAP ABAP Configuration** Aspect before deploying SAP ABAP Management Templates.

To deploy SAP ABAP Configuration Aspect on SAP ABAP Application Server, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > SAP ABAP Aspects

3. In the ABAP Aspects folder, select the **SAP ABAP Configuration** Aspect, and then click  to open the Assign and Deploy Wizard.

4. In the **Configuration Item** tab, click the SAP ABAP Application Server Central Instance you want to deploy the SAP Aspects. For more information about SAP ABAP Aspects that supports SAP Central Instance and Application Server, see *OMi MP for SAP ABAP Monitoring Template Configuration Files table in Deployment Scenarios.*

   > **Note:** You must not select the SAP ABAP Application Server configured as part of SAP ABAP Remote Configuration Aspect. For more information "Deploying SAP ABAP Remote Configuration Aspect ".

5. Click **Next**. The **Required Parameters** tab opens.

6. Select **SAP ABAP Application Server Client** parameter and click  .

   The Edit Parameter: SAP ABAP Application Server Client opens.

7. Click **Value**, specify the value, and then click **OK**.

8. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x. You can edit the default values for parameters in **All Parameters** tab.

> **Note:** To change the default values of Mandatory Parameter for SAP ABAP Application Server, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

9. Click **Next**.
10. *(Optional)*. If you do not want to enable the assignment immediately, .

    On BSM 9.2x, clear the **Enable Assigned Objects** check box.

    On OMi 10.x, clear the **Enable Assignment(s)** check box.

    You can then enable the assignment later using the Assignments & Tuning pane.
11. Click **Finish**.

Data Collection

Frequency (polling interval) at which each Aspect must be monitored is predefined with a default value in a specific frequency parameter. Frequency parameter is an expert parameter that is defined for each of the metrics regardless of whether they are for generating events or not.

Following are the four predefined frequency parameters:

Parameter	Frequency
Very High	5 mins
High	15 mins
Medium	1 hour
Low	24 hours

After Management Templates and Aspects are deployed, collector is triggered based on the predefined frequency parameter in a specific Aspect. You can modify the default value of the parameter at following two levels:

- During deployment of the Management Template or Aspects using the Management Templates & Aspects pane.
- After deployment using the Assignments & Tuning pane.

For more information about how to modify the parameter values, see Types of Parameters.

Task 6: Identifying and Deploying an SAP Management Template

> **Note:** You **must** deploy the SAP Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM, and so on. For more information, see "Task 3: Deploying the SAP Discovery Aspect".

OMi MP for SAP contains two separate set of Management Templates and Aspects for monitoring the ABAP and J2EE Application Servers in your SAP Landscape. The OMi MP for SAP also contains a set of SAP ABAP Monitoring Templates which you can configure to run at regular intervals to collect information regarding various functionality of ABAP Application Servers in your SAP Environment. For more information about ABAP Monitoring Templates, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Deploying an SAP Management Template

You must identify the SAP Management Template suitable for your SAP environment before deployment by following these recommendations:

- For monitoring the basic functionality of SAP ABAP Application Server that comprises any of these components - health, dump status, batch job health, transport, user health, processes and dispatcher, work processes, security, and RFC destinations, you can deploy **Essential SAP ABAP Management Template**.
- For in-depth and detailed monitoring of SAP ABAP Application Server environments, you can deploy **Extensive SAP ABAP Management Template**.
- For monitoring the basic functionality of SAP J2EE Application Server that comprises any of these components - SAP J2EE requests, system and application thread pool, memory, and transaction status, you can deploy **Essential SAP J2EE Management Template**.
- For in-depth and detailed monitoring of SAP J2EE Application Server environments, you can deploy **Extensive SAP J2EE Management Template**.

To deploy OMi MP for SAP Management Templates, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

   For ABAP Application Server:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Management Templates

   For J2EE Application Server:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Management Templates

3. In the **SAP Management Templates** folder, click the Management Template that you want to deploy, and then click  . The Assign and Deploy wizard opens.

4. In the **Configuration Item** tab, click the SAP system or SID to which you want to assign the Management Template, and then click **Next**. You can select multiple items by holding down the **Ctrl** or **Shift** key while selecting them.

5. In the **Required Parameters** tab, you must specify the mandatory parameters.

   For J2EE:

   a. Select the **Java Installation Directory** parameter in the list, and then click the  . The Edit Parameter: Java Installation Directory dialog box opens.

   b. Click **Value**, specify the value, and then click **OK**.

   c. Select the **SAP J2EE Application Server Instance User Name** parameter in the list, and then click the  . The Edit Parameter: SAP J2EE Application Server Instance User Name dialog box opens.

   d. Click **Value**, specify the value, and then click **OK**.

   e. Select the **SAP J2EE Application Server Instance Password** parameter in the list, and then click the  . The Edit Parameter: SAP J2EE Application Server Instance Password dialog box opens.

   f. Click **Value**, specify the value, and then click **OK**.

   For ABAP:

6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

> **Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default values of a parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To show expert parameters, click **Show Expert Parameters**.

7. Click **Next**.
8. *(Optional)*. If you do not want to enable the assignment immediately, clear the Enable Assigned ObjectsEnable Assignment(s) check box.

   On BSM 9.2x, clear the **Enable Assigned Objects** check box.

   On OMi 10.x, clear the **Enable Assignment(s)** check box.

   You can then enable the assignment later using the Assignments & Tuning pane.
9. Click **Finish**.

> **Note:** The username given during the deployment of a Management Template must have required privileges for OMi MP for SAP to collect data. You can create separate user for ABAP and J2EE Application Servers. You can also create a single SAP user with necessary privileges to collect data from ABAP and J2EE Application Servers.

> **Note:** Data logging is disabled by default for SAP ABAP Application Server. You must run the `SAP ABAP Application Server - Start Performance Agent` tool to enable SAP ABAP data logging.

Task 7: Deploying SAP Aspects

If you are using **Monitoring Automation for Servers** license, you must deploy the OMi MP for SAP Aspects to the SAP CIs.

> **Note:** You **must** deploy the SAP Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM, and so on. For more information, see "Task 3: Deploying the SAP Discovery Aspect".

> **Note:** You must deploy **SAP ABAP Configuration** Aspect before deploying other SAP ABAP Aspects.

Deploying SAP ABAP Configuration Aspect on SAP Managed Nodes

To deploy SAP ABAP Configuration Aspect on SAP managed nodes, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Aspects

3. In the SAP ABAP Aspects folder, select the **SAP ABAP Configuration** Aspect, and then click  **Assign and Deploy Item** to open the Assign and Deploy Wizard.

4. In the **Configuration Item** tab, click the appropriate SAP managed node to which you want to deploy the SAP ABAP Configuration Aspect. Click **Next** to accept the CIs and go to **Required Parameters**.

5. In the **Required Parameters** tab, you must specify the mandatory parameters.

   a. Select the **SAP ABAP Application Server Instance Name** parameter and click  . The Edit Parameter dialog box opens.

   b. In the Edit Instance Parameter pane, select the **SAP ABAP Application Server Instance Name** parameter and click  . The Edit Parameter dialog box opens.

   c. Click **Value**, specify the value in the following format:

      ```
      ShortHostName_SAPSID_SAPInstNum_ABAP
      ```

      Example:

      ```
      TestNode_W09_00_ABAP
      ```

   d. Click **OK**.

   e. Select the **SAP ABAP Application Server Client** parameter in the list, and then click  . The Edit Parameter: SAP ABAP Application Server Client dialog box opens.

   f. Click **Value**, specify the SAP ABAP server client number, and then click **OK.**

      Example:

      ```
      001
      ```

   g. Select the **SAP ABAP Application Server Instance Number** parameter and click  . The Edit Parameter dialog box opens.

h. Click **Value**, specify the SAP ABAP server instance number, and then click **OK**.

Example:

```
00
```

i. Select the **SAP ABAP Host Name** parameter and click  .

The Edit Parameter dialog box opens.

j. Click **Value**, specify the SAP managed node name (fully qualified) within parenthesis.

Example:

```
(TestNode.hpe.com)
```

k. Click **OK**.

6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
7. Click **Finish**.

Deploying OMi MP for SAP Aspects

To deploy OMi MP for SAP Aspects on SAP Managed Nodes, follow these steps:

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:

   For ABAP Application Server:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Aspects

   For J2EE Application Server:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Aspects
3. In the specific SAP Aspects folder, select the SAP Aspect you want to deploy, and then click  **Assign and Deploy Item** to open the Assign and Deploy Wizard.

4. In the **Configuration Item** tab, click the appropriate SAP managed node to which you want to deploy the SAP Aspect. You can select multiple items by holding down the **Ctrl** or **Shift** key while selecting them. Click **Next** to accept the CIs and go to **Required Parameters**.
5. In the **Required Parameters** tab, you must specify the mandatory parameters.

   For J2EE:

   a. Select the **Java Installation Directory** parameter in the list, and then click  . The Edit Parameter: Java Installation Directory dialog box opens.
   b. Click **Value**, specify the value, and then click **OK**.
   c. Select the **SAP J2EE Application Server Instance User Name** parameter in the list, and then click  . The Edit Parameter: SAP J2EE Application Server Instance User Name dialog box opens.
   d. Click **Value**, specify the value, and then click **OK**.
   e. Select the **SAP J2EE Application Server Instance Password** parameter in the list, and then click  . The Edit Parameter: SAP J2EE Application Server Instance Password dialog box opens.
   f. Click **Value**, specify the value, and then click **OK**.

   For ABAP:

6. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x. To change the default values of the parameters, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

   > **Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To view expert parameters, click  **Show Expert Parameters**.

   For J2EE:

   To change the default values of SAP J2EE Application Server Instance Name parameter, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

   For ABAP:

To change the default values of Mandatory Parameter for SAP ABAP Application Server, you can select the parameter and then click  . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

7. Click **Next**.
8. *(Optional)*. If you do not want to enable the assignment immediately, .

   On BSM 9.2x, clear the **Enable Assigned Objects** check box.

   On OMi 10.x, clear the **Enable Assignment(s)** check box.

   You can then enable the assignment later using the Assignments & Tuning pane.
9. Click **Finish**.

Task 8: Configuring SAP ABAP Monitoring Templates

The OMi MP for SAP contains SAP ABAP Monitoring Templates which enables you to monitor specific functionality of SAP ABAP Application Server. A set of SAP ABAP Monitoring Templates provided with OMi MP for SAP contains out-of-the-box configuration which enables deployment without any manual configuration. OMi MP for SAP enables you to configure SAP ABAP Monitoring Template for monitoring functionality specific to your SAP environment.

The SAP ABAP Monitoring Templates with out-of-the-box configuration are listed in the following table:

SAPABAP Monitoring Template	Description
SAPABAP_CCMSIntegrationMon	SAP ABAP Monitoring Template for monitoring the output of SAP CCMS monitoring infrastructure.
SAPABAP_DispMon	SAP ABAP Monitoring Template for monitoring the size, content and status of various queues for different types of SAP work processes.
SAPABAP_DumpMon	SAP ABAP Monitoring Template for monitoring the runtime errors that occur on the SAP ABAP system.
SAPABAP_LckChkMon	SAP ABAP Monitoring Template for monitoring the Enqueue process which manages the SAP ABAP logical locks for different SAP transactions and SAP reports.
SAPABAP_Perfmon	SAP ABAP Monitoring Template for collecting the SAP

	Performance metrics from different OMi MP for SAP Performance monitors.
SAPABAP_SplMon	SAP ABAP Monitoring Template for monitoring the number of SAP ABAP Spooler entries, error generating spool requests, erroneous spooler entries in the print requests.
SAPABAP_StatusMon	SAP ABAP Monitoring Template for monitoring the SAP ABAP Application Server Availability Status.
SAPABAP_TraceMon	SAP ABAP Monitoring Template for monitoring all the SAP Trace and Log files for "ERROR".
SAPABAP_TransMon	SAP ABAP Monitoring Template for monitoring the successfully imported/exported SAP ABAP transports, failed imports/exports, availability of confirmed/unconfirmed repairs and connections/tptests to the configured systems.
SAPABAP_UpdProcMon	SAP ABAP Monitoring Template for monitoring the different conditions of SAP ABAP update processes like inactive Status and errors.
SAPABAP_WPMon	SAP ABAP Monitoring Template for monitoring the running work processes, waiting work process, checking the various status of work process such as Debug, Private or No Restart.

For more information about configuring SAP ABAP Monitoring Templates, see "SAP ABAP Monitoring Templates".

Monitoring SAP Environment

After you deploy Management Template and Aspects, you can analyze the status of events from the following perspectives:

- Event Perspective
- Health Perspective
- Performance Perspective

Event Perspective

The Event Perspective provides complete information of events from an Event Perspective. In the Event Perspective, you can view the event information of SAP Application Server CIs that are monitored by OMi MP for SAP.

To view the Event Perspective of SAP Application Server CIs, follow these steps:

1. Open the Event Perspective pane:

   On BSM 9.2x, click **Applications > Operations Management > Event Perspective**.

   On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.

   The View Explorer pane appears.

2. In the **Browse Views** tab, select **SAP_Deployment** or **SAP_ABAP_Deployment** or **SAP_J2EE_Deployment** view that contains the respective SAP Application Server CIs for which you want to view the events. Alternatively, you can use **Search** tab to find Application Server CI.

3. Click the SAP Application Server CI for which you want to view the Event Perspective. The list of events for the selected SAP Application Server CI appears on the Event Browser pane.

   When you click an event from the Event Browser, the Event Details pane opens where you can view following details:

   - **General** - Displays the detailed information about the selected event such as Severity, Lifecycle State, Priority, Related CIs and so on.
   - **Additional Info** - Displays more detailed information about the attributes of the selected event.
   - **Source Info** - Displays an overview of the information available about the source of the selected event.
   - **Actions** - Displays the list of actions available for a selected event. There are two types of possible actions: User Action and Automatic Action.
   - **Annotations** - Displays a list of the annotations attached to the selected event.
   - **Custom Attributes** - Displays a list of the attributes that either an administrator or a responsible user manually configured and added to the selected event.
   - **Related Events** - Displays an overview of all the events that are related to the event selected in the Event Browser.
   - **History** - Displays the history of the selected event.
   - **Resolver Hints** - Displays the information used to identify the node and CI associated with an event.
   - **Instructions** - Displays instruction information designed to help operators handle the associated event.
   - **Forwarding** - Displays the transfer of ownership details if any, for the events.

> **Note:** For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Health Perspective

The Health Perspective provides a high-level view of the overall health information of the related CIs in the context of events. In the Health Perspective, you can view the health information of the SAP Application Server CIs that are monitored by OMi MP for SAP.

To view the Health Perspective of SAP Application Server CIs, follow these steps:

1. Open the Health Perspective pane:

   On BSM 9.2x, click **Applications > Operations Management > Health Perspective**.

   On OMi 10.x, click **Workspaces > Operations Console > Health Perspective**.

   The View Explorer pane appears.

2. In the **Browse Views** tab, select **SAP_Deployment** or **SAP_ABAP_Deployment** or **SAP_J2EE_Deployment** view that contains the respective SAP Application Server CIs for which you want to view the health related events. Alternatively, you can use **Search** tab to find a SAP Application Server CI.
3. Click the SAP Application Server CI for which you want to view the Health Perspective. The list of health related events for the selected SAP Application Server CI appears on the Event Browser pane.

   When you click an event from the Event Browser pane, the following panes appear:

   - **Health Top View** - Displays the health top view of the selected event.
   - **Health Indicators** - Displays the Key Performance Indicators (KPIs) and HIs related to the CI that you select from the Health Top View pane.
   - **Actions** - Displays the list of actions available for a selected event.

> **Note:** For more information about Managing Events, see the *Operations Manager i Concepts Guide*.

Performance Perspective

Performance Perspective enables you to populate graphs from existing graph templates. You can also plot customized graphs by selecting the required metrics for a selected CI.

To view the Performance Perspective of SAP Application Server CIs using graphs, follow these steps:

1. Open the Performance Perspective pane:

   On BSM 9.2x, click **Applications > Operations Management > Performance Perspective**.

   On OMi 10.x, click **Workspaces > Operations Console > Performance Perspective**.

   The View Explorer pane appears.

2. In the **Browse Views** tab, select **SAP_Deployment** or **SAP_ABAP_Deployment** or **SAP_J2EE_Deployment** view. The performance pane appears, which lists the default graphs available for the respective views.
3. Click the graph you want to plot from the **Graphs** tab, and then click  **Draw Graphs**. The selected graph is plotted on the right pane.

Chapter 3: Components

The OMi MP for SAP includes the following components for monitoring your SAP environment:

- SAP Management Templates
- SAP Aspects
- SAP ABAP Monitoring Templates
- SAP Parameters
- Run-time Service Model (RTSM) Views
- Event Type Indicators (ETIs)
- Health Indicators (HIs)
- Configuration Items (CIs) and Configuration Item Types (CITs)
- Topology Based Event Correlation (TBEC) Rules
- Tools

SAP Management Templates

The SAP Management Templates provide a complete management solution for monitoring the health and performance of different systems and applications in your SAP landscape.

By default, OMi MP for SAP comprises two sets of SAP Management Templates with predefined settings to monitor ABAP and Java application servers in the environment. You can deploy the SAP Management Templates with the default parameters and seamlessly monitor the systems in your environment. These SAP Management Templates comprises several Aspects which enables you to monitor the ABAP and Java Application Servers.

Based on the monitoring requirements, you can also customize the SAP Management Templates or create SAP Management Templates to monitor the systems in your environment.

Overview of SAP Management Templates

OMi MP for SAP comprises the following two sets of Management Templates to monitor ABAP and Java stacks in your SAP environment:

SAP ABAP Monitoring

OMi MP for SAP contains the following Management Templates for monitoring ABAP application server:

- "Essential SAP ABAP Management Template"
- "Extensive SAP ABAP Management Template"

SAP J2EE Monitoring

OMi MP for SAP contains the following Management Templates for monitoring Java application server:

- "Essential SAP J2EE Management Template "
- "Extensive SAP J2EE Management Template"

How to Access Management Templates

1. For ABAP Application Server:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Management Templates.**
3. For J2EE Application Server:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
4. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Management Templates**.

Tasks

You can perform the following tasks on OMi MP for SAP Management Template:

How to Deploy OMi MP for SAP Management Templates

For more information, see Task 6: Identifying and Deploying a SAP Management Template.

How to Automatically Assign OMi MP for SAP Management Templates and OMi MP for SAP Aspects

To automatically assign OMi MP for SAP Management Templates or Aspects, follow these steps:

1. Open the Automatic Assignment Rules:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Automatic Assignment Rules**.

   On OMi 10.x, click **Administration > Monitoring > Automatic Assignment Rules**.

   Automatic Assignment Rules consists of Auto-Assignment Rules pane at the top and Parameters pane at the bottom.

2. In the **Auto-Assignment Rules** pane, click  **New Assignment** and select the appropriate option. The Create Auto-Assignment Rule wizard opens.
3. In the **Select Target View** tab, select the view for which you want to create the automatic assignment rule, and then click **Next**.
4. In the **Select Item to Assign** tab, click the Management Template or an Aspect that you want to automatically assign to all the CIs, and then click **Next**.

   The latest version of the Management Template or Aspect that you want to assign is selected by default. Click **Next**.

5. In the **Required Parameters** tab, click **Next**.

   > **Note:** There are no parameters that require editing for this assignment.

6. *(Optional)*. In the **All Parameters** on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can change the default value of parameters by following these steps:

   a. To edit a parameter, double-click it or select it from the list and click  **Edit**. The Edit Parameter dialog box opens.

   b. Change the default value and click **OK**.

7. Click **Next**.
8. *(Optional)*. In the **Configure Option** tab, clear the **Activate Auto- Assignment Rule** check box if you do not want to activate the assignment rule immediately. You can activate automatic assignment rules later using the Automatic Assignment Rules pane at **Administration > Monitoring > Automatic Assignment Rules**.
9. Click **Finish** to save the changes. The assignment rule is added to the list of auto-assignment rules.

An assignment may trigger an event to be sent to OMi if one of the following situations applies:

- A deployment job fails.
- An auto-assignment fails.
- An auto-assignment succeeds.

You can check if the automatic assignment rule successfully created the expected assignments by following these steps:

1. Open the Assignments & Tuning pane:

   On BSM 9.2x, click **Admin > Operations Management > Assignments & Tuning**.

   On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
2. In the **Browse Views** tab, select the view you identified while creating your automatic assignment rule.
3. Expand the view, and select a node that corresponds to the root CI type of the assigned item. Assignments created as a result of Automatic Assignment Rules are shown in the list of assignments at the top of the right pane, and have the value Auto-Assignment in the column Assigned By.

You can consider the following options for tuning the assignment:

- Use the Auto-Assignment Rules pane to tune the parameter values for all assignments triggered by the automatic assignment rule.
- Use the Assignments pane to tune, redeploy, delete, and enable or disable individual assignments.

How to display an Inventory Report for OMi MP for SAP Management Template

The Inventory Report displays the Management Templates, Aspects, and Policy Templates that are available on a server. To display an Inventory Report for OMi MP for SAP Management Template, follow these steps:

1. Select the Management Template for which you want to create the report for.
2. Click  **Generate Inventory Report** in the Configuration Folders pane.

   The report displays the Management Templates, Aspects, and Policy Templates that are available on the server.

   You can display additional types of reports from the Assignments & Tuning pane.

Essential SAP ABAP Management Template

The Essential SAP ABAP Management Template monitors the SAP ABAP systems in your SAP Landscape. You can monitor the health and availability of the following system:

SAP ABAP Application Server

How to Access Essential SAP ABAP Management Template

1. Open the Management Templates & Aspects pane:
   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Management Templates > Essential SAP ABAP Management Template**.

User Interface Reference

Management Template - General

Provides an overview of the attributes of the Management Template.

UI Element	Description
Name	Name of ABAP Management Template
Description	The description of the Management Template.
ID	A unique Identifier for the GUID version.
Version ID	A unique identifier for this version of the Management Template.
Version	The current version of the Management Template. In this instance, the version of the Management Template is 1.0.
Change	The text that describes what is new or modified in this version of the Management

UI Element	Description
Log	Template.

Management Template - Topology View

Provides an overview of the CI type you want to assign to the Management Template.

UI Element	Description
Topology View	Essential SAP ABAP Management Template uses SAP_ABAP_Deployment for Topology View. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP ABAP Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP ABAP Management Template contains SAP System CI Types.

Extensive SAP ABAP Management Template

The Extensive SAP ABAP Management Template monitors the SAP ABAP systems in your SAP Environment. You can monitor the health and availability of the following system:

SAP ABAP Application Server

How to Access Extensive SAP ABAP Management Template

1. Open the Management Templates & Aspects pane:
   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects.**

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects.**
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Management Templates > Extensive SAP ABAP Management Template**.

User Interface Reference

Management Template - General

Provides an overview of the attributes of the Management Template.

UI Element	Description
Name	Name of ABAP Management Template

UI Element	Description
Description	The description of the Management Template.
ID	A unique Identifier for the GUID version.
Version ID	A unique identifier for this version of the Management Template.
Version	The current version of the Management Template. In this instance, the version of the Management Template is 1.0.
Change Log	The text that describes what is new or modified in this version of the Management Template.

Management Template - Topology View

Provides an overview of the CI type you want to assign to the Management Template.

UI Element	Description
Topology View	Essential SAP ABAP Management Template uses SAP_ABAP_Deployment for Topology View. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP ABAP Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP ABAP Management Template contains SAP System CI Types.

Essential SAP J2EE Management Template

The Essential SAP J2EE Management Template monitors the SAP J2EE requests, system and application thread pool, memory, and transaction status. You can monitor the health and availability of the SAP J2EE Application Server.

How to Access the Essential SAP J2EE Management Template

1. Open the Management Templates & Aspects pane:
   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Management Templates > Essential SAP J2EE Management Template**.

User Interface Reference

Management Template - General

Provides an overview of the attributes of the Management Template.

UI Element	Description
Topology View	Essential SAP ABAP Management Template uses SAP_ABAP_Deployment for Topology View. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP ABAP Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP ABAP Management Template contains SAP System CI Types.

Management Template - Topology View

Provides an overview of the CI type you want to assign to the Management Template.

UI Element	Description
Topology View	**SAP_Deployment** is the topology view for Essential SAP J2EE Management Template. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP J2EE Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP J2EE Management Template contains SAP System CI Types.

Extensive SAP J2EE Management Template

The Extensive SAP J2EE Management Template monitors the SAP J2EE application server availability, SAP J2EE requests, system and application thread pool, memory, transaction, ports, JMX, EJB, sessions, and connector services.

You can monitor the health and availability of SAP J2EE Application Server.

How to Access the Extensive SAP J2EE Management Template

1. Open the Management Templates & Aspects pane:

On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > JAVA Management Templates > Extensive SAP J2EE Management Template**.

User Interface Reference

Management Template - General

Provides an overview of the attributes of the Management Template.

UI Element	Description
Topology View	Essential SAP ABAP Management Template uses SAP_ABAP_Deployment for Topology View. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP ABAP Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP ABAP Management Template contains SAP System CI Types.

Management Template - Topology View

Provides an overview of the CI type you want to assign to the Management Template.

UI Element	Description
Topology View	**SAP_Deployment** is the topology view for Essential SAP J2EE Management Template. It contains the CI types that you want to manage using the Management Template.
CI Type	The type of CIs managed by Essential SAP J2EE Management Template. This is the type of CI to which the Management Template can be assigned. The Essential SAP J2EE Management Template contains **SAP System** CI Types.

SAP Aspects

SAP Aspects are used to monitor specific functionality of the applications and systems operating in your SAP Landscape. The systems can be individual or clustered systems. Each SAP Aspect

comprises policy templates, instrumentation, and parameters which enables you to monitor the health and performance of SAP systems. Each Aspect provides the ability to monitor a configured application server CI.

Types of SAP Aspects

OMi MP for SAP comprises the following two sets of Aspects to monitor ABAP and Java stacks in your SAP environment:

- SAP ABAP Monitoring - "SAP ABAP Aspects"
- SAP J2EE Monitoring - SAP J2EE Aspects

How to Access SAP Aspects

1. Open the Management Templates & Aspects pane:
   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server**.

Tasks

This section provides information about the following tasks:

How to deploy OMi MP for SAP Aspect

For more information about deploying OMi MP for SAP, see Task 7: Deploying SAP Aspects.

How to Create OMi MP for SAP Aspect

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > ERP Management > SAP NetWeaver Application Server > ABAP Aspects**.

3. In the Management Templates & Aspects pane, click , and then click **Create Aspect**. The Add New Aspect dialog box opens.
4. In the **General** tab, specify a Name for the new Aspect, and then click **Next**.
5. In the **CI Types** tab, select one or more CITs from Available CI Types pane to associate with the Aspect and click to add them to the Assigned CI Types pane, and then click **Next**.

   > **Note:** You can use **CTRL** or **SHIFT** key to select multiple CITs.

6. In the **Instrumentation** tab, click **Add Instrumentation** to add instrumentation categories to the Aspect. The Add Instrumentation window opens which lists the instrumentation that you want to add. Select the instrumentation and click **OK**. Click **Next**.

   > **Note:** You can add instrumentation based on your requirement. You can skip the step if you do not want to add instrumentation to the Aspect.

7. *(Optional)*. In the **Aspects** tab, click **Add Existing Aspect**. The Add Existing dialog box opens which enables you to select an existing Aspect that you want to add within an Aspect. Click an Aspect and then click **OK**. You can use **CTRL** or **SHIFT** key to select multiple Aspects. Click **Next**.

   > **Note:** If you are adding existing Aspects within an Aspect, ensure at least one of the CITs of the Aspect that you add must be a CIT or a parent CIT of the existing Aspect.

8. *(Optional)*. In the **Policy Template** tab, click **Add Policy Templates** on BSM 9.2x or **Add Policy Templates From List** on OMi 10.x. The Add New Policy Templates From List to Aspect dialog box on BSM 9.2x or Add New Policy Templates dialog box on OMi 10.xopens.Select the Policy Templates that you want to add and click **OK**.
9. If suitable Policy Templates do not exist, follow these steps to add a new Policy Template:
   a. Click , and then click **Add New Policy Template** to create a Policy Template. The Select Type for New Policy Template dialog box opens.
   b. Select the **Measurement Threshold** Policy Template type from the **Type** drop-down list and click **OK**. The Policy Related Information dialog box opens.
   c. In the Policy Related Information dialog box, specify a unique policy name and click **OK**. A new Policy Template is added.
10. Click **Next**.
11. In the **Parameters** tab, you see a list of parameters from the Policy Templates that you added to

this Aspect.

To edit parameters:

a. Double-click the parameter or select the parameter from the list and click  **Edit**. The Edit Parameter dialog box opens.

b. Modify the default parameter value and click **OK**.

12. In the Add New Aspect dialog box, click **Finish** to save the aspect. The new aspect appears in the Management Templates & Aspects pane.

How to Deploy OMi MP for SAP Aspects

For more information, see Task 7: Deploying SAP Aspects.

SAP ABAP Aspects

SAP ABAP Aspects are used to monitor the ABAP applications and system operating in your SAP environment. These systems can be individual or clustered systems. Each SAP ABAP Aspect comprises of policy templates, instrumentation, and parameters for monitoring the health and performance of the SAP systems. Each Aspect provides the ability to monitor a Computer CI.

User Interface Reference

General	Provides an overview of the general attributes of the SAP Aspects.
CI Type	The type of configuration items that the Aspect can be assigned to. This is the type of CI to which the Management Template can be assigned. The SAP Aspects contain Computer and SAP ABAP Application Server CI types.
Instrumentation	Provides a single package which contains the binaries for discovery, collection, and data logging.
Aspects	Provides an overview of any Aspects that the SAP Aspect contains. You can expand each item in the list to see more details about the nested Aspect. The SAP ABAP Base Aspect is part of all the other Aspects.
Policy Templates	Provides an overview of the policy templates that the SAP Aspect contain. You can expand each item in the list to see more details about the policy template.

The OMi MP for SAP contains the following aspects for monitoring ABAP Application Server:

SAP ABAP Batch Job Health

Monitors the status and collects performance of batch jobs running on the SAP system.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_BatJobMon	NA	Configuration file for monitoring the SAP ABAP Batch jobs that are exceeding the defined time interval, closed before the defined time interval, and not started at the scheduled time.	SAP ABAP Monitoring Template

SAP ABAP Base

Base Aspect for Monitoring SAP ABAP Landscapes contains Configuration, Scheduler, and Logger.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_High	NA	Runs the SAP ABAP collector/analyzer every 15 min with favorites metrics	Scheduled Task
SapAbapApplicationServer	SAPABAP_Messages	NA	SAP MP message template for message interception.	Open Message Interface
SapAbapApplicationServer	SAPABAP_Low	NA	Runs the SAP ABAP collector/analyzer Low schedule	Scheduled Task
SapAbapApplicationServer	SAPABAP_Medium	NA	Runs the SAP ABAP collector/analyzer every MEDIUM schedule	Scheduled Task
SapAbapApplicationServer	SAPABAP_VeryHigh	NA	Runs the SAP ABAP collector/analyzer every VERYHIGH schedule	Scheduled Task

SAP ABAP Configuration

Collects configuration information for SAP ABAP application server CIs.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ Configuration	NA	SAP ABAP Configuration Details.	ConfigFile

SAP ABAP Correction and Transport System Status

Monitors the various parameters of SAP Correction and Transport System.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ CTSMon	NA	Configuration file for monitoring the SAP Correction and Transport System for different transport requests, tasks, and objects.	SAP ABAP Monitoring Template

SAP ABAP Discovery

Discovers the various ABAP instances in the SAP landscape.

CI Type	Policy Template	Indicator	Description	Policy Type
Computer	SAPABAP_ Discovery	NA	SAP ABAP discovery policy.	Service Auto-Discovery

SAP ABAP Dump Status

Monitors the runtime errors on the SAP ABAP environment.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ DmpMon	NA	Configuration file for monitoring the runtime errors that occur on the SAP ABAP system.	SAP ABAP Monitoring Template

SAP ABAP Idoc Status

Monitors the status of Inbound and Outbound Idocs.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ IdocStatusMon	NA	Configuration file for monitoring the current status of different Idocs on the SAP ABAP system.	SAP ABAP Monitoring Template

SAP ABAP Lock Status

Monitors the database locks on the SAP system.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ LckChkMon	NA	Configuration file for monitoring the Enqueue process which manages the SAP ABAP logical locks for different SAP transactions and SAP reports.	SAP ABAP Monitoring Template

SAP ABAP Performance Monitor

Collects the SAP performance metrics with respect to Oracle database, document statistics, enterprise portal, ICM statistics, batch jobs, buffer, memory, spools, update jobs, users, statistical records, workload statistics, and work processes.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ StatRecMon	NA	Configuration file for specifying the SAP transactions for SAP ABAP statistical records performance monitor.	SAP ABAP Monitoring Template
SapAbapApplicationServer	SAPABAP_ PerfMon	NA	Configuration file for collecting the SAP Performance metrics from different SAP MP performance monitors.	SAP ABAP Monitoring Template

SAP ABAP Processes and Dispatcher Status

Monitors the status of various SAP work processes and the ABAP dispatcher.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ ProcMon	NA	Configuration file for monitoring the number of SAP ABAP processes.	SAP ABAP Monitoring Template
SapAbapApplicationServer	SAPABAP_ DispMon	NA	Configuration file for monitoring the size, content and status of various queues for different types of SAP work processes.	SAP ABAP Monitoring Template

SAP ABAP RFC Destination Status

Monitors the failed SAP RFC destinations.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ RFCDestMon	NA	Configuration file for monitoring the failed SAP RFC destinations based on the connection type and name of the SAP RFC destinations.	SAP ABAP Monitoring Template

SAP ABAP Remote Configuration

Configuration input for SAP ABAP remotely monitored nodes.

CI Type	Policy Template	Indicator	Description	Policy Type
Computer	SAPABAP_ RemoteDiscovery	NA	Discovers SAP ABAP Remote Nodes along with SAP System and Instance number	Service Auto-Discovery
Computer	SAPABAP_ RemoteConfiguration	NA	SAP ABAP Remote Configuration Details.	ConfigFile

SAP ABAP Security Status

Monitors the security status of important SAP users, SAP system parameters and security events.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_SecMon	NA	Configuration file for monitoring the SAP ABAP Security parameters like the privileges and authorizations of important SAP users, parameters that affect the overall SAP.	SAP ABAP Monitoring Template

SAP ABAP Spool Health

Monitors the status of various spool requests in the SAP system.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_SplMon	NA	Configuration file for monitoring the number of SAP ABAP spooler entries, error generating spool requests, and erroneous spooler entries in the print requests.	SAP ABAP Monitoring Template

SAP ABAP System Change Option Status

Monitors the SAP system change option.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_SysChgOptMon	NA	Configuration file for monitoring the SAP ABAP System Change options based on the global edit Status flag, namespaces, and software components.	SAP ABAP Monitoring Template

SAP ABAP Transport Status

Monitors the status of imports/exports of the transports on the SAP system.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ TransMon	NA	Configuration file for monitoring the successfully imported/exported SAP ABAP transports, failed imports/exports, availability of confirmed/unconfirmed repairs and connections/tptests to the configured systems.	SAP ABAP Monitoring Template

SAP ABAP Update Tasks Health

Monitors the status of update tasks running on the SAP system.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ UpdProcMon	NA	Configuration file for monitoring the different conditions of SAP ABAP Update processes like inactive Status and errors.	SAP ABAP Monitoring Template

SAP ABAP User Health

Monitors the status of logged-in users.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ UsrMon	NA	Configuration file for monitoring the SAP ABAP logged-in Users.	SAP ABAP Monitoring Template

SAP ABAP Work Process Health

Monitors the status of the SAP work processes.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_	NA	Configuration file for monitoring	SAP

CI Type	Policy Template	Indicator	Description	Policy Type
	WPMon		the running work processes, waiting work process, checking the various Status of work process like Debug/Private/No Restart.	ABAP Monitoring Template

SAP CCMS Integration

Monitors the output of SAP CCMS monitor sets.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ CCMSIntegrationMon	NA	Configuration file for monitoring the output of SAP CCMS monitoring infrastructure.	SAP ABAP Monitoring Template

SAP System Health

Monitors the SAP System availability status and trace file/log file status.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ TraceMon	NA	Configuration file for monitoring all the SAP Trace and Log files for "ERROR".	SAP ABAP Monitoring Template
SapAbapApplicationServer	SAPABAP_ StatusMon	NA	Configuration file for monitoring the SAP ABAP Application Server Availability Status.	SAP ABAP Monitoring Template

SAP Temporary Sequential File Monitoring

Monitors the inconsistencies of the temporary Sequential objects.

CI Type	Policy Template	Indicator	Description	Policy Type
SapAbapApplicationServer	SAPABAP_ TempSeqFileMon	NA	Configuration file for monitoring the inconsistencies found in the SAP ABAP temporary sequential objects.	SAP ABAP Monitoring Template

SAP J2EE Aspects

SAP J2EE Aspects are used to monitor the Java applications and system operating in your SAP Landscape. The systems can be individual or clustered systems. Each SAP J2EE Aspect comprises of policy templates, instrumentation, and parameters for monitoring the health and performance of the SAP systems. Each Aspect enables you to monitor a Computer CI.

User Interface Reference

General	Provides an overview of the general attributes of the SAP Aspects.
CI Type	The type of configuration items that the Aspect can be assigned to. This is the type of CI to which the Management Template can be assigned. The SAP Aspects contain the Computer and SAP J2EE Application Server CI types.
Instrumentation	Provides a package which contains the binaries for discovery, collection, and data logging.
Aspects	Provides an overview of SAP Aspects. You can expand each item in the list to see more details about an Aspect. The SAP J2EE Base Aspect is part of all the other Aspects.
Policy Templates	Provides an overview of the policy templates that the SAP Aspect contains. You can expand each item in the list to see more details about the policy template.

The OMi MP for SAP contains the following aspects for monitoring J2EE Application Server:

SAP J2EE Base

Base Aspect for monitoring SAP Landscapes and contains configuration, scheduler, and logger.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_VeryHigh	NA	Runs the SAP J2EE collector/analyzer every VERYHIGH schedule	Scheduled Task
SapJ2eeApplicationServer	SAPJ2EE_Low	NA	Runs the SAP J2EE collector/analyzer Low schedule	Scheduled Task
SapJ2eeApplicationServer	SAPJ2EE_Medium	NA	Runs the SAP J2EE collector/analyzer every MEDIUM schedule	Scheduled Task
SapJ2eeApplicationServer	SAPJ2EE_High	NA	Runs the SAP J2EE collector/analyzer every 15 min with favorites metrics	Scheduled Task
SapJ2eeApplicationServer	SAPJ2EE_Messages	NA	SAP MP message template for message interception.	Open Message Interface
SapJ2eeApplicationServer	SAPJ2EE_NWStatus	NA	Status and availability of SAP J2EE Application Server.	Scheduled Task

SAP J2EE Application Thread Pool Performance

Monitors the performance of application thread pools of the SAP J2EE system. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0226	NA	Min Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0219	ApplicationThreadPoolUtilization:High / ApplicationThreadPoolUtilization:Normal	Application Threads pool - Thread pool usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0229	NA	Waiting Tasks	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
			Queue Overflow.	
SapJ2eeApplicationServer	SAPJ2EE_0031	NA	Maximum Application threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0227	ApplicationThreadPoolUtilization:High / ApplicationThreadPoolUtilization:Normal	Application Threads pool - Thread pool capacity rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0221	NA	Active Threads Count.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0034	NA	Active Application threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0033	NA	Current Application threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0036	NA	Waiting tasks queue size in the Application threads pool.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0032	NA	Initial Application threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0223	NA	Initial Thread Pool Size.	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0225	NA	Max Waiting Tasks Queue Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0220	ApplicationThreadPoolUtilization:High / ApplicationThreadPoolUtilization:Normal	Application Threads pool - Waiting tasks usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0228	NA	Waiting Tasks Count.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0222	NA	Current Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0224	NA	Max Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0218	ApplicationThreadPoolUtilization:High / ApplicationThreadPoolUtilization:Normal	Application threads pool - Usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0030	NA	Minimum Application threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0035	NA	Waiting tasks count in the Application threads pool.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0037	NA	Waiting tasks	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
			queue overflow in the Application threads pool.	

SAP J2EE Cluster Manager - Message Server Communication Layer Performance

Monitors the message server communication layer in the cluster manager. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0066	NA	Total number of bytes received from the configuration Manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0230	NA	Average message processing time	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0081	NA	Total number of bytes received from deploy service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0041	NA	Total number of bytes sent from the cache manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0062	NA	Total number of bytes sent from the servlet JSP service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0038	NA	Current message context pool size of the J2EE cluster	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0051	NA	Total number of bytes sent from Telnet service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0071	NA	Total number of bytes received from the IIOP port through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0053	NA	Total number of bytes sent from JMS provider through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0069	NA	Total number of bytes received from the internal connection of the service manager through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0045	NA	Total number of bytes sent from the IIOP port through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0087	NA	Total number of bytes received from web DYNPRO service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0057	NA	Total number of bytes sent from connector service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0074	NA	Total number of bytes received from the web services through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0070	NA	Total number of bytes received from the P4 port through the message server communication layer	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0084	NA	Total number of bytes received from the specified service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0043	NA	Total number of bytes sent from the internal connection of the service manager through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0078	NA	Total number of bytes received from JMX service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0047	NA	Total number of bytes sent from the shell service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0076	NA	Total number of bytes received from JMX notification service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0086	NA	Total number of bytes received from security service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0083	NA	Total number of bytes received from connector service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0050	NA	Total number of bytes sent from JMX notification service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0079	NA	Total number of bytes received from JMS provider through the message server communication layer	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0056	NA	Total number of bytes sent from naming service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0085	NA	Total number of bytes received from the SAP security core user management engine service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0068	NA	Total number of bytes received from the Deploy distributor of the service manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0088	NA	Total number of bytes received from the servlet JSP service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0080	NA	Total number of bytes received from HTTP port through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0072	NA	Total number of bytes received from the SLD service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0042	NA	Total number of bytes sent from the deploy distributor of the service manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0054	NA	Total number of bytes sent from HTTP port through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0075	NA	Total number of bytes received from the log	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			configurator through the message server communication layer	
SapJ2eeApplicationServer	SAPJ2EE_0089	NA	Total number of bytes received from the RFC engine service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0049	NA	Total number of bytes sent from the log configurator through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0044	NA	Total number of bytes sent from the P4 port through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0040	NA	Total number of bytes sent from the Configuration Manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0090	NA	Total number of bytes received from the application tracing service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0060	NA	Total number of bytes sent from security service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0055	NA	Total number of bytes sent from deploy service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0048	NA	Total number of bytes sent from the web services through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Total number of bytes sent	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	0061		from web DYNPRO service through the message server communication layer	Threshold
SapJ2eeApplicationServer	SAPJ2EE_0059	NA	Total number of bytes sent from the sap security core user management engine service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0067	NA	Total number of bytes received from the cache manager through message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0052	NA	Total number of bytes sent from JMX service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0058	NA	Total number of bytes sent from the specified service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0046	NA	Total number of bytes sent from the SLD service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0091	NA	Total number of bytes received from the PRTBRIDGE service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0082	NA	Total number of bytes received from naming service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0073	NA	Total number of bytes received from the shell service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Total number of bytes	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	0077		received from telnet service through the message server communication layer	Threshold
SapJ2eeApplicationServer	SAPJ2EE_0065	NA	Total number of bytes sent from the PRTBRIDGE service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0064	NA	Total number of bytes sent from the application tracing service through the message server communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0039	NA	Average message context process time of the J2EE cluster	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0063	NA	Total number of bytes sent from the RFC engine service through the message server communication layer	Measurement Threshold

SAP J2EE Cluster Manager - Session Communication Layer Performance

Monitors the session communication layer in the cluster manager. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0106	NA	Total number of bytes sent from the IIOP service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0096	NA	Current size of the HTTP message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0104	NA	Total number of bytes sent from the JMS provider service through the session communication layer	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0103	NA	Total number of bytes sent from the HTTP service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0111	NA	Total number of bytes received from the JMS provider service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0097	NA	Current size of the JMS provider message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0109	NA	Total number of bytes received from the telnet service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0110	NA	Total number of bytes received from the HTTP service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0231	NA	Average session processing time	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0095	NA	Current size of the telnet message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0102	NA	Total number of bytes sent from the telnet service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0105	NA	Total number of bytes sent from the web services through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0094	NA	Current size of the internal message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0092	NA	Maximum session queue size	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0100	NA	Total number of bytes sent from the P4 port service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0093	NA	Current size of the P4 message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0098	NA	Current size of the web services message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0108	NA	Total number of bytes received from the internal service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0101	NA	Total number of bytes sent from the internal service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0099	NA	Current size of the IIOP message queue in the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0113	NA	Total number of bytes received from the IIOP service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0107	NA	Total number of bytes received from the P4 port service through the session communication layer	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0112	NA	Total number of bytes received from the web services through the session communication layer	Measurement Threshold

SAP J2EE Configuration

Collects configuration for J2EE application server CIs.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_ Configuration	NA	SAP J2EE Configuration Details.	ConfigFile

SAP J2EE Configuration Manager and Class Loader Performance

Monitors the cache hit rate and commit duration parameters of the configuration Manager and Class loader count.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_ 0002	NA	Commit duration	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 0233	CacheHitRate:High / CacheHitRate:Normal	Configuration manager - Cache hit rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 0234	NA	Configuration manager - Commit Duration	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 0232	NA	Class loader count	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 0001	CacheHitRate:High / CacheHitRate:Normal, CacheHitRate:High / CacheHitRate:Normal	Cache hit rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 0012	NA	Class loader count	Measurement Threshold

SAP J2EE Connections Manipulator Performance

Monitors the number of connections for different ports in the connection manipulator. This Aspect supports only SAP version 7.0 and SAP 7.0x.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_	NA	Maximum possible	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
	0021		connections in the connections manipulator (dispatcher).	
SapJ2eeApplicationServer	SAPJ2EE_0015	NA	P4 connections count of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0016	NA	IIOP connections count of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0020	NA	Free connections in the pool of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0013	NA	Total connections count of connections manipulator (dispatcher)	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0018	NA	Telnet connections count of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0014	NA	HTTP connections count of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0017	NA	JMS connections count of connections manipulator (dispatcher).	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0019	NA	Other connections count of connections manipulator (dispatcher).	ConfigFile

SAP J2EE Connector Service Performance

Monitors the managed connections for different resource adapters.This Aspect supports only SAP version 7.0 and SAP 7.0x.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2116	NA	Number of free managed connections from ADS	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			resource adapter	
SapJ2eeApplicationServer	SAPJ2EE_2063	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_FO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2077	NA	Number of used managed connections from SAP/CAF_EUP_ER resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2093	NA	Number of used managed connections from SAP/BC_SLM resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2127	NA	Maximum number of managed connections simultaneously opened from the SDK_SAPQ resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2075	NA	Maximum number of managed connections simultaneously opened from the SAP/CAF_EUP_ER resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2021	NA	Number of used managed connections from SAPSR3DB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2131	NA	Maximum number of managed connections simultaneously opened from the SDK_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2040	NA	Number of free managed connections from SAP/CAF_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2128	NA	Number of free managed connections from SDK_SAPQ resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Number of free managed	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	2092		connections from SAP/BC_ SLM resource adapter	Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2130	NA	Number of clients waiting for pooled managed connections for SDK_SAPQ resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2028	NA	Number of free managed connections from SAP/BC_ MIGSERVICE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2024	NA	Number of free managed connections from SAP/EP_ PRT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2129	NA	Number of used managed connections from SDK_ SAPQ resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2094	NA	Number of clients waiting for pooled managed connections for SAP/BC_SLM resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2096	NA	Number of free managed connections from SAP/LOCAL_ MAINFRAME_POOL resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2115	NA	Maximum number of managed connections simultaneously opened from the ADS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2103	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_JDO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2039	NA	Maximum number of managed connections simultaneously opened from the SAP/CAF_RT resource	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			adapter	
SapJ2eeApplicationServer	SAPJ2EE_2110	NA	Number of clients waiting for pooled managed connections for SAP/BC_UDDI resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2109	NA	Number of used managed connections from SAP/BC_UDDI resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2126	NA	Number of clients waiting for pooled managed connections for SDK_CAF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2053	NA	Number of used managed connections from SAP/CAF/EUP_GP/MAIL_CF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2056	NA	Number of free managed connections from SAP/BC_UME resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2105	NA	Number of used managed connections from SAP/BC_JDO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2023	NA	Maximum number of managed connections simultaneously opened from the SAP/EP_PRT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2135	NA	Maximum number of managed connections simultaneously opened from the SDK_ODBO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2133	NA	Number of used managed connections from SDK_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2068	NA	Number of free managed connections from SAP/BC_XMLA resource adapter	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2120	NA	Number of free managed connections from SDK_JDBC resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2019	NA	Maximum number of managed connections simultaneously opened from the SAPSR3DB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2027	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_MIGSERVICE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2091	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_SLM resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2104	NA	Number of free managed connections from SAP/BC_JDO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2035	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_WDRR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2038	NA	Number of clients waiting for pooled managed connections for SAP/BC_WDRR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2044	NA	Number of free managed connections from SAP/BW_MMR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2042	NA	Number of clients waiting for pooled managed connections for SAP/CAF_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Number of clients waiting for	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	2034		pooled managed connections for SAP/CAF_EUP_GP resource adapter	Threshold
SapJ2eeApplicationServer	SAPJ2EE_2138	NA	Number of clients waiting for pooled managed connections for SDK_ODBO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2049	NA	Number of used managed connections from SAP/EP_DQE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2051	NA	Maximum number of managed connections simultaneously opened from the SAP/CAF/EUP_GP/MAIL_CF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2057	NA	Number of used managed connections from SAP/BC_UME resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2052	NA	Number of free managed connections from SAP/CAF/EUP_GP/MAIL_CF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2085	NA	Number of used managed connections from SAP/BC_ADM resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2025	NA	Number of used managed connections from SAP/EP_PRT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2061	NA	Number of used managed connections from SAP/BC_JMS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2098	NA	Number of clients waiting for pooled managed connections for SAP/LOCAL_MAINFRAME_POOL resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Number of free managed	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	2108		connections from SAP/BC_ UDDI resource adapter	Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2066	NA	Number of clients waiting for pooled managed connections for SAP/BC_FO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2058	NA	Number of clients waiting for pooled managed connections for SAP/BC_UME resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2050	NA	Number of clients waiting for pooled managed connections for SAP/EP_DQE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2113	NA	Number of used managed connections from UTDB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2031	NA	Maximum number of managed connections simultaneously opened from the SAP/CAF_EUP_GP resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2132	NA	Number of free managed connections from SDK_ XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2036	NA	Number of free managed connections from SAP/BC_ WDRR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2082	NA	Number of clients waiting for pooled managed connections for SAP/EP_PCD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2100	NA	Number of free managed connections from SAP/BC_ SLD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2074	NA	Number of clients waiting for pooled managed connections for SAP/BC_MON resource	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			adapter	
SapJ2eeApplicationServer	SAPJ2EE_2073	NA	Number of used managed connections from SAP/BC_MON resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2043	NA	Maximum number of managed connections simultaneously opened from the SAP/BW_MMR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2055	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_UME resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2102	NA	Number of clients waiting for pooled managed connections for SAP/BC_SLD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2097	NA	Number of used managed connections from SAP/LOCAL_MAINFRAME_POOL resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2095	NA	Maximum number of managed connections simultaneously opened from the SAP/LOCAL_MAINFRAME_POOL resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2121	NA	Number of used managed connections from SDK_JDBC resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2125	NA	Number of used managed connections from SDK_CAF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2048	NA	Number of free managed connections from SAP/EP_DQE resource adapter	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2122	NA	Number of clients waiting for pooled managed connections for SDK_JDBC resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2020	NA	Number of free managed connections from SAPSR3DB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2029	NA	Number of used managed connections from SAP/BC_MIGSERVICE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2076	NA	Number of free managed connections from SAP/CAF_EUP_ER resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2047	NA	Maximum number of managed connections simultaneously opened from the SAP/EP_DQE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2037	NA	Number of used managed connections from SAP/BC_WDRR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2032	NA	Number of free managed connections from SAP/CAF_EUP_GP resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2078	NA	Number of clients waiting for pooled managed connections for SAP/CAF_EUP_ER resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2088	NA	Number of free managed connections from SAP/CAF_BW_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2041	NA	Number of used managed connections from SAP/CAF_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2124	NA	Number of free managed connections from SDK_CAF	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			resource adapter	
SapJ2eeApplicationServer	SAPJ2EE_2080	NA	Number of free managed connections from SAP/EP_PCD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2112	NA	Number of free managed connections from UTDB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2062	NA	Number of clients waiting for pooled managed connections for SAP/BC_JMS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2123	NA	Maximum number of managed connections simultaneously opened from the SDK_CAF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2099	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_SLD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2059	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_JMS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2054	NA	Number of clients waiting for pooled managed connections for SAP/CAF/EUP_GP/MAIL_CF resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2106	NA	Number of clients waiting for pooled managed connections for SAP/BC_JDO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2046	NA	Number of clients waiting for pooled managed connections for SAP/BW_MMR resource	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			adapter	
SapJ2eeApplicationServer	SAPJ2EE_2111	NA	Maximum number of managed connections simultaneously opened from the UTDB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2136	NA	Number of free managed connections from SDK_ODBO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2134	NA	Number of clients waiting for pooled managed connections for SDK_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2119	NA	Maximum number of managed connections simultaneously opened from the SDK_JDBC resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2030	NA	Number of clients waiting for pooled managed connections for SAP/BC_MIGSERVICE resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2071	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_MON resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2060	NA	Number of free managed connections from SAP/BC_JMS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2064	NA	Number of free managed connections from SAP/BC_FO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2026	NA	Number of clients waiting for pooled managed connections for SAP/EP_PRT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2084	NA	Number of free managed connections from SAP/BC_	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			ADM resource adapter	
SapJ2eeApplicationServer	SAPJ2EE_2118	NA	Number of clients waiting for pooled managed connections for ADS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2069	NA	Number of used managed connections from SAP/BC_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2065	NA	Number of used managed connections from SAP/BC_FO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2067	NA	Maximum number of managed connections simultaneously opened from the SAP/BC_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2045	NA	Number of used managed connections from SAP/BW_MMR resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2033	NA	Number of used managed connections from SAP/CAF_EUP_GP resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2101	NA	Number of used managed connections from SAP/BC_SLD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2070	NA	Number of clients waiting for pooled managed connections for SAP/BC_XMLA resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2022	NA	Number of clients waiting for pooled managed connections for SAPSR3DB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2079	NA	Maximum number of managed connections simultaneously opened from the SAP/EP_PCD resource adapter	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2081	NA	Number of used managed connections from SAP/EP_PCD resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2137	NA	Number of used managed connections from SDK_ODBO resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2090	NA	Number of clients waiting for pooled managed connections for SAP/CAF_BW_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2086	NA	Number of clients waiting for pooled managed connections for SAP/BC_ADM resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2114	NA	Number of clients waiting for pooled managed connections for UTDB resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2089	NA	Number of used managed connections from SAP/CAF_BW_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2072	NA	Number of free managed connections from SAP/BC_MON resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2107	NA	Maximum Number of managed connections simultaneously opened from the SAP/BC_UDDI resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2117	NA	Number of used managed connections from ADS resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2087	NA	Maximum Number of managed connections simultaneously opened from the SAP/CAF_BW_RT resource adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2083	NA	Maximum Number of managed connections	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			simultaneously opened from the SAP/BC_ADM resource adapter	

SAP J2EE Discovery

Discovers the various JAVA instances in the SAP landscape.

CI Type	Policy Template	Indicator	Description	Policy Type
Computer	SAPJ2EE_ Discovery	NA	SAPMP J2EE Discovery policy.	Service Auto-Discovery

SAP J2EE EJB Performance

Monitors the performance of the session statefull beans, stateless beans , message driven beans and entity beans. This Aspect supports only SAP version 7.0 and SAP 7.0x.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_ 2159	NA	Initial number of bean instances that will be created in the pool	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2151	NA	Number of bean instances that this pool can hold	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2164	NA	Number of bean instances provided by this pool, which are currently used by the application or are stored in the pool	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2147	NA	Number of times a bean instance has been activated	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2146	NA	Number of times a bean instance has been passivated	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_ 2169	NA	Number of times a bean instance has been	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
			passivated	
SapJ2eeApplicationServer	SAPJ2EE_2148	NA	Number of times a bean has been created	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2167	NA	The number by which the total number of instances in the pool will be incremented each time a new instance is requested and there are no idle instances in the pool. The value of this element must be positive.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2157	NA	Number of bean instances provided by this pool, which are currently used by the application or are stored in the pool.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2161	NA	Number of bean instances provided by this pool which are currently used by this application.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2142	NA	Number of bean sessions that are currently passivated	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2154	NA	Number of bean instances provided by this pool which are currently used by this application	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2170	NA	Number of times a bean instance has been activated	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2139	NA	The time in seconds after which an idle active session is passivated	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2166	NA	Initial number of bean instances that will be created in the pool	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2155	NA	Number of times a bean has been created	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_	NA	Number of times a bean and	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
	2163		its session has been removed	Threshold
SapJ2eeApplicationServer	SAPJ2EE_2149	NA	Number of times a bean and its session has been removed	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2165	NA	Number of bean instances that this pool can hold	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2145	NA	Number of times a bean and its session has been removed	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2140	NA	The period in seconds since the bean's passivation, after which the EJB container clears the session bean's instance from the swap and destroys the session.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2158	NA	Number of bean instances that this pool can hold.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2168	NA	Number of bean instances provided by this pool which are currently used by this application.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2150	NA	Number of bean instances provided by this pool, which are currently used by the application or are stored in the pool.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2152	NA	Initial number of bean instances that will be created in the pool	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2143	NA	Number of completed sessions	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2141	NA	Number of active bean sessions	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2156	NA	Number of times a bean and its session has been removed	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2153	NA	The number by which the total number of instances in the pool will be incremented each time a new instance is requested and there are no idle instances in the pool. The value of this element must be positive.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2162	NA	Number of times a bean has been created	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2160	NA	The number by which the total number of instances in the pool will be incremented each time a new instance is requested and there are no idle instances in the pool. The value of this element must be positive.	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2144	NA	Number of times a bean has been created.	Measurement Threshold

SAP J2EE Http Provider Performance

Monitors the performance of requests in the HTTP provider. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2014	NA	Number of skipping requests of the open connections in the HTTP provider	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2215	NA	All Requests Count.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2216	NA	HTTP provider - Active threads count	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2018	NA	Average request response time of the HTTP provider	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2186	NA	Total number of all requests in the HTTP provider.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2017	NA	Total count of requests in the HTTP provider.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2217	NA	HTTP provider - Threads in-process rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2012	NA	Number of reading requests of the open connections in the HTTP provider	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2011	NA	Total count of the open connections of the HTTP provider	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2013	NA	Number of reading response of the open connections in the HTTP provider	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2016	NA	Average rate of requests per connection in the HTTP provider	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2015	NA	Number of Keep Alive waiting connections of the HTTP provider	Measurement Threshold

SAP J2EE JMS Performance

Monitors the JMS session container. This Aspect supports versions starting from SAP 7.1

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2207	NA	JMS Session container - Connections count	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2208	NA	JMS Session container - Consumer count	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2209	NA	JMS Session container - Producers count	Measurement Threshold

SAP J2EE JMX Adapter Performance

Monitors the JMX Adapter protocol.This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2229	NA	JMX Adapter - Local MBean Repository size of JMX Adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2001	NA	Maximum entries in the JMX Adapter cache	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2228	NA	JMX Adapter - Cluster wide notification listeners	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2006	NA	Active threads in the notification queue of JMX Adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2002	NA	Current entries in the JMX Adapter cache	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2003	NA	Replaced entries in the JMX Adapter cache	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2004	NA	Cache hit rate of the JMX Adapter	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2005	NA	Notification queue size of the JMX Adapter	Measurement Threshold

SAP J2EE JNDI Registry Status

Monitors the JNDI registry.This Aspect supports versions starting from SAP 7.1.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2231	NA	JNDI Registry - Byte Array Cache size	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2230	NA	JNDI Registry - Bound objects count	Measurement Threshold

SAP J2EE Log Configurator Performance

Monitors the log file size and status of the messages in the log configurator. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2213	NA	Number of error messages in the Log Configurator.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2211	NA	Number of all logged messages in the Log Configurator.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2007	NA	Total log file size in the Log Configurator	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2210	NA	Log Configurator - Total log file size	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2214	NA	Number of fatal messages in the Log Configurator.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2212	NA	Number of warning messages in the Log Configurator.	ConfigFile

SAP J2EE Memory Status

Monitors the status of J2EE memory and time out parameter of SAP system. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2010	NA	Used Memory.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2201	NA	Allocated Memory.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2203	NA	Used memory.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2202	NA	Available Memory.	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2008	NA	Allocated Memory.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2204	NA	Timeout - Estimated frequency per minute	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2009	NA	Available Memory.	ConfigFile

SAP J2EE P4 and IIOP Provider Performance

Monitors the performance of P4 and IIOP service providers. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2227	NA	IIOP Provider - Thread usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2218	NA	P4 provider - Failed requests count	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2219	NA	P4 provider - Thread usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2220	NA	RequestsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2185	NA	Number of requests in the P4 provider.	ConfigFile

SAP J2EE Ports Manager Performance

Monitors the accepting threads usage for different ports. This Aspect supports only SAP version 7.0 and SAP 7.0x.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0007	NA	Accepting threads usage rate of P4 port.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_	NA	Accepting threads usage rate of	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
	0006		IIOP (SSL) port.	
SapJ2eeApplicationServer	SAPJ2EE_0011	NA	Accepting threads usage rate of JMS provider.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0009	NA	Accepting threads usage rate of P4 (SSL) port.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0005	NA	Accepting threads usage rate of IIOP port.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0003	NA	Accepting threads usage rate of HTTP port.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0010	NA	Accepting threads usage rate of Telnet.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0004	NA	Accepting threads usage rate of HTTP (SSL) port.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0008	NA	Accepting threads usage rate of P4 (HTTP Tunneling) port.	ConfigFile

SAP J2EE Sessions Manager Performance

Monitors the status and performance of sessions and session aggregated data. This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2232	UnsuccessfulLogonAttemptsRate: High / UnsuccessfulLogonAttemptsRate: Normal	Security - Unsuccessful logon attempts	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2182	NA	Number of timed out sessions in the security server.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0204	NA	Sessions manager -	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
			Active web sessions count	Threshold
SapJ2eeApplicationServer	SAPJ2EE_2184	NA	Number of logged off sessions in the security server.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0202	NA	Opened Web Sessions Count.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2180	NA	Number of active sessions in the security server.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2183	NA	Number of invalid sessions in the security server.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2181	NA	Total number of sessions in the security server.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0205	NA	Sessions manager - Number of logged in users	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0201	NA	Opened security sessions	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
			count.	
SapJ2eeApplicationServer	SAPJ2EE_0203	NA	Opened EJB sessions count.	ConfigFile

SAP J2EE System Thread Pool Performance

Monitors the performance of Java Application Response time Measurement requests.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_0215	SystemThreadPoolUtilization:High / SystemThreadPoolUtilization:Normal	System Threads pool - Thread pool capacity rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0024	NA	Initial System threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0027	NA	Waiting tasks count in the System threads pool.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0028	NA	Waiting tasks queue size in the System threads pool.	ConfigFile
SapJ2eeApplicationSer	SAPJ2E	NA	Current	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
ver	E_0025		System threads pool size.	
SapJ2eeApplicationServer	SAPJ2EE_0214	NA	Min Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0022	NA	Minimum System threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0208	NA	System Threads pool - Waiting tasks usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0206	SystemThreadPoolUtilization:High / SystemThreadPoolUtilization:Normal	System Threads pool - Usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0207	NA	System Threads pool - Thread pool usage rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_0211	NA	Initial Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0023	NA	Maximum System threads pool size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0029	NA	Waiting tasks queue overflow in the System	ConfigFile

CI Type	Policy Template	Indicator	Description	Policy Type
			threads pool.	
SapJ2eeApplicationServer	SAPJ2EE_0209	NA	Active Threads Count.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0026	NA	Active thread count in the System threads pool.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0212	NA	Max Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0213	NA	Max Waiting Tasks Queue Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0217	NA	Waiting Tasks Queue Overflow.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0210	NA	Current Thread Pool Size.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_0216	NA	Waiting Tasks Count.	ConfigFile

SAP J2EE Transaction Status

Monitors the status of different types of transactions.This Aspect supports versions starting from SAP 7.1.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2221	NA	CommittedTransactionsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2223	NA	RolledBackTransactionsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2224	NA	SuspendedTransactionsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2222	NA	OpenTransactionsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2226	J2EETransactionSuccessRate:Low / J2EETransactionSuccessRate:Normal	Transaction - Success Rate	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2225	NA	TimedOutTransactionsCount.	ConfigFile

SAP J2EE Web Container Performance

Monitors the performance of web container.This Aspect supports different metrics depending on the SAP versions.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2188	NA	Number of current security sessions in the web container	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2190	NA	Number of timed out security sessions in the web container	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2189	NA	Number of timed out HTTP sessions in the web container	Measurement Threshold

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2187	NA	Number of current HTTP sessions in the web container	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2206	NA	AllRequestsCount.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2191	NA	Total number of all requests in the web container.	ConfigFile
SapJ2eeApplicationServer	SAPJ2EE_2205	NA	Web container - Average processing time	Measurement Threshold

SAP J2EE Web Services Performance

Monitors the performance of requests for various services.This Aspect supports only SAP version 7.0 and SAP 7.0x.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_2172	NA	Number of requests that have failed for any reason	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2175	NA	Implementation time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2178	NA	Implementation time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2174	NA	Pre-processing time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2179	NA	Post-processing time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2177	NA	Pre-processing time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2171	NA	Number of successfully passed requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2176	NA	Post-processing time for the service	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_2173	NA	Number of currently processed requests	Measurement Threshold

SAP JARM Requests Performance

Monitors the performance of Java Application Response time Measurement requests.

CI Type	Policy Template	Indicator	Description	Policy Type
SapJ2eeApplicationServer	SAPJ2EE_4001	NA	Number of jarm requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4005	JARMRequestsAverageCPUTime:High / JARMRequestsAverageCPUTime:Normal	Average CPU time for jarm requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4206	NA	Number of requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4002	NA	Number of jarm requests per second	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4003	NA	Number of component calls by all jarm requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4004	JARMRequestsAverageResponseTime:High / JARMRequestsAverageResponseTime:Normal	Average response time of jarm requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4205	NA	Number of component calls	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4201	JARMRequestsAverageResponseTime:High /	Average response	Measurement

CI Type	Policy Template	Indicator	Description	Policy Type
		JARMRequestsAverageResponseTime:Normal	time of J2EE Engine	Threshold
SapJ2eeApplicationServer	SAPJ2EE_4204	NA	Average out bound data	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4202	NA	Requests per second	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4006	NA	Average outbound data for jarm requests	Measurement Threshold
SapJ2eeApplicationServer	SAPJ2EE_4203	JARMRequestsAverageCPUTime:High / JARMRequestsAverageCPUTime:Normal	Average CPU time	Measurement Threshold

SAP ABAP Monitoring Templates

The OMi MP for SAP contains a set of SAP ABAP Monitoring Templates which you configure to run at regular intervals to collect information regarding various Aspects of ABAP Application Servers in your SAP Environment.

The OMi MP for SAP enables you to extensively customize the SAP ABAP Monitoring Templates to suit your monitoring requirements. Each SAP ABAP Monitoring Template enables you to monitor a set of functionality of the ABAP Application Server and has a set of keywords that can be configured to monitor a specific functionality.

Each monitoring template provided with the OMi MP for SAP defines default settings by using keywords. Some keywords can only be used with specific SAP ABAP Monitoring Templates.

How to Access SAP ABAP Monitoring Templates

1. Open SAP ABAP Monitoring Templates:
   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates**.

On OMi 10.x, click **Administration > Monitoring > Policy Templates**.

2. In the Policy Templates Group pane:

   On BSM 9.2x, click **Policy Templates by group> SAP ABAP Monitoring Templates**.

   On OMi 10.x, click **Policy Management > Templates grouped by type > SAP ABAP Monitoring**.

Remote Monitoring with SAP ABAP Monitoring Templates

The SAP ABAP Monitoring Templates extends the scope of monitoring ABAP Application Servers by enabling you to monitor SAP ABAP Application Servers on nodes which does not have Operations Agent installed. You set up and perform the remote monitoring of ABAP Application Servers from a node where Operations Agent is installed and OMi MP for SAP Management Templates are deployed.

To make use of the remote-monitoring feature provided by the OMi MP for SAP, for example, to monitor an SAP System running in an environment that is not supported by the OMi MP for SAP, you need to perform the following actions. Specifying Individual Remote Servers to Monitor shows how a new line is required for each additional SAP server, which you want to monitor remotely.

- Enable the **RemoteMonitoring** keyword by removing the leading hash symbol "#" in each monitor's configuration file.
- Define the name of the local host, on which you want to perform the monitoring. Note that you need a new line for each local host that you want to associate with a remote host.
- Define the name of the remote SAP server (RemoteHost), which you want to monitor.
- Make sure that the remote host is configured with SAP ABAP Configuration Aspect.

The RemoteMonitoring keyword accepts the following parameters:

- **LocalHost**

  This is the name of the local OMi MP for SAP managed node (where Agent is installed) with which you want to remotely monitor the SAP server defined in the parameter "`RemoteHost`".

- **RemoteHost**

  This is the name of the remote SAP server you want to monitor from the host defined in the parameter "`LocalHost`".

- **SAP System and SAP Number (SAPABAP_CCMSIntegrationMon only)**

  The SAPABAP_CCMSIntegrationMon Monitoring Template needs to know both the ID and the Number of the SAP System running on the SAP server defined in the parameter "`RemoteHost`".

Specifying Individual Remote Servers to Monitor

```
#-------------------------------------------------------------

# Remote LocalHost RemoteHost

# Monitoring

RemoteMonitoring =sap1 =sdsap1

RemoteMonitoring =sap1 =sdsap2

RemoteMonitoring =sap2 =sdsap3

#-------------------------------------------------------------
```

For more information about configuring Remote Monitoring for SAPABAP_CCMSIntegrationMon, see "SAPABAP_CCMSIntegrationMon".

SAPABAP_BatJobMon

The SAPABAP_BatJobMon enables monitoring of SAP ABAP Batch jobs that are exceeding the defined time interval, closed before the defined time interval, and not started at the scheduled time.

The job-report alert monitor SAPABAP_BatJobMon identifies and reports on batch jobs for the following conditions:

- A batch job's run time is either less than or has exceeded a specified limit.
- A specified period of time passes between a batch job's scheduled and actual start time (and date).
- A batch job has aborted.

> **Note:** You cannot configure SAPABAP_BatJobMon to send multiple messages, for example, first send a WARNING message if the run time for a batch job exceeds 5 minutes and then send a CRITICAL message if the run time for the same batch job exceeds 10 minutes.

The SAP ABAP Monitoring Template SAPABAP_BatJobMon references:

- Reports created using SAP NetWeaver transaction **SM36** or **SM38**.
- Job details including ID number using SAP NetWeaver transaction **SM37**.

Monitor Type

The SAPABAP_BatJobMon Monitoring Template is of type *time frame*. One run gathers only one value set.

Alert Types

The SAPABAP_BatJobMon Monitoring Template has the following alert types. Note that if you want to use the SAPABAP_BatJobMon Monitoring Template, you must configure the alert types listed below:

- JOB_MAX_RUN_TIME

  Defines the maximum allowed run time for a job. SAPABAP_BatJobMon Monitoring Template sends an alert if the defined job runs for longer than the maximum defined time, specified in minutes.

- JOB_MIN_RUN_TIME

  Defines the minimum allowed run time for a job. SAPABAP_BatJobMon Monitoring Template sends an alert if the defined job does not run for at least as long as the defined time, specified in minutes.

- START_PASSED

  It is the maximum allowed delay between scheduled and actual start time for a defined job. SAPABAP_BatJobMon Monitoring Template triggers an alert if the job does not start within the defined time, specified in minutes.

- JOB_ABORTED

  SAPABAP_BatJobMon Monitoring Template sends an alert whenever the jobs specified in its configuration fail to complete successfully.

First Time Monitoring

When monitoring batch job alerts for a particular alert type for the first time, the Job-report monitor SAPABAP_BatJobMon Monitoring Template checks for the following conditions in SAP:

- Jobs which are not yet scheduled to run
- Jobs which ended within the previous two days

- Jobs which are still running

Performance Aspects

On a production system, the SAP standard table `tbtco` is usually very big. To speed up the database selection, you should specify the job names in as much detail as possible. For more information about the meaning of the query conditions in the SAP ABAP Monitoring Template Configuration, see "Query Conditions for Monitoring Templates".

The runtime cost of a job selection grows in the order shown in the following table:

Specified Jobname	Sign	Option	Selection
JOBNAME	I	EQ	Z5_CRITICAL_JOB_1> select via index
JOBNAME	I	CP	Z5_CRITICAL_JOB*> select via index
JOBNAME	E	CP	Z5_CRITICAL_JOB*> sequential scan

> **Note:** Exclude options tend to be more expensive than include options in performance terms. Using wild cards such as "*" in general database queries is more expensive than in explicit queries.

File Locations

The SAPABAP_BatJobMon Monitoring Template uses the files listed in this table:

File	Description
r3moncol (.exe)	Collector executable for the batch job monitor
r3monjob.cfg	Configuration file for monitored jobs and job conditions.
r3monjob.log	Trace file for storing trace data.

The `SAPABAP_BatJobMon` Monitoring Template do not write history information to a specific history file. For more information, see "SAP ABAP Monitoring Templates, Monitoring Template Configuration Files, and History Files".

Environment Variables

The SAPABAP_BatJobMon Monitoring Template uses the environment variables described in Environment Variables.

Command-Line Parameters

The SAPABAP_BatJobMon Monitoring Template uses the command-line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_BatJobMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring Job-Report Monitor Alert Types

You can configure SAPABAP_BatJobMon Monitoring Template, the job-report monitor, for each of the listed alert types for a specific job, a combination of jobs, or for *all* jobs. You can also define exceptions for jobs that need different monitoring conditions. Note that the general rules for using exclude and include parameter values, which are of particular importance for these alert types.

Try to avoid using select option CP with the JOBNAME parameter because CP slows down the selection process. If you do use CP, try to limit its scope, for example, instead of specifying CP *, specify CP SAP*.

Parameter Values

This section describes how the OMi MP for SAP interprets *include* and *exclude* parameter values for an alert type entry. The OMi MP for SAP compares values in different parameters using 'and'; the OMi MP for SAP compares values in the same parameter as follows.

- **Include:** use 'or' to compare the parameters
- **Exclude:** use 'and' to compare the parameters

The OMi MP for SAP evaluates *include* values before *exclude* values, as shown in the following table:

Select Options	Alert Type:JOB_MAX_RUN_TIME Example Configuration of Select Options	Comparison
1	=JOBNAME =I =CP =ZREP* = =MAX_RUNTIME =I =GT =10 =	OR
2	=JOBNAME =I =CP =SAP* = =MAX_RUNTIME =I =GT =20 =	OR
3	=JOBNAME =E =CP =SAP_ZREP* =	AND

JOB_MAX_RUN_TIME

The JOB_MAX_RUN_TIME alert type defines the maximum allowed run time for a job. Use the JOB_MAX_RUN_TIME alert type to configure the job-report SAPABAP_BatJobMon Monitoring Template to generate an alert when a job exceeds the value configured in the parameter MAX_RUNTIME.

The following table lists, the parameters that you can use to configure the JOB_MAX_RUN_TIME alert type and shows the value assigned to the parameters by default. The configuration of any of the

parameters listed in this table is optional. If both parameters are omitted, SAPABAP_BatJobMon Monitoring Template reports all jobs running in the specified time.

Parameter Name	Description	Query Conditions	Default Value
JOBNAME	Name of the jobs to monitor	= Sign: I, E	I
		= Opt: EQ, CP, BT	CP
		= Low <Name of job>	*
		= High (Only for use with a range)	
MAX_ RUNTIME	Job run time in minutes which, if exceeded, generates an alert.	= Sign I, E	I
		= Opt: EQ, GE, GT, BT	GT
		= Low (Specify this parameter as a number. Otherwise the monitor ends with a dump.)	5
		= High (Only for use with a range)	

The following examples illustrates both the default and a customized configuration for the JOB_MAX_ RUN_TIME alert type.

- **Default JOB_MAX_RUN_TIME Configuration**

  In Default JOB_MAX_RUN_TIME Configuration, an event generating an alert occurs if any report named `<jobname>*` has a runtime exceeding five minutes.

  ```
  AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1 \
  =WARNING =MaxRunTime =R3_Jobs\
  =JOB_MAX_RUN_TIME =JOBNAME =I =CP =<jobname>* =\
  =MAX_RUNTIME =I =GT =5 =
  ```

- **Customized JOB_MAX_RUN_TIME Configuration**

  In Customized JOB_MAX_RUN_TIME Configuration, an event generating an alert occurs if all the reports named SAP*, except reports SAPZ*, have a runtime exceeding ten minutes.

  ```
  AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1\
  =WARNING =MaxRunTime =R3_Jobs \
  =JOB_MAX_RUN_TIME =JOBNAME =I =CP =SAP* = \
  =MAX_RUNTIME =I =GT =10 =
  ```

```
AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1\
=WARNING =MaxRunTime =R3_Jobs \
=JOB_MAX_RUN_TIME =JOBNAME =E =CP =SAPZ* = \
=MAX_RUNTIME =I =GT =10 =
```

The OMi MP for SAP optional test transport includes a program that you can run to start a long-running job. You can use the job to verify that the SAPABAP_BatJobMon Monitoring Template is correctly configured to send a message to OMi, if a job runs for more than a defined amount of time. If the test completes successfully, a message about the test job appears in the OMi message browser. For more information about Transports, see Transports readme file on the OMi managed node. For more information about importing and applying OMi MP for SAP Transports, see *OMi MP for SAPInstallation Guide.*

After importing the transport, the installed test program /HPOV/YSPI0002 can be viewed using the SAP ABAP Object Navigator Transaction SE80.

JOB_MIN_RUN_TIME

The JOB_MIN_RUN_TIME alert type defines the minimum allowed run time for a job. Use the JOB_MIN_RUN_TIME alert type to configure the job-report Monitoring Template SAPABAP_BatJobMon to generate an alert when a job does not run for the time specified in the parameter MIN_RUNTIME.

The following table lists the parameters that you can use to configure the JOB_MAX_RUN_TIME alert type and shows the value assigned to the parameters by default:

The configuration of any of the parameters below is optional. If both parameters are omitted, all jobs running in the specified time frame are reported.

Parameter Name	Description	Query Conditions	Default Value
JOBNAME	Name of the jobs to monitor	= Sign: I, E	I
		= Opt: EQ, CP, BT	CP
		= Low <Name of job>	*
		= High: [a]	

MIN_ RUNTIME	This defines the minimum allowed run time. Alerts are triggered for jobs which did not run for the time specified (in minutes).	= Sign I, E	I
		= Opt: EQ,LE, LT, BT	LT
		=Low <Min. value in minutes> [b]	1
		= High	

a Only for use with range.

b Specify this parameter as a number, otherwise the monitor ends with a dump.

The following examples illustrates both the default and a customized configuration for the JOB_MIN_ RUN_TIME alert type.

- **Default JOB_MIN_RUN_TIME Configuration**

  In Default JOB_MIN_RUN_TIME Configuration, an event generating an alert occurs if any report named <*jobname*>* has a runtime of less than one minute.

```
AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1 \

=WARNING =MinRunTime =R3_Jobs\

=JOB_MIN_RUN_TIME =JOBNAME =I =CP =<jobname>* = \

=MIN_RUNTIME =I =LT =1 =
```

- **Customized JOB_MIN_RUN_TIME Configuration**

  In Customized JOB_MIN_RUN_TIME Configuration, an event generating an alert occurs if all reports named SAP*, except reports SAPZ*, have a runtime of less than two minutes.

```
AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1 \

=WARNING =MinRunTime =R3_Jobs \

=JOB_MIN_RUN_TIME =JOBNAME =I =CP =SAP* = \

=MIN_RUNTIME =I =LT =2 =

AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1 \

=WARNING =MinRunTime =R3_Jobs \
```

```
=JOB_MIN_RUN_TIME =JOBNAME =E =CP =SAPZ* = \

=MIN_RUNTIME =I =LT =2 =
```

The OMi MP for SAP optional test transport includes a program that you can run to start a short job. You can use the job to verify that the SAPABAP_BatJobMon Monitoring Template is correctly configured to send a message to OMi if a job runs for less than a defined amount of time. If the test completes successfully, a message about the test job appears in the OMi message browser. For more information about Transports, see Transports readme file on the OMi managed node. For more information about importing and applying OMi MP for SAP Transports, see *OMi MP for SAPInstallation Guide.*

After importing the transport, the installed test program /HPOV/YSPI0005 can be viewed using the SAP ABAP Object Navigator Transaction `SE80`.

START_PASSED

The START_PASSED alert type defines the maximum allowed delay between a job's scheduled and actual start times. Use the START_PASSED alert type to configure the SAPABAP_BatJobMon Monitoring Template to generate an alert if the specified jobs do not start within the configured TIME_ SPAN after the scheduled start time. The following table lists the parameters that you can use to configure the START_PASSED alert type and shows the value assigned to the parameters by default.

If a job is scheduled but does not have a start time, SAPABAP_BatJobMon Monitoring Template cannot monitor it until and unless an assigned start time is visible in the SAP database. SAP associates a start time with a job only when the job assumes a particular status. The following SAP job statuses have a start time which means you can monitor them with `SAPABAP_BatJobMon` Monitoring Template: Released, Ready, Active, Finished, and Canceled.

The configuration of any of the parameters below is optional. If both parameters are omitted all jobs running in the specified time frame are reported.

Parameter Name	Description	Query Conditions	Default Value
JOBNAME	Name of the jobs to monitor	= Sign: I, E	I
		= Opt: EQ, CP, BT	CP
		= Low <Name of job>	*
		= High [1]	

Parameter Name	Description	Query Conditions	Default Value
TIME_SPAN	The job run time in minutes that specifies when an alert should be raised. Note that it is not necessary to use a time range. You can specify a particular time instead.	= Sign I, E	I
		= Opt: EQ, GT, GE, BT	GT
		=Low [2] <low_value_of_ range _in_minutes_ past_ scheduled_ start_time>	1
		=High <high_value_ of_ range_in_ minutes_past_ scheduled_start_ time>	

1. Only for use with a range.
2. Specify this parameter as a number. Otherwise the monitor ends with a dump.

Default START_PASSED Configuration

In Default START_PASSED Configuration, an event generating an alert occurs if any report named <jobname>* does not start more than one minute after the scheduled start time.

```
AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1\

=WARNING =StartPassed =R3_Jobs \

=START_PASSED =JOBNAME =I =CP =<jobname>* =\

=TIME_SPAN =I =GT =1 =
```

JOB_ABORTED

The JOB_ABORTED alert type defines the names of the jobs, which fail to complete successfully. Use the JOB_ABORTED alert type to configure the SAPABAP_BatJobMon Monitoring Template to generate an alert whenever the jobs specified in its configuration fails. The following table lists the parameters that you can use to configure the JOB_ABORTED alert type and shows the value assigned to the parameters by default:

> **Note:** The configuration of the parameter below is optional.

Parameter Name	Description	Query Conditions	Default Value

JOBNAME	Name of the jobs to be monitored	= Sign: I, E	I
		= Opt: EQ, CP, BT	CP
		= Low <Name of job>	*
		= High [1]	

1. Only for use when specifying a range.

- **Default JOB_ABORTED Configuration**

  In Default JOB_ABORTED Configuration, an event generates an alert if any report named `<jobname>*` aborts.

  ```
  AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1\

  =WARNING =Aborted =R3_Jobs \

  =JOB_ABORTED =JOBNAME =I =CP = <jobname>*
  ```

- **Customized JOB_ABORTED Configuration**

  In Customized JOB_ABORTED Configuration, an event generates an alert if jobs named SAP_REORG_ABAPDUMPS or ITOTEST are aborted.

  ```
  AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1\

  =WARNING =Aborted =R3_Jobs \

  =JOB_ABORTED =JOBNAME =I =EQ =SAP_REORG_ABAPDUMPS =

  AlertMonFun =ALL =ALL =ALL =ALL =JOBREPORT =1 \

  =WARNING =Aborted =R3_Jobs\

  =JOB_ABORTED =JOBNAME =I =EQ =ITOTEST =
  ```

The OMi MP for SAP optional test transport includes a program that you can run to generate an ABAP dump. You can use the generated dump to verify that the SAPABAP_BatJobMon Monitoring Template is correctly configured to send a message to OMi if a job aborts. *For more information about OMi MP for SAP transports, see the transports read-me file on the OMi managed node. For more information about importing and applying OMi MP for SAP transports, see the OMi MP for SAP Installation Guide*.

After importing the transport, installed test program `/HPOV/YSPI0004` can be viewed using the SAP ABAP Object Navigator Transaction `SE80`.

SAPABAP_CCMSIntegrationMon

The SAPABAP_CCMSIntegrationMon Monitoring Template enables monitoring the output of SAP CCMS monitoring infrastructure.

This section provides detailed information about the contents of the SAPABAP_CCMSIntegrationMon Monitoring Template.

Monitoring Conditions

You must define and enable the keywords———:—Severity*<Level>*, RFCTimeOut, CCMSMonitorSet, and CCMSAcknowledgeMessage. All other keywords in the `SAPABAP_CCMSIntegrationMon` Monitoring Template are optional.

CCMS Monitor Sets

The XAL interface allows the OMi MP for SAP to read, write, and reset CCMS alerts directly in the CCMS alert-monitor tree. The most obvious advantage of this feature is that you can use existing CCMS monitor sets as templates to define your own monitor sets, which contain only those CCMS alerts you want to monitor with the OMi MP for SAP.

Remember to logon to SAP and define the new CCMS monitor sets which you want the OMi MP for SAP to use to generate messages before you start the configuration of the `SAPABAP_CCMSIntegrationMon` Monitoring Template.

> **Note:** To create or modify items in the CCMS monitor tree, you need to make sure that the `Maintenance Function` for the CCMS monitor sets is switched ON. You can find the `Maintenance function` option in the **Extras** menu, for example, `Extras > Activate Maintenance Function`.

If you are not interested in receiving messages concerning all the alerts present in the default monitor set, for example, `OperatingSystem`, `DatabaseClient`, and so on, you can expand the individual application-server item and select only the alerts which you want to use to generate messages that will be sent to OMi.

Make sure that the new monitor sets you define for the OMi MP for SAP are visible to and usable by the OMi user. If you are logged into SAP as the defined OMi user, then you can see only the CCMS monitor sets that are marked “Public”. If you are logged into SAP as the administrator, you can see all available monitor sets, in which case you have to ensure that you make the new monitor sets you define for the OMi MP for SAP are visible either to the defined OMi user or everyone by using the “Public” option.

> **Note:** Remember to use only ASCII characters when defining the name of a CCMS monitor set as the OMi MP for SAP cannot currently interpret non-ASCII characters in monitor-set names.

One SAP System/SID can have multiple monitor sets. If you need to define multiple monitor sets for a SAP System/SID, remember to include each new monitor set on a new line in the monitor-set section of the `SAPABAP_CCMSIntegrationMon` Monitoring Template configuration, as illustrated in Configuring Multiple Monitor Sets. The name you define in the monitor parameter must match the name of the monitor set as it appears in the CCMS alert-monitor tree. The name of monitors must appear in the configuration exactly as they are shown in SAP including, for example, forward slashes (/), as shown in Configuring Multiple Monitor Sets.

Note that the combination of traditional long SAP names and the line break in the example configuration shown in Configuring Multiple Monitor Sets disguises the name of the monitor. The complete name of the last monitor is: =System / All Monitoring Segments / All Monitoring Contexts. Note that the names you use do not have to be this long. In addition, if you want to associate multiple monitors with one, single monitor set, you have to specify each individual monitor on a new line as shown by the first two entries in Configuring Multiple Monitor Sets, where the OMi MP for SAP monitor set has two Monitors; System and DB_ALERT.

Configuring Multiple Monitor Sets

```
#-------------------------------------------------------------------------
--
# Monitor Set SAP SAP Monitor Set Monitor
 # System Number
CCMSMonitorSet =WA1 =33 =MPSAP =System
CCMSMonitorSet =WA1 =33 =MPSAP =DB_ALE
RT
CCMSMonitorSet =SP6 =00 =SAP CCMS Technical Expert Monitors =System
/\
All Monitoring Segments / All Monitoring
Contexts
#-------------------------------------------------------------------------
--
```

The default configuration of individual CCMS alert monitors does not always meet the demands of your environment and, in some instances, you will need to change it. You can check and, if necessary, modify a monitor's properties in the **Performance Attribute** tab of the **Monitor: Properties and Methods** window. If you decide to change the monitor properties, you need to consider the following points:

- Ensure that the severity level of the CCMS Alerts matches the severity level of the OMi messages, which are generated by the CCMS Alerts.
- Ensure that severity-level thresholds configured for a given CCMS alert monitor are appropriate for your needs.

To open the **Monitor: Properties and Methods** window for a specific CCMS monitor, browse to the desired monitor in the monitor-set tree and either click the **Properties** button or double-click the monitor you want to view.

CCMS Alert Monitors

Alerts are the most basic element of the strategy that SAP uses to monitor the health of the SAP Landscape. Alerts are associated with objects such as disks and CPUs, and objects have attributes such as response times and usage statistics. The status of the object as well as its performance and availability over time are important to the SAP System administrator. The SAP NetWeaver CCMS alert monitor displays the configured alerts (along with any associated objects and attributes) as CCMS monitors in a monitor tree, which you can browse.

> **Note:** The public monitor sets are visible to (and usable by) all SAP users.

For ease of navigation, the CCMS monitors are grouped into pre-defined monitor sets, for example, `SAP CCMS Technical Expert Monitors` or `SAP CCMS Admin Workplace`. The pre-defined monitor sets contain a large number of sub sets and monitors, which can generate thousands of alerts, some of which you really do not need.

If you switch on the maintenance function for the CCMS monitor sets, you can create your own CCMS monitor sets, which contain only the monitors for the alerts you want to know about on a regular basis. When you have created your own monitor sets, you can add them to the monitor-set tree and configure the OMi MP for SAP to monitor them. In this way, you can reduce the alerts you hear about and the information you receive so that it is easier to manage.When a condition is reported in the SAP NetWeaver CCMS monitor, the monitoring object and its attributes are included in the resulting alert.

CCMS Acknowledge Message

The CCMSAcknowledgeMessage feature determines whether SAPABAP_CCMSIntegrationMon Monitoring Template tells SAP to automatically acknowledge (complete) CCMS Alerts, which match the defined conditions. Enabling the CCMSAutoAcknowledge feature in SAPABAP_

CCMSIntegrationMon Monitoring Template is same as selecting the alert and clicking the [Complete Alert] button in SAP CCMS.

Automatically Acknowledging CCMS Alerts

```
# Triggers auto-acknowledge of CCMS alerts

#-----------------------------------------------------------

# CCMSAcknowledgeMessage SAP Ack. filtered Enable=1

# System Messages Disable=0

CCMSAcknowledgeMessage =ALL =0 =0

CCMSAcknowledgeMessage =SP6 =0 =0

#-----------------------------------------------------------
```

You can enable or disable the auto-acknowledgment feature for specific SAP Systems defined on individual lines in the SAPABAP_CCMSIntegrationMon Monitoring Template configuration. However, note that if you disable the auto-acknowledgment feature (=0) for a specific SAP System, SAPABAP_CCMSIntegrationMon Monitoring Template ignores the setting for **Ack. Filtered Messages** defined on the same line.

If you enable the **Ack. Filtered Messages** keyword, messages that are filtered out (and not sent to Operations Agent) by the **AlerMonSyslog** specifications (which means, setting `Disabled=0` in the appropriate line) will be acknowledged in CCMS. Therefore, these alerts will not be visible in the OMi message browser or in SAP CCMS anymore.

> **Note:** If you enable the **CCMSAcknowledgeMessage** keyword, you also need to make sure that you enable the Severity`<Level>` keyword. The Severity`<Level>` keyword allows you to filter CCMS alerts according to severity.

Environment Variables

The following table lists the environment variables, which you can use to configure the `SAPABAP_CCMSIntegrationMon` Monitoring Template.

Environment Variable	Description
SAPOPC_DRIVE	The Windows drive where the Operations Agent is running, for example, `E:\usr\...`
SAPOPC_HISTORYPATH	Path to the `r3monal` history file
SAPOPC_R3MONAL_CONFIGFILE	Name of the `r3monal` configuration file

SAPOPC_SAPDIR	The Windows drive where SAP NetWeaver is running, for example, `E:\usr\sap`
SAPOPC_TRACEPATH	Path to the `r3monal` trace file

File Location

The `SAPABAP_CCMSIntegrationMon` Monitoring Template uses the default files listed in the following table:

File Name	Description
r3monal (.exe)	Executable for the SAP NetWeaver CCMS alert monitor
r3monal.cfg	Configuration file for the CCMS alert monitor
r3monal.his	History file for storing data after each monitor run

Remote Monitoring

The RemoteMonitoring keyword allows you to configure the OMi MP for SAP on local host to monitor an SAP instance on a remote host. Note that SAP System and SAP Number are only required by `SAPABAP_CCMSIntegrationMon` Monitoring Template.

Enabling Remote Monitoring

```
#-----------------------------------------------------------

# Remote Host Localhost Remotehost SAP System SAP Number

RemoteMonitoring =hpspi003 =ovsdsap6 =SP6 =00

#-----------------------------------------------------------
```

RFC Time Out

You use the RFCTimeout keyword to define the maximum amount of time in seconds before an RFC XAL function call is canceled, for example: =120. You need to set a time-out which takes into account the environment in which SAP is running. For example, if the RFC call takes longer than expected to complete, that is, to receive a reply to the initial request, the SAP System is probably down or has a serious performance problem. Note that after the RFC call completes and SAP allocates a free Dialog process, the time limit no longer applies.

Setting the Time-out period for XAL Function Calls

```
#-------------------------------------------------------------

# Max. time in sec. before a RFC XAL function call is

# canceled. If the RFC call takes longer than expected, the
```

```
# system is probably down or has a major performance problem.

RFCTimeOut = 120

#------------------------------------------------------------
```

Severity Levels

The Severity Values section of the SAPABAP_CCMSIntegrationMon Monitoring Template defines how you filter CCMS alerts in the CCMS monitor trees you are managing with SAPABAP_ CCMSIntegrationMon Monitoring Template and map the severity level of the filtered CCMS Alerts to the desired severity level for the corresponding OMi messages. You can use the keywords SeverityWarning and SeverityCritical in combination with the CCMSAcknowledgeMessage keyword, which is described in more detail in "CCMS Acknowledge Message".

By adding a new line for individual combinations of SAP system ID and SAP number, you can restrict the severity mapping between CCMS Alerts and OMi messages to a specific SAP System ID and SAP Number.

Following is the Default settings for Severity Levels in SAPABAP_CCMSIntegrationMon:

```
#------------------------------------------------------------

#Severity SAP SAP Enabled=1 OpCSeverity

#Values System Number Disabled=0

SeverityWarning =ALL =ALL =0 =WARNING

SeverityCritical =ALL =ALL =1 =CRITICAL

#------------------------------------------------------------
```

You can edit the severity levels in SAPABAP_CCMSIntegrationMon Monitoring Template in one of the following ways:

- **Enable or disable severity levels**

  If you want to disable (=0) the generation of messages for CCMS alerts with the severity **warning**, add a new (or change the existing) SeverityWarning line as follows:

  ```
  SeverityWarning =ALL =ALL =0 =WARNING
  ```

- **Change how the OMi MP for SAP maps CCMS severity levels to message severity levels in OMi**

  If you want the OMi MP for SAP to report all SeverityWarning events as critical, add a new (or change the existing) SeverityWarning definition, as follows:

```
SeverityWarning =ALL =ALL =1 =CRITICAL
```

- **Define SID-Specific exceptions**

  If you want the OMi MP for SAP report as critical all Severity Warning events that occur on SAP system LP2, leave the default settings for ALL systems and add the following line:

  ```
  SeverityWarning =LP2 =ALL =1 =CRITICAL
  ```

Following is an example of Severity Levels in SAPABAP_CCMSIntegrationMon Monitoring Template Configuration

```
# A Monitor Set defines the messages you want to forward to OMi.

#-------------------------------------------------------------------------

# Monitor Set SAP SAP Monitor Set Monitor

# System Number

#CCMSMonitorSet =WA1 =33 =MPSAP =System

#CCMSMonitorSet =WA1 =33 =MPSAP=DB_ALERT

#CCMSMonitorSet =SP6 =00 =SAP CCMS Technical Expert Monitors

=System / All Monitoring Segments / All Monitoring Contexts

#-------------------------------------------------------------------------

# Remote Host Localhost Remotehost SAP SAP

# System Number

#RemoteMonitoring =hpspi003 =ovsdsap6 =SP6 =00

#-------------------------------------------------------------------------

# CCMSAcknowledgeMessage SAP Ack. filtered Enable=1

# System Messages Disable=0

CCMSAcknowledgeMessage =ALL =0 =0

CCMSAcknowledgeMessage =SP6 =0 =0

# XMI compatibility mode

# makes the r3monal send syslog messages r3monxmi style

#-------------------------------------------------------------------------

# XmiSyslogMode Enabled =1
```

```
# Disabled =0

XmiSyslogMode =0

# Syslog filtering

#--------------------------------------------------------------------------

# Alert Classes SAP SAP SyslogId Enabled=1

# System Number From To Disabled=0

AlerMonSyslog =ALL =ALL =A00 =MZZ =1

AlerMonSyslog =ALL =ALL =N00 =ZZZ =0

AlerMonSyslog =LPO =01 =A00 =ZZZ =1
```

Trace Levels

For more information about the trace levels the alert monitors used, in particular, the trace levels available to the SAPABAP_CCMSIntegrationMon Monitoring Template, see "TraceLevel".

Alert Classes

In the alert-classes section of the SAPABAP_CCMSIntegrationMon Monitoring Template configuration, you define how the OMi MP for SAP's CCMS alert monitor filters syslog events in the SAP System; the filtering mechanism ensures that you extract and display only those syslog events that you are interested in seeing. You filter the syslog events that you want to monitor by specifying ranges of message numbers (syslog IDs). Each line of the alert-classes section of the SAPABAP_CCMSIntegrationMon Monitoring Template configuration is set up in a particular way. Each entry defines monitoring for a specified range of syslog events. You can specify which syslog events to monitor by enabling or disabling ranges of syslog IDs either globally or for specified SAP systems and instances.

In Syslog events in the SAPABAP_CCMSIntegrationMon Monitoring Template configuration, monitors the syslog events with IDs A00 through MZZ on all SAP Systems and SAP numbers but does not monitor the syslog events with IDs N00 through ZZZ on all SAP Systems and numbers. Syslog event monitoring is enabled on SAP System LPO for IDs A00 through ZZZ.

Syslog events in the `SAPABAP_CCMSIntegrationMon` Monitoring Template Configuration

```
# Syslog filtering

#------------------------------------------------------------

# Alert Classes SAP SAP SyslogId Enabled=1

# System Number From To Disabled=0
```

```
AlerMonSyslog =ALL =ALL =A00 =MZZ =1

AlerMonSyslog =ALL =ALL =N00 =ZZZ =0

AlerMonSyslog =LPO =01 =A00 =ZZZ =1

#-------------------------------------------------------------
```

Monitoring the CEN

The central monitoring system (CEN) is a single SAP system that you designate as the central point of control for CCMS alerts originating from all over the monitored SAP landscape. The CEN concept allows you to reduce the overhead of monitoring and managing multiple SAP systems by making essential information concerning problem alerts available in one, central location. After you configure SAP to use the CEN for the central management of CCMS alerts, you can use the SAPABAP_ CCMSIntegrationMon Monitoring Template to intercept the CCMS alerts destined for the CEN and use the alerts to generate messages, which it forwards to the OMi message browser.

Testing the Configuration

The OMi MP for SAP's optional test transport includes a program that generates an ABAP dump which you can use to verify that the SAPABAP_CCMSIntegrationMon Monitoring Template checks the syslog and sends a message to OMi if a dump occurs in the SAP System. If the test completes successfully, a message about the test dump appears in the OMi message browser. Note that this test works only if you configure SAPABAP_CCMSIntegrationMon Monitoring Template to monitor the appropriate SAP CCMS monitor sets, for example: `<SAPSID>/R3Abap/Shortdumps`.

For more information about OMi MP for SAP transports, Transports readme file on the OMi managed node. For more information about importing and applying OMi MP for SAP transports, see the *OMi Management Pack for SAP Installation Guide*. After importing the transport, you can view the test programs installed by using the SAP transaction SE80 to open the ABAP object navigator and browsing to the report (or program) `/HPOV/YSPI0004`.

SAPABAP_CTSMon

The SAPABAP_CTSMon Monitoring Template enables monitoring of SAP Correction and Transport System for different transport requests, tasks, and objects. Data collection is application-server independent.

The SAPABAP_CTSMon Monitoring Template uses the following SAP elements as a reference:

- Transport requests and object lists created using SAP NetWeaver transaction **SE01**
- Tasks created using SAP NetWeaver transaction **SE09**

Monitor Type

The SAPABAP_CTSMon Monitoring Template is of type time frame. One monitor run gathers only one value set.

Alert Types

The CTS monitor has the following alert types:

- REQUEST_CREATED

  Defines when new requests generate an alert
- REQUEST_RELEASED

  Defines whether to generate an alert for a released request
- TASK_CREATED

  Defines if new tasks should generate an alert
- TASK_RELEASED

  Defines whether to generate an alert for released tasks
- OBJECT_USED

  Defines whether objects used by a task or a request generate an alert
- OBJECT_RELEASED

  Defines whether to generate an alert when a request or task releases an object

File Locations

The SAPABAP_CTSMon Monitoring Template uses the files listed in this table:

File	Description
r3moncol (.exe)	Collector executable for the CTS monitor
r3moncts.cfg	Configuration file for the CTS monitor.
r3moncts.log	Trace file for storing trace data.

The SAPABAP_CTSMon Monitoring Template do not write history information to a specific history file.

Environment Variables

The SAPABAP_CTSMon Monitoring Template uses the environment variables described in"Environment Variables".

Command-Line Parameters

The SAPABAP_CTSMon Monitoring Template uses the command line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_CTSMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring SAPABAP_CTSMon Monitoring Template Alert Types

You should keep in mind the following rules when configuring the alert-type parameters for the SAPABAP_CTSMon Monitoring Template:

- By default, the OMi MP for SAP selects all data for each parameter.
- You can restrict data by specifying some or all of the parameters for the alert type.
- The SAPABAP_CTSMon Monitoring Template only considers the named parameters if you change default values and overrides the default value ALL for the unspecified parameters.

Use the parameter TRFUNCTION to configure the REQUEST_CREATED, REQUEST_RELEASED, TASK CREATED and TASK RELEASED alert types.

TRFUNCTION has request functions which you can specify using the letter codes indicated in the following table:

Letter Code	Function Description
A	Request: Unclassified request becomes K, L or W with first object
C	Transport with change authorization

D	Patch
K	Request: Change request with destination consolidation layer
L	Request: Local request without transport
R	Task: Repair
S	Task: Development/correction
T	Request: Transport without originals
U	Dummy
W	Request: Customizing request with cons. layer destination
X	Task: Unclassified task becomes S or R with first object
Z	(task without request) SE09 memory usage

Note: In the descriptions of the use of this parameter for each of the CTS alert types, only the letter code is shown.

REQUEST_CREATED

Use the REQUEST_CREATED alert type to configure the Correction-and-Transport (CTS) alert monitor SAPABAP_CTSMon Monitoring Template to generate a message for any new request created within the last specified time frame. For example, adding a new (or modifying an existing) function module requires a change request. The following table lists the parameters that you can use to configure the REQUEST_CREATED alert type and shows the value assigned to the parameters by default.

The configuration of any of these parameters is optional.

Parameter Name	Description	Query Conditions	Default Value
TRFUNCTION	The request function.	= Sign: I, E	I
		Opt: CP, EQ	CP
		= Low: A,K,L,W,C,T, U, D [a]	*
		= High:	

TARGET	The target system for which this request was created. **Note:** This must be a SID.	= Sign I, E	
		= Opt: EQ, CP	
		= Low:<name of system>	
		= High	
USERNAME	The login name of the SAP NetWeaver user who created the request.	= Sign I	
		= Opt: EQ, CP	
		= Low: <username who created this request>	
		= High	

a You can only specify the listed functions (* means all).

In the Default REQUEST_CREATED Configuration, the monitor generates a message if a new request occurs within the last time frame.

The Default REQUEST_CREATED Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =CTS =1\

=WARNING =Request =R3_CTS\

=REQUEST_CREATED =USERNAME =I =CP =* =
```

REQUEST_RELEASED

Use the REQUEST_RELEASED alert type to configure the Correction-and-Transport (CTS) Monitoring Template SAPABAP_CTSMon to generate a message for any new request released within the last specified time frame. The following table lists the parameters that you can use to configure the REQUEST_RELEASED alert type and shows the value assigned to the parameters by default:

> **Note:** The configuration of the parameters below is optional.

Parameter Name	Description	Query Conditions	Default Value
TRKORR	Request ID	= Sign: I, E	
		= Opt: EQ	
		= Low: <Request ID>	
		= High:	
TRFUNCTION	The request function.	= Sign: I, E	
		= Opt: EQ	
		= Low: K,L, W,C,T, U, D. (You can only specify the listed functions (* means all).)	
		= High:	
TARGET	The target system for which this request was created. This must be a SID.	= Sign I, E	I
		= Opt: EQ, CP	CP
		= Low: <name of system>	*
		= High	
USERNAME	The login name of the SAP NetWeaver user who created the request.	= Sign I	
		= Opt: EQ,CP	
		= Low: <username who created this request>	
		= High	
CUSTOMIZING	Customizing Requests	= Sign I,E	
		= Opt: EQ	
		= Low (Any entry other than 'X' will be treated as space.)	
		= High	
WORKBENCH	Workbench Requests	= Sign I, E	
		= Opt: EQ	
		= Low (Any entry other than 'X' will be treated as space.)	
		= High	

In the Default REQUEST_RELEASED Configuration, an event generating an alert occurs if any *customizing* request was released in the last time frame.

The Default REQUEST_RELEASED Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =CTS =1\

=WARNING =Request =R3_CTS\

=REQUEST_RELEASED =CUSTOMIZING =I =EQ =X
```

TASK_CREATED

Use the TASK_CREATED alert type to configure the CTS Monitoring Template SAPABAP_CTSMon to generate a message for any new task *created* within the last specified time frame. The following table lists the parameters that you can use to configure the TASK_CREATED alert type and shows the value assigned to the parameters by default.

The configuration of any of these parameters is optional.

Parameter Name	Description	Query Conditions	Default Value
TRFUNCTION	The request function.	= Sign: I, E	I
		= Opt: CP, EQ	CP
		= Low: X, S, R, Z [a]	*
		= High:	
USERNAME	The login name of the SAP NetWeaver user who created the request.	= Sign: I	
		= Opt: EQ, CP	
		= Low:<username who created this request>	
		= High:	

In the Default TASK_CREATED Configuration, SAPABAP_CTSMon Monitoring Template generates a message for any new task created within the last specified time frame.

The Default TASK_CREATED Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =CTS =1 \

=WARNING =Task =R3_CTS \

=TASK_CREATED =TRFUNCTION =I =CP =* =
```

TASK_RELEASED

Use the TASK_RELEASED alert type to configure the CTS Monitoring Template SAPABAP_CTSMon to generate a message for any new task released within the last time frame. The following table lists the parameters that you can use to configure the TASK_RELEASED alert type and shows the value assigned to the parameters by default:

The configuration of the parameters below is optional.

Parameter Name	Description	Query Conditions	Default Value
TRKORR	Request ID	= Sign: I, E	
		= Opt: EQ	
		= Low: <Request ID>	
		= High:	
TRFUNCTION	The request function.	= Sign: I, E	I
		= Opt: CP, EQ	CP
		= Low: R, S, Z [a]	*
		= High:	
USERNAME	The login name of the SAP NetWeaver user who created the request.	= Sign: I	
		= Opt: EQ, CP	
		= Low: <username who created this request>	
		= High	

In the Default TASK_RELEASED Configuration, SAPABAP_CTSMon Monitoring Template generates a message for any new task released in the last time frame.

The Default TASK_RELEASED Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =CTS =1\

=WARNING =Task =R3_CTS\

=TASK_RELEASED =TRFUNCTION =I =CP =* =
```

OBJECT_USED

Use the OBJECT_USED alert type to configure the CTS Monitoring Template SAPABAP_CTSMon to generate a message if a task or a request uses an object matching the defined configuration within the last time frame. The following table lists the parameters that you can use to configure the OBJECT_ USED alert type and shows the value assigned to the parameters by default:

The configuration of the parameters below is optional.

Parameter Name	Description	Query Conditions	Default Value
PGMID	Program ID	= Sign: I, E	
		= Opt: EQ, CP	
		= Low: <Program ID>	
		= High:	
OBJECT	Object type of element.	= Sign I, E	
		= Opt: EQ, CP	
		= Low: <Object type>	
		= High	
OBJ_ NAME	Object Name in object directory.	= Sign I, E	I
		= Opt: EQ, CP	CP
		= Low: <Object name>	*
		= High	
OBJ_ FUNC	Special function for an object entry: D = Delete, or M = Delete and recreate.	= Sign I, E	
		= Opt: EQ, CP	
		= Low	
		= High	
IN_ REQUEST	Alert generated if object container is a request.	= Sign I,E	
		= Opt: EQ	
		= Low	
		= High	

Parameter Name	Description	Query Conditions	Default Value
IN_TASK	Alert generated if object container is a task.	= Sign I, E	
		= Opt: EQ	
		= Low	
		= High	

In the Default OBJECT_USED Configuration, an event generating an alert occurs if any object with Object Type **LIMU** is used by a task or a request.

The Default OBJECT_USED Configuration

```
AlertMonFun =ALL =SD1 =ALL =ALL =CTS =1\

=WARNING =Object =R3_CTS\

=OBJECT_USED =PGMID =I =EQ =LIMU =
```

OBJECT_RELEASED

Use the OBJECT_RELEASED alert type to configure the CTS Monitoring Template SAPABAP_CTSMon to generate a message if a request or a task released the specified object. The following table lists the parameters that you can use to configure the OBJECT_USED alert type and shows the value assigned to the parameters by default:

The configuration of the parameters below is optional.

Parameter Name	Description	Query Conditions	Default Value
TRKORR	Request ID	= Sign: I, E	
		= Opt: EQ, CP	
		= Low:<Request ID>	
		= High:	

Parameter Name	Description	Query Conditions	Default Value
PGMID	Program ID	= Sign: I, E	
		= Opt: EQ, CP	
		= Low: <Program ID>	
		= High:	
OBJECT	Object type of element	= Sign I, E	
		= Opt: EQ, CP	
		= Low: <Object type>	
		= High	
OBJ_ NAME	Object Name in object directory	= Sign I	I
		= Opt: EQ, CP	CP
		= Low: <Object name>	*
		= High	
IN_ REQUEST	Alert generated if object container is a request	= Sign I,E	
		= Opt: EQ	
		= Low (Any entry other than 'X' will be treated as space.)	
		= High	
IN_TASK	Alert generated if object container is a task.	= Sign I, E	
		= Opt: EQ	
		= Low (Any entry other than 'X' will be treated as space.)	
		= High	

In the Default OBJECT_RELEASED Configuration, an event generating an alert occurs if any object is released by a task.

The Default OBJECT_RELEASED Configuration

```
AlertMonFun =ALL =ALL =AL =ALL =CTS =1\

=WARNING =Object =R3_CTS\

=IN_TASK =I =EQ =X =
```

SAPABAP_DispMon

The SAPABAP_DispMon Monitoring Template enables monitoring of the size, content, and status of various queues for different types of SAP work processes. The SAPABAP_DispMon Monitoring Template monitors the queues which belong to the SAP instances defined in the OMi MP for SAP and allows you to manage SAP performance issues more pro-actively by avoiding bottlenecks and helping to ensure that the monitored SAP Systems have enough work processes available to fulfill all user requests, even when loads are typically very high.

This section contains information about the following topics:

- Prerequisites
- File Locations
- Integrating SAPABAP_DispMon Monitoring Template with OMi MP for SAP Monitors
- SAPABAP_DispMon Monitoring Template Configuration

Prerequisites

If SAPABAP_DispMon Monitoring Template is not able to find either the correct version of the SAP executable `dpmon` or the profile of the SAP instance whose queues you want to monitor, it aborts its run, writes an entry in its log file, and sends a message to the message browser. SAPABAP_DispMon Monitoring Template requires a version of the `dpmon` executable, which recognizes the `-s[snapshot]` option.

To check if the correct version of the `dpmon` executable is available on the SAP server which you want to monitor with SAPABAP_DispMon Monitoring Template, log on to the SAP server as user <SID>adm and run the `dpmon` command with the `-help` option. If the command output displays the `-s[snapshot]` option as shown in Checking the snapshot option ON, you can configure and use the SAPABAP_ DispMon Monitoring Template.

Checking the snapshot option

```
$>dpmon -help

Usage: dpmon <options>

with the following options:

-p[ing] check dispatcher with NI ping

-i[nfo] retrieve dispatcher info

-s[snapshot] show info and terminate

-t <trace_level> tracelevel (default:1)

-f <trace_file>] name of the tracefile (default: dev_dpmon)

-T <timeout> network time-out value in ms (default:500)
```

On both UNIX and Windows operating systems, the SAPABAP_DispMon Monitoring Template uses the environment variables SAPOPC_DPMON_PATH_ `<SID>` and SAPOPC_PROFILE_`<SID>_<InstNr>` to determine the location of dpmon and the SAP instance profile respectively. If the variables are not set, SAPABAP_DispMon Monitoring Template uses the registry on Windows operating systems to determine the path to `dpmon` and the profile-file for the monitored SAP instances.

On UNIX operating systems, SAPABAP_DispMon Monitoring Template does not require any special interface to determine the location of `dpmon` or the profile-file for the monitored SAP instances: it assumes they are in the default SAP location. If you know the profiles files are not in the default location, or the name of the profile does not follow standard SAP naming conventions, you must indicate this in the SAPABAP_DispMon Monitoring Template configuration. The standard naming convention for an SAP profile is:

```
<SID>_[D|DVEBMGS]<SysNr>_<hostname>
```

For more information on configuring SAPABAP_DispMon Monitoring Template, see "SAPABAP_DispMon Monitoring Template Configuration".

File Locations

The SAP System-security SAPABAP_DispMon Monitoring Template uses the files listed in the following table:

File	Description

r3mondisp (.exe)	Executable for the ABAP Dispatcher-queue monitor
r3mondisp.cfg	Configuration file for the ABAP dispatcher-queue monitor.
r3mondisp.log	File used to store trace data collected by the ABAP dispatcher-queue monitor.

Integrating SAPABAP_DispMon Monitoring Template with OMi MP for SAP Monitors

To prevent the OMi MP for SAP from causing excessive and unnecessary load on the SAP System at critical times, you can configure the SAPABAP_DispMon Monitoring Template to work together with the other OMi MP for SAP monitors so that the monitors check the status of the ABAP dispatcher and establish how full the dispatcher queues are before requesting a work process. OMi MP for SAP monitors require a dialog work process to logon to SAP. To enable this integration feature, use the `EnableDPQueueCheck` keyword in the SAPABAP_DispMon Monitoring Template configuration to check the dispatcher status before starting.

For example, if you want the SAPABAP_DispMon Monitoring Template, to check the status of the ABAP dispatcher before SAPABAP_CCMSIntegrationMon starts its monitor run, configure the `EnableDPQueueCheck` keyword in the SAPABAP_DispMon Monitoring Template as illustrated in "Checking the ABAP Dispatcher Before Startup". If SAPABAP_CCMSIntegrationMon's request for a work process violated a threshold for dialog work processes defined in the Monitoring Template configuration, the `SAPABAP_DispMon` Monitoring Template would not start its monitor run; it would send a message to the message browser indicating the reason why it did not start. You should consider using this feature where SAP System performance could be further compromised as a result of a request for an additional dialog work process by OMi MP for SAP monitor.

> **Note:** SAPABAP_DispMon Monitoring Template is not affected by the thresholds defined for the `EnableDPQueueCheck` keyword; the Monitoring Template continues to work normally even if other monitors do not start as a result of a lack of available dialog work processes.

Checking the ABAP Dispatcher Before Startup

```
# EnableDPQueueCheck hostname SAP SAP Enable =1

# System Number Disable=0

#

EnableDPQueueCheck =ALL =ALL =ALL =1
```

For more information about the `EnableDPQueueCheck` keyword, see "EnableDPQueueCheck".

SAPABAP_DispMon Monitoring Template Configuration

The SAPABAP_DispMon Monitoring Template allows you to configure the Monitoring Template using the keywords listed in this section to meet the requirements of your particular SAP environment. "Excerpt from a SAPABAP_DispMon Monitoring Template Configuration" shows an excerpt from the Monitoring Template's default configuration.

> **Note:** If you configure the OMi MP for SAP ABAP Monitoring Templates to check the status of the ABAP dispatcher before starting the monitor run, make sure the Monitoring Template has the required privileges to access and read data.

You can use the following keywords in configuring the SAPABAP_DispMon Monitoring Template. For more information, see allowed values for the parameters in the following list:

- **TraceLevel**

  Set the trace level for SAPABAP_DispMon Monitoring Template when it runs on the specified SAP server. The TraceLevel keyword accepts the following parameters:

  ```
  TraceLevel =<hostname> =<TraceLevel>
  ```

- **TraceFile**

  Set the name of the trace file, which SAPABAP_DispMon Monitoring Template uses to log entries. The TraceFile keyword accepts the following parameters:

  ```
  TraceFile =<hostname> =<filename> =<TraceMode> =<TracePeriod>
  ```

- **DPQueueCheck**

  Manages the pro-active monitoring of the ABAP dispatcher. If more than one threshold matches for the same managed node and the same work-process, SAPABAP_DispMon Monitoring Template only sends the message with the highest severity. The `DPQueueCheck` keyword accepts the following parameters:

  ```
  DPQueueCheck =<hostname> =<SID> =<InstanceNr> \ =<disable/enable>\ =<OVO Msg
  Group> =<OVO Msg Object> =<OVO Severity> \ =<WP-Type> =<Idle/Queue> =<Percentage
  idle/full>
  ```

  Since the status of queued work-process is, generally speaking, more important than the status of idle work processes of the same work-process type, we recommend that the severity level assigned to messages concerning queued work processes is higher than the severity level you

associate with messages about idle work processes. For example, you can assign the severity level Warning to messages about idle work processes and Critical to messages about queued work processes.

- **DisableMonitoringWithSeverity**

  Specify which SAPABAP_DispMon Monitoring Template message severity should trigger the disabling of integrated OMi MP for SAP monitors to prevent the monitors increasing loads unnecessarily by requesting additional dialog work processes from the SAP Systems, whose dispatcher you are monitoring with the OMi MP for SAP. The `DisableMonitoringWithSeverity` keyword accepts the following parameters:

  ```
  DisableMonitoringWithSeverity =<hostname> =<SID> \ =<InstanceNr> =<Severity>
  ```

  The `DisableMonitoringWithSeverity` keyword must be used in conjunction with keywords DPQueueCheck, which you configure in the SAPABAP_DispMon Monitoring Template, and `EnableDPQueueCheck`, which you define in the configuration of the Monitoring Template you want to integrate with SAPABAP_DispMon Monitoring Template. For more information about the keyword `EnableDPQueueCheck`, see "EnableDPQueueCheck".

- **InstanceProfilePath**

  The path to the profile-configuration file for an SAP instance whose dispatcher you want to monitor; the `InstanceProfilePath` keyword accepts the following parameters:

  ```
  InstanceProfilePath =<hostname> =<SID> =<InstanceNr> \ =<path>
  ```

  Excerpt from `SAPABAP_DispMon` Monitoring Template configuration shows how to configure the monitoring template to send a warning message to the message browser if less than 15 percent of the total allocated dialog work processes for all SAP clients in all the SAP instances monitored by the OMi MP for SAP are idle.

  Excerpt from a SAPABAP_DispMon Monitoring Template Configuration

  ```
  #-------------------------------------------------------------

  # TraceLevel hostname only error messages=1 info messages=2 debug

  messages=3

  # Disable=0

  TraceLevel =ALL =0

  #-------------------------------------------------------------------------

  # TraceFile hostname filename TraceMode TracePeriod

  # (a=append/w=create(default)) (in mins)
  ```

```
TraceFile =ALL =r3mondisp.log =w =60

#---------------------------------------------------------------------

#InstanceProfilePath =<host> =<SID> =<InstanceNr> =<Path>

#

InstanceProfilePath =ALL =ALL =ALL =default

#-------------------------------------------------------------

#DisableMonitoringWithSeverity=<host>=<SID>=<InstanceNr>=<Severity>

#

DisableMonitoringWithSeverity=ALL=ALL=ALL=WARNING

#-------------------------------------------------------------
```

The Excerpt from SAPABAP_DispMon Monitoring Template configuration also shows how to use the keyword `DisableMonitoringWithSeverity` to configure SAPABAP_DispMon Monitoring Template to prevent OMi MP for SAP monitors from starting if the start up requires a dialog work process (for example, to logon to SAP) and the allocation of that work process would violate a threshold for idle dialog work processes defined in the configuration file and, as a result, generate a message with the severity **warning** or higher.

Note that you have to use the `EnableDPQueueCheck` keyword to configure each individual OMi MP for SAP monitor that logs on to SAP to check the dialog work-process queue before starting its run. For more information about the keyword `EnableDPQueueCheck`, see "EnableDPQueueCheck".

SAPABAP_DmpMon

The SAPABAP_DmpMon Monitoring Template enables monitoring of the runtime errors that occur on the SAP ABAP system. The check is performed once per monitor run for all application servers.

Dumps are usually runtime errors and hence they cannot always be detected by a static syntax check. They can occur for many reasons and may indicate serious problems. No dumps should occur on a production system.

Here are two examples of actions which cause dumps to occur:

- division by zero
- a called function model is not enabled

Since the system administrator generally has to do something to resolve problems associated with an ABAP dump, the messages generated by the SAPABAP_DmpMon Monitoring Template include an operator-initiated action that calls an ABAP program to display details of the dump.

The SAPABAP_DmpMon Monitoring Template references the SAP NetWeaver transaction **ST22**.

Monitor Type

The SAPABAP_DmpMon Monitoring Template is of type time frame. One monitor run gathers only one value set.

Alert Types

The SAPABAP_DmpMon Monitoring Template has the following alert type:

- ABAP4_ERROR_EXIST

  Each ABAP dump generates one alert.

File Locations

The SAPABAP_DmpMon Monitoring Template uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for ABAP-dump monitor
r3mondmp.cfg	Configuration file for monitored application servers.
r3mondmp.log	Trace file for storing trace data.

The alert-collector monitors do not write history information to a specific history file.

Environment Variables

The SAPABAP_DmpMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_DmpMon Monitoring Template uses the command line parameters described "Command-Line Parameters".

Remote Monitoring

For more information about configuring the SAPABAP_DmpMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

ABAP4_ERROR_EXIST

Use the ABAP4_ERROR_EXIST alert type to configure the SAPABAP_DmpMon Monitoring Template, to generate an alert for each dump that occurred in the last time frame. The Default ABAP4_ERROR_EXIST Configuration shows how you can use `=MAX_ENTRIES` to count the number of dumps that have to occur before the OMi MP for SAP generates a message. In addition, you can specify a period of time in hours `(=TIME_LIMIT)` within which the defined number of dumps must occur. In this example, the OMi MP for SAP generates a message if ten dumps occur within twenty four hours.

The Default ABAP4_ERROR_EXIST Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =ABAP4 =1\

=WARNING =ABAP_Dump =R3_ABAP-4\

=ABAP4_ERROR_EXIST

#AlertMonFun =ALL =ALL =ALL =ALL =ABAP4 =1 \

=WARNING =ABAP_Dump =R3_ABAP-4 =ABAP4_ERROR_EXIST\

=MAX_ENTRIES =I =GT =10 = \

=TIME_LIMIT =I =LT =24 =
```

The OMi MP for SAP's optional test transport includes a program that generates an ABAP dump which you can use to verify that the SAPABAP_DmpMon Monitoring Template correctly reports dumps to OMi in the form of a message. If the test completes successfully, a message about the test dump appears in the OMi message browser. For more information about OMi MP for SAP transports, see the transports read-me file /usr/sap/trans/readme on the OMi managed node; for more information about

importing and applying OMi MP for SAP transports, see the *OMi Management Pack for SAP Installation Guide*. After importing the transport, you can view the test programs installed by using the SAP transaction SE80 to open the ABAP object navigator and browsing to the report (or program) /HPOV/YSPI0004.

SAPABAP_IdocStatusMon

The SAPABAP_IdocStatusMon Monitoring Template enables you to monitor the current status of different iDocs on the SAP ABAP system.The SAPABAP_IdocStatusMon Monitoring Template, is *time-frame* based and checks the status of existing iDOCs for errors using the transaction **WE02** as the data source. The monitoring template is application-server independent and available for global (SAP NetWeaver System-wide) use.

Monitor Type

The SAPABAP_IdocStatusMon Monitoring Template is of type time frame. One monitor run gathers only one value set.

Alert Types

The SAPABAP_IdocStatusMon Monitoring Template has the following alert types:

"IDOC_CURRENT_STATUS"

Defines when to generate an alert concerning the current state of the iDOCs.

File Locations

The SAPABAP_IdocStatusMon Monitoring Template uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for the iDOC-status monitor
r3monale.cfg	Configuration file for iDOC-status monitor
r3monale.log	Trace file for storing trace data

The alert-collector monitors do not write history information to a specific history file.

Environment Variables

The SAPABAP_IdocStatusMon Monitoring Template uses the environment variables described in "Environment Variables". The environment variables for all the alert-collector monitors share the same format, the only difference being that the name of the Monitoring Template varies to match each specific monitor as indicated in "Environment Variables".

Command-Line Parameters

The SAPABAP_IdocStatusMon Monitoring Template uses the command-line parameters described in "Command-Line Parameters". The command-line parameters for all the alert-collector monitors share the same format, the only difference being that the name of the Monitoring Template must vary to match each specific monitor for both the `-cfgfile` and `-trace` parameters as indicated in "Command-Line Parameters".

Remote Monitoring

For more information about configuring the SAPABAP_IdocStatusMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring SAPABAP_IdocStatusMon Monitoring Template Alert Types

When configuring the IDOC_CURRENT_STATUS alert type for SAPABAP_IdocStatusMon Monitoring Template, remember that you must define at least one of the parameters listed in "IDOC_CURRENT_STATUS Configuration Parameters" table.

IDOC_CURRENT_STATUS

The IDOC_CURRENT_STATUS alert type defines the current status of iDOCs, which you want to monitor. Use the IDOC_CURRENT_STATUS alert type to configure the iDOC-status alert monitor SAPABAP_IdocStatusMon Monitoring Template to generate an alert if the status of an iDOC matches the status defined in the STATUS parameter. The following table lists the parameters that you can use

to configure the IDOC_CURRENT_STATUS alert type and shows the value assigned to the parameters by default. Note that ‘ ‘ in the Default Value column signifies an empty string.

IDOC_CURRENT_STATUS Configuration Parameters

Parameter Name	Description	Query Conditions	Default Value
DOCNUM	iDOC number, for example: “05” (error during translation)	= Sign: I, E	‘ ‘
		= Opt: GE, GT, LE, LT, BT	‘ ‘
		= Low	‘ ‘
		= High:	‘ ‘
DOCTYP	The basic iDOC type, for example: DOCMAS01	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
MESCOD	Logical message code	= Sign I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
MESFCT	Logical message function	= Sign: I	‘ ‘
		= Opt: CP, EQ ‘ ‘	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
MESTYP	Logical message type	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘

Parameter Name	Description	Query Conditions	Default Value
RCVPFC	Partner function of receiver	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
RCVPRN	Partner number of receiver	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
RCVPRT	Partner type of receiver	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
SNDPFC	Partner function of sender	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
SNDPRN	Partner number of sender	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘

Parameter Name	Description	Query Conditions	Default Value
SNDPRT	Partner type of sender	= Sign: I	‘ ‘
		= Opt: CP, EQ	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘
STATUS *	Status of iDOC	= Sign: I, E	‘ ‘
		= Opt: GE, GT, LE, LT, BT	‘ ‘
		= Low	‘ ‘
		= High	‘ ‘

*Possible values: CHECK_INBOUND, CHECK_OUTBOUND, MAX_ENTRIES, TIME_LIMIT

In Remote Monitoring, the SAPABAP_IdocStatusMon Monitoring Template checks the status of inbound iDOCs. An event generating an alert occurs if the number of in-bound iDOCS specified in IDOC_CURRENT_STATUS is greater than (GT) the value 4 (four) defined in MAX_ENTRIES.

IDOC_CURRENT_STATUS Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =ALL =1 \

=WARNING =ALE =R3_IDOC_STATUS \

=IDOC_CURRENT_STATUS =STATUS =I =EQ =CHECK_INBOUND \

=MAX_ENTRIES =I =GT =4
```

Checking the iDOC Status

Using the IDOC_CURRENT_STATUS alert type in conjunction with the STATUS parameter allows you to check any one of the different iDOC statuses that are registered in SAP NetWeaver or a range of statuses defined in a group.

In addition, the OMi MP for SAP provides two pre-defined groups that you can use to check for a range of errors relating to incoming or outgoing iDOCs. For example, you can use the values `CHECK_INBOUND` and `CHECK_OUTBOUND` to monitor a range of values:

- `CHECK_OUTBOUND`

  monitors iDOCs with status: 02, 04, 05, 25, 26, 29, 30, 32

- `CHECK_INBOUND`

  monitors iDOCs with status: 51, 56, 60, 61, 62, 63, 64, 65, 66, 69

If you want to use the SAPABAP_IdocStatusMon Monitoring Template to check for a specific iDOC status, replace the value `=CHECK_INBOUND` shown in "IDOC_CURRENT_STATUS Configuration" with the iDOC status number listed in "Possible iDOC Status" table that corresponds to the iDOC status you want to monitor. For example, to monitor the number of existing iDOCS, use `=01`. Note that it is not currently possible to define your own ranges similar to the pre-defined ranges `CHECK_INDOUND` and `CHECK_OUTBOUND`. Instead, you have to define a separate `AlertMonFun` entry for each additional value, which you want to monitor.

The following table lists all the statuses that the OMi MP for SAP recognizes:

Possible iDOC Status

iDOC Status	Description	Check Inbound	Check Outbound
00	Not used, only for R/2		
01	iDoc created		
02	Error passing data to port		✓
03	Data passed to port OK		
04	Error within control information of EDI subsystem		✓
05	Error during translation		✓
06	Translation OK		
07	Error during syntax check		
08	Syntax check OK		
09	Error during interchange handling		
10	Interchange handling OK		
11	Error during dispatch		
12	Dispatch OK		
13	Retransmission OK		

iDOC Status	Description	Check Inbound	Check Outbound
14	Interchange Acknowledgment positive		
15	Interchange Acknowledgment negative		
16	Functional Acknowledgment positive		
17	Functional Acknowledgment negative		
18	Triggering EDI subsystem OK		
19	Data transfer for test OK		
20	Error triggering EDI subsystem		
21	Error passing data for test		
22	Dispatch OK, acknowledgment still due		
23	Error during retransmission		
24	Control information of EDI subsystem OK		
25	Processing despite syntax error (outbound)		✓
26	Error during syntax check of iDoc (outbound)		✓
27	Error in dispatch level (ALE service)		
28	Not used		
29	Error in ALE service		✓
30	iDoc ready for dispatch (ALE service)		✓
31	Error - no further processing		
32	iDoc was edited		✓
33	Original of an iDoc which was edited		
34	Error in control record of iDoc		
35	iDoc reloaded from archive		
36	Electronic signature not performed (time-out)		
37	iDoc added incorrectly		
38	iDoc archived		
39	iDoc is in the receiving system (ALE service)		
40	Application document not created in receiving		

iDOC Status	Description	Check Inbound	Check Outbound
	system		
41	Application document created in receiving system		
42	iDoc was created by test transaction		
50	iDoc added		
51	Error: Application document not posted	✓	
52	Application document not fully posted		
53	Application document posted		
54	Error during formal application check		
55	Formal application check OK		
56	iDoc with errors added	✓	
57	Test iDoc: Error during application check		
58	iDoc-Copy from an R/2 connection		
59	Not used		
60	Error during syntax check of iDoc (Inbound)	✓	
61	Processing despite syntax error (Inbound)	✓	
62	iDoc passed to application	✓	
63	Error passing iDoc to application	✓	
64	iDoc ready for transfer to the application	✓	
65	Error in ALE service		
66	iDoc is waiting for predecessor iDoc (serialization)		
67	Not used		
68	Error - no further processing		
69	iDoc was edited	✓	
70	Original of an iDoc which was edited		
71	iDoc reloaded from archive		
72	Not used, only for R/2		

iDOC Status	Description	Check Inbound	Check Outbound
73	iDoc archived		
74	iDoc was created by test transaction		

SAPABAP_LckChkMon

The SAPABAP_LckChkMon Monitoring Template enables monitoring of the Enqueue process which manages the SAP ABAP logical locks for different SAP transactions and SAP reports. Obsolete locks are defined as locks which are older than the time period you specify. The check is performed once per monitor run for all application servers.

An object which is locked cannot be changed by anyone other than the user associated with it and can cause severe problems. The operator can check the locks set for a specific instance in `SM12`. Here are two examples of actions which cause locks to occur:

- Users switch off their computers without first logging off the SAP NetWeaver system - this is the most common cause of locked objects.
- An entire SAP instance fails.

The SAPABAP_LckChkMon Monitoring Template references the SAP NetWeaver transaction `SM12`.

Messages generated by this alert monitor include an operator-initiated action that calls the `SM12` Locks Overview module. The operator can then check the locks set for a specific instance in `SM12`.

Monitor Type

The SAPABAP_LckChkMon Monitoring Template is of type snapshot and does not make use of alert types or parameters. One monitor run gathers only one value set.

Alert Types

The SAPABAP_LckChkMon Monitoring Template has only one alert type:

"OLD_LOCKS"

Specifies when to define a lock as **old**, using the time period you specify in the parameter LOCK_ TIME.

File Locations

The SAPABAP_LckChkMon Monitoring Template uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for the lock_check monitor
r3monlck.cfg	Configuration file for the lock_check monitor.
r3monlck.log	Trace file for storing trace data.

Environment Variables

The SAPABAP_LckChkMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_LckChkMon Monitoring Template uses the command-line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the alert-collector monitors to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

OLD_LOCKS

The LOCK_TIME alert type specifies when to define a lock as “old”, using the time period you specify in the parameter LOCK_TIME. Use the LOCK_TIME alert type to configure SAPABAP_LckChkMon Monitoring Template to generate an alert when a job exceeds the time span defined in the parameter LOCK_TIME.

The following table lists the parameters that you can use to configure the LOCK_TIME alert type and shows the value assigned to the parameters by default:

> **Note:** The configuration of the parameter below is mandatory.

Parameter Name	Description	Query Conditions	Default Value

LOCK_ TIME	The time span (in hours) after which a lock is considered old.	= Sign: I,E	I
		= Opt: EQ, GT, GE, LE, LT, BT	GT
		= Low: <time in hours> [1]	
		= High:[2]	

1. Specify this parameter as a number. Otherwise the monitor ends with a dump.
2. Only for use when specifying a range.

In The Default OLD_LOCKS Configuration, an event generating an alert occurs if any lock exceeds a time span of 24 hours.

The Default OLD_LOCKS Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =LOCK_CHECK =1\

=WARNING =Enqueue =R3_Enqueue\

=OLD_LOCKS =LOCK_TIME =I =GT =24 =
```

SAPABAP_PerfMon

The SAPABAP_PerfMon Monitoring Template enables you to collect SAP Performance metrics from different OMi MP for SAP Performance monitors.

Overview

The OMi MP for SAP R/3 Performance Agent uses a selection of performance monitors to collect SAP performance data and store them either in the HPE Software Embedded Performance Component (CODA) or the Performance Agent (Unix/Windows). You can use the Performance Manager to monitor, manage, and correlate data, together with data collected by any other application, database, system, and network Performance Agent. The data can then be used to compare trends between SAP business transactions and other system metrics. This section provides information about the following topics:

- Performance monitoring with the OMi MP for SAP
- Using OMi to install the OMi MP for SAP R/3 Performance Agent

- Configuring the performance monitors

Implemented ABAP-function modules inside SAP NetWeaver are accessed by means of an RFC-call. The performance monitors gather a snapshot of SAP-runtime performance data.

The OMi MP for SAP R/3 Performance Agent can collect more than 130 metrics in *addition* to those collected by the SAP NetWeaver Performance alert monitor (`ST03`), which is part of the SAP NetWeaver CCMS subsystem.

You can configure the OMi MP for SAP R/3 Performance Agent to specify which monitors should be run on specified SAP NetWeaver instances and how frequently.

The Performance Agent runs in Windows operating systems as a service and in UNIX operating systems as a daemon (background) process that runs independently of the OMi agent processes. To start or stop the OMi MP for SAP R/3 Performance Agent processes, use the appropriate OMi MP for SAP tool in the Tool Bank window. For more information, see "Managing the OMi MP for SAP R/3 Performance Agent".

Configuring the SAPABAP_PerfMon Monitoring Template

The OMi MP for SAP provides a default configuration for the `SAPABAP_PerfMon` Monitoring Template; the default configuration works without modification immediately after installation. However, if you want to set up the `SAPABAP_PerfMon` Monitoring Template for your particular SAP environment, you can modify the configuration by enabling or disabling the keywords in the following list and, where necessary, setting or modifying the appropriate parameters:

- **TraceLevel**

  The TraceLevel keyword accepts the following parameters:

  ```
  TraceLevel =<Hostname> =<TraceLevel>
  ```

  Hostname:

=ALL	Monitor all hosts with the OMi MP for SAP. This is the default setting.
=<SAP_host>	The name of an SAP server, where you want to specify a trace level. Use a new line for each individual host.

  TraceLevel:

=0	Disable. This is the default setting.
=1	Log only error messages
=2	Log all messages
=3	Log only debug messages. Note that this trace level logs a lot of information and could very quickly lead to a very large trace file.

- **TraceFile:**

  The TraceFile keyword accepts the following parameters:

  `Tracefile =<Hostname> =<Filename>`

  Hostname:

=ALL	Monitor all SAP servers with the OMi MP for SAP. This is the default setting.
=<SAP_host>	The name of a specific host where tracing is enabled and you want to specify a trace level.

  Filename:

  `=r3perfmon.log` - This is the default setting, which writes the log file to the default log file directory. Alternatively, you can specify the name of the file to which you want to write the trace log and, if necessary, the path. The path can be either absolute or relative to the working directory.

- **AgentHostname**

  Make sure that the AgentHostname keyword set to `ALL`.

- **SyncBack**

  The SyncBack keyword accepts the following parameters:

  `SyncBack =<Enable|Disable> =<SyncBack Threshold>`

  Enable/Disable:

=0	Disable the scheduler synchronization.
=1	Enable the scheduler synchronization. This is the default setting.

  SyncBack Threshold:

=<*n*> mins	The difference in minutes between defined and actual schedules. If the SyncBack threshold is reached, for example, when the scheduler is **n** minutes behind schedule, the scheduler restarts to return to the defined schedule. The SyncBack threshold should be *higher* than the `Message Threshold` value set in association with the `BehindSyncMessage` keyword so that you receive a message warning about schedule problems *before* the scheduler restarts.

- **BehindSyncMessage**

  The BehindSyncMessage keyword accepts the following parameters:

  ```
  BehindSyncMessage =<Enable|Disable> =<OpC Severity> \
  =<OpC Object> =<OpC MsgGroup> =<Message Threshold>
  ```

  Enable/Disable:

=0	Disable the sending of a behind-schedule message
=1	Enable the sending of a behind-schedule message. This is the default setting.

  OpC Severity:

=WARNING	The severity of the behind-schedule message sent. This is the default value.

  OpC Object:

=r3perfagent	The HPOM for Windows object to associate with the behind-schedule message. This is the default value.

  OpC MsgGroup:

=R3_ General	The HPOM for Windows message group to which the behind-schedule message belongs. This is the default value.

  Message Threshold:

=<*n*> mins	The elapsed time in minutes before a behind-schedule message is sent to the HPOM management server. The message-threshold value should be less than the `SyncBack Threshold` value set in association with the `SyncBack` keyword so that you receive a message warning about schedule problems *before* the scheduler restarts.

- **RemoteMonitoring**

  The RemoteMonitoring keyword accepts the following parameters:

```
RemoteMonitoring =<LocalHost> =<RemoteHost>
```

LocalHost:

This is the name of the host where the OMi MP for SAP software is running and whose performance agent will be used to remotely monitor the SAP server defined in **Remotehost**.

RemoteHost:

This is the name of the *remote* SAP server that you want to monitor using the OMi MP for SAP on the SAP server defined in **Localhost**. Although the remote host is not usually an OMi managed node and does not have Agent installed.

- **PerfMon**

  The Perfmon keyword *requires* a value for the following parameters:

```
PerfMon =<SAP Hostname> =<SAP System> =<SAP Number> \
=<SAP Client> =<RFC FUNCTION> =<Enable|Disable> \
=<Polling Interval> =<Hold Connection>
```

SAP Hostname:

=ALL	Monitor all SAP hosts with the OMi MP for SAP. This is the default setting.
=<SAP_host>	The host name of a specific SAP server whose performance you want to monitor. Use a new line for each individual host.

SAP System:

=ALL	Monitor all SAP Systems with the OMi MP for SAP. This is the default setting.
=<SAP_SID>	The ID of a SAP System whose performance you want to monitor, for example, DEV. Use a new line for each individual SID.

SAP Number:

=ALL	Monitor all SAP numbers with the OMi MP for SAP. This is the default setting.
=<Instance>	The number of a specific SAP instance whose performance you want to monitor, for example, 00, 99. Use a new line for each new SAP number.

SAP Client:

=ALL	Monitor all SAP clients with the OMi MP for SAP. This is the default setting.
=<ClientID>	The number of a specific SAP client whose performance you want to monitor, for example, 099. Use a new line for each SAP client.

RFC FUNCTION:

*=<metricname>*_PERF, where *metricname* refers to the specific metric list you want the performance monitor to use, for example, DBINFO_PERF or SAPMEMORY_PERF. For more information about the possible values you can use, see "OMi MP for SAP Performance Monitors ".

Enable/Disable:

=0	Disable the performance monitor
=1	Enable the performance monitor. This is the default setting.

Polling Interval:

=nn	*nn* is the time in minutes between each run of the performance monitor.

Hold Connection:

=0	*Disable:* Close the RFC connection after the call has completed. This is the default setting.
=1	*Enable:* Keep the RFC connection open after the call has completed.

Managing the OMi MP for SAP R/3 Performance Agent

You can control the OMi MP for SAP R/3 Performance Agent using command-line options, which differ according to the platform and operating system. You can manage the OMi MP for SAP R/3 Performance Agent either by using command-line options or the tools that are installed by the OMi MP for SAP.

OMi MP for SAP R/3 Performance Agent Command Line Syntax

You an use the following options with the `r3perfagent` command from the instrumentation directory on UNIX managed nodes to control the OMi MP for SAP R/3 Performance Agent from the command line:

- **r3mon-perl -S SAPMP_Tool.pl Start**
- **r3mon-perl -S SAPMP_Tool.pl Stop**
- **r3mon-perl -S SAPMP_Tool.pl Status**

Status option is available only for SAP UNIX nodes.

You can use the following syntax with the `r3perfagent` command on Windows managed nodes to control the OMi MP for SAP R/3 Performance Agent from the command line:

- **r3mon-perl -S SAPMP_Tool.pl Start**
- **r3mon-perl -S SAPMP_Tool.pl Stop**

You can also use the `Services` option in the Windows Control Panel to control Windows services.

OMi MP for SAP R/3 Performance Agent

The OMi MP for SAP R/3 Performance Agent requires access to SAP to collect SAP-related metrics, which it then uses to generate reports and graphs. You must provide the combination of SAP user-name and password in the SAPABAP_PerfMon Monitoring Template. It is particularly important for the OMi MP for SAP R/3 Performance Agent, which reads the SAP log-in information in the SAPABAP_ PerfMon Monitoring Template configuration only once, during startup, and will not start if it cannot log in to SAP. The OMi MP for SAP R/3 Performance Agent attempts to log in to SAP and, if it fails, sends a message to OMi indicating that it was unable to start as a result of authorization problems.

If you change the SAP user name-password combination that the OMi MP for SAP uses to log in to SAP, you need to make sure that the changes are reflected in the SAPABAP_PerfMon Monitoring Template Parameters and, in addition, that the OMi MP for SAP components which use the information in the SAPABAP_PerfMon Monitoring Template configuration are restarted to make them aware of the changes.

Stop the SAP/Performance Agent before you change the SAP user/password which the OMi MP for SAP needs for access to SAP, as follows:

1. **Stop the SAP/Performance Agent**

   Stop the SAP/Performance Agent on all OMi MP for SAP managed nodes where it is running. On each managed node, enter:

   ```
   r3mon-perl -S SAPMP_Tool.pl Stop
   ```

2. **Login to SAP**

Login to SAP as the administrator and change the user-password combination that OMi MP for SAP uses to log in to SAP as required.

> **Note:**SAP requires you to change the password for dialog users more frequently than other types of SAP users.

3. **Update SAPABAP_PerfMon Monitoring Template configuration**

   Configure SAP ABAP Application Server CI using SAPABAP_PerfMon Monitoring Template. You must provide the User Name, Password, and Client Number.

4. **Restart the SAP/Performance Agent**

   Restart the SAP/Performance Agent on each of the OMi MP for SAP managed nodes where the SAP/ Performance Agent is running. On each managed node, enter:

   ```
   r3mon-perl -S SAPMP_Tool.pl Start
   ```

   > **Note:** The OMi MP for SAP cannot collect performance metrics during the period when the SAP/ Performance Agent is not running.

SAP/Performance Agent Tools

The following table shows tools available for the SAP/Performance Agent with OMi MP for SAP—SAP R/3 NT or SAP R/3 UNIX.

Tool Name	SAP R/3 NT	SAP R/3 UN*X
Start	✓	✓
Stop	✓	✓
Status		✓

OMi MP for SAP Performance Monitors

The OMi MP for SAP performance monitors can be one of two types: `snapshot` or `time-frame`. A snapshot monitor runs once and gathers only one set of values. Snapshot monitors need to run on a regular basis to create a comprehensive picture of the performance of the SAP NetWeaver environment. Time-frame monitors run, as the name suggests, over a period of time.

The following performance monitors are available with the OMi MP for SAP and are explained in greater detail in the individual sections that follow:

- "DBINFO_PERF"

  Monitors database-performance analysis values

- "DOCSTAT_PERF"

  Collects the document volume statistics for the last full hour

- "EP_PERF"

  Monitors the status and performance of the SAP Enterprise Portal

- "ICMSTAT_PERF"

  Monitors the status and performance of the SAP Internet Communication Manager

- "JOBREP_PERF"

  Counts the number of jobs per state (scheduled, running)

- "SAPBUFFER_PERF"

  Returns values for the use of SAP *buffers* for a SAP instance

- "SAPABAP_PerfMon"

  Monitors SAP memory use by SAP users for a SAP instance

- "SPOOL_PERF "

  Counts the number of spool requests in different states

- "SYSUP_PERF "

  Monitors the status of the SAP NetWeaver instances

- "UPDATE_PERF"

  Monitors the number of update processes

- "STATRECS_PERF"

  Monitors the statistical records of SAP Transaction

- "USER_PERF "

  Monitors the number of users and user sessions per SAP client

- "WLSUM_PERF "

  Collects the performance-workload statistics hourly

- "WP_PERF"

Monitors the number of users/sessions per SAP client for an SAP application server.

DBINFO_PERF

The DBINFO_PERF performance monitor returns a set of values as they are displayed in the SAP database-performance analysis page. This information can be used to detect database performance problems and assess whether database tuning could improve database performance.

> **Note:** The DBINFO_PERF performance monitor works *only* with Oracle database data structures. It does not work with data structures from other database products.

Type

The DBINFO_PERF performance monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

It is recommended to run the DBINFO_PERF performance monitor once every 15 minutes.

Datasource

The DBINFO_PERF performance monitor uses the SAP transaction *ST04* (DB performance overview) as its data source.

Metrics

The following table shows the values in the performance table returned by the DBINFO_PERF performance monitor.

Order	Metric Name	Description	% Value	Cumulation
1	CPUUSAGE	Database CPU usage		No
2	BUFPREADS	Physical reads		Yes
3	BUFPWRITES	Physical writes		Yes
4	BUFQUAL	Quality of data base buffer pool	%	No
5	BUFSIZE	Database buffer pool size		Static
6	BUFWAITS	Buffer busy waits		Yes
7	BUFWTIME	Buffer busy wait time		Yes

Order	Metric Name	Description	% Value	Cumulation
8	DICTSIZE	Dictionary cache size		Static
9	DDQUAL	Quality of Data Dictionary cache	%	No
10	LOGBLOCKS	Redo log blocks written		Yes
11	LOGENTRIES	Redo log buffer entries		Yes
12	LOGSIZE	Redo log buffer size		Static
13	LOGFAULT	Allocation error rate of redo log buffer	%	No
14	LOGALLOC	Redo log buffer allocation retries		Yes
15	ROLLBACKS	Rollbacks		Yes
16	SCANLONG	Long table scans		Yes
17	SORTDISK	Sort disk		Yes
18	SORTMEM	Sort memory		Yes
19	SORTROWS	Sort rows		Yes

DOCSTAT_PERF

The performance monitor, DOCSTAT_PERF, collects statistics relating to the volume of documents generated and processed for the last full hour. You can only configure this monitor once for every SAP NetWeaver System that you want to monitor.

Type

The DOCSTAT_PERF performance monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

It is recommended to run the DOCSTAT_PERF performance monitor hourly.

Data Source

The DOCSTAT_PERF performance monitor uses the SAP transaction *ST07* (quantity structure) as its data source.

Metrics

The following table shows the values in the performance table returned by the DOCSTAT_PERF performance monitor.

Order	Metric Name	Description
1	SID	The SAP System ID
2	DESCRIPTION	Description of an application-monitor object
3	CNTHEADER	Document headers
4	CNTITEM	Document items
5	CNTDIV	Document division
6	CNTTOTAL	Total number of records
7	CNTLINE	Number of line items
8	CNTCHGDOC	The number of changed documents
9	CNTTEXT	Text

EP_PERF

The performance monitor, EP_PERF, monitors the status and performance of the SAP Enterprise Portal (EP) including (but not limited to) all the J2EE components on which it relies.

> **Note:** EP_PERF is applicable wherever Enterprise Portal is available.

Type

The EP_PERF performance monitor is of type time-frame. One monitor run gathers only one value set.

Frequency

It is recommended to run the EP_PERF performance monitor approximately once every fifteen minutes.

Datasource

The EP_PERF monitor uses the CCMS as its data source.

Metrics

The following table shows the values in the performance table returned by the EP_PERF performance monitor.

Order	Metric Name	Description
1	SID_EP	ID of the SAP System hosting the Enterprise Portal
2	HOSTNAME_EP	Name of the system hosting the Enterprise Portal
3	START_TIME_EP	The time at which the EP-monitor run starts
4	NO_REQ_EP	Number of requests to the Enterprise Portal
5	AVG_RESP_TIME_EP	Average time to respond to requests to the Enterprise Portal
6	AVG_CPU_TIME_EP*	Average CPU time required to respond to requests to the Enterprise Portal
7	REQ_PER_SEC_EP	Number of requests per second to the Enterprise Portal
8	AVG_OUTBND_DATA_EP	Average amount of out-bound data per request to the Enterprise Portal
9	ACC_RESP_TIME_EP	Accumulated response time of requests to the Enterprise Portal
10	ACC_CPU_TIME_EP*	Accumulated CPU time required to respond to EP requests
11	OUTBND_DATA_REQ_EP	Requests providing outbound data
12	ACC_OUTBND_DATA_EP	Amount of accumulated outbound data (in bytes)
13	NO_COMPCALLS_REQ_EP	Number of component calls by all requests to the Enterprise Portal
14	AVG_CMPCALLPERREQ_EP	Average number of component calls per EP request
15	VALID_MONDATA_REQ_EP	EP requests providing correct monitor data
16	REQ_NOT_CORR_CLSD_EP	EP requests with components that were not correctly closed
17	REQCLSD_TOOMNYCMP_EP	Number of EP requests that were closed because of too many components
18	REQS_RUNLEVEL_0_EP	EP requests running with level 0
19	REQS_RUNLEVEL_1_EP	EP requests running with level 1
20	REQS_RUNLEVEL_2_EP	EP requests running with level 2
21	USRS_SINCE_1_REQ_EP	Number of users making EP requests since the first request
22	USRS_SINCE_LSTRST_EP	Number of users making EP requests since the last

Order	Metric Name	Description
		user reset
23	LST_REQ_RST_TSTMP_EP	Time of the last EP-request reset
24	LST_CMPREQ_TSTMP_EP	Time of the last component reset
25	LST_USRREQ_TSTMP_EP	Time of the last EP-user reset

*Applicable only for SAP NetWeaver portal version 7.0

> **Note:** If the performance monitor EP_PERF cannot find any data or it encounters a null string in SAP CCMS, it logs some performance metrics as '0' (zero); this behavior is expected.

ICMSTAT_PERF

The performance monitor, ICMSTAT_PERF, monitors the status and performance of the SAP Internet Communication Manager (ICM).

Type

The ICMSTAT_PERF performance monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

It is recommended to run the ICMSTAT_PERF performance monitor approximately once every fifteen minutes.

Datasource

The ICMSTAT_PERF monitor uses the SAP transaction SMICM (ICM monitor) as its data source.

Metrics

The following table shows the values in the performance table returned by the ICMSTAT_PERF performance monitor:

Order	Metric Name	Description
1	ICM_Status	The status of the Internet Communication Manager
2	Max_Threads	The defined maximum number of open threads allowed by the ICM
3	Peak_ Threads	Peak number of open threads in the ICM in a given period

Order	Metric Name	Description
4	Cur_Threads	Number of currently open threads in the ICM
5	Max_ Connections	The defined maximum number of open connections allowed by the ICM
6	Peak_ Connections	Peak number of connections in the ICM in a given period
7	Cur_ Connections	Number of current connections in the ICM
8	Max_ QueueEntries	The maximum number of queued requests allowed by the ICM defined in: icm/req_queue_len
9	Peak_ QueueEntries	Peak number of queued requests in the ICM in a given period
10	Cur_ QueueEntries	Number of currently queued requests in the ICM
11	Running_ Threads	Number of work threads waiting for a request (idle)
12	Dead_ Threads	Number of work threads in a problematic state, for example, dead or hanging
13	Processed_ Threads	Number of work threads currently processing a request

JOBREP_PERF

The JOBREF_PERF performance monitor counts the jobs per state in the time period between the end date and time of the last monitor run and the start date and time of the actual monitor run.

Type

The JOBREF_PERF monitor is of type time-frame. One monitor run gathers only one value set.

Frequency

It is recommended to run the JOBREF_PERF performance monitor between once an hour and once a day.

Datasource

The JOBREF_PERF monitor uses the SAP transaction SM37 (background job overview) as its data source.

Metrics

The following table shows the values in the performance table returned by the JOBREF_PERF performance monitor:

Order	Metric Name	Description
1	RUNNING	The number of jobs with status running since the last monitor run
2	READY	The number of jobs with status ready since the last monitor run
3	SCHEDULED	The number of jobs with status scheduled since the last monitor run
4	RELEASED	The number of jobs with status released since the last monitor run
5	ABORTED	The number of jobs with status aborted since the last monitor run
6	FINISHED	The number of jobs with status finished since the last monitor run
7	PUT_ACTIVE	The number of jobs with status put_active since the last monitor run
8	UNKNOWN_ STATE	The number of jobs with status unknown since the last monitor run

SAPBUFFER_PERF

The SAPBUFFER_PERF performance monitor returns values for the use of SAP memory buffers by SAP users for a given instance, for example, hit ratios, buffer quality, free space available and so on in the NetWeaver repository, programs, and database tables.

Type

The SAPBUFFER_PERF monitor is of type time frame.

Frequency

It is recommended to run the SAPBUFFER_PERF performance monitor once every fifteen minutes.

Data Source

The SAPBUFFER_PERF monitor reads information from the SAP- buffers transaction *ST02*.

Metrics

The following table shows the values in the performance table returned by the SAPBUFFER_PERF performance monitor.

Order	Metric Name	Description
1	BUFFER_ NAME	The name of the buffer
2	HITRATIO	Buffer object reads / logical requests. The buffer hit ratio appears as a percentage
3	ALLOCATED_ SIZE	The amount of space allocated to the buffers [1]
4	FREE_ SPACE	The amount of free space (KB) available in the buffer
5	FREE_ SPACE_ PERCENT	Available free buffer space as a percentage of total
6	MAXDIR_ ENTR	The number of directories available for the buffer [2]
7	FREEDIR_ ENTR	Number of free directories available for the buffer
8	FDIR_ENTR_ PERCENT	Free directories available for the buffer as

Order	Metric Name	Description
		a percentage
9	BUFFER_ SWAPS	Swap activity both inwards and outwards since System start [3]
10	BUFFER_ SWAPS_ DELTA	Difference between the number of buffer swaps measured in the current and previous monitor runs
11	DB_ ACCESSES	The number of database accesses since System start [4]
12	DB_ ACCESSES_ DELTA	Difference between the number of database accesses measured in the current and previous monitor runs

1. Buffer size and “available buffer size” differ, because part of the buffer space is used for buffer management.
2. The buffer directories point to the location of the objects stored in the buffer.
3. Buffers swap objects out of the buffer to load a new object in, if insufficient free space or free

directories exist.

4. Database access occurs when an object cannot be read from the buffer.

Type

The SAPMEMORY_PERF monitor is of type snapshot: one monitor run gathers one value set.

Frequency

It is recommended to run the SAPMEMORY_PERF performance monitor once every fifteen minutes.

Data source

The SAPMEMORY_PERF monitor reads information from the SAP- buffers transaction *ST02*.

Metrics

The following table shows the values in the performance table returned by the SAPMEMORY_PERF performance monitor:

Order	Metric Name	Description
1	MEMORY_ AREA	The type of memory buffer
2	CURRENT_ USE_ PERCENT	The amount of space currently used expressed as a percentage of the total available
3	CURRENT_ USE	The amount of space currently used in KB
4	MAX_USE	The maximum value (max. use) since system startup
5	IN_ MEMORY	The amount of space used in shared memory
6	ON_DISK	The amount of space used on the disk

SPOOL_PERF

The SPOOL_PERF performance monitor counts the number of spool requests present in different states.

Type

The SPOOL_PERF performance monitor is of type time frame and does not make use of alert types or parameters. One monitor run gathers only one value set. The SPOOL_PERF performance monitor collects SID-related metrics and should run only once per monitored SID, that is: either on the SAP central instance or on one application server.

Frequency

It is recommended to run the SPOOL_PERF performance monitor once every 10 to 30 minutes.

Data Source

The SPOOL_PERF performance monitor uses the SAP transaction `SP01` (output controller) as its data source.

Metrics

The following table shows the values in the performance table returned by the SPOOL_PERF performance monitor.

Order	Metric Name	Description
1	ALL_SJ	Total number of spool jobs
2	SJ_ ARCHIVE	Number of spool jobs in status archive
3	PRINT_ REQ	Total number of print requests
4	OPEN_PR	Number of open print requests
5	SUCCESS_ PR	Number of successfully processed print requests
6	ERROR_ PR	Number of Print requests with errors
7	FAILED_PR	Number of failed print requests

SYSUP_PERF

The SYSUP_PERF performance monitor is used to determine whether the SAP NetWeaver system is available or not.

Type

The SYSUP_PERF performance monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

The SYSUP_PERF performance monitor runs once a minute; the run frequency cannot be modified.

Data Source

The SYSUP_PERF performance monitor uses internal SAP RFC calls as its data source.

Metrics

The following table shows the values in the performance table returned by the SYSUP_PERF performance monitor.

Metric Name	Description
SYSTEM_ STATUS	Status of the System (UP/DOWN) on the basis of the following values: • SAP System available • SAP System logon failure • SAP System communication problems • SAP System unknown Indicates that the performance agent was not running and could not collect any data.

UPDATE_PERF

The UPDATE_PERF performance monitor is used to determine whether update errors are occurring.

When the SAP NetWeaver system is behaving well, no update errors should occur. However, an update error can occur, if an update is performed on a database table record that has previously been deleted. A normal update process should not have to wait in status INIT for more than 5 minutes for an

update task. If a greater number of work processes exist with the status INIT the reason could be that a table space is full.

Type

The UPDATE_PERF monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

It is recommended you configure the UPDATE_PERF performance monitor to run once a minute.

Data Source

The UPDATE_PERF monitor uses the SAP transaction *SM13* (update records) as its data source.

Metrics

The following table shows the values in the performance table returned by the UPDATE_PERF performance monitor:

Order	Metric Name	Description
1	ALL	Number of all VB-update tasks
2	INITIAL	Number of initial VB-update tasks
3	ERRONEOUS	Number of erroneous VB-update tasks
4	VB1	Number of update tasks having V1 executed
5	VB2	Number of update tasks having V2 executed

STATRECS_PERF

The SAPABAP_StatRecMon Monitoring Template reads the statistical records and returns the average response time per transaction.

The SAPABAP_StatRecMon Monitoring Template uses the alert types RESPONSE_TIME and the parameter TRANSACTION to restrict the data selected. The transactions monitored are specified in the parameter TRANSACTION. If this parameter is not specified, the average response time is reported for each transaction in the local statistics file for the specified time frame. For more information, see "SAPABAP_StatRecMon" Monitoring Template.

USER_PERF

The USER_PERF performance monitor provides important information about the number of users and user sessions per SAP client for a given SAP application server.

Type

The USER_PERF monitor is of type snapshot.

Frequency

It is recommended to run the USER_PERF performance monitor once every five minutes.

Data source

The USER_PERF performance monitor the SAP transaction SM04 (overview of users) as its data source.

Metrics

The following table shows the values in the performance table returned by the USER_PERF performance monitor:

Order	Metric Name	Description
1	USER_ CLIENT	The SAP client number associated with the users
2	USER_CNT	The number of users logged in per client
3	SESSION_ CNT	The total number of user sessions per client

WLSUM_PERF

The performance monitor, WLSUM_PERF, collects the performance workload statistics for the last full hour. You can display the workload statistics for all task types, for example, dialog, background, RFC, ALE, or update. The WLSUM_PERF performance monitor is mandatory; you must configure it for every application server that you want to monitor.

> **Note:** The data collection for the WLSUM monitor is based on the internal SAP job COLLECTOR_ FOR_PERFORMANCEMONITOR. This job must run with the same frequency as specified for

WLSUM_PERF in SAPABAP_PerfMon Monitoring Template. WLSUM_PERF will then pick up the data collected by the last run of COLLECTOR_FOR_PERFORMANCEMONITOR.

Type

The WLSUM_PERF performance monitor is of type time-frame. One monitor run gathers only one value set.

Frequency

Due to the way in which the performance monitor, WLSUM_PERF, measures and records time, it is mandatory to configure the WLSUM_PERF performance monitor to run once an hour.

Data source

The WLSUM_PERF performance monitor uses the SAP transaction *ST03* (workload analysis) as its data source.

Metrics

The following table shows the values in the performance table returned by the WLSUM_PERF performance monitor:

Order	Metric Name	Description
1	Hostname	The SAP System hostname
2	SID	The SAP System ID
3	INSTANCE	The SAP instance number, if SAP version < 4.6x
4	TASKTYPE	Type of SAP NetWeaver task (RFC, dialog)
5	CNT	The number of dialog steps
6	DBACTIVCNT	Counter for database-active dialog steps
7	RESPTI	Time that elapses between a dialog sending a request to the dispatcher and receiving a response
8	CPUTI	CPU time used in the work process
9	QUEUETI	The time an unprocessed dialog step waits in the dispatcher queue for a free work process
10	LOADGENTI	Time taken loading and generating objects such as ABAP source code and screen information from the database
11	COMMITTI	Time required for commit to complete

Order	Metric Name	Description
12	DDICTI	Time required for Data Dictionary
13	QUETI	Time required for batch-input queue
14	CPICTI	Time required for RFC and CPI-C
15	ROLLINCNT	Number of roll-ins (rolled-in user contexts)
16	ROLLINTI	Processing time for roll-ins
17	ROLLOUTCNT	Number of roll-outs (rolled-out user contexts)
18	ROLLOUTTI	Processing time for roll-outs
19	READDIRCNT	Number of direct read accesses
20	READDIRTI	Time for direct read access
21	READSEQCNT	Number of sequential read attempts
22	READSEQTI	Time for sequential read accesses
23	CHNGCNT	Number of modified database accesses
24	CHNGTI	Time for modified database accesses
25	BYTES	Number of bytes
26	GUITIME	Total time taken for the dispatcher to execute a GUI request
27	GUICNT	Count of GUI steps
28	GUINETTIME	Time taken for the application server to respond to a request from the SAP GUI

WP_PERF

The OMi MP for SAP performance agent uses the WP_PERF monitor to detect performance problems concerning SAP work processes. For example, WP_PERF can detect and report on the following situations:

- Work processes need to wait for semaphores
- Work processes are in private mode
- A dialog work-process does not return to idle after use/release

Type

The WP_PERF monitor is of type snapshot. One monitor run gathers only one value set.

Frequency

It is recommended that you configure the WP_PERF performance monitor to run once every 15 minutes.

Data Source

The WP_PERF performance monitor uses SAP transaction *SM50* (work- process overview) as its data source.

Metrics

The following table shows the values in the performance table returned by the performance monitor:

Order	Metric Name	Description
1	ALL_WP	Number of all work processes
2	SEMAPHORE_ WP	Number of work processes waiting on a semaphore
3	DEBUG_WP	Number of work processes in debug mode
4	LONG_ RUNNING	Number of long running dialog wp
5	PRIVAT_WP	Number of dialog wp in private mode
6	NOSTART_WP	Number of dialog wp with no restart capability
7	DIA_IDLE	Number of idle dialog work processes
8	DIA_ALL	Number of dialog work processes
9	DIA_ RUNNING	Number of running dialog wp
10	BTC_IDLE	Number of idle batch work processes
11	BT_ALL	Number of batch work processes
12	BTC_ RUNNING	Number of running batch wp
13	SPO_IDLE	Number of idle spool work processes

Order	Metric Name	Description
14	SPO_ALL	Number of spool work processes
15	SPO_ RUNNING	Number of running spool wp
16	ENQ_IDLE	Number of idle enqueue work processes
17	ENQ_ALL	Number of enqueue work processes
18	ENQ_ RUNNING	Number of running enqueue wp
19	UPD_IDLE	Number of idle update work processes
20	UPD_ALL	Number of update work processes
21	UPD_ RUNNING	Number of running update wp
22	UPD2_IDLE	Number of idle update2 work processes
23	UPD2_ALL	Number of update2 work processes
24	UPD2_ RUNNING	Number of running update2 work processes

Removing the OMi MP for SAP R/3 Performance Agent

To remove the OMi MP for SAP R/3 Performance Agent from the managed node, you need to perform the following steps in the order indicated:

1. Before starting the process of removing the OMi MP for SAP Performance Agent from the managed node, make sure that you stop the performance agent. You can stop the OMi MP for SAP R/3 Performance Agent by following any of the following method:
   a. To stop OMi MP for SAP R/3 Performance Agent using SAP ABAP Application Server - Stop Performance Agent tool, follow these steps:
      i. Go to the Assignments & Tuning pane:

         On BSM, click **Admin > Operations Management > Monitoring > Assignments & Tuning**

On OMi, click **Administration > Monitoring > Assignments & Tuning**

ii. From **Browse Views** tab, select **SAP_Deployment** View. Select the SAP ABAP Application Server or SAP J2EE Application Server on which you want to stop the performance agent.

iii. Right-click, select **Launch Tool**.

iv. Select **Stop Performance Agent** tool and click **Run Tool**.

For ABAP:

```
SAP ABAP Application Server - Stop Performance Agent
```

For J2EE:

```
SAP J2EE Application Server - Stop Performance Agent
```

OMi MP for SAPPerformance Agent is stopped on the selected SAP Application Server.

b. To stop OMi MP for SAP R/3 Performance Agent using command line, Use the following command as root user in the command line:

```
r3mon-perl -S SAPMP_Tool.pl Stop
```

OMi MP for SAP Performance Agent is stopped on the selected SAP CI.

2. Launch SAP ABAP Application Server - Remove Performance Package. To launch the tool follow these steps:

a. Go to the Assignments & Tuning window:

On BSM, click **Admin > Operations Management > Monitoring > Assignments & Tuning**

On OMi, click **Administration > Monitoring > Assignments & Tuning**

b. From **Browse Views** tab, select **SAP_Deployment** View. Select the SAP ABAP Application Server or SAP J2EE Application Server from which you want to remove the performance agent.

c. Right-click, select **Launch Tool**.

d. Select **Remove Performance Package** tool and click **Run Tool**.

For ABAP:

```
SAP ABAP Application Server - Remove Performance Package
```

For J2EE:

```
SAP J2EE Application Server - Remove Performance Package
```

OMi MP for SAP Performance Agent is removed from the selected SAP Application Server.

SAPABAP_ProcMon

The SAPABAP_ProcMon Monitoring Template enables the monitoring of different SAP ABAP processes.

This section contains information about the following topics:

File Locations

The SAPABAP_ProcMon Monitoring Template contains the files listed in the following table:

File	Description
r3monpro (.exe)	Executable for the process monitor.
r3monpro.cfg	Configuration file for the process monitor.
r3monpro.his	History file for storing data after each monitor run.

Environment Variables

The SAPABAP_ProcMon Monitoring Template uses the environment variables listed in the following table:

Environment Variable	Description
SAPOPC_DRIVE	The Windows drive where the HPOM agent is running, for example, `E:\usr\...`
SAPOPC_HISTORYPATH	Path to the `r3monpro` history file
SAPOPC_R3MONPRO_ CONFIGFILE	Name of the `r3monpro` configuration file
SAPOPC_SAPDIR	The Windows drive where SAP NetWeaver is running, for example: `E:\usr\sap`

SAPOPC_TRACEPATH	Path to the `r3monpro` trace file

Monitoring Conditions

Monitoring conditions for SAPABAP_ProcMon Monitoring Template are specified in the template configuration. Individual rows define monitoring conditions for specific processes. You can use the SAPABAP_ProcMon Monitoring Template to set the rules which define how the number of processes running should be measured and what severity level should be assigned to the alert that is generated if the number of processes exceeds the limits you define.

You can set monitoring conditions for a specific process to any of the following modes:

- **Exact**

  The number of processes running on a managed node must be equal to the specified number.

- **Min**

  The number of processes running on a managed node must not be less than the specified number.

- **Max**

  The number of processes running on a managed node must not be more than the specified number.

- **Delta**

  SAPABAP_ProcMon Monitoring Template triggers an alert if there is any change in the number of processes running on a managed node or if the specific amount of allowed change in the number of instances of the same process exceeds the defined limit. This mode enables you to recognize changes without having to define an absolute number of processes for a managed node.

  For example, if Delta =2, then a difference of 2 or more between the number of processes (n) found in the previous and current monitor run on a managed node triggers an alert. Note that if SAPABAP_ProcMon Monitoring Template triggers an alarm, it resets *n* to the number of processes discovered in the most recent monitor run, and calculates the new Delta on the basis of the new number of processes found running.

Sample Configuration

The first row of the following example shows how to monitor the `saposcol` process on all configured hosts. Note that exactly one such process should run at any given time. Any violation of this number is critical. It affects the OMi process saposcol. The associated OMi MP for SAP message group is `R3_State`.

The last row of the same example specifies that eight or fewer instances of the `dw.sapSID` process should run on all hosts. If the number is larger than eight, the monitor generates a warning message associated with OMi MP for SAP object dw.sap and OMi MP for SAPmessage group R3_State.

The string SID has special meaning in this context. `SID` will be replaced by the SAP system name on the managed node. This enables global definitions for different SAP Systems.

```
AlertInstMonPro =ALL =00 =saposcol =1 =Exact=1 =CRITICAL =saposcol =R3_State

AlertInstMonPro =C01 =00 =explorer =1 =Max =1 =CRITICAL =explorer =R3_State

AlertInstMonPro =T11 =00 =dw.sapSID =1 =Min =8 =WARNING =dw.sap =R3_State
```

It is also possible to ensure that a process is not running. To do so, use the mode Exact and enter 0 as the number.

> **Note:** On servers running the UNIX operating system, SAPABAP_ProcMon Monitoring Template can identify processes at the instance level. On servers running the Windows operating system, you need to define on a single line the total number of work processes on the node. For example, if there are two SAP instances, each with four (4) work processes, the total number of processes is eight (8).

For SAP servers running on UNIX operating systems, you can configure the SAPABAP_ProcMon Monitoring Template to monitor the specific SAP-gateway read process gwrd associated with individual SAP SIDs, which is especially useful in a multi-SID environment. If you have multiple instances of SAP running in the same SID, you can configure SAPABAP_ProcMon Monitoring Template to monitor the specific SAP-gateway read process gwrd assigned to each, individual instance, too. For more information about how to configure SAPABAP_ProcMon Monitoring Template to monitor individual gwrd processes in an environment where multiple SAP instances or multiple SAP SIDs are running on the same SAP server, have a look at the following examples:

- "Monitoring SAP-Gateway Read Processes per SID"
- "Monitoring SAP-Gateway Read Processes per SAP Instance"

Monitoring SAP-Gateway Read Processes per SID shows how to configure SAPABAP_ProcMon Monitoring Template to monitor the individual gwrd processes associated with specific SIDs on a SAP server hosting multiple SAP SIDs.

Monitoring SAP-Gateway Read Processes per SID

```
AlertInstMonPro =Q12 =ALL =gwrd -dp pf=/usr/sap/

SID* =1 =Exact =1 =CRITICAL \

=gwrd =R3_State
```

```
AlertInstMonPro =Q22 =ALL =gwrd -dp pf=/usr/sap/

SID* =1 =Exact =1 =CRITICAL \

=gwrd =R3_State

AlertInstMonPro =Q32 =ALL =gwrd -dp pf=/sapmnt/

SID* =1 =Exact =1 =CRITICAL \

=gwrd =R3_State

AlertInstMonPro =Q52 =ALL =gwrd -dp pf=/usr/sap/

SID* =1 =Exact =1 =CRITICAL \

=gwrd =R3_State
```

Monitoring SAP-Gateway Read Processes per SAP Instance shows how to configure SAPABAP_ ProcMon Monitoring Template to monitor the individual gateway processes associated with specific SAP instances on a SAP server hosting multiple SAP instances per SAP SID.

Monitoring SAP-Gateway Read Processes per SAP Instance

```
AlertInstMonPro =Q12 =12 =gwrd -dp pf=/usr/sap/

SID* =1 =Exact =1 =CRITICAL \ =gwrd =R3_State

AlertInstMonPro =Q22 =21 =gwrd -dp pf=/usr/sap/Q22/SYS/profile/

Q22_D21_sap2ap1 \ =1 =Exact =1 =CRITICAL =gwrd =R3_State

AlertInstMonPro =Q22 =22 =gwrd -dp pf=/usr/sap/Q22/SYS/profile/

Q22_D22_sap2ap1 \ =1 =Exact =1 =CRITICAL =gwrd =R3_State

AlertInstMonPro =Q32 =32 =gwrd -dp pf=/sapmnt/

SID* =1 =Exact =1 =CRITICAL \ =gwrd =R3_State

AlertInstMonPro =Q52 =52 =gwrd -dp pf=/usr/sap/

SID* =1 =Exact =1 =CRITICAL \ =gwrd =R3_State
```

In the SAPABAP_ProcMon Monitoring Template configuration, the path to the SAP-instance profile defined in the `pf` parameter is case-sensitive. To avoid problems, make sure that the path to the SAP-instance profile defined in the SAPABAP_ProcMon Monitoring Template configuration matches the path displayed in the output of the `ps` command, for example:

```
[root@accra]# ps -eaf | grep gwrd
```

```
Q22adm 15691 15688 0 Jun 6 ? 52:54 gwrd -dp \ pf=/usr/sap/Q22/SYS/profile/Q22_D21_
sap2ap1

root 20756 20599 0 10:22:58 pts/tb 0:00 grep gwrd
```

SAPABAP_RFCDestMon

The SAPABAP_RFCDestMon Monitoring Template enables monitoring of failed SAP RFC destinations based on the connection type and name of the SAP RFC destinations. The SAPABAP_RFCDestMon Monitoring Template, references the RFC destinations, which you can display, create, and maintain by means of the SAP NetWeaver transaction **SM59**.

Monitor Type

The SAPABAP_RFCDestMon Monitoring Template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The SAPABAP_RFCDestMon Monitoring Template has the following alert type, which uses a snapshot report type:

CHECK

Defines alert conditions for failed SAP-RFC connections.

File Locations

The SAPABAP_RFCDestMon Monitoring Template uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for the SAP-RFC monitor.
r3monrfc.cfg	Configuration file for the SAP-RFC monitor.
r3monrfc.log	Trace file for storing trace data.

The SAPABAP_RFCDestMon Monitoring Template do not write history information to a specific history file.

Environment Variables

The SAPABAP_RFCDestMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_RFCDestMon Monitoring Template uses the command-line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_RFCDestMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring RFC-destination Alert Types

You must configure the parameters CONNECTION_TYPE and NAME for all alert types for `SAPABAP_RFCDestMon` Monitoring Template, the RFC-destination monitor. Note the general rules below on exclude and include parameters for `SAPABAP_RFCDestMon` Monitoring Template.

Parameter Values

This section describes how the SAPABAP_RFCDestMon Monitoring Template interprets the include and exclude parameter values for an alert type entry. The SAPABAP_RFCDestMon Monitoring Template compares values in different parameters using ‘and’; the SAPABAP_RFCDestMon Monitoring Template compares values in the same parameter as follows:

- **Include:** Use ‘or’ to compare the parameters
- **Exclude:** Use ‘and’ to compare the parameters

The OMi MP for SAP evaluates *include* values before *exclude* values.

CHECK

CHECK is a snapshot alert type for SAPABAP_RFCDestMon Monitoring Template, the OMi MP for SAP's RFC-destination monitor. Snapshot alert types take a picture of the SAP System at the moment the monitor runs.

The CHECK alert type defines alert conditions for failed SAP-RFC connections. Use the CHECK alert type to configure SAPABAP_RFCDestMon Monitoring Template to generate an alert if the RFC connection test for the target system fails. The following table lists the parameters that you can use to configure the CHECK alert type and shows the value assigned to the parameters by default.

The parameter CHECK is required. The following tables provides you more information about the meaning of the query conditions in the alert-collector monitor configuration files:

Parameter Name	Description	Query Conditions	Default Value
CONNECTION_ TYPE	Type of SAP RFC connection to monitor, for example: 1, 3, M, T... Type 1= App. Server, 3= SAP NetWeaver System, M= CMC, T =TCP/IP, G= HTTP connection to external server, H= HTTP connections to SAP NetWeaver system.	= Sign I, E	I
		= Opt: EQ	EQ
		= Low	3
		= High	
NAME	Name you assigned to the SAP-RFC connection as shown in the transaction /NSM59.	= Sign: I, E	I
		= Opt: EQ, CP	EQ
		= Low: <SID>	**
		= High:	

The Default Check-RFC_DESTINATION Configuration

In The Default Check-RFC_DESTINATION configuration, an event generating an alert occurs whenever the RFC_DESTINATION test fails for any *one* of the type 3 SAP-RFC destinations.

```
AlertMonFun =ALL =ALL =ALL =ALL =RFC_DESTINATION =1 \

=WARNING =RFC_Destinations =R3_RFC \

=CHECK =CONNECTION_TYPE =I =EQ =3 =
```

Check-RFC_DESTINATION Configuration

In the following example of Check-RFC_DESTINATION Configuration, an event generating an alert occurs whenever RFC_DESTINATION test fails for the single SAP-RFC destination named OV_C01_099.

```
AlertMonFun =ALL =ALL =ALL =ALL =RFC_DESTINATION =1 \

=WARNING =RFC_Destinations =R3_RFC \

=CHECK =NAME =I =CP =OV_C01_099 =
```

SAPABAP_SecMon

The SAPABAP_SecMon Monitoring Template enables monitoring of the SAP ABAP Security parameters like the privileges and authorizations of important SAP users, parameters that affect the overall SAP.

In addition to the other SAP user roles and authorizations required by the OMi MP for SAP, you also have to assign the authorizations defined in the SAP user role /HPOV/SAPSPI_SECURITY_MON to the OMi user under which SAPABAP_SecMon Monitoring Template runs before SAPABAP_SecMon Monitoring Template starts; the user role /HPOV/SAPSPI_SECURITY_MON includes authorizations (such as S_TCODE or S_USER_AUT) that are needed to execute the SAP reports, which SAPABAP_SecMon Monitoring Template calls by means of the SAP RFC interface.

This section contains information about the following topics:

- "File Locations"
- "Alert Types"
- "Remote Monitoring using SAPABAP_SecMon Monitoring Template "

File Locations

The SAPABAP_SecMon Monitoring Template uses the files listed in the following table:

File	Description
r3monsec (.exe)	Executable for the SAP System-security monitor.
r3monsec.cfg	Configuration file for the SAP System-security monitor.
r3monsecpw.msg	Contains encrypted passwords for standard Oracle users in an SAP environment.
r3monsec.log	File used to store trace data collected by the SAP System-security monitor.

Alert Types

The SAPABAP_SecMon Monitoring Template uses the following alert types:

- "SAP_PARAMETERS"

  Monitors security-related parameters such as those defined in the SAP report RSPFPAR.

- "DEFAULT_USERS"

  Monitors settings for passwords defined for SAP and Oracle users to ensure that insecure default passwords are not in use.

- "PRIVILEGED_USERS"

  Monitors any special privileges granted to SAP users or being requested by users who are not normally entitled.

The OMi MP for SAP interprets *include* and *exclude* parameter values for an alert-type entry according to whether the values appear in the same parameters or in different parameters. The OMi MP for SAP compares values in *different* parameters using 'and'; the OMi MP for SAP compares values in the *same* parameter as follows.

- **Include:** use 'or' to compare the parameters
- **Exclude:** use 'and' to compare the parameters

The OMi MP for SAP evaluates *include* values before it evaluates exclude values.

Note that the OMi MP for SAP ignores include and exclude parameters for the SAPABAP_SecMon Monitoring Template alert types SAP_PARAMETERS and DEFAULT_USERS; however, you must use include and exclude parameters for the alert type PRIVILEGED_USERS.

SAP_PARAMETERS

Use the SAP_PARAMETERS alert type to configure the SAPABAP_SecMon Monitoring Template to monitor the settings of (and any changes to) security-related SAP parameters. The SAP_PARAMETERS alert type compares the values you define in the SAPABAP_SecMon Monitoring Template with the contents of the SAP report RSPFPAR, which contains security-related parameters for the SAP instances you are monitoring.

The default settings for the alert type SAP_PARAMETERS reflect a small selection of the parameters defined in the SAP report RSPFPAR; you can change the contents of the SAP_PARAMETERS

section of the SAPABAP_SecMon Monitoring Template to suit the needs of your SAP environment by adding, modifying, or removing values accordingly.

> **Note:** The alert type SAP_PARAMETERS ignores the include (=I) and exclude (=E) parameter.

Example SAP_PARAMETERS settings

"Example SAP_PARAMETERS settings" shows how to configure SAPABAP_SecMon Monitoring Template to monitor the SAP parameter, which defines whether SAP should automatically unlock locked SAP users at midnight. The example configuration tells `SAPABAP_SecMon` Monitoring Template to check that the automatic unlocking of locked SAP users is *disabled* in SAP (=EQ =0). In this example, `SAPABAP_SecMon` Monitoring Template would generate a message with the severity level “critical” if it is found that the parameter was enabled in SAP and assign the generated message to the OMi message group R3_Security.

```
AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =SAP_PARAMETERS =R3_Security\

=SAP_PARAMETERS =login/failed_user_auto_unlock =I =EQ =0 =
```

"Default Settings for SAP_PARAMETERS" shows the default settings for the SAP_PARAMETERS alert type; if your SAP Systems are configured differently, SAPABAP_SecMon Monitoring Template will generate alerts. For example, in the default configuration, SAP user passwords must have 6 characters or more and contain at least 4 letters and 2 integers. If you configure your SAP instance to allow passwords which do not conform to the rules defined in SAPABAP_SecMon Monitoring Template configuration, for example: passwords which contain only five characters or do not contain any integers, SAPABAP_SecMon Monitoring Template sends a message to the message browser.

Note that SAPABAP_SecMon Monitoring Template does not read or check the SAP passwords themselves; SAPABAP_SecMon Monitoring Template compares the rules you define in the policy configuration for the length and form of SAP passwords with the rules defined in SAP itself for password creation. If the rules for password creation, form, or length in the SAPABAP_SecMon Monitoring Template differ in any way from the rules for passwords defined in SAP, the OMi MP for SAP sends a message to the message browser.

Default Settings for SAP_PARAMETERS

Parameter	Default Value
login/failed_user_auto_unlock	0 (0=disabled; 1=enabled)
login/fails_to_session_end	3
login/fails_to_user_lock	5

Parameter	Default Value
login/min_password_diff	3
login/min_password_lng	6
login/min_password_letters	4
login/min_password_digits	2
login/min_password_specials	0
login/no_automatic_user_sapstar	1
login/password_max_new_valid	10
login/password_max_reset_valid	2
login/password_expiration_time	30
login/disable_password_logon	0 (0=disabled; 1=enabled)
login/disable_multi_gui_login	0 (0=disabled; 1=enabled)
login/disable_cpic	0 (0=disabled; 1=enabled)
login/system_client	100
login/disable_multi_rfc_login	0 (0=disabled; 1=enabled)
rdisp/gui_auto_logout	1800

DEFAULT_USERS

Use the DEFAULT_USERS alert type to configure the SAPABAP_SecMon Monitoring Template, to check the passwords for standard SAP or Oracle database users and determine whether any well-known, default passwords are still in use. Standard SAP users include SAP*, DDIC, SAPCPIC, and EARLYWATCH. The DEFAULT_USERS alert type makes use of the SAP report RSUSR003.

The SAPABAP_SecMon Monitoring Template configuration provides default settings for the alert type DEFAULT_USERS. Note that the include (=I) and exclude (=E) parameter is ignored for the alert type DEFAULT_USERS.

Default Settings

```
AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =DEFAULT_USERS =R3_Security\

=DEFAULT_USERS
```

The default configuration for the DEFAULT_USERS alert type enables the SAP and Oracle user check, which means the monitor generates an alert if it finds a default password in use.

PRIVILEGED_USERS

Use the PRIVILEGED_USERS alert type to configure the SAPABAP_SecMon Monitoring Template, to check the authorizations granted to SAP users in the Systems you are monitoring with the OMi MP for SAP. The PRIVILEGED_USERS alert type compares the values defined in the SAPABAP_ SecMon Monitoring Template configuration with the contents of the SAP report RSUSR005, which lists information concerning the critical authorizations granted to SAP users. The SAPABAP_SecMon Monitoring Template generates an alert for any SAP user who has critical authorizations but is not defined in the SAPABAP_SecMon Monitoring Template configuration.

> **Note:** The SAP report RSUSR005 is SAP-client dependent; SAPABAP_SecMon Monitoring Template monitors only the users for the SAP clients defined in Monitoring Template Configuration.

The SAPABAP_SecMon Monitoring Template does not provide any default settings for the alert type PRIVILEGED_USERS; you have to decide which user authorizations you want to monitor in SAP and insert the strings that define them into the monitor template-configuration manually. You can use the report RSUSR005 to find the strings defining the authorizations you want to monitor, for example: “All rights for background jobs”, as illustrated in"Example Settings for PRIVILEGED_USERS". Note that you need to use a new line for each user authorization that you want to monitor.

After you have determined which user authorizations you want to monitor, set the include (=I) or exclude (=E) parameter to specify which SAP users you want to check for the use (or misuse) of the defined authorization "Example Settings for PRIVILEGED_USERS" shows how to exclude SAP user KWAME from the check to determine which users have permission to execute external operating-system commands.

Example Settings for PRIVILEGED_USERS

```
AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =PRIVILEGED_USERS =R3_Security\

=PRIVILEGED_USERS =All rights for background jobs =I =EQ =ALL =

AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =PRIVILEGED_USERS =R3_Security\

=PRIVILEGED_USERS =Execute external operating system commands\

=E =EQ =KWAME =
```

Note that the string you paste into the SAPABAP_SecMon Monitoring Template must match an existing string in SAP. If the string you paste into the SAPABAP_SecMon Monitoring Template configuration does not exist in SAP, for example because it contains a typo or is only a sub-set of a known SAP user-authorization string, no match occurs and the SAPABAP_SecMon Monitoring Template does not send any message to the message browser. For example: “Execute external operating” would not match, since it is only a part of the complete user-authorization string “Execute external operating system commands” defined in the SAPABAP_SecMon Monitoring Template.

Remote Monitoring using SAPABAP_SecMon Monitoring Template

To make use of the remote-monitoring feature provided by the SAPABAP_SecMon Monitoring Template, for example, to monitor security on an SAP server running on an operating system that is not supported by the OMi MP for SAP or on an SAP node where the Operations Agent is not installed, you need to enable the RemoteMonitoring keyword (by removing the leading hash symbol “#”) in the SAPABAP_SecMon Monitoring Template configuration.

You also need to specify the name of the local host, which you want to perform the monitoring and the name of the remote SAP server, whose security settings you want to monitor. Note that you must add a new line for each additional SAP server, which you want to monitor remotely.

Default `SAPABAP_SecMon` Monitoring Template Configuration

```
#-------------------------------------------------------------

# TraceLevel hostname Disable=0 only error messages=1

# info messages=2 debug messages=3

#

TraceLevel =ALL =0

#-------------------------------------------------------------------------

# TraceFile hostname filename TraceMode TracePeriod

# (a=append/w=create(default)) (in mins)

TraceFile =ALL =r3monsec.log =w =60

#-------------------------------------------------------------------------

# History hostname path

# Path
```

```
#

HistoryPathUnix =ALL =default

HistoryPathAIX =ALL =default

HistoryPathWinNT =ALL =default

#--------------------------------------------------------------------------

# Remote Local Remote

# Monitoring Host Host

RemoteMonitoring =sap1 =sdsap

#--------------------------------------------------------------------------

# AlertMonFun SAP SAP SAP SAP Alertmonitor Enable =1/

\

# Hostname System Number Client Disable=0

\

#

# OpC OpC OpC \

# Severity Object MsgGroup \

#

# Alerttype RFC Parameter

# =Parameter =Sign =Opt =Low =High

# [=Param =Sign =Opt =Low =High] ...

AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =SAP_PARAMETERS =R3_Security\

=SAP_PARAMETERS =login/failed_user_auto_unlock =I =EQ =0 =

AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =DEFAULT_USERS =R3_Security\

=DEFAULT_USERS = = = = =

AlertMonFun =ALL =ALL =ALL =ALL =SECURITY =1\

=CRITICAL =PRIVILEGED_USERS =R3_Security\
```

```
=PRIVILEGED_USERS =All rights for background jobs =I =EQ =ALL =
```

SAPABAP_SplMon

The SAPABAP_SplMon Monitoring Template monitors the following entries in the print requests:

- Spooler entries: The number of spool requests which would generate an alert.
- Error generating spool requests: The number of error-generating spool requests that would generate an alert
- Erroneous spooler entries: A specified printer has received erroneous spool requests.

The SAPABAP_SplMon Monitoring Template references output tasks in SAP NetWeaver transaction `SP01` and report sources in SAP NetWeaver transaction `SE38`.

Monitor Type

The SAPABAP_SplMon Monitoring Template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The SAPABAP_SplMon Monitoring Template has the following alert types:

- "SPOOL_ENTRIES_RANGE"

  This defines the number of spool requests which, if exceeded, would cause an alert.

- "SPOOL_ERROR_RANGE"

  This defines the number of error-generating spool requests which, if exceeded, would cause an alert.

- "PRINT_ERROR_EXISTS"

  This specifies the name(s) of printers for which an alert would be generated if a spool error exists.

File Locations

The SAPABAP_SplMon monitor uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for the spooler monitor
r3monspl.cfg	Configuration file for the spooler monitor.
r3monspl.log	Trace file for storing trace data.

The SAPABAP_SplMon Monitoring Template does not write history information to a specific history file.

Environment Variables

The SAPABAP_SplMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_SplMon Monitoring Template uses the command line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_SplMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring Alert Types

You can configure SAPABAP_SplMon Monitoring Template, the spooler monitor, for each of the alert types and then define exceptions for different monitoring conditions. For more detailed information, see the alert-type tables which give the parameters and configuration for each alert type.

SPOOL_ENTRIES_RANGE

The SPOOL_ENTRIES_RANGE alert type defines the number of spool requests which, if exceeded, would generate an alert. Use the SPOOL_ENTRIES_RANGE alert type to configure SAPABAP_SplMon Monitoring Template to generate an alert if the number of spool entries exceeds the range specified. The following table lists the parameters that you can use to configure the SPOOL_ENTRIES_RANGE alert type and shows the value assigned to the parameters by default:

The configuration of the RANGE parameter is mandatory.

Parameter Name	Description	Query Conditions	Default Value
RANGE	The number of spool entries outside of which an alert will be generated. Note that, despite its name, you do not need to specify this parameter as a select-option range.	= Sign: I, E	I
		= Opt: EQ, GT, GE, LE, LT, BT	GT
		= Low: *	50
		= High:	

*Specify this parameter as a number. Otherwise the monitor ends with a dump.

In the Default SPOOL_ENTRIES_RANGE Configuration, an event generating an alert occurs if there are more than 50 spooler entries.

The Default SPOOL_ENTRIES_RANGE Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =SPOOLER =1\

=CRITICAL =Spool =R3_Spooler \

=SPOOL_ENTRIES_RANGE =RANGE =I =GT =50 =
```

SPOOL_ERROR_RANGE

The SPOOL_ERROR_RANGE alert type defines the number of erroneous spool requests which, if exceeded, would generate an alert. Use the SPOOL_ERROR_RANGE alert type to configure SAPABAP_SplMon Monitoring Template to generate an alert if the number of erroneous spool entries exceeds the range specified. The following table lists the parameters that you can use to configure the SPOOL_ERROR_RANGE alert type and shows the value assigned to the parameters by default:

> **Note:** The configuration of the RANGE parameter is mandatory.

Parameter Name	Description	Query Conditions	Default Value
RANGE	The number of erroneous spool requests outside of which an alert will be generated. Note that, despite its name, you do not need to specify this parameter as a select option range.	= Sign: I, E	I
		= Opt: EQ, GT, GE,LE, LT, BT	GT
		= Low: *	50
		= High:	

*Specify this parameter as a number; otherwise the monitor ends with a dump.

In the Default SPOOL_ERROR_RANGE Configuration, an event generating an alert occurs if there are more than 50 erroneous spool requests.

The Default SPOOL_ERROR_RANGE Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =SPOOLER =1\

=CRITICAL =Spool =R3_Spooler \

=SPOOL_ERROR_RANGE =RANGE =I =GT =50 =
```

PRINT_ERROR_EXISTS

The PRINT_ERROR_EXISTS alert type defines the printers to monitor for spool errors. Use the PRINT_ERROR_EXISTS alert type to configure SAPABAP_SplMon Monitoring Template to generate an alert if a spool error exists for the specified printer. The following table lists the parameters that you can use to configure the PRINT_ERROR_EXISTS alert type and shows the value assigned to the parameters by default.

The SAPABAP_SplMon Monitoring Template generates an alert if a spool error exists for a specified printer. The configuration of the PRINTER parameters is mandatory.

Parameter Name	Description	Query Conditions	Default Value
PRINTER	The printer(s) which should be checked for spool entries of state error.	= Sign: I, E	I
		= Opt:	CP
		= Low:	*
		= High:	

In the Default PRINT_ERROR_EXISTS Configuration, SAPABAP_SplMon Monitoring Template generates an alert if any printer has a spool entry-state error.

The Default PRINT_ERROR_EXISTS Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =SPOOLER =1\

=WARNING =Spool =R3_Spooler \

=PRINT_ERROR_EXISTS =PRINTER =I =CP =* =
```

SAPABAP_StatRecMon

The SAPABAP_StatRecMon Monitoring Template reads the statistical records and returns the average response time per transaction.

The SAPABAP_StatRecMon Monitoring Template uses the alert types RESPONSE_TIME and the parameter TRANSACTION to restrict the data selected. The transactions monitored are specified in the parameter TRANSACTION. If this parameter is not specified, the average response time is reported for each transaction in the local statistics file for the specified time frame.

Type

The SAPABAP_StatRecMon Monitoring Template is time-frame based. Each run gathers only one value set. To collect a set of values, the monitor must be scheduled on a regular basis. Since various monitors have different requirements, you have to specify the interval for each monitor individually. This monitor uses the time frame between the last start and the current start times and considers only those transactions which complete within the specified time-frame.

The SAPABAP_StatRecMon Monitoring Template collects application-server-specific metrics; it should run on each application server whose performance you want to monitor.

Frequency

It is recommended that you configure the SAPABAP_StatRecMon Monitoring Template to run once a minute.

Data Source

The SAPABAP_StatRecMon Monitoring Template uses the following SAP transaction as its data source:

- For SAP 7.0 and higher: STAD

Metrics

The following table shows the values in the performance table returned by the SAPABAP_StatRecMon Monitoring Template.

Order	Metric Name	Description
1	SAP_TCODE	Transaction code associated with the measured transaction. This metric is only visible with the HP Performance Manager.
2	SAP_RESPONSE_TIME	Time SAP takes to respond.
3	SAP_NET_TIME	Net Time.
4	SAP_REC_COUNT	The number of times the measured transaction occurs.

SAPABAP_StatusMon

The SAPABAP_StatusMon Monitoring Template enables monitoring of the SAP ABAP Application Server's Availability Status.

The SAPABAP_StatusMon Monitoring Template is of type time frame. It runs every two minutes and compares the current value with the previous value stored in the history file and generates a message if it finds a difference, which it needs to report.

> **Note:** The lack of response from SAP could be due to a problem which does not mean that the System is down. For example, SAP would not respond if all available dialog work processes were allocated. For more information about how SAPABAP_StatusMon Monitoring Template interprets the responses it receives from SAP, see "Establishing the SAP Status".

File Locations

Th following table lists the files used by the SAPABAP_StatusMon Monitoring Template.

File	Description
r3status (.exe)	Executable for the SAPABAP_StatusMon Monitoring Template
r3status.log	The SAPABAP_StatusMon Monitoring Template creates a log/trace file after each run of the monitor. The trace file is stored in the standard OMi MP for SAP Agent log directory.
r3itosap.cfg	The SAPABAP_StatusMon Monitoring Template uses the initial user name and password in the `r3itosap.cfg` to determine which SAP instances it is supposed to monitor.
r3status.cfg	The SAPABAP_StatusMon Monitoring Template uses information in template configuration to determine history paths, trace levels, and which SAP instances it is supposed to monitor on remote SAP servers.
r3status.his	History file for storing data after each run of the SAPABAP_StatusMon Monitoring Template. The SAPABAP_StatusMon Monitoring Template uses information in this file to determine whether a change of status has occurred. For more information, see "History File".

Environment Variables

The following table lists the environment variables used by the SAPABAP_StatusMon Monitoring Template:

Environment Variable	Description
SAPOPC_RFC_TIMEOUT	Set time out value for RFC connections - default is 20 seconds.
SAPOPC_HISTORYPATH	Path to the `r3status.his` history file.
SAPOPC_R3STATUS_CONFIGFILE	Name of the configuration file, which the

Environment Variable	Description
	SAPABAP_StatusMon Monitoring Template uses.
SAPOPC_R3ITOSAP_CONFIGFILE	Name of the general configuration file, which contains information used by the OMi MP for SAP.
SAPOPC_TRACEPATH	Path to the SAPABAP_StatusMon Monitoring Template trace file.

History File

The first time the SAPABAP_StatusMon Monitoring Template runs, it writes its findings to the history file, `r3status.his`. The next time the SAPABAP_StatusMon Monitoring Template runs, it uses the information in the `r3status.his` file to determine whether a change of status has occurred since the last time the monitor ran and, as a consequence, which if any message it has to send to the OMi.

The SAPABAP_StatusMon Monitoring Template updates the entries in the `r3status.his` file at the end of each time it runs, with the current timestamp and the current status of each monitored SAP instance.

The following excerpt from the `r3status.his` file shows the format and contents of the `r3status.his` file.

Excerpt from the r3status.his file

```
021028-11:18:29

#-------------------------------------------------------------

021028-11:18:29 #Keyword SAP SAP SAP State

021028-11:18:29 # System Number Instance

021028-11:18:29 #

021028-11:18:29 ConfiguredInstance =DEV =00 =DVEBMGS00 =UP

021028-11:18:29 ConfiguredInstance =PKR =99 =DVEBMGS99 =DOWN

-------------------------------------------------------------------------------

---
```

Configuring SAPABAP_StatusMon Monitoring Template

You can configure the SAPABAP_StatusMon Monitoring Template using the keywords listed below to change the configuration from default settings to meet the requirements of your particular environment. Where appropriate, possible values for a given keyword are also specified. The default SAPABAP_ StatusMon Monitoring Template configuration shows a complete Monitoring Template configuration, which monitors the status of both local and remote SAP Systems.

The following standard keywords work as expected in the context of the SAPABAP_StatusMon Monitoring Template:

- TraceLevel
- TraceFile
- HistoryPath [Unix | AIX | WinNT]

The following keywords require special attention when used in the context of the OMi MP for SAPSAPABAP_StatusMon Monitoring Template:

- **EnableDPQueueCheck**

  SAPABAP_StatusMon Monitoring Template requires a dialog work process to log on to SAP and determine the System's status. Enable the EnableDPQueueCheck keyword (=1) if the SAP System whose status you are monitoring is experiencing performance problems and you want SAPABAP_StatusMon Monitoring Template to check the size and status of the ABAP dispatcher before starting its monitor run. If there are no, or too few, dialog work processes available, SAPABAP_StatusMon Monitoring Template sends a message to the message browser indicating that it did not start due to the violation of a threshold defined for dialog processes. The command disables the monitor run only for the SIDs where the threshold violation for the dialog work processes occurred.

  If you use the EnableDPQueueCheck keyword in the SAPABAP_StatusMon Monitoring Template, remember to configure the keywords DPQueueCheck and DisableMonitoringWithSeverity in the SAPABAP_DispMon Monitoring Template configuration, too. For more information about monitoring the SAPABAP_DispMon Monitoring Template, see "SAPABAP_DispMon" Monitoring Template.

  The default run interval for SAPABAP_StatusMon Monitoring Template is two minutes. If your SAP landscape consists of large numbers of SAP instances running on multiple hosts, network congestion or a slow response from SAP might prevent EnableDPQueue from checking the status of the ABAP dispatchers on all the configured SAP instances before SAPABAP_StatusMon

Monitoring Template starts its next run. In the unlikely event that this happens, the old instance of SAPABAP_StatusMon Monitoring Template aborts without reporting the status of any dispatchers that it has not yet checked. To avoid this problem re-occurring, increase the run interval for SAPABAP_StatusMon Monitoring Template.

- **RemoteMonitoring**

  SAPABAP_StatusMon Monitoring Template cannot check the status of the ABAP dispatcher on a SAP System, which the OMi MP for SAP is monitoring remotely.

Establishing the SAP Status

When the SAPABAP_StatusMon Monitoring Template checks the availability of an SAP System, it reports the status as: Up, Down, or Connection time-out. Although the meaning of “Up” and “Down” is clear, the status of the connection time-out status requires some explanation. The time-out status could occur if the SAP System is hanging, in which case the problem could be due to an RFC time out, which itself needs investigating and is a good example to show how difficult it can be sometimes to establish the exact state of the SAP System the OMi MP for SAP is monitoring.

The SAPABAP_StatusMon Monitoring Template, considers an SAP instance as “not available” if the SAP instance does not respond within 60 seconds. However, the lack of response from SAP could be due to a problem which does not mean that the System is down, for example: all available dialog work processes are allocated, or all available SAP gateway connections are busy. The OMi MP for SAP's, SAPABAP_StatusMon Monitoring Template, reports the status of the SAP System it is monitoring according to the following rules:

- **Available:**

  SAPABAP_StatusMon Monitoring Template reports an SAP System as available if it can log on to the SAP instance and, in addition, start and receive a response from the SAP function module RFC_SYSTEM_INFO within 60 seconds.

- **Not Available:**

  SAPABAP_StatusMon Monitoring Template reports an SAP System as not available if the SAP instance does not respond within 60 seconds or the function module RFC_SYSTEM_INFO could not start, for example: due to the fact that the instance is down.

Monitoring SAP Remotely

To make use of the remote-monitoring feature provided by the OMi MP for SAP, for example, to monitor a SAP server running on an operating system that is not supported by the OMi MP for SAP, you must enable the RemoteMonitoring keyword (by removing the leading hash symbol "#") in the SAPABAP_ StatusMon Monitoring Template. Next, on the same line, define the name of the local host, which you want to use for monitoring the remote SAP server. Finally, you have to define the name of the remote SAP server, which you want to monitor. You must define a new line to the Default SAPABAP_ StatusMon Monitoring Template configuration for each additional SAP server, which you want to monitor remotely.

> **Note:** You can associate multiple remote SAP servers with one single local host or you can associate single remote hosts with individual different local hosts. Default SAPABAP_StatusMon Monitoring Template configuration shows a mixed approach where one local host "sap1" is used to monitor two remote hosts; "sdsap" and "sapwolf ". A third local host "sap2" remotely monitors the remote host "triosap".

For more information about the contents of the SAPABAP_StatusMon Monitoring Template's configuration including the keywords and parameters you use to define local and remote server names, see the entry concerning "Remote Monitoring" in "Configuring SAPABAP_StatusMon Monitoring Template".

Default SAPABAP_StatusMon Monitoring Template Configuration

```
#--------------------------------------------------------------------

# TraceLevel hostname Disable=0 only error messages=1

# info messages=2 debug messages=3

#

TraceLevel =ALL =0

#--------------------------------------------------------------------

# TraceFile hostname filename TraceMode TracePeriod

# (a=append/w=create(default)) (in mins)

TraceFile =ALL =r3status.log =w =60

#--------------------------------------------------------------------

# History hostname path
```

```
# Path
#
HistoryPathUniX =ALL =default
HistoryPathAIX =ALL =default
HistoryPathWinN =ALL =default
#-------------------------------------------------------------
# Check the ABAP dispatcher before a connection to SAP is
# opened. If the dialog queue is too full or not enough
# free work processes are available, monitoring is disabled.
#
# This feature should only be enabled in special cases. For
# regular dispatcher monitoring, use the r3mondisp.
#
# EnableDPQueueCheck hostname SAP SAP Enable=1/
System Number Disable=0
EnableDPQueueCheck =ALL =ALL =ALL =0
#-------------------------------------------------------------
# Remote Local Remote
# Monitoring Host Host
RemoteMonitoring =sap1 =sdsap
RemoteMonitoring =sap1 =sapwolf
RemoteMonitoring =sap2 =triosap
#-------------------------------------------------------------
```

SAPABAP_SysChgOptMon

The SAPABAP_SysChgOptMon Monitoring Template enables monitoring of the SAP ABAP System Change options based on the global edit Status flag, namespaces, and software components.

SAPABAP_SysChgOptMon Monitoring Template double-checks the SAP system change options using the SAP NetWeaver transaction `SE06` as a reference.

Monitor Type

The SAPABAP_SysChgOptMon Monitoring Template is of type snapshot and does not make use of alert types or parameters. One monitor run gathers only one value set.

Alert Types

The SAPABAP_SysChgOptMon Monitoring Template has only one alert type:

CHANGE_OPT

Monitors and double-checks the SAP System change options and generates an alert if the option matches the configuration.

File Locations

The SAPABAP_SysChgOptMon Monitoring Template uses the files listed in the following table:

File	Description
r3moncol (.exe)	Collector executable for the system change option monitor.
r3monchg.cfg	Configuration file for system change option monitor.
r3monchg.log	Trace file for storing trace data.

The SAPABAP_SysChgOptMon Monitoring Template does not write history information to a specific history file.

Environment Variables

The SAPABAP_SysChgOptMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_SysChgOptMon Monitoring Template uses the command line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_SysChgOptMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring SAPABAP_SysChgOptMon Monitoring Template Alert Types

The general rules mentioned in the following section concern the use of exclude and include parameter values. The rules are particularly important for SAPABAP_SysChgOptMon Monitoring Template alert types.

Parameter Values

This section describes how the OMi MP for SAPinterprets *include* and *exclude* parameter values for an alert type entry. The OMi MP for SAP compares values in *different* parameters using 'and'; the OMi MP for SAP compares values in the same parameter as follows:

- **Include:** use 'or' to compare the parameters
- **Exclude:** use 'and' to compare the parameters

Note that the OMi MP for SAP evaluates *include* values before *exclude* values, as shown in the following table:

Select Options	Alert Type: CHANGE_OPT (SAP 4.6x) Example Configuration of Select Options	Comparison
1	=SYSTEM_CHANGE_OPTION =1 =WARNING =SystemChange =R3_Security = NSP_EDTFLAG =I = CP= /0* =	OR
2	=SYSTEM_CHANGE_OPTION =1 =WARNING =SystemChange = =R3_Security = NSP_EDTFLAG =I =EQ =/SAPQUERY/ =	OR
3	=SYSTEM_CHANGE_OPTION =1 =WARNING =SystemChange =R3_Security = NSP_EDTFLAG =E =EQ =LOCAL =	AND

CHANGE_OPT

The CHANGE_OPT alert type monitors and double-checks the SAP system change options and generates an alert if the settings for the flag parameters allow editing. The configuration of all parameters is mandatory. Multiple parameter entries on a single line are not allowed; use a new line to specify each one of any multiple configurations. For more information about the meaning of the query conditions in the Monitoring Template configuration, see "Parameters and Delimiters ". The following

table lists the parameters that you can use to configure the CHANGE_OPT alert type and shows the value assigned to the parameters by default:

Parameter Name	Description	Query Conditions	Default Value
EDTFLAG	Flag indicating if an object can be edited.	= Sign: I	I
		= Opt: EQ	EQ
		= Low: ON, OFF, PATCH (PATCH=set to patch system)	PATCH
		= High:	
NSP_EDTFLAG	Flag indicating which specified name space(s) to set to ON.	= Sign: I	I
		= Opt: EQ, CP	CP
		= Low (See list of name space change options for SAP 4.6. X in Table 30.)	*
		= High:	
SWC_EDTFLAG	Flag indicating which specified software components to set to ON.	= Sign: I	I
		= Opt: EQ, CP	CP
		= Low: <specified software component> (See list of name space change options for SAP 4.6. X in Table 30.)	*
		= High:	

In the Default CHANGE_OPT Configuration, an event generating an alert occurs when the global system change is OFF or the specified name space is Local Objects (/0LOCAL/), or the specified software component is Local Developments (no automatic transport).

The Default CHANGE_OPT Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1\

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =NSP_EDTFLAG =I =EQ =/0LOCAL/ =

AlertMonFun =ALL =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1\

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =SWC_EDTFLAG =I =EQ = LOCAL =

AlertMonFun =ALL =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1\

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =EDTFLAG =I =EQ =OFF =
```

The Customized CHANGE_OPT Configuration

```
AlertMonFun =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1\

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =NSP_EDTFLAG =I =EQ =/SAPQUERY/ =

AlertMonFun =ALL =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1\

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =SWC_EDTFLAG =I =EQ = SAP_HR =

AlertMonFun =ALL =ALL =ALL =ALL =SYSTEM_CHANGE_OPTION =1 \

=WARNING =SystemChange =R3_Security \

=CHANGE_OPT =EDTFLAG =I =EQ =OFF =
```

In the Customized CHANGE_OPT Configuration, an event generating an alert occurs when the Global Change option is OFF or the system space change option **ABAP query /SAP** is ON, or the software component change option for Human Resources is ON.

Software Components Change Options

Technical ID	Description
HOME	Customer developments
LOCAL	Local developments (no automatic transport)
SAP_ABA	Cross-Application Component
SAP_APPL	Logistics and Accounting
SAP_BASIS	SAP Basis Component
SAP_HR	Human Resources

Name System Change Options for SAP 6.x

Technical ID	Description
/0CUST/	Customer name range
/0SAP/	General SAP name range
/1BCABA/	ABAP & GUI tools
/1BCDWB/	Development Workbench
/1BCDWBEN/	Enqueue function groups
/1COPA/	Generated objects in CO-PA
/1ISRWP/	IS-R merchandise and assortment controlling
/1ISU/	Generation namespace for CIC (Customer Interaction Center)
/1PAPA/	Personnel administration
/1PAPAXX/	Personnel administration - general
/1PSIS/	Project Information System - Logical database PSJ
/1PYXXFO/	PY-XX Form tool: Generated objects
/1SAP1/	General SAP generation namespace
/1SDBF12L/	Generation of pricing report
/BI0/	Business Information Warehouse: SAP namespace
/BIC/	Business Information Warehouse: Customer namespace
/SAPQUERY/	ABAP query /SAP
/SAPRRR/	Ready-to-Run SAP
/SAPSMOSS/	Interface: SAP messages to the SAP Online Service System
/SAPTRAIN/	SAP training

SAPABAP_TraceMon

The SAPABAP_TraceMon Monitoring Template enables monitoring of all the SAP Trace and Log files for "ERROR". SAPABAP_TraceMon Monitoring Template monitors only what has occurred since its previous run. Any error within a trace file generates only a single alert. The file monitor scans the following directories, where *<SID>* refers to the SAP system ID and *<InstanceNumber>* refers to the SAP instance number of the monitored SAP System:

- **UNIX/Linux:** /usr/sap/<SID>/<InstanceNumber>/work/
- **Windows:** <drive:>\usr\sap\<SID>\<InstanceNumber>\work

Messages generated by this monitor include an operator-initiated action, which calls the vi editor. vi displays a list of all trace files and log files and prompts you to select a file from the list and display its contents.

File Locations

The SAPABAP_TraceMon Monitoring Template includes files listed in the following table:

File	Description
r3mondev (.exe)	Executable for the file monitor.
r3mondev.cfg	Configuration file for monitored files
r3mondev.his	History file that stores data for each monitor run

Environment Variables

The SAPABAP_TraceMon Monitoring Template uses environment variables listed in the following table:

Environment Variable	Description
SAPOPC_DRIVE	The Windows drive where the HPOM agent is running, for example, E:\usr\...
SAPOPC_HISTORYPATH	Path to the r3mondev history file
SAPOPC_R3MONDEV_CONFIGFILE	Name of the r3mondev configuration file
SAPOPC_SAPDIR	The Windows drive where SAP NetWeaver is running, for example: E:\usr\sap
SAPOPC_TRACEPATH	Path to the r3mondev trace file

Monitoring Conditions

This section of the SAPABAP_TraceMon Monitoring Template enables you to specify the device monitoring details for the OMi MP for SAP.

For more information about the entries in the SAPABAP_TraceMon Monitoring Template including keywords and their possible values along with a description of each editable parameter, see the following excerpt:

```
#-------------------------------------------------------------------------
-
# TraceLevel hostname only error messages=1 info messages=2 debug
messages=3
# Disable=0
TraceLevel =ALL =0
#-------------------------------------------------------------------------
-
# TraceFile hostname filename TraceMode TracePeriod
# (a=append/w=create(default)) (in mins)
TraceFile =ALL =r3moncts.log =w =60
#-------------------------------------------------------------------------
# History hostname path
# Path
#
HistoryPathUnix =ALL =default
HistoryPathAIX =ALL =default
HistoryPathWinNT =ALL =default
#-------------------------------------------------------------
# AlertDevMon SAP SAP Enable =1 Filemask Severity Opc OpC
# Sys Number Disable=0 Object MsgGro
up
#AlertDevMon =ALL =ALL =1 =dev_* =WARNING =r3mondev =R3_Trace
```

```
#AlertDevMon =ALL =ALL =1 =std* =CRITICAL =r3mondev =R3_Trace

#Dispatcher trace file

AlertDevMon =ALL =ALL =1 =dev_disp =WARNING =r3mondev =R3_Trace

#Workprocess trace file for workprocess with number 0

AlertDevMon =ALL =ALL =1 =dev_w0 =WARNING =r3mondev =R3_Trace

#message server trace file

AlertDevMon =ALL =ALL =1 =dev_ms =WARNING =r3mondev =R3_Trace

#screen processor trace file

AlertDevMon =ALL =ALL =1 =dev_dy0 =WARNING =r3mondev =R3_Trace

#tp process trace file

AlertDevMon =ALL =ALL =1 =dev_tp =WARNING =r3mondev =R3_Trace

------------------------------------------------------------------------

---
```

The monitoring conditions section of the SAPABAP_TraceMon Monitoring Template includes the following default settings:

```
# AlertDevMon SAP SAP Enable =1 Filemask Severity OpcObject OpCMsgGroup

# System Number Disable=0

#AlertDevMon =ALL =ALL =1 =dev_* =WARNING =r3mondev =R3_Trace

#AlertDevMon =ALL =ALL =1 =std* =MAJOR =r3mondev =R3_Trace
```

Configuring SAPABAP_TraceMon Monitoring Template

You can edit the SAPABAP_TraceMon Monitoring Template configuration in the following ways:

- **Disable messages**

  If you do not want to receive any messages relating to `dev_*` files for any of the SAP systems you are monitoring using the OMi MP for SAP, change the first line of the SAPABAP_TraceMon Monitoring Template configuration file as follows:

  ```
  AlertDevMon =ALL =ALL =0 =dev_* =WARNING =r3mondev =R3_Trace
  ```

- **Change a message's severity level**

If you want to reduce the severity of all messages relating to `std*` files from critical to warning, change the second line of the SAPABAP_TraceMon Monitoring Template configuration file as follows:

```
AlertDevMon =ALL =ALL =1 =std* =WARNING =r3mondev =R3_Trace
```

- **Define exceptions to general rules**

  If you want to increase the severity of messages relating to `dev_*` files on SAP system LP2 from warning to critical, leave the default settings as they are and add the following line:

  ```
  AlertDevMon =LP2 =ALL =1 =dev_* =CRITICAL =r3mondev =R3_Trace
  ```

> **Note:** Wildcards are only allowed at the end of the string. Only SAP trace files located in the work directory are relevant and the names of these files must begin with either `dev` or `std`.

SAPABAP_TransMon

The SAPABAP_TransMon Monitoring template enables monitoring of the successfully imported/exported SAP ABAP transports, failed imports/exports, availability of confirmed/unconfirmed repairs and connections/tptests to the configured systems.

The SAPABAP_TransMon Monitoring template is application-server independent and is used to check the following parts of the transport system:

- Successful or failed imports and exports for the monitored system
- The presence of confirmed and unconfirmed repairs in the monitored system
- Connections that use a connection test (PING) to the configured systems
- TP-Tests of the configured systems

The SAPABAP_TransMon Monitoring template references transport routes in SAP NetWeaver transactions **`STMS`**and **`SE01`**.

Monitor Type

The SAPABAP_TransMon Monitoring template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The transport alert monitor has the following alert types, which use a mixture of snapshot and time-frame report types:

- **TRANS**

  Defines alert conditions for successful and failed transport exports and imports.

- **REPAIR**

  Defines alert conditions for confirmed and unconfirmed repairs.

- **RFCONNECT**

  Defines alert conditions for the RFC connections between the systems.

- **TPTEST**

  Defines alert conditions concerning the TP interface with the database. It includes a connection test (PING), TP call to the connected database, check of the TP interface (version, transport directory, TPPARAM path, file check, and TPLOG check).

File Locations

The SAPABAP_TransMon Monitoring template uses the files listed in the following table:

File	Description
r3moncol (.exe)	Collector executable for the transport monitor
r3montra.cfg	Configuration file for the transport monitor.
r3montra.log	Trace file for storing trace data.

The SAPABAP_TransMon Monitoring Template does not write history information to a specific history file.

Environment Variables

The SAPABAP_TransMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_TransMon Monitoring Template uses the command-line parameters described in "Command Line Parameters".

Remote Monitoring

For more information about configuring the SAPABAP_TransMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring Transport-Monitor Alert Types

You must configure the parameter ALERT_THRESHOLD for all alert types for SAPABAP_TransMon Monitoring Template. All other parameters are optional. Note the general rules below on exclude and include parameters for SAPABAP_TransMon Monitoring Template.

Parameter Values

This section describes how the OMi MP for SAP interprets *include* and *exclude* parameter values for an alert type entry. The OMi MP for SAP compares values in different parameters using 'and;' OMi MP for SAP compares values in the same parameter as follows.

- **Include:** Use 'or' to compare the parameters
- **Exclude:** Use 'and' to compare the parameters

The OMi MP for SAP evaluates *include* values before *exclude* values.

TRANS

TRANS is a time-frame based alert type for SAPABAP_TransMon Monitoring Template.The SAPABAP_TransMon Monitoring Template generates an alert if the number of failed or successful transport imports and exports exceeds a defined threshold. Note that the parameter USERNAME is mandatory for the TRANS alert type.

The following table lists the parameters that you can use to configure the TRANS alert type and shows the value assigned to the parameters by default.

Parameter Name	Description	Query Conditions	Default Value
ALERT_ THRESHOLD	The return code of the transport state above which an alert occurs. For example, 4 (warning).	= Sign: I, E	I
		= Opt: GT, GE, LT, LE	GT
		= Low: [1]	4
		= High:	

Parameter Name	Description	Query Conditions	Default Value
E_SUCCESS	Filtering option to include all *successfully* exported transports.	= Sign: I, E	I
		= Opt: EQ	EQ
		= Low: [2]	X
		= High:	
E_FAILURE	Filtering option to include all failed *exported* transports.	= Sign: I, E	I
		= Opt: EQ	EQ
		= Low: [2]	X
		= High:	
I_SUCCESS	Filtering option to include all *successfully* imported transports.	= Sign: I, E	I
		= Opt: EQ	EQ
		= Low: b	X
		= High:	
I_FAILURE	Filtering option to include all *failed* imported transports.	= Sign: I, E	I
		= Opt: EQ	EQ
		= Low [2]	X
		= High:	
USERNAME	The login name of the SAP NetWeaver user [3]. This parameter is mandatory.	= Sign I, E	I
		= Opt: EQ,CP	EQ
		= Low: <username>	ddic [4]
		= High:	

1. Specify as a number, otherwise the monitor ends with a dump.
2. Any entry other than the default is treated as space.
3. Since requests/tasks are user dependent, you can use it to restrict data.
4. SAP user name for database-administration tasks.

In **The Default TRANS Configuration**, an event generating alert occurs if the threshold for imported or exported transports is greater than four (4).

> **Note:** The number “4” defined in the threshold for the parameter ALERT_THRESHOLD does not refer to the total number of imports. It refers to the SAP return code associated with the import. In this example, transport imports with return codes of 4 (warning) and above (GT=4) would generate an alert. For more information about import return codes, refer to the SAP product documentation.

The Default TRANS Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =Trans =R3_Transport\

=TRANS =I_FAILURE =I =EQ =X =\

=USERNAME =I =EQ =ITOUSER =\

=ALERT_THRESHOLD =I =GT =4 =

AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =Trans =R3_Transport\

=TRANS =I_SUCCESS =I =EQ =X =\

=USERNAME =I =EQ =ITOUSER =\

=ALERT_THRESHOLD =I =GE =4 =

AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =Trans =R3_Transport\

=TRANS =E_FAILURE =I =EQ =X =\

=USERNAME =I =EQ =ITOUSER =\

=ALERT_THRESHOLD =I =GT =4

AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =Trans =R3_Transport\

=TRANS =E_SUCCESS =I =EQ =X =\

=USERNAME =I =EQ =ITOUSER =\

=ALERT_THRESHOLD = I = GT = 4 =
```

REPAIR

REPAIR is a time-frame based alert type for SAPABAP_TransMon Monitoring template. The SAPABAP_TransMon Monitoring template generates an alert if the number of confirmed or unconfirmed repairs exceeds a specified threshold.

The following table lists the parameters that you can use to configure the REPAIR alert type and shows the value assigned to the parameters by default. Note that the parameter ALERT_THRESHOLD is mandatory.

Parameter Name	Description	Query Conditions	Default Value
R_CONFIRM	Filtering option to include all confirmed repairs.	= Sign: I, E	I
		= Opt: EQ	EQ
		= Low:[1]	X
		= High:	
R_UNCONFIR	Filtering option to include all unconfirmed repairs.	= Sign: I, E	I
		= Opt:	EQ
		= Low: [1]	X
		= High:	
USERNAME	The login name of the SAP NetWeaver user [2]. This parameter is mandatory.	= Sign I, E	I
		= Opt: EQ,CP	EQ
		= Low: <username>	ddic [3]
		= High:	
ALERT_THRESHOLD	The number of the allowed repair state above which an alert occurs.	= Sign I, E	I
		= Opt: GT, GE, LT, LE	GT
		= Low: [4]	4
		= High:	

1. Any entry other than the default is treated as space.
2. Since requests/tasks are user dependent, you can use it to restrict the data.
3. SAP user name for database-administration tasks.
4. Specify the parameter as a number or the monitor ends with a dump.

In the Default REPAIR Configuration, an event generating an alert occurs if the alert threshold of four (=GT =4) R_CONFIRM or R_UNCONFIR errors is exceeded for the specified target System.

The Default REPAIR Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1 \

=WARNING =Repair =R3_Transport \

=REPAIR =R_CONFIRM =I =EQ =X = \

=ALERT_THRESHOLD =I =GT =4 =

AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1 \

=WARNING =Repair =R3_Transport \

=REPAIR =R_UNCONFIR =I =EQ =X = \

=ALERT_THRESHOLD =I =GT =4 =

AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1 \

=WARNING =Repair =R3_Transport \

=REPAIR =USERNAME =I =CP =* =\

=ALERT_THRESHOLD =I =GT =4 = =
```

RFCONNECT

RFCONNECT is a snapshot alert type for SAPABAP_TransMon Monitoring Template. Snapshot alert types take a picture of the system at the moment the monitor runs. SAPABAP_TransMon Monitoring template generates an alert if the number of RFC-connect errors to the target system exceeds the specified alert threshold.

The following table lists the parameters that you can use to configure the RFCONNECT alert type and shows the value assigned to the parameters by default. Note that the parameter ALERT_ THRESHOLD is mandatory. All other parameters are optional.

Parameter Name	Description	Query Conditions	Default Value
ALERT_ THRESHOLD	Number of reconnect errors above which an alert occurs.	= Sign I, E	I
		= Opt: GT, GE, LT, LE	GT
		= Low: #	4
		= High:	
CHECKSYSTEM	System ID of the system you are monitoring.	= Sign: I, E	I
		= Opt: EQ, CP	EQ
		= Low: <SID>	'*'
		= High:	

Specify this parameter as a number; otherwise the monitor ends with a dump.

In the Default RFCONNECT Configuration, an event generating an alert occurs if the alert threshold of four RFC-connect errors is exceeded for the specified target system.

The Default RFCONNECT Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =RfcConnect =R3_Transport\

=RFCCONNECT =CHECKSYSTEM =I =CP =* =\

=ALERT_THRESHOLD =I =GT =4 =
```

TPTEST

TPTEST is a snapshot alert type for SAPABAP_TransMon Monitoring template. Snapshot alert types take a picture of the System at the moment the monitor runs. SAPABAP_TransMon Monitoring template generates an alert if the number of TPTEST errors to the target system exceeds a defined threshold.

The following table lists the parameters that you can use to configure the TPTEST alert type and shows the value assigned to the parameters by default. Note that the parameter ALERT_THRESHOLD is mandatory. All other parameters are optional.

Parameter Name	Description	Query Conditions	Default Value
ALERT_ THRESHOLD	Number of TPTEST errors above which an alert occurs.	= Sign I, E	I
		= Opt: GT, GE, LT, LE	GT
		= Low: *	4
		= High:	
CHECKSYSTEM	ID of the system which you are testing or monitoring.	= Sign: I, E	I
		= Opt: EQ, CP	EQ
		= Low: <SID>	''
		= High:	

*Specify this parameter as a number; otherwise the monitor ends with a dump.

In the Default TPTEST Configuration, an event generating an alert occurs if the alert threshold of four TPTEST errors is exceeded for the specified target system.

The Default TPTEST Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =TRANSPORT =1\

=WARNING =TpTest =R3_Transport\

=TPTEST =CHECKSYSTEM =I =EQ =<SID> =\

=ALERT_THRESHOLD =I =GT =4 =
```

SAPABAP_UpdProcMon

The SAPABAP_UpdProcMon Monitoring Template enables monitoring of different conditions of SAP ABAP Update processes like inactive status and errors.

The SAPABAP_UpdProcMon Monitoring Template monitors the status of both active updates and updates that have been stopped by a SAP user or by the System. The SAPABAP_UpdProcMon Monitoring Template references update errors and update status in SAP NetWeaver transaction **SM13**.

Monitor Type

The SAPABAP_UpdProcMon Monitoring Template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The update monitor has the following alert types.

- UPDATE_ACTIVE

  Get information about the status of update processes and sends an alert if a process is not active.

- UPDATE_ERRORS_EXIST

  Get information about update processes that have errors.

File Locations

The SAPABAP_UpdProcMon Monitoring Template uses the files listed in the following table:

File	Description
r3moncol (.exe)	Collector executable for the update monitor.
r3monupd.cfg	Configuration file for the update monitor.
r3monupd.log	Trace file for storing trace data.

The SAPABAP_UpdProcMon Monitoring Template do not write history information to a specific history file.

Environment Variables

The SAPABAP_UpdProcMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_UpdProcMon Monitoring Template uses the command-line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_UpdProcMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring Update-Monitor Alert Types

No parameters are used to configure alert types for SAPABAP_UpdProcMon Monitoring Template. You do not need to edit or customize the configuration.

UPDATE_ACTIVE

UPDATE_ACTIVE is an alert type for SAPABAP_UpdProcMon Monitoring Template. SAPABAP_UpdProcMon Monitoring Template generates an alert if the UPDATE task is inactive. The following example illustrates the default configuration for the UPDATE_ACTIVE alert type.

In the Default UPDATE_ACTIVE Configuration, an event generating an alert occurs if any update is stopped.

The Default UPDATE_ACTIVE Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =UPDATE =1\

=CRITICAL =UpdActive =R3_Update =UPDATE_ACTIVE
```

UPDATE_ERRORS_EXIST

UPDATE_ERRORS_EXIST is an alert type for SAPABAP_UpdProcMon Monitoring Template. SAPABAP_UpdProcMon Monitoring Template generates an alert if any update errors exist. The following example illustrates the default configuration for the UPDATE_ERRORS_EXIST alert type.

In the Default UPDATE_ERRORS_EXIST Configuration, an event generating an alert occurs if any update error occurs.

The Default UPDATE_ERRORS_EXIST Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =UPDATE =1\

=CRITICAL =UpdError =R3_Update =UPDATE_ERRORS_EXIST
```

SAPABAP_UsrMon

The SAPABAP_UsrMon Monitoring Template enables monitoring of the SAP ABAP logged-in Users. The SAPABAP_UsrMon Monitoring Template identifies and reports the number of logged-in users. The check is performed for each application server. A very high number of users could indicate that performance problems might occur. The alert can then be used to decide whether it is necessary to ask or even force users to log out. The SAPABAP_UsrMon Monitoring Template references the SAP NetWeaver transaction **SM04**.

Monitor Type

The SAPABAP_UsrMon Monitoring Template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The SAP-user monitor has only one alert type:

USER_LOGGEDIN_MAX

Define the maximum number of logged in users.

File Locations

The SAPABAP_UsrMon Monitoring Template uses the files listed in this table.

File	Description
r3moncol (.exe)	Collector executable for the user monitor.
r3monusr.cfg	Configuration file for the user monitor.
r3monusr.log	Trace file for storing trace data.

The SAPABAP_UsrMon Monitoring Template do not write history information to a specific history file.

Environment Variables

The SAPABAP_UsrMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_UsrMon Monitoring Template uses the command-line parameters described in "Command-Line Parameters".

Remote Monitoring

For more information about configuring the SAPABAP_UsrMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

USER_LOGGEDIN_MAX

USER_LOGGEDIN_MAX is an alert type for SAPABAP_UsrMon Monitoring Template. SAPABAP_UsrMon Monitoring Template generates an alert if the maximum number of SAP users exceeds a defined threshold. The following table lists the parameters that you can use to configure the USER_LOGGEDIN_MAX alert type and shows the value assigned to the parameters by default. The configuration of the parameter MAX is mandatory.

The APSERVER parameter allows you to set the application-server- dependent monitors, `r3monwpa`, `r3monusr`, and `r3monoms` to monitor a specific application server. You need to configure APSERVER in the following manner, where *<hostname>* is the name of the application server you are monitoring as it appears in the list of application servers displayed in transaction SM51:

```
=APSERVER =I =CP =<hostname>_<SID>_<Instance_Number> =
```

We also recommend that you explicitly define the host name of the SAP NetWeaver central instance whose application server(s) you want to specify with APSERVER, as illustrated in the following example:

Specifying an Application Server

```
AlertMonFun =<Central_Inst_Hostname> =ALL =ALL =ALL =USER =1 \

=WARNING =Login =R3_WP \

=USER_LOGGEDIN_MAX =MAX =I =GT =30 = \

=APSERVER =I =CP =hpdev01_MP3_00 =
```

The remainder of this section describes the specific configuration requirements for this alert monitor.

Parameter Name	Description	Query Conditions	Default Value
APSERVER	Specifies the application server to monitor	= Sign: I, E	
		= Opt: CP	
		= Low : <AppServer_ID>	
		= High:	
MAX	The number of logged in users before an alert occurs. [a]	= Sign: I, E	
		= Opt: GT, GE	I
		= Low:	GT
		= High:	5

a. You must specify the parameter value as a number, otherwise the monitor ends with a dump.

In The Default USER_LOGGEDIN_MAX Configuration, an event generating an alert occurs if the number of users logged in exceeds thirty.

The Default USER_LOGGEDIN_MAX Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =USER =1\

=WARNING =Login =R3_User\

=USER_LOGGEDIN_MAX =MAX =I =GT =30 =
```

SAPABAP_WPMon

The SAPABAP_WPMon Monitoring Template enables monitoring of the running work processes, waiting work process, and checking the various Status of work process like Debug/Private/No Restart.

The SAPABAP_WPMon Monitoring Template references the SAP NetWeaver transaction `SM50` and reports the following conditions for work processes running on each of the application servers:

- Reports the number of *running* work processes for each work-process type configured in the profile of the current operation mode.
- Reports the number of *waiting* work processes for each work-process type configured in the profile of the current operation mode.
- Compares the number of *active* work processes with the number of *configured* work processes (of the same work process type) in the profile of the current operation mode.
- Checks the status of the work processes, as follows:
  - **D (Debug)**

    No processes run on live systems.
  - **P (Private)**

    Processes run using maximum available system resources.
  - **R (No Restart)**

    Failed processes do not restart, which means that dependent jobs also fail.

The SAPABAP_WPMon Monitoring Template can only monitor alerts from an `enqueue` work process that is part of a central instance; it cannot monitor the alerts from an `enqueue` work process belonging to a stand-alone `enqueue` server. To monitor stand-alone `enqueue` work processes, use the `SAPABAP_CCMSIntegrationMon` Monitoring Template to check for SAP CCMS alerts generated by the `enqueue` server.

Monitor Type

The SAPABAP_WPMon Monitoring Template is of type snapshot. One monitor run gathers only one value set.

Alert Types

The work-process alert monitor has the following alert types.

- **WP_AVAILABLE**

  The WP_AVAILABLE alert type defines alert conditions for the number of expected work processes running.

- **WP_IDLE**

  The WP_IDLE alert type defines alert conditions for the number of idle work processes waiting.

- **WP_CHECK_CONFIGURED**

  The WP_CHECK_CONFIGURED alert type defines alert conditions for comparing the actual number of running work processes with the number of configured work processes in the profile of the current operation mode. The monitor check only compares work processes of the same type.

- **WP_STATUS**

  The WP_STATUS alert type defines alert conditions for work processes which the monitor finds in a problematic state, for example: D (Debug), P (Private) or R (No Restart).

File Locations

The SAPABAP_WPMon Monitoring Template has the files listed in the following table:

File	Description
r3moncol (.exe)	Collector executable for the WorkProcess monitor.
r3monwpa.cfg	Configuration file for the WorkProcess monitor.
r3monwpa.log	Trace file for storing trace data.

The SAPABAP_WPMon Monitoring Template does not write history information to a specific history file.

Environment Variables

The SAPABAP_WPMon Monitoring Template uses the environment variables described in "Environment Variables".

Command-Line Parameters

The SAPABAP_WPMon Monitoring Template uses the command-line parameters described in Command Line Parameters.

Remote Monitoring

For more information about configuring the SAPABAP_WPMon Monitoring Template to monitor another SAP System remotely, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

Configuring Work-Process Monitor Alert Types

This section helps you to configure alert types for SAPABAP_WPMon Monitoring Template. Note the general rules below concerning the use of the *exclude* and *include* parameter values; the rules are of particular importance for these alert types.

Parameter Values

This section describes how the OMi MP for SAP interprets *include* and *exclude* parameter values for an alert type entry. The OMi MP for SAP compares values in different parameters using 'and'. The OMi MP for SAP compares values in the same parameter as follows.

- **Include:** use 'or' to compare the parameters
- **Exclude:** use 'and' to compare the parameters

The OMi MP for SAP evaluates include values before exclude values, as shown in the following table:

Select Options	Alert Type: WP_ AVAILABLE Example Configuration of Select Options	Comparison
1	=DIA =I =BT =50 =100 =OPMODE =I =CP =DAY	OR
2	=DIA =I =GT =5 =OPMODE =I =CP =NIGHT	OR
3	=DIA = E =LT =60	AND

WP_AVAILABLE

WP_AVAILABLE is an alert type for SAPABAP_WPMon Monitoring Template. SAPABAP_WPMon Monitoring Template generates an alert if the number of running work processes for each, selected work-process type is outside the specified maximum (or minimum) threshold. The following table lists the parameters that you can use to configure the WP_AVAILABLE alert type and shows the value assigned to the parameters by default. The configuration of the parameters listed for the WP_ AVAILABLE alert type is mandatory. You must specify all threshold parameters as a number otherwise the monitor ends with a dump.

The APSERVER parameter allows you to set the application-server- dependent monitors, `r3monwpa`, `r3monusr`, and `r3monoms` to monitor a specific application server. You need to configure APSERVER

in the following manner, where <*hostname*> is the name of the application server to monitor as it appears in the list of application servers displayed in transaction **SM51**:

```
=APSERVER =I =CP =<hostname>_<SID>_<Instance_Number> =
```

We also recommend that you explicitly define the host name of the SAP NetWeaver central instance whose application server(s) you want to specify with APSERVER, as illustrated in the Specifying an Application Server.

Specifying an Application Server

```
AlertMonFun =<Centr_Instance_Hostname> =ALL =ALL =ALL =WP =1 \

=WARNING =Availability =R3_WP \

=WP_AVAILABLE =DIA =I =GT =50 = \

=APSERVER =I =CP =hpdev01_MP3_00 =
```

Rest of this section describes the specific configuration requirements for this alert monitor.

Parameter Name	Description	Query Conditions	Default Value
APSERVER	Specifies an application server to monitor	= Sign: I, E	
		= Opt: CP	
		= Low : <AppServer_ID>	
		= High:	
BTC	Threshold for batch work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	
DIA	Threshold for dialog work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	

Parameter Name	Description	Query Conditions	Default Value
ENQ	Threshold for enqueue work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	
OPMODE	Defines the operation mode for this parameter *	= Sign I, E	I
		= Opt: CP, EQ= Low: <operation_ mode>	EQ
		= Low: <operation_ mode>	current
		= High:	
SPO	Threshold for spool work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	
UPD	Threshold for update work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	
UP2	Threshold for update2 work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: <*number*>	
		= High:	

* A critical alert occurs if you specify a non-existent mode.

In the Default WP_AVAILABLE Configuration, an event generating an alert occurs if the number of available dialog work processes is less than fifty.

The Default WP_AVAILABLE Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =WP =1\

=WARNING =Availability =R3_WP\

=WP_AVAILABLE =DIA =I =LT =50 =
```

> **Note:** Check that the work-process types you want to monitor with SAPABAP_WPMon Monitoring Template are correctly configured in the SAP instance profile.

The SAPABAP_WPMon Monitoring Template can only monitor work-process types that are configured in the SAP instance profile. If the DIA work-process type is not configured in the SAP instance profile (or "rdisp/wp_no_dia = 0"), then no DIA work processes are started. Since zero (0) DIA work processes is clearly less than the minimum allowed (50) specified in the default configuration for the WP_AVAILABLE alert type shown in The Default WP_AVAILABLE Configuration would generate an alert under normal circumstances.

However, if the DIA work-process type is not configured in the SAP instance profile, r3monwpa cannot monitor the number of DIA work processes that are running at any given point in time and, as a consequence, does not generate an alert. You can check discrepancies between the SAP instance profile and the SAPABAP_WPMon Monitoring Template configuration file with the alert type WP_CHECK_CONFIGURED.

WP_IDLE

WP_IDLE is an alert type for SAPABAP_WPMon Monitoring Template. SAPABAP_WPMon Monitoring Template generates an alert if the number of waiting work processes for each, selected work-process type is outside the specified max (or min) threshold.

The following table lists the parameters that you can use to configure the WP_IDLE alert type and shows the value assigned to the parameters by default. The configuration of the parameters for the WP_IDLE alert type is mandatory. You must specify all threshold parameters as a number otherwise the monitor ends with a dump.

The APSERVER parameter allows you to set the application-server- dependent monitors, r3monwpa, r3monusr, and r3monoms to monitor a specific application server. You need to configure APSERVER in the following manner, where *<hostname>* is the name of the application server to monitor as it appears in the list of application servers displayed in transaction SM51:

```
=APSERVER =I =CP =<hostname>_<SID>_<Instance_Number> =
```

It is also recommended to define explicitly the host name of the SAP NetWeaver central instance whose application server(s) you want to specify with APSERVER, as illustrated in the Specifying an Application Server.

Specifying an Application Server

```
AlertMonFun =<Centr_Instance_Hostname> =ALL =ALL =ALL =WP =1 \

=WARNING =Idle =R3_WP \
```

```
=WP_IDLE =BTC =I =GT =20 = \

=APSERVER =I =CP =hpdev01_MP3_00 =
```

The following table lists the configuration parameters for WP_IDLE:

Parameter Name	Description	Query Conditions	Default Value
APSERVER	Specifies an application server to monitor	= Sign: I, E	
		= Opt: CP	
		= Low : *<AppServer_ID>*	
		= High:	
BTC	Threshold for batch work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: *<number>*	
		= High:	
DIA	Threshold for dialog work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: *<number>*	
		= High:	
ENQ	Threshold for enqueue work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low:	
		= High:	
OPMODE	Defines the operation mode for this parameter.[1]	= Sign I, E	I
		= Opt: CP, EQ	EQ
		= Low: *<operation_mode>*	current
		= High:	

Parameter Name	Description	Query Conditions	Default Value
SPO	Threshold for spool work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: *<number>*	
		= High:	
UPD	Threshold for update work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: *<number>*	
		= High:	
UP2	Threshold for update 2 work processes	= Sign: I, E	
		= Opt: GT, GE, LT, LE	
		= Low: *<number>*	
		= High:	

1. If a non-existent mode is specified, a critical alert occurs.

In the Default WP_IDLE Configuration, an event generating an alert occurs if the number of idle Dialog work processes is less than ten.

The Default WP_IDLE Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =WP =1\

=WARNING =Idle =R3_WP\

=WP_IDLE =DIA =I =LT =10 =
```

> **Note:** Check that the work-process types you want to monitor with SAPABAP_WPMon Monitoring Template are correctly configured in the SAP instance profile.

The SAPABAP_WPMon Monitoring Template can only monitor work-process types that are configured in the SAP instance profile. If the DIA work-process type is not configured in the SAP instance profile (or “rdisp/wp_no_dia = 0”), then no DIA work processes are started. Since zero (0) DIA work processes is clearly less than the minimum allowed (10) specified in the default configuration for the WP_IDLE alert type shown in The Default WP_IDLE Configuration, this would, under normal circumstances, generate an alert.

However, if the DIA work-process type is not configured in the SAP instance profile, SAPABAP_WPMon Monitoring Template cannot monitor the number of DIA work processes that are running at any given point in time and, as a consequence, does not generate an alert. You can check discrepancies between the SAP instance profile and the SAPABAP_WPMon Monitoring Template with the alert type WP_CHECK_CONFIGURED.

WP_CHECK_CONFIGURED

The WP_CHECK_CONFIGURED is an alert type for SAPABAP_WPMon Monitoring Template. The WP_CHECK_CONFIGURED alert type makes a comparison between the actual number of running work processes and the number of configured work processes in the profile of the current operation mode. Note that the monitor only compares work processes of the same type, for example: DIA, BTC.

The APSERVER parameter allows you to set the Monitoring Template SAPABAP_WPMon, SAPABAP_UsrMon,and so on to monitor a specific Application Server. You need to configure APSERVER in the following manner, where *<hostname>* is the name of the application server to monitor as it appears in the list of application servers displayed in transaction **SM51**:

```
=APSERVER =I =CP =<hostname>_<SID>_<Instance_Number> =
```

We also recommend that you explicitly define the host name of the SAP NetWeaver central instance whose application server(s) you want to specify with APSERVER, as illustrated in the Specifying an Application Server.

Specifying an Application Server

```
AlertMonFun =<Centr_Instance_Hostname> =ALL =ALL =ALL =WP =1 \

=WARNING =Check =R3_WP \

=WP_CHECK_CONFIGURED \

=APSERVER =I =CP =hpdev01_MP3_00 =
```

The following table lists the parameters that you can use to configure the WP_CHECK_CONFIGURED alert type and shows the value assigned to the parameters by default:

Parameter Name	Description	Query Conditions	Default Value
APSERVER	Specifies an application server to monitor	= Sign: I, E	
		= Opt: CP	
		= Low: *<AppServer_ID>*	
		= High:	

In the Default WP_CHECK_CONFIGURED Configuration, SAPABAP_WPMon Monitoring Template generates an alert if the number of running work processes does not match the number of configured work processes for a given work-process type.

The Default WP_CHECK_CONFIGURED Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =WP =1\

=WARNING =Check =R3_WP\

=WP_CHECK_CONFIGURED \

=APSERVER =I =CP =ALL =
```

WP_STATUS

The WP_STATUS is an alert type for SAPABAP_WPMon Monitoring Template. WP_STATUS defines alert conditions for work processes which the monitor finds in a problematic state, for example: D (Debug), P (Private), or R (No Restart). SAPABAP_WPMon Monitoring Template generates an alert if the work processes running in the SAP Systems you are monitoring with the OMi MP for SAP match the conditions defined in the parameters below. The configuration of the parameter below is optional.

The APSERVER parameter allows you to set the application-server- dependent monitors, SAPABAP_WPMon, SAPABAP_UsrMon, etc. to monitor a specific Application Server. You need to configure APSERVER in the following manner, where *<hostname>* is the name of the application server to monitor as it appears in the list of application servers displayed in transaction SM51:

```
=APSERVER =I =CP =<hostname>_<SID>_<Instance_Number> =
```

We also recommend that you explicitly define the host name of the SAP NetWeaver central instance whose application server(s) you want to specify with APSERVER, as illustrated in the Specifying an Application Server.

Specifying an Application Server

```
AlertMonFun =<Centr_Instance_Hostname> =ALL =ALL =ALL =WP =1 \

=WARNING =WP_Status =R3_WP \

=WP_STATUS =STATUS =I =GT =30 = \

=APSERVER =I =CP =hpdev01_MP3_00 =
```

The following table lists the parameters that you can use to configure the WP_STATUS alert type and shows the value assigned to the parameters by default:

Parameter Name	Description	Query Conditions	Default Value
APSERVER	Specifies an application server to monitor	= Sign: I, E	
		= Opt: CP	
		= Low: <AppServer_ ID>	
		= High:	
STATUS [1]	The status which is monitored	= Sign: I, E	
		= Opt:	
		= Low: [2]	
		= High:	

1. Possible additional values: MAX_ENTRIES
2. Possible values: D=Debug, P=Private, R=Restart (no alert).

In the Default WP_STATUS Configuration, an event generating an alert occurs if the status of a running workprocess is critical. The Default WP_STATUS Configuration also shows how you can use =MAX_ENTRIES to define the number of work processes with a defined status that have to exist before the OMi MP for SAP generates a message.

The Default WP_STATUS Configuration

```
AlertMonFun =ALL =ALL =ALL =ALL =WP =1\

=CRITICAL =WP_Status =R3_WP\

=WP_STATUS =STATUS =I =CP =* =
```

TempSeqFileMon

Monitoring the TemSe file

To save runtime costs, the OMi MP for SAP monitors the consistency of SAP's Temporary Sequential file (TemSe), using a report you set up in SAP. However, you still need to assign the SAPABAP_ TempSeqFileMon Monitoring Template to the managed nodes.

Monitor Type

The TemSe monitor is of type snapshot. One monitor run gathers only one value set.

Report Description

The TemSe report references the SAP NetWeaver transaction **SP12**. Any inconsistency found in the TEMSE database is serious, use the log in **SP12** to correct the cause of the inconsistency. For example a disk failure.

Running the TemSe Monitor

To run the TemSe monitor, you need to set up a job in SAP NetWeaver which references a report named /HPOV/ZHPSPIT1.

> **Note:** You can only use the report with SAP version 4.6 and later.

To set up the report:

1. Logon to **SAP NetWeaver**.
2. Set up a job using transaction **SM36**.
3. In the job, specify the following details:
   a. Date on which the report should start.
   b. Frequency with which the report should run.

Customizing SAP ABAP Monitoring Templates

This section provides reference information you can use for customizing ABAP Monitoring Templates to suit your monitoring requirements.

> **Note:** You must increment the Version of corresponding SAP ABAP Aspects and SAP ABAP Management Templates after configuring or customizing SAP ABAP Monitoring Templates. For more information on SAP ABAP Aspects and corresponding SAP ABAP Monitoring Templates, see "SAP ABAP Monitoring Templates, Monitoring Template Configuration Files, and History Files".

SAP ABAP Monitoring Templates, Monitoring Template Configuration Files, and History Files

OMi MP for SAP's ABAP Monitoring Template uses SAP Monitors to monitor different functionalities of your SAP ABAP Application Server. Some SAP monitors store data in a history file for accessing

certain information after each run. This section provides reference information about SAP ABAP Monitoring Templates, their corresponding SAP ABAP Aspects, and different SAP monitors and History Files used by the SAP ABAP Monitoring Templates.

SAP ABAP Aspect	SAP ABAP Monitoring Template	Monitoring Template Configuration File (cfg)	History File
SAP ABAP Batch Job Health	SAPABAP_BatJobMon	r3monjob	
SAP CCMS Integration	SAPABAP_CCMSIntegrationMon	r3monal	r3monal.his
SAP ABAP Correction and Transport System Status	SAPABAP_CTSMon	r3moncts	
SAP ABAP Processes and Dispatcher Status	SAPABAP_DispMon	r3mondisp	
SAP ABAP Dump Status	SAPABAP_DmpMon	r3mondmp	
SAP ABAP Idoc Status	SAPABAP_IdocStatusMon	r3monale	
SAP ABAP Lock Status	SAPABAP_LckChkMon	r3monlck	
SAP ABAP Performance Monitor	SAPABAP_PerfMon	r3perfagent	
SAP ABAP Processes and Dispatcher Status	SAPABAP_ProcMon	r3monpro	r3monpro.his
SAP ABAP RFC Destination Status	SAPABAP_RFCDestMon	r3monrfc	
SAP ABAP Security Status	SAPABAP_SecMon	r3monsec	
SAP ABAP Spool Health	SAPABAP_SplMon	r3monspl	
SAP ABAP Performance Monitor	SAPABAP_StatRecMon	r3perfstat	
SAP System Health	SAPABAP_StatusMon	r3status	r3status.his
SAP ABAP System Change Option Status	SAPABAP_SysChgOptMon	r3monchg	
SAP Temporary Sequential File Monitoring	SAPABAP_TempSeqFileMon	r3monaco	

SAP ABAP Aspect	SAP ABAP Monitoring Template	Monitoring Template Configuration File (cfg)	History File
SAP System Health	SAPABAP_TraceMon	r3mondev	r3mondev.his
SAP ABAP Transport Status	SAPABAP_TransMon	r3montra	
SAP ABAP Update Tasks Health	SAPABAP_UpdProcMon	r3monupd	
SAP ABAP User Health	SAPABAP_UsrMon	r3monusr	
SAP ABAP Work Process Health	SAPABAP_WPMon	r3monwpa	

History Path

The HistoryPath[Unix | AIX | WinNT] keyword in the ABAP Monitoring Template configuration file accepts the following parameters:

```
HistoryPath<Unix|Aix|WinNT> <HostName> =<Path>
```

- **Hostname:**

  `=ALL` - Monitor all hosts with the SPI for SAP. This is the default setting.

  `=<SAP_host>` Name of a SAP server, where you want to specify the path to the monitor history file. Use a new line for each individual host.

- **Path:**

  UNIX: `=default`

  AIX: `=default`

  Windows: `=default`

The `=default` value is associated with the default path to the history files which the OMi MP for SAP Monitoring Templates write.

Some ABAP Monitoring Templates like SAPABAP_IdocStatusMon or SAPABAP_DmpMon do not write history information to a monitor-specific history file. Instead, any information relating to SAP alerts which come to the notice of the OMi MP for SAP alert-collector monitors is written directly to the SAP database, where it can be found by the ABAP Monitoring Template collector. At the start of each monitor run, ABAP Monitoring Template reads the relevant tables and uses the information to determine if any events the OMi management server has already been notified about and whether to generate further messages or not.

For SAP ABAP Monitoring Templates that use a History File, you must specify the history path, which is the directory path used to locate a Monitoring Template's history file. SAP ABAP Monitoring Template include the following default paths for UNIX, AIX, and Windows servers:

```
HistoryPathUnix =ALL =default

HistoryPathAIX =ALL =default

HistoryPathWinNT =ALL =default
```

> **Note:** You can configure the ABAP Monitoring Templates to use a specific history path on Windows managed nodes rather than the default: `=default`, for example: `%OvAgentDir%\Tmp`. For more information, see the SAPOPC_HISTORYPATH environment variable and the alert-monitor configuration-file keyword.

Each SAP ABAP Monitoring Template creates its own history file. Each time an SAP ABAP Monitoring Template monitor completes a run, it adds a new section to its history file. This feature enables the SAP ABAP Monitoring Template monitor to check for changes since the previous run.

> **Note:** Do not edit any of the monitor history `(*.his)` files. Editing the monitor history file could compromise the accuracy and consistency of your records. The monitor uses its history file to determine which, if any, events have occurred since the last run and whether to send any messages.

Following in an excerpt from SAP ABAP Monitoring Template configuration:

```
#-------------------------------------------------------------------------

# History hostname path

# Path

#

HistoryPathUnix =ALL =default

HistoryPathAIX =ALL =default

HistoryPathWinNT =ALL =default

#-------------------------------------------------------------
```

Keywords and Parameters

Keyword	Keyword Parameter/Configuration Fields	Description
TraceLevel	Tracelevel =<HostName> =<Trace Level>	**Hostname:** =ALL -Monitor all SAP hosts with the SPI for SAP. This is the default setting. =<SAP_host> -The name of a SAP server, where you want to specify a trace level. Use a new line for each individual host. **Trace level:** =0 -Disable logging. This is the default setting for all configuration files. =1-Log only error messages =2 -Log all messages =3-Log everything including debug messages
TraceFile	Tracefile =<HostName> =<FileName> =<TraceMode> =<TracePeriod>	**Hostname:** =ALL -Monitor all SAP servers with the SPI for SAP. This is the default setting. =<SAP_host> -Name of a specific host where tracing is enabled and you want to specify a trace level. Use a new line for each individual host. **Filename:** =r3mon<alert_monitor_ name>.log, for example, r3mondev.log, or r3mondmp.log. This is the default setting. Alternatively, you can specify the name of the file to which you want to write the trace log. By default, monitor trace files are located in the following directories:

Keyword	Keyword Parameter/Configuration Fields	Description
		• UNIX: `/var/opt/OV/log` • AIX: HTTPS: `/var/opt/OV/log` • Microsoft Windows: HTTPS: `%OvDataDir%\log` **TraceMode:** `=w` -default value `=a` -append **TracePeriod:** Monitor verifies whether the existing file's the time period has elapsed the time period mentioned in the ABAP Monitoring Template. If the time period has elapsed, a new file will be created. Otherwise new trace log entries will be appended into the already existing file.
RFCTimeOut	RFCTimeOut =%%RFCTimeOutInterval%%	RFCTimeOut defines the maximum amount of time, in seconds, before an RFC XMI/XAL function call is canceled, for example: `=120`. If the RFC call takes longer than expected to complete, that is; to receive a reply to the initial request, the System is probably down or has a serious performance problem.
EnableDPQueueCheck	EnableDPQueueCheck =<Hostname> =<SAP SID> =<SAP Number> \ =<Enable/Disable>	**Hostname:** Name of the SAP Server where the instance is running whose ABAP dispatcher you want the OMi MP for SAP to check before starting: `=ALL` -All the hosts which the OMi MP for SAP monitors. This is the default setting. `=<SAP_host>` -Name of a SAP server, where you want to enable checking of the dispatcher-queue.

Keyword	Keyword Parameter/Configuration Fields	Description
		Use a new line for each individual host. **SAP SID:** SAP System ID of the instance whose ABAP dispatcher you want the OMi MP for SAPmonitors to check before starting: =ALL -All System IDs which the OMi MP for SAPmonitors. This is the default setting. =<SAP_SID> -SAP System ID of the instance whose ABAP dispatcher you want to check, for example: “SP1”. **SAP Number:** Number of the SAP instance whose ABAP dispatcher you want the OMi MP for SAP monitors to check before starting: =ALL -All instances which the OMi MP for SAP monitors. This is the default setting. =<SAP_InstNr> -Number the SAP instance whose ABAP dispatcher you want the OMi MP for SAP monitors to check, for example: “45”. **Enable/Disable:** Enable (=1) or disable (=0) - is a particular monitor to monitor the ABAP dispatcher for the defined SAP instance, for example: 1. The default is Disable (=0). You have to enable the OMi MP for SAP monitors individually.
Remote Monitoring	RemoteMonitoring =<LocalHost> =<RemoteHost>	**LocalHost:** Name of the host which the OMi MP for SAP is already monitoring and whose Agent will be used to

Keyword	Keyword Parameter/Configuration Fields	Description
		remotely monitor the SAP server defined in `Remotehost`. **RemoteHost:** Name of the *remote* SAP server that you want to monitor using the OMi MP for SAPon SAP server defined in “Localhost”.
AlertMonFun	`AlertMonFun =<SAP Hostname> =<SAP System> =<SAP Number> \ =<SAP Client> =<AlertMonitor> =<Enable/Disable> \ =<OpC Severity> =<OpC Object> =<OpC MsgGroup> \ =<Alerttype> =<RFC Parameter>`	For detailed information about parameters/fields supported by AlertMonFun, see "Configuration Fields in ABAP Monitoring Templates".

Query Conditions for Monitoring Templates

The data for each Monitoring Template is split into a number of alert types. For example, the JOBREPORT Monitor has four alert types: JOB_MAX_RUN-TIME, JOB_MIN_RUN_TIME, START_PASSED and JOB_ABORTED. For each alert monitor’s defined alert types you have to:

- Specify which SAP NetWeaver systems should be checked
- Enter selection criteria which defines under what circumstances an alert will be raised. This is described in more detail below.

Parameter Data Types

Parameters in the monitoring-conditions section of the ABAP Monitoring Template associated with each alert type define the conditions, which generate an alert. There are two general types of parameter data:

- **Name**

  Parameter name describes the attributes of the SAP NetWeaver System for which you define the monitoring conditions. For example: MAX_RUNTIME and JOBNAME are the names of parameters for the alert type JOB_MAX_RUN_TIME, which is associated with the JOBREPORT monitor.

- **Delimiters**

Parameter delimiters are used to specify the “select” options for each parameter. The parameter delimiters define the circumstances under which an alert should be generated. A message will be sent for each event that matches your specified conditions. There are four types of Parameter Delimiters, which must appear in the following order: SIGN, OPT(ION), LOW, and HIGH.

Specifying Query Conditions

The following points apply generally when using parameter delimiters to specify query conditions:

- All possible and reasonable conditions can be used to configure the query condition, within the limitations given below.
- Messages which are excluded by your defined conditions will not appear in the OMi message browser.

The following table lists the parameter delimiters used to configure the ABAP Monitoring Templates:

> **Note:** The order of the parameter delimiters for the query conditions must match the order shown in following table, such as: SIGN, OPTION, LOW, HIGH.

Parameters and Delimiters

Parameter Delimiters	Description
SIGN	**I:** Include **E:** Exclude
OPT	The standard SAP operators NE (Not Equal to), NB (Not Between... and...), and NP (does Not contain Pattern) cannot be used to configure the alert types described in this section. You should only use the following operators: • **EQ:** equal to • **BT:** between... and • **CP:** contains pattern • **LE:** less than or equal to • **GE:** greater than or equal to • **GT:** greater than • **LT:** less than
LOW	• A comparison value such as a string when used with the operator CP. • The lower value of a range when used in conjunction with the operator BT.
HIGH	A numeric comparison value to specify the higher value of a range. This parameter delimiter should only be used in conjunction with the operator BT.

Configuration Fields in ABAP Monitoring Templates

The following table lists different user configurable fields in SAP ABAP Monitoring Template and their descriptions:

Fields	Description
#AlertMonFun	Name of the keyword used to monitor a certain job.
=<SAP Hostname>	Hostname of the SAP server you want to monitor
=<SAP System>	ID of the SAP system you want to monitor.
=<SAP Number>	Number of SAP Instance you want to monitor.
=<SAP Client>	Client ID of SAP client you want to monitor.
=<AlertMonitor>	Alert Type to use for monitoring.
=<Enable/Disable>	Enable or Disable monitoring.
=<OpC Severity>	Severity level of the message you want to map the SAP alert to.
=<OpC Object>	MP Object associated with the generated message.
=<OpC MsgGroup>	Name of the message group the OMi message belongs to.
=<Alerttype>	Name of the Alert Type.
=<RFC Parameter>	Name of a parameter for a given Alert Type.

Environment Variables

This section describes the environment variables for all Monitoring Template. The configuration is identical for all SAP ABAP Monitoring Templates except the name of the Monitoring Template.

Environment Variable	Description
SAPOPC_ <R3MONNAME>*_CONFIGFILE	Configuration-file name
SAPOPC_R3ITOSAP_CONFIGFILE	General SAP NetWeaver login configuration file
SAPOPC_TRACEPATH	Trace path config. file

*Where <R3MONNAME> is the name of the monitor whose Monitoring Template configuration file location you want to change. For example, SAPOPC_R3MONDMP_CONFIGFILE.

Command-Line Parameters

The command line parameters for all the SAP ABAP Monitoring Template are described in this section. Similarly, for the environment variables, the configuration is identical for all SAP ABAP Monitoring Template except the name of the Monitoring Template.

Parameter	Description
-cfgfile	Name of the monitor's configuration file. For example, -cfgfile <R3MONNAME>*.cfg
-trace	The monitor writes an initial trace file `writetrace.log`, which contains information about the configuration file `r3itosap` and the monitor-specific config file `<R3MONNAME>*.cfg`.

*Where <R3MONNAME> is the name of the monitor whose configuration-file location you want to read. For example, r3mondmp.

In the following example, the Monitoring Template writes an initial trace file `writetrace.log`, which contains information about the general configuration file `r3itosap` and the monitor-specific configuration file `r3monjob.cfg`.

```
r3moncol -cfgfile r3monjob.cfg -trace
```

SAP Parameters

Parameters are variables that are an integral component of SAP Management Templates, Aspects, and Policy Templates. Each parameter corresponds to a variable. Parameters contain default values that are used for monitoring different components of SAP Application Server. You can also modify the values of the variables to suit your monitoring requirements.

Types of Parameters

OMi MP for SAP contains the following set of parameters to monitor ABAP and J2EE application servers:

- SAP J2EE Application Server Parameters
- SAP ABAP Application Server Parameters
- SAP ABAP Monitoring Template Parameters

SAP J2EE Application Server Parameters

OMi MP for SAP contains the following parameters for monitoring J2EE Application Server:

Parameter	Parameter Type	Description	Default Values
Frequency of VeryHigh Scheduler	Expert	Frequency for the scheduler which is expected to run on very short interval (in minutes).	5
Frequency of High Scheduler	Expert	Frequency for the scheduler which is expected to run on short interval (in minutes).	15
Frequency of Medium Scheduler	Expert	Frequency for the scheduler which is expected to run on medium interval (in hours).	1
Frequency of Low Scheduler	Expert	Frequency for the scheduler which is expected to run on high interval (in hours).	24
Application Instance	Mandatory	Application instance for which data needs to be fetched.	CI Name
<J2EE aspect name> Frequency	Dependent	Frequency to monitor assigned J2EE component.	VERYHIGH
<J2EE aspect name> Severity	Dependent	Severity of the event or component that is monitored.	MAJOR
<J2EE aspect name> Threshold	Dependent	Threshold value of the event or component that is monitored.	10000000.000000

SAP ABAP Application Server Parameters

OMi MP for SAP contains the following parameters for monitoring ABAP Application Server:

Parameter	Parameter Type	Description	Default/Sample Values
Frequency of VeryHigh Scheduler	Expert	Frequency for the scheduler which is expected to run on very short interval (in minutes).	5

Frequency of High Scheduler	Expert	Frequency for the scheduler which is expected to run on short interval (in minutes).	15
Frequency of Medium Scheduler	Expert	Frequency for the scheduler which is expected to run on medium interval (in hours).	1
Frequency of Low Scheduler	Expert	Frequency for the scheduler which is expected to run on high interval (in hours).	24
ConfgurationFileName for <monitored aspect name>	Read Only	Configuration file for ABAP application server monitoring.	Example: r3monjob.cfg
FREQ for ABAP <monitored aspect name>	Dependent	Frequency for monitoring the assigned aspect.	VERYHIGH
TraceLevel for ABAP <monitored aspect name>	Dependent	Trace level for monitoring the assigned ABAP aspect.	0
TraceFileName for ABAP <monitored aspect name>	Dependent	Trace file name monitoring the assigned ABAP aspect.	Example: r3monjob.log
TraceMode for ABAP <monitored aspect name>	Dependent	Trace file mode for monitoring the assigned ABAP aspect.	w
TracePeriod for ABAP <monitored aspect name>	Dependent	Trace period (in mins) for monitoring the assigned ABAP aspect.	60
RFCTimeOutInterval for ABAP <monitored aspect name>	Dependent	RFCTimeout (in seconds) for monitoring the assigned ABAP aspect.	120
IsDPQCheckEnabled for ABAP <monitored aspect name>	Dependent	DPQCheck for monitoring the assigned ABAP aspect.	0

SAP ABAP Monitoring Template Parameters

The OMi MP for SAP contains a set of parameters that are used for configuring ABAP Monitoring Templates to monitor ABAP Application Server. These parameters are user configurable and enables you to change default values as per your monitoring requirements. The OMi MP for SAP extends ABAP monitoring capability by enabling you to create custom parameters required to monitor specific functionality or areas of your ABAP Application Server. The following table lists the user configurable parameters provided to support ABAP Application Server monitoring:

Parameter Name	Variable Name	Description
ConfigurationFileName for	ConfigurationFileName	Name of the configuration file used by

<Monitoring Template Name>*		SAP ABAP Monitoring Template.
FREQ for <Monitoring Template Name>	FREQ	Frequency used by SAP ABAP Monitoring Template.
TraceLevel for <Monitoring Template Name>	TraceLevel	Trace level for SAP ABAP Monitoring Template monitoring.
TraceFileName for <Monitoring Template Name>	TraceFileName	Trace file name for SAP ABAP Monitoring Template monitoring.
TraceMode for <Monitoring Template Name>	TraceMode	Trace file mode for SAP ABAP Monitoring Template monitoring.
TracePeriod for <Monitoring Template Name>	TracePeriod	Trace period (in minutes) for SAP ABAP Monitoring Template monitoring.
RFCTimeOutInterval for <Monitoring Template Name>	RFCTimeOutInterval	RFCTimeout (in seconds) for SAP ABAP Monitoring Template.
IsDPQCheckEnabled for <Monitoring Template Name>	IsDPQCheckEnabled	DPQCheck for SAP ABAP Monitoring Template monitoring.

*The default naming convention of the mentioned parameters include parameter name followed by the ABAP Monitoring Template Name.

Configuring ABAP Monitoring Template Parameters

This section provides information about editing ABAP Monitoring Template Parameters.

You can edit the ABAP Monitoring Template Parameters to suit your monitoring requirements. To edit ABAP Monitoring Template parameters, follow these steps:

1. Open the Policy Template Groups.
2. To tune the Parameters:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates > SAP ABAP Monitoring Template**.

   On OMi 10.x, click **Administration > Monitoring > Policy Templates**.

3. In the **Policy Template Groups** tab on BSM 9.2x or **Policy Templates**, click **Templates grouped by type** on OMi 10.x.
4. Select **SAP ABAP Monitoring**.
5. In the Policy Templates pane, select the SAP ABAP Monitoring Template for which you want to edit parameters.

   The parameters for the selected Monitoring Template are listed in the Details pane.
6. Double-click the Parameter you want to edit.

   The Monitoring Template editor menu opens.
7. Select the **Policy Data** tab. The Policy Raw Data pane opens.
8. In the Policy Parameters pane, select the parameter you want to edit and then click  . The Edit Parameter dialog box opens. You can edit the Name, Variable Name, UI Order, Variable Type, Default Value, and Flags.
9. Click the Item you want to edit, specify the value, and then click **OK**.

Creating Custom Parameters for SAP ABAP Monitoring Templates

The OMi MP for SAP enables you to parametrize frequently changing elements or values in the Monitoring Template Configuration String. The steps to parametrize SAPABAP_DispMon Monitoring Template is shown here as an example:

1. Open the SAP ABAP Monitoring Template.

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates > SAP ABAP Monitoring Template**.

   On OMi 10.x, click **Administration > Monitoring > Policy Templates > SAP ABAP Monitoring Template**.
2. Select **SAPABAP_DispMon Monitoring Template** for which you want to create the custom parameter.
3. Click  and select **Edit Policy Template (Raw Mode)**. The Policy Related Information window opens.
4. Select **Policy Data** tab. The SAP ABAP Monitoring Template Configuration appears.
5. Go to **DisableMonitoringWithSeverity** keyword configuration string.

   ```
   DisableMonitoringWithSeverity =ALL =ALL =ALL =WARNING
   ```

6. To parametrize the WARNING configuration string value, add %% at the start and end of the WARNING value as shown.

   ```
   DisableMonitoringWithSeverity =ALL =ALL =ALL =%%WARNING%%
   ```

7. From the **Policy Parameters** tab, click **Synchronize parameters**. The Synchronize parameters dialog box opens.
8. Click **Change** to add WARNING to the list of parameters for SAPABAP_DispMon Monitoring Template.
9. You can now define or edit the Name, Variable Name, UI Order, Variable Type, Default Value, and Flags for the WARNING parameter.

   Following is an example of defining a variable name for the Custom Parameter:

   a. From the Edit Parameter dialog box of WARNING parameter, select **Variable Name** text field.

   b. Define a variable name for WARNING parameter.

   > **Note:** It is recommended that you provide a Variable Name that is easily recognizable by you since the parameter will be displayed by the Variable Name during Deployment. For example, you can provide `DisableMonitoringWithSeverity_ALL_Severity` as variable name for WARNING custom parameter for ease of deployment.

   c. Click **OK** and then click **Synchronize parameters**. The Synchronize parameters dialog box opens.

   d. Click **Change** to update the changes made to the parameter.

> **Note:** You can also edit the WARNING custom parameter from **All Parameter** tab during SAPABAP_DispMon Monitoring Template deployment.

Tuning OMi MP for SAP Parameters

You can edit the parameters of the SAP Management Templates and Aspects that are already deployed to the SAP CIs.

1. Open the Assignments & Tuning pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.

   On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.

2. In the **Browse Views** tab, select the RTSM View that contains the required Application Server CI for which you want to tune parameters. Alternatively, you can use the **Search** tab to find a CI.
3. In the list of SAP CIs, click a **CI**. The Assignments pane shows details of any existing assignments for the CI.
4. Click the assignment for which you want to tune parameters. The Details of Assignment pane shows the current parameter values.
5. In the Assignment Details pane, change the parameters:
   a. *(Optional)*. By default, the list shows only mandatory parameters. To see all parameters, click  .
   b. Select a parameter in the list, and then click  .

      For standard parameters, the Edit Parameter dialog box opens.

      Click **Value**, specify the value, and then click **OK**.

      For instance parameters, the Edit Instance Parameter dialog box opens.

      Change the instance values if necessary, and then for each instance value, change dependent parameter values. After you change the instances and dependent parameter values, click **OK**.
6. In the Assignment Details pane, click **Save Changes**. Operations Console deploys the new parameter values to the relevant HPE Operations Agent.

Run-time Service Model (RTSM) Views

RTSM View enables you to build and visualize a subset of the overall RTSM model.

How to Access RTSM Views

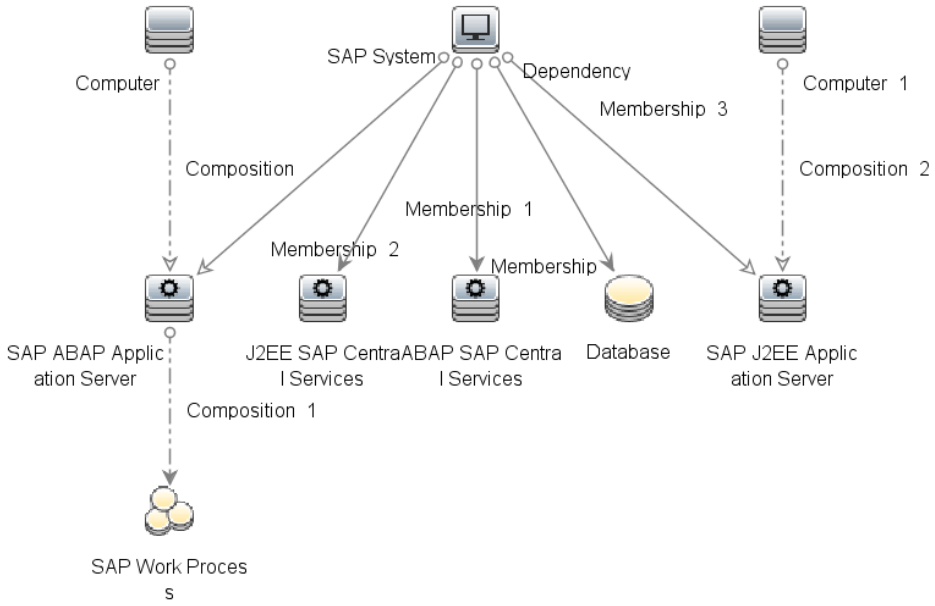
1. Open Modeling Studio pane:

   On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Modeling Studio**.

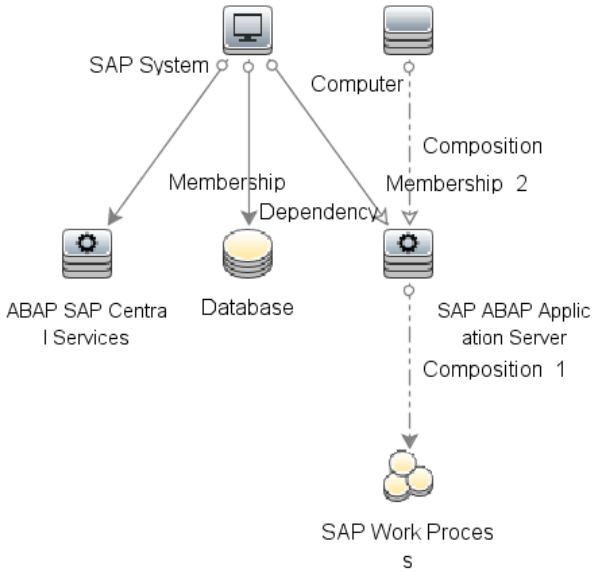
   On OMi 10.x, click **Administration > RTSM Administration > Modeling > Modeling Studio**.
2. Click **Resource Type** as **Views**.
3. Click **Operations Management > SAP**.

By default, OMi MP for SAP includes the following RTSM Views:

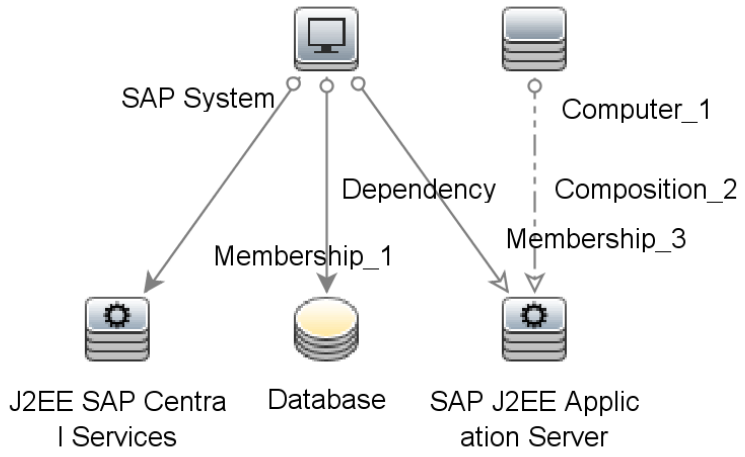
- **SAP_Deployment:** This RTSM view shows the SAP System, SAP J2EE Application Server, J2EE SAP Central Services, Database, SAP ABAP Application Server, SAP Work Process, and ABAP SAP Central Services CI Types. The SAP_Deployment view enables you to visualize the Event and Health perspectives of the SAP Application Server CIs that you monitor. You can use the SAP_Deployment view for visualizing events that are specific to the monitored SAP Application Servers. You can also use the SAP_Deployment view for assigning and tuning the OMi MP for SAP deployment in the SAP Application Server environment. The following image shows the relationship among the CI Types:



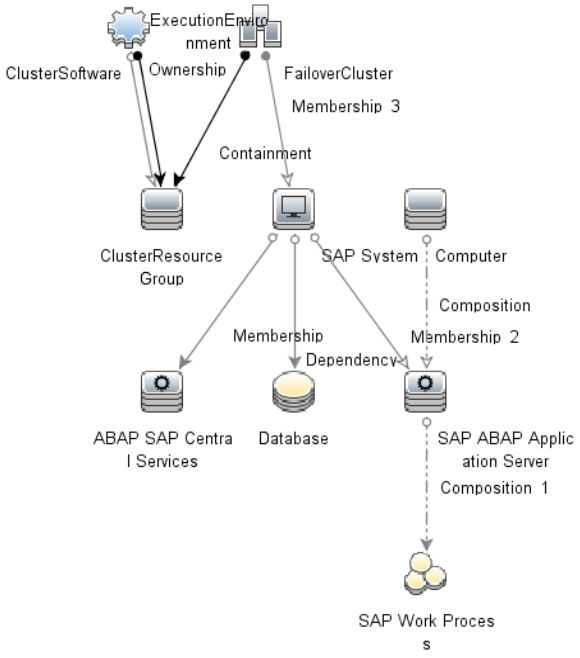
- **SAP_ABAP_Deployment:** This RTSM view shows the SAP System, SAP ABAP Application Server, ABAP SAP Central Services, SAP Work Process, and Database CI Types. The SAP_ ABAP_Deployment view enables you to visualize the Event and Health perspectives of the SAP ABAP Application Server CIs that you monitor. You can use the SAP_ABAP_Deployment view for visualizing events that are specific to the monitored SAP ABAP Application Servers. You can also use the SAP_ABAP_Deployment view for assigning and tuning the OMi MP for SAP deployment in the SAP ABAP Application Server environment. The following image shows the relationship among the CI Types:



- **SAP_J2EE_Deployment:** This RTSM View shows the SAP System, Database, SAP J2EE Application Server, and J2EE SAP Central Services CI Types. The SAP_J2EE_ Deployment view enables you to visualize the Event and Health perspectives of the SAP J2EE Application Server CIs that you monitor. You can use the SAP_J2EE_Deployment view for visualizing events that are specific to the monitored SAP J2EE Application Servers. You can also use the SAP_J2EE_Deployment view for assigning and tuning the OMi MP for SAP deployment in the SAP J2EE Application Server environment. The following image shows the relationship among the CI Types:



- **SAP_Cluster_Deployment:** This RTSM View shows the SAP System, Database, SAP ABAP Application Server, and ABAP SAP Central Services, ClusterSoftware, ClusterResourceGroup, and Failover Cluster CI types in an SAP Cluster Configuration. You can use the SAP_Cluster_ Deployment view for visualizing events that are specific to the monitored SAP ABAP Application Servers in cluster. The following image shows the relationship among the CI Types:



Event Type Indicators (ETIs)

ETIs are categorization of events based on the type of occurrence. The OMi MP for SAP includes the following ETIs to monitor SAP-related events:

How to Access Event Type Indicators

1. Open the Indicators pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Indicators**.

   On OMi 10.x, click **Administration > Service Health > CI Status Calculation > Health- and Event Type Indicators**.

2. In the CI Type pane, click **Configuration Item > InfrastructureElement > Application Resource > [Select the related CI Type]**.

CI Type	ETI	Description	Value/Severity
sap_r3_server	TemSe File Inconsistency	This provides the Temporary Sequential File Inconsistency.	High/WARNING
sap_r3_server	IDoc Status	This provides the status of SAP IDocs.	High/WARNING, Normal/NORMAL
sap_r3_server	LoggedIn Users Max	Indicates the number of users who have logged into the SAP system at any given point of time.	High/WARNING
sap_r3_server	SAP User Login Status	This provides the status of the users logged in into the SAP System.	Highl/WARNING
sap_r3_server	ABAP Dump Rate	Indicates the frequency of runtime errors that occur on the SAP system.	High/WARNING
sap_r3_server	RFC Error Rate	Indicates the frequency of RFC errors that occur during the communication between the application servers or among the various RFC destinations.	High/WARNING
sap_r3_server	Logon Failure	This provides Logon failure status.	Yes/MAJOR
sap_r3_server	System Change Option Status	Indicates the SAP System Change option status.	High/WARNING, Normal/NORMAL
sap_r3_server	SAP Process Status	This provides the status of SAP process.	Normal/NORMAL, Low/WARNING
sap_r3_server	ABAP Dispatcher Status	This provides the status of the SAP ABAP Dispatcher.	High/WARNING, Normal/NORMAL
sap_r3_server	SAP Transport Error Rate	Indicates the transport errors on the application server. This includes the errors due to import or export.	Normal/NORMAL, High/MAJOR
sap_j2ee_app_server	SAP J2EE Kernel	Generic Indicator for all the Kernel related metrics of SAP J2EE Application Server	Normal/NORMAL, Warning/WARNING, Major/MAJOR
sap_j2ee_app_server	SAP J2EE Services	Generic Indicator for all Service related metrics of SAP J2EE Application Server.	Normal/NORMAL, Warning/WARNING, Major/MAJOR
sap_	Unsuccessful	Indicates the number of all the unsuccessful	Normal/NORMAL,

CI Type	ETI	Description	Value/Severity
j2ee_ app_ server	Logon Attempts Rate	logon attempts by all users from server startup.	High/MAJOR
sap_ system	SAP System Log Status	This provides the status of the SAP System Log messages.	Highl/WARNING, Normal/NORMAL
sap_ system	CTS Performance	This indicates the performance of the SAP Correction and Transport System.	High/WARNING
sap_ system	SAP FileSystem Utilization	This provides the information on the utilization of the SAP File System.	High/WARNING
sap_ system	SAP System Security Status	This provides the status of SAP System Security parameters.	Highl/WARNING, Normal/NORMAL, Low/WARNING
sap_ system	Work Load Performance	Indicates the workload performance on the SAP system.	Normal/NORMAL

Health Indicators (HIs)

HIs analyze the events that occur in SAP CIs and report the health of the SAP CIs. The OMi MP for SAP includes the following HIs to monitor the SAP-related events:

How to Access Health Indicators (HIs)

1. Open the Indicators pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Indicators**.

   On OMi 10.x, click **Administration > Service Health > CI Status Calculation > Health- and Event Type Indicators**.

2. In the CI Type pane, click **Configuration Item > InfrastructureElement > Application Resource > [Select the respective CI Type]**.

CI Type	HI	Description	Value/Severity
database	Database CPU Usage	Indicates the database CPU usage on the SAP system.	Normal/NORMAL, Highl/WARNING

CI Type	HI	Description	Value/Severity
sap_ work_ process	Batch WorkProcess Availability	Indicates the availability of the SAP background work process.	Available/NORMAL, Unavailable/MAJOR
sap_ work_ process	Gateway WorkProcess Performance	Indicates the performance of the SAP Gateway work process.	Normal/NORMAL, Low/MAJOR
sap_ work_ process	Spool WorkProcess Performance	Indicates the performance of the Spool work process.	Normal/NORMAL, Low/MAJOR
sap_ work_ process	Batch WorkProcess Performance	Indicates the performance of the SAP background work process.	Normal/NORMAL, Low/MAJOR
sap_ work_ process	Spool WorkProcess Availability	Indicates the availability of SAP Spool work process.	Available/NORMAL, Unavailable/MAJOR
sap_ system	SAP System Memory Utilization	Indicates the memory utilized on the SAP system.	Normal/NORMAL, High/MAJOR
sap_ system	SAP System Status	Indicates whether the SAP system is up or down.	Up/NORMAL, Down/CRITICAL
sap_ j2ee_ app_ server	SAP J2EE Application Server Status	Indicates whether the SAP J2EE Application Server is up or down.	Up/NORMAL, Down/CRITICAL
sap_ work_ process	Dialog WorkProcess Availability	Indicates the availability of the dialog work process on the SAP system.	Available/NORMAL, Unavailable/MAJOR
sap_ work_ process	Update WorkProcess Performance	Indicates the performance of the update work process.	Normal/NORMAL, Low/MAJOR
sap_ work_ process	Gateway WorkProcess Availability	Indicates the availability of the Gateway work process.	Available/NORMAL, Unavailable/MAJOR
sap_ work_ process	Enqueue WorkProcess Performance	Indicates the performance of the SAP en queue work process.	Normal/NORMAL, Low/MAJOR
sap_ j2ee_	J2EE Transaction	Indicates the ratio between committed transactions count and total transactions count.	Normal/NORMAL, Low/MAJOR

CI Type	HI	Description	Value/Severity
app_ server	Success Rate		
database	Database Performance	Indicates the database performance on the SAP system.	Normal/NORMAL, Low/WARNING
sap_ system	SAP System CPU Utilization	Indicates the average utilization of CPU on the SAP system.	Normal/NORMAL, High/MAJOR
sap_ work_ process	Dialog WorkProcess Performance	Indicates the performance of SAP Dialog work processes.	Normal/NORMAL, Low/MAJOR
sap_ system	SAP Transaction Rate	Indicates the average response time and net time of SAP transactions.	Normal/NORMAL, Low/MAJOR
sap_ j2ee_ app_ server	Application Thread Pool Utilization	Indicates the ratio between the allocated task slots and total number of task slots on the application thread pool.	Normal/NORMAL, High/MAJOR
sap_ work_ process	Enqueue WorkProcess Availability	Indicates the availability of SAP Enqueue work process.	Available/NORMAL, Unavailable/MAJOR
sap_ work_ process	Update WorkProcess Availability	Indicates the availability of update work process	Available/NORMAL, Unavailable/MAJOR
sap_ j2ee_ app_ server	JARM Requests Average Response Time	Indicates the average response time of all the JARM requests on the J2EE application server.	Normal/NORMAL, High/MAJOR
sap_r3_ server	SAP ABAP Application Server Status	Indicates whether the ABAP application server is up or down	Up/NORMAL, Down/CRITICAL
sap_ j2ee_ app_ server	Cache Hit Rate	Indicates the cache hit rate on the J2EE application server.	Normal/NORMAL, High/MAJOR
sap_ j2ee_ app_	J2EE Memory Usage Rate	Indicates the ratio between the used memory and available memory.	Normal/NORMAL, High/MAJOR

CI Type	HI	Description	Value/Severity
server			
sap_ system	SAP Buffer Hit Ratio	Indicates the ratio of percentage of database requests that could be satisfied from the buffer, without requiring the involvement of the database.	Normal/NORMAL, Low/MAJOR
sap_ j2ee_ app_ server	JARM Requests Average CPU Time	Indicates the average CPU time for all the JARM requests.	Normal/NORMAL, High/MAJOR
sap_ j2ee_ app_ server	System Thread Pool Utilization	Indicates the ratio between the allocated task slots and total number of task slots on the system thread pool.	Normal/NORMAL, High/MAJOR

Configuration Items and Configuration Item Types

Configuration Items (CIs) are components that have to be managed in order to deliver an IT Service. CIs typically include IT Services, hardware, and software. Configuration Item Types (CITs) describes the type of a CI and its attributes. The SAP CIs that are discovered in an environment are grouped under the CITs.

The following table lists the CI Types that are mapped to RTSM in OMi using the OMi MP for SAP:

Package	CI Type
OMi_MgmtPack_SAP	SAP System
	SAP ABAP Application Server
	ABAP SAP Central Services
	Database
	J2EE SAP Central Services
	SAP J2EE Application Server
	SAP Work Process

Note: OMi MP for SAP Cluster Deployment View contains ClusterSoftware, ClusterResourceGroup, and Failover Cluster CITs.

Topology Based Event Correlation (TBEC) Rules

The OMi MP for SAP includes the following Topology Based Event Correlation Rules (TBEC Rules) to correlate SAP Application Server related events:

For more information on how the correlation rules work, see the *Operations Manager i Concepts Guide*.

How to Access Topology Based Event Correlation (TBEC) Rules

1. Open Correlation Rules pane:

   On BSM 9.2x, click **Admin > Operations Management > Event Correlation > Topology-Based Event Correlation**.

   On OMi 10.x, click **Administration > Event Processing > Correlation > Topology-Based Event Correlation**.

2. In the Correlations pane, select the respective correlation rule.

SAP::Computer:Node Status >> SAP ABAP Application Server Status

Description: Correlates the node status to the availability of the SAP ABAP Application Server		
Symptom		
CIT: SAP ABAP Application Server	ETI: SAPABAPApplicationServerStatus	Value: Down
Cause		
CIT: Computer	ETI: Node Status	Value:Down Value: Hang Value: Suspended

SAP::Computer:Ping Availability>>SAP ABAP Application Server Status

Description: Correlates unavailability of the node to that of SAP		
Symptom		
CIT: SAP ABAP Application Server	ETI: SAPABAPApplicationServerStatus	Value: Down

Cause		
CIT: Computer	ETI: Ping Availability	Value: Down Value: Unavailable

SAP::Computer:Memory Usage Level >> SAP Batch & Dialog Workprocess Performance

Description: Correlates the Computer memory usage level to the SAP Batch Workprocess performance and Dialog Workprocess Performance		
Symptom 1		
CIT:SAP Work Process	ETI: BatchWorkprocessperformance	Value: Low
Symptom 2		
CIT: SAP Work Process	ETI: Dialogworkprocessperformance	Value: Low
Cause		
CIT: Computer	ETI: Memory Usage Level	Value: Much Higher than Normal

SAP::SAP System :SAP System Memory Utilization >> Computer Memory Usage Level

Description: Correlates the SAP System's Memory utilization to the Computer Memory Usage Level		
Symptom		
CIT: Computer	ETI: Memory Usage Level	Value: Much Higher than Normal
Cause		
CIT: SAP System	ETI: SAPSystemMemoryUtilization	Value: Much Higher than Normal Value: High

SAP::SAP System: SAP System CPU Utilization>>Computer CPU Load

Description: Correlates the SAP System CPU Utilization to the Computer CPU load		
Cause		
CIT: SAP System	ETI: SAPSystemCPUUtilization	Value: High

Symptom		
CIT: Computer	ETI: CPU Load	Value: Busy Value: Constrained Value: Overloaded Value: Bottleneck

SAP::Computer:CPU Load>>SAP Batch & Dialog Workprocess Performance

Description: Correlates the Computer CPU Load to the SAP Batch Workprocess performance and Dialog Workprocess performance		
Symptom 1		
CIT:SAP Work Process	ETI: BatchWorkprocessperformance	Value: Low
Symptom 2		
CIT: SAP Work Process	ETI: Dialogworkprocessperformance	Value: Low
Cause		
CIT: Computer	ETI: CPU Load	Value: Busy Value: Constrained Value: Overloaded Value: Bottleneck

SAP::SAP ABAP Application Server:ABAP Dump Rate >>SAP Batch Workprocess Availability and Performance

Description: Correlates the SAP ABAP Dump rate to the SAP Batch workprocess performance and availability		
Symptom 1		
CIT:SAP Work Process	ETI: BatchWorkProcessPerformance	Value: Low
Symptom 2		
CIT: SAP Work Process	ETI: Batchworkprocessavailability	Value:Not Available

Cause		
CIT: SAP ABAP Application Server	ETI: ABAPDumpRate	Value: High

SAP::Computer:Node Status >>SAP J2EE Application Server Status

Description: Correlates the Computer node status to the availability of SAP J2EE Application Server		
Symptom		
CIT: SAP J2EE Application Server	ETI: SAPJ2EEApplicationServerStatus	Value: Down
Cause		
CIT: Computer	ETI: Node Status	Value: Down Value: Hang Value: Suspended

SAP::Computer:Ping Availability >>SAP J2EE Application Server Status

Description: Correlates the Computer availability to the SAP J2EE Application Server Status		
Symptom		
CIT: SAP J2EE Application Server	ETI: SAPJ2EEApplicationServerStatus	Value: Down
Cause		
CIT: Computer	ETI: Ping Availability	Value: Unavailability

SAP::SAP J2EE Application Server:Memory Usage Rate & Transaction Success Rate >>Computer CPU Load

Description:Correlates the SAP J2EE Application Server Memory Usage rate and transaction success rate to the Computer CPU Load		
Cause 1		
CIT: SAP J2EE Application Server	ETI: J2EEMemoryUsageRate	Value: High
Cause 2		
CIT: SAP J2EE Application	ETI:	Value:Low

Server	J2EETransactionSuccessRate	
Symptom		
CIT: Computer	ETI: CPULOAD	Value: Overloaded

SAP::Computer:CPU Load>>SAP JARM Requests Average Response Time

Description: Correlates the computer CPU Load to the SAP JARM Requests Average Response time		
Symptom		
CIT: SAP J2EE Application Server	ETI: JARMRequestsAverageResponseTime	Value: High
Cause		
CIT: Computer	ETI: CPULOAD	Value: Overloaded

SAP::Computer:Memory Usage Level >>SAP J2EE Application Server Status & Transaction Success Rate & Average Requests Response Time

Description: Correlates the Computer Memory Usage level to SAP J2EE Application Server Status, SAP J2EE Transaction Success Rate and SAP JARM Average Requests Response Time		
Symptom 1		
CIT: SAP J2EE Application Server	ETI: J2EETransactionSuccessRate	Value: Low
Symptom 2		
CIT: SAP J2EE Application Server	ETI: SAPJ2EEApplicationServerStatus	Value:Down
Symptom 3		
CIT: SAP J2EE Application Server	ETI: JARMRequestsAverageResponseTime	Value: High
Cause		
CIT: Computer	ETI: Memory Usage Level	Value: Much Higher than Normal

SAP::SAP J2EE Application Server:J2EE Memory Usage Rate >>SAP J2EE Application Server Average Requests Response Time & Average Requests CPU Time

Description: Correlates the SAP J2EE Memory Usage Rate to SAP JARM Average Requests Response Time and SAP JARM Average Requests CPU time		
Symptom 1		
CIT: SAP J2EE Application Server	ETI: JARMRequestsAverageResponseTime	Value: High
Symptom 2		
CIT: SAP J2EE Application Server	ETI: JARMRequestsAverageCPUTime	Value:High
Cause		
CIT: SAP J2EE Application Server	ETI: J2EEMemoryUsageRate	Value: High

Tools

The OMi MP for SAP is packaged with tools which you can use to administer and monitor SAP CIs.

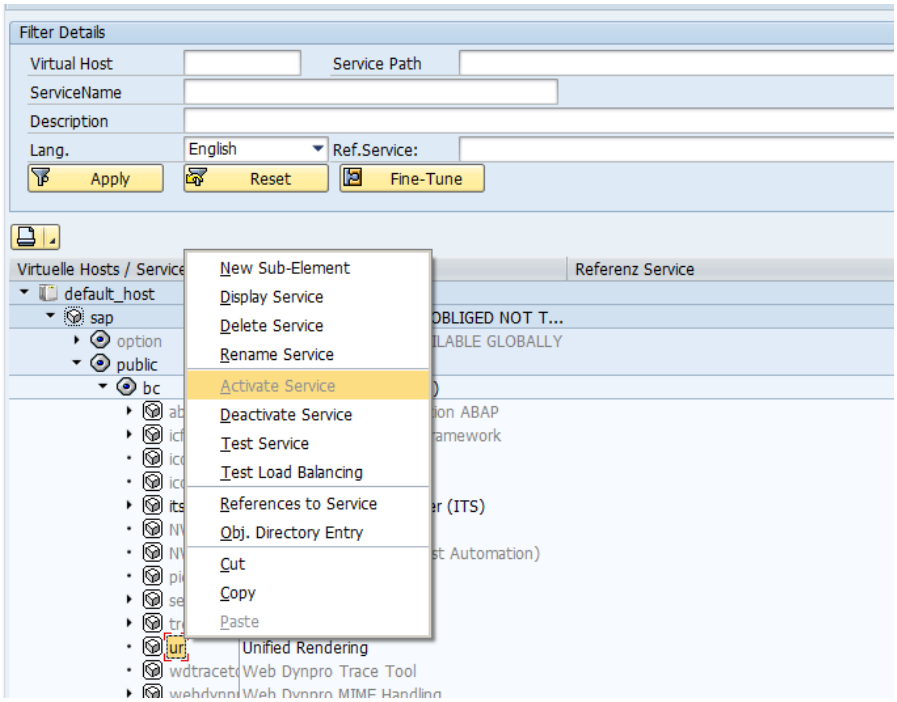
> **Note:** OMi MP for SAP Tools does not work for remotely monitored SAP Application Server CIs.

Prerequisites

OMi MP for SAP ABAP tools launching SAP GUI for different transactions use the WEBGUI port. You must enable the WEB-GUI for SAP for OMi MP for SAP ABAP tools to work with SAP systems in your environment. To configure the WEB-GUI for SAP, follow these steps:

1. Go to transaction **`SICF`** and activate the following services:
   a. `/default_host/sap/bc/gui/sap/its/webgui`
   b. `/default_host/sap/public/bc/ur`

c. `/default_host/sap/public/bc/its/mimes`



2. Publish all the services using the following transaction:

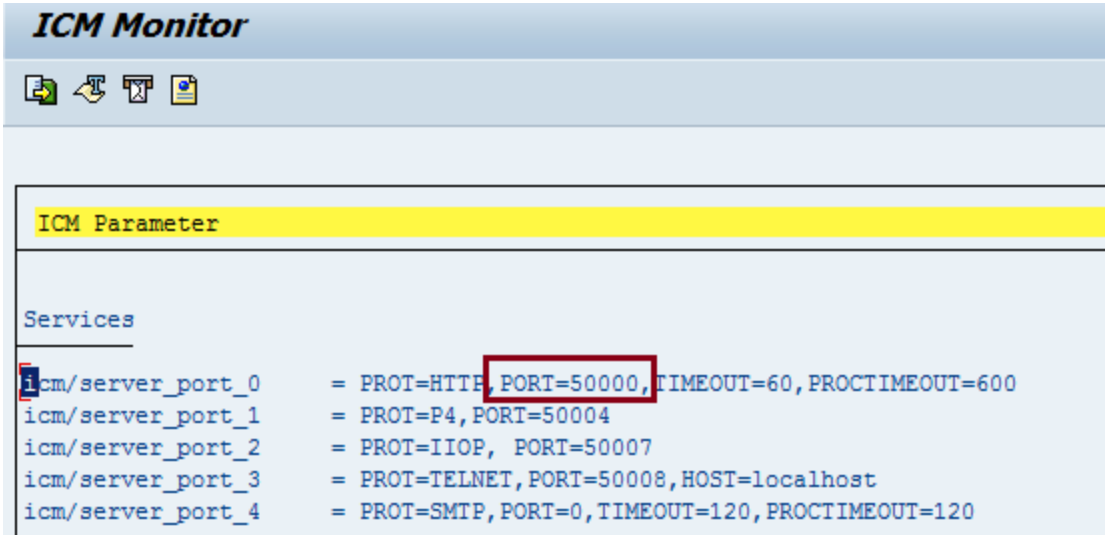
   `SIAC_PUBLISH_ALL_INTERNAL`

3. Go to transaction `SMICM`

4. From the Menu, open the **Parameters Display** menu:

   GOTO > Parameters > Display

5. Note the **icm/server_port_0 field** Port Number. This is the WEBGUI port number used by OMi MP for SAP Tools while launching WEBGUI based Transactions.



For more information about SAP Transactions and Activating WEBGUI port, see *SAP Documentation*.

The following table lists the tools provided with OMi MP for SAP:

CI Type	Tool Name	Description
SAP ABAP Application Server	SAP ABAP Application Server - Stop Performance Agent	Stops the performance agent.
	SAP ABAP Application Server - Workload Monitor	Displays the SAP transaction ST03 on the SAPGUI.
	SAP ABAP Application Server - Background Job Overview	Displays the SAP transaction SM37 on the SAPGUI.
	SAP ABAP Application Server - SAPGUI for HTML	Launches the SAPGUI for HTML.
	SAP ABAP Application	Displays the SAP transaction SM50 on the SAPGUI.

CI Type	Tool Name	Description
	Server - WorkProcess Overview	
	SAP ABAP Application Server - Instances Information	Provides information about the running SAP Application Server instances.
	SAP ABAP Application Server - Install Performance Package	Installs the performance package.
	SAP ABAP Application Server - Remove Performance Package	Removes the performance package.
	SAP ABAP Application Server - Background Job Definition	Displays the SAP transaction SM36 on the SAPGUI.
	SAP ABAP Application Server - Start Performance Agent	Starts the performance agent.
	SAP ABAP Application Server - System Log Overview	Displays the SAP transaction SM21 on the SAPGUI.
	SAP ABAP Application Server - LoggedIn Users Overview	Displays the SAP transaction AL08 on the SAPGUI.

CI Type	Tool Name	Description
	SAP ABAP Application Server - Configured Instance Status (Only Unix Nodes)	Displays the status of Configured SAP instances for Unix Nodes only.
	SAP ABAP Application Server - Gateway Connections	Displays the SAP transaction SMGW on the SAPGUI.
	SAP ABAP Application Server - Database Performance	Displays the SAP transaction DB02 on the SAPGUI.
	SAP ABAP Application Server - Background Job Status	Displays the SAP transaction SMX on the SAPGUI.
	SAP ABAP Application Server - SAP Server Overview	Displays the SAP transaction SM51 on the SAPGUI.
	SAP ABAP Application Server - CCMS Control Panel	Displays the SAP transaction RZ03 on the SAPGUI
	SAP ABAP Application Server - Performance Agent Status (Only Unix Nodes)	Provides the status of performance agent.
	SAP ABAP Application Server - SAP	Checks the availability of SAP Database for Unix Nodes only.

CI Type	Tool Name	Description
SAP J2EE Application Server	Database Availability (Only Unix Nodes)	
	SAP ABAP Application Server - Profile Maintenance	Displays the SAP transaction RZ10 on the SAPGUI.
	SAP J2EE Application Server - Remove Performance Package	Removes the performance package.
	SAP J2EE Application Server - Connection Status	Checks and displays the SAP J2EE Application Server Connection status.
	SAP J2EE Application Server - Performance Agent Status (Only Unix Nodes)	Provides the status of performance agent on only UNIX nodes.
	SAP J2EE Application Server - Stop Performance Agent	Stops the performance agent.
	SAP J2EE Application Server - Configuration Creation	Creates the configuration for the SAP J2EE application server monitoring at the node level.
	SAP J2EE Application Server - Install Performance	Installs the performance package.

CI Type	Tool Name	Description
	Package	
	SAP J2EE Application Server - Start Performance Agent	Starts the performance agent.

Chapter 4: Creating SAP Management Templates

1. Open the Management Templates & Aspects pane:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server

3. Select the SAP NetWeaver Application Server folder and if you need to create a new configuration folder, click . The Create Configuration Folder dialog box opens.

4. Type the name of the new configuration folder and a description. For example, you can type the new configuration folder name as <Test>.

5. Click **OK**. The new configuration folder is created.

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > Test

6. In the Management Templates & Aspects pane, select the configuration folder and click **Create Management Template**. The Create Management Template wizard opens.

7. In the **General** tab, type a **Name** for the new SAP Management Template. Click **Next**.

8. An SAP Management Template enables you to manage ABAP and J2EE application servers and all the related dependent CIs. Select **SAP ABAP Application Server** or **SAP J2EE Application Server** from the list as the Topology View depending on your monitoring requirement.

9. Click an item in the topology map to select the **CI Type** of the CIs that this Management Template enables you to manage. This is the type of CI to which the Management Template can be assigned. For example, you can select SAP J2EE Application Server to monitor SAP J2EE Application server in your SAP Landscape.

   Click **Next**.

10. In the **Aspects** tab, add the Aspects to the Management Template. To add an existing Aspect, follow these steps:

a. Select the Aspect you want to add from the Available Aspects matching the CI Types pane. You can use **CTRL** or **SHIFT** key to select multiple Aspects.

b. Click  to move the Aspect to the Selected Aspects pane. The Aspect is added to the Management Template.

11. You must add the SAP ABAP Base Aspect or the SAP J2EE Base Aspect to the new Management Template. The SAP ABAP Base Aspect and the SAP J2EE Base Aspect contains the config file, scheduled task and log file policy templates, which are essential for data collection.

12. For each Aspect that you add, you must specify at least one **Target CI**.

    Click an Aspect in the list, and then in the topology map click the CIT you want the Aspect to monitor when this Management Template is assigned. Use the **CTRL** or **SHIFT** key to select several CITs. Each CIT that you select here must correspond to one of the CI types assigned within the Aspect itself (or a child of one of those CITs). For example, you can select SAP CI from the topology map.

13. In the **Parameters** tab, you see a list of all the parameters from the Aspects that you added to this Management Template.

    To combine parameters:

    a. Press **CTRL** and click the parameters that you want to combine.

    b. Click the  . The Edit/Combine Parameters dialog box opens.

    c. Type a **Name** for the combined parameters.

    d. *(Optional).* Specify a **Description**, **Default Value**, and whether the combined parameter is **Read Only**, an **Expert Setting**, or **Hidden**.

    You can specify either a specific default value, or you can click **From CI Attribute** and then browse for a CI attribute. When you specify a CI attribute, Operations Management sets the parameter value automatically during the deployment of the underlying policy templates, using the actual value of this attribute from the CI. You can also change values of conditional parameters. (The conditions are read-only and cannot be changed at Management Template level.)

    Read Only prevents changes to the parameter value when the Management Template is assigned to a configuration item. Hidden also prevents changes, but additionally makes the parameter invisible when the Management Template is assigned, and during parameter tuning. Users can choose whether to show expert settings when they make an assignment.

    e. Click **OK**.

You can also edit the parameters without combining them, to override the defaults in the Aspects or policy templates. Click one parameter, and then click . The Edit/Combine Parameters dialog box opens.

14. In the Create Management Template wizard, click **Finish** to save the Management Template and close the wizard. The new Management Template appears in the Management Templates & Aspects pane.

Editing SAP Management Templates

You can edit the SAP Management Templates and modify the following components:

- Parameters
- Aspects

Editing Parameters

Use Case: You are using Essential SAP ABAP Management Template to monitor the status and performance of batch jobs running on the SAP system. You are monitoring the SAP ABAP Batch Job and want to modify the corresponding parameters corresponding to closely monitor the SAP ABAP Batch Job health.

To closely monitor the SAP ABAP Batch Job health, you must modify the parameters SAP ABAP Batch Job monitor parameters - FREQ for ABAP Batch Jobs, TraceLevel for ABAP Batch Jobs, TraceFileName for ABAP Batch Jobs, TraceMode for ABAP Batch Jobs, TracePeriod for ABAP Batch Jobs, RFCTimeOutInterval for ABAP Batch Jobs.

1. Open Management Templates & Aspects:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > SAP ABAP Application Server Management Template

3. Select the **Essential SAP ABAP Management Template** from the list, and then click  . The Edit Management Template dialog box opens.
4. Click the **Parameters** tab. The list of parameters appear.
5. Double-click the ABAP Batch Jobs parameters.

   In this instance, FREQ for ABAP Batch Jobs, TraceLevel for ABAP Batch Jobs, TraceFileName for ABAP Batch Jobs, TraceMode for ABAP Batch Jobs, TracePeriod for ABAP Batch Jobs, and RFCTimeOutInterval for ABAP Batch Jobs.

   The Edit Parameter dialog box appears.
6. You can change the default value by using the drop down text. For example, you can change the value of the parameter FREQ for ABAP Batch Jobs to HIGH from VERYHIGH depending on your monitoring requirements.
7. Click **OK**. The Edit Management Template dialog box opens.
8. Click **OK**. The version of the SAP Management Template is incremented.

> **Note:** The version number of the SAP Management Template is incremented when any customizations are made to the SAP Management Template.

Editing Aspects

Use Case: You are using Extensive SAP J2EE Management Template to monitor your J2EE environment. You do not want to use some Aspects which are part of the Extensive SAP J2EE Management Template.

1. Open Management Templates & Aspects:

   On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.

   On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:

   Configuration Folders > ERP Management > SAP NetWeaver Application Server > SAP J2EE Application Server Management Template
3. Select the **Extensive SAP J2EE Management Template** from the list, and then click  **Edit**. The Edit Management Template dialog box opens.

4. Click the **Aspects** tab. The list of Aspects appear.
5. Select the Aspect that you want to delete from the list. For example, you want to delete the SAP J2EE Connections Manipulator Performance.
6. Click  to delete the selected Aspect.
7. Click **OK**. The version of the Extensive SAP J2EE Management Template is incremented.

Chapter 5: Deployment Scenarios

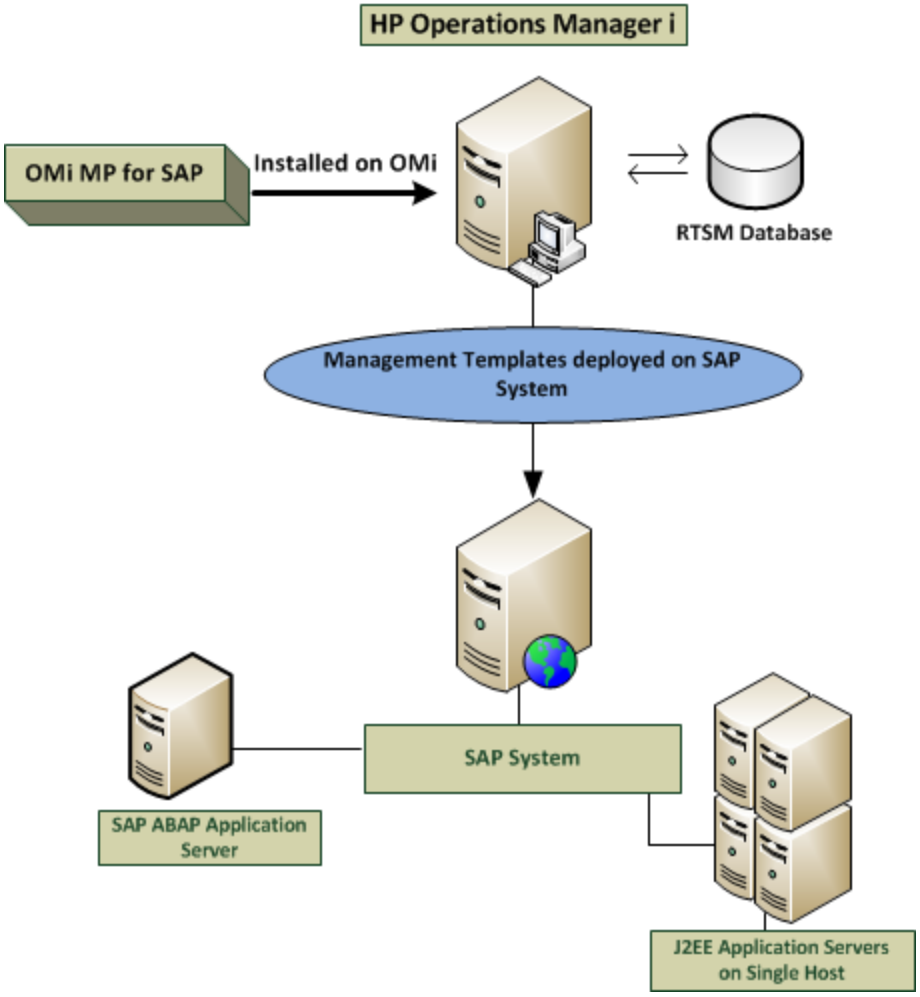
You can use OMi MP for SAP to monitor different SAP Application Server configurations like SAP system with standalone ABAP Application Servers, J2EE Application Server Instances with Central Server on same system, SAP ABAP Application Servers on remote nodes etc. This section provides information about deploying OMi MP for SAP on different SAP Server configurations.

Monitoring SAP J2EE Application Servers on Single Host

OMi MP for SAP enables you to monitor multiple SAP J2EE Application Servers running on a single SAP Host system. To deploy OMi MP for SAPon SAP J2EE Application Servers running on a single host, follow these steps:

1. You must add the nodes you want to monitor to the OMi console.
2. Deploy the SAP J2EE Discovery Aspect to discover J2EE Application Server CIs on the SAP managed nodes.
3. Identify and deploy the SAP J2EE Management Template as per your monitoring requirement. For more information about Identifying and Deploying SAP Management Templates, see Task 6: Identifying and Deploying an SAP Management Template.

The following figure shows a typical deployment scenario where the OMi MP for SAP is deployed to monitor SAP J2EE Application Servers on Single Host:



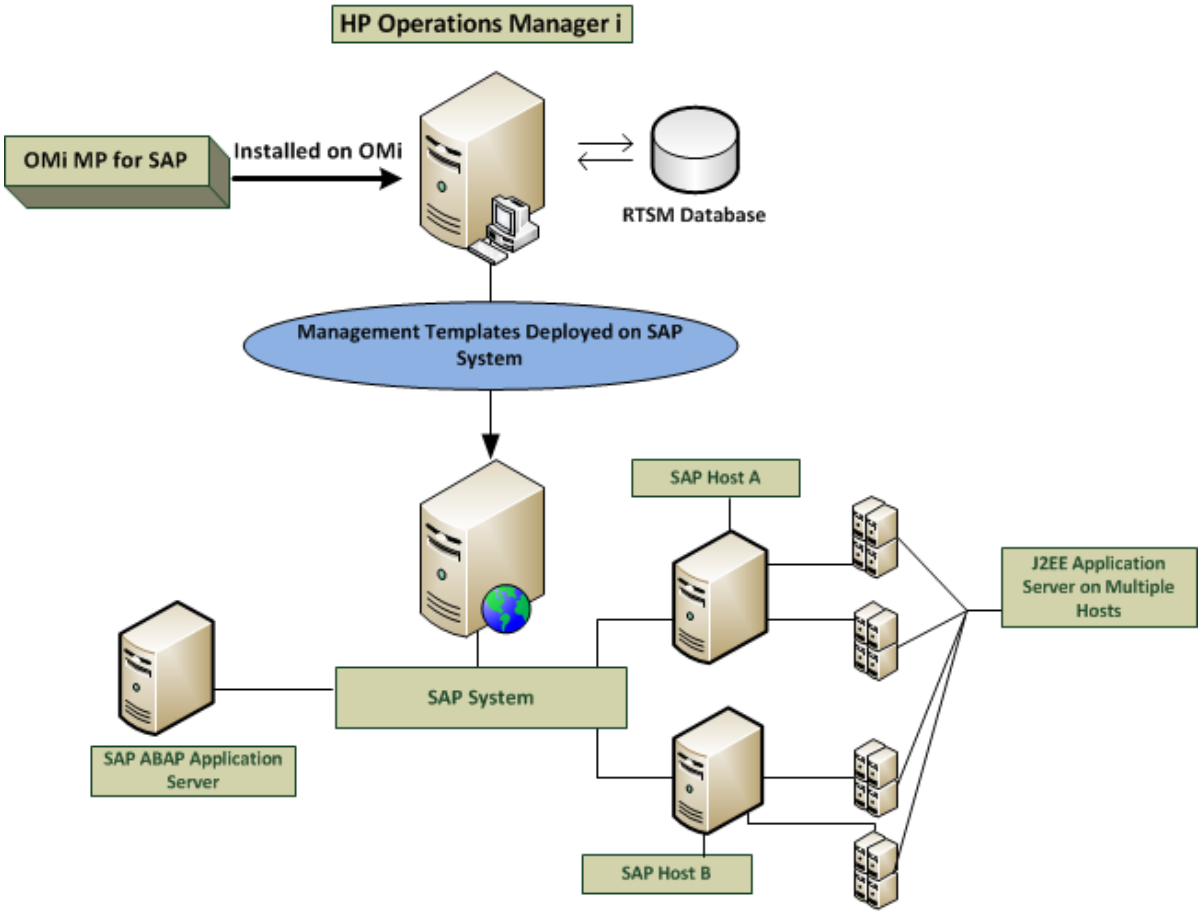
Monitoring SAP J2EE Application Servers on Multiple Hosts

OMi MP for SAP enables you to monitor J2EE Application Servers running on multiple SAP Host systems. To deploy OMi MP for SAP on SAP J2EE Application Servers running on multiple hosts, follow these steps:

> **Note:** OMi MP for SAP only requires Agent to be installed on SAP node where SAP J2EE Central Server Instance is running.

1. You must add the nodes you want to monitor to the OMi 10.x console.
2. Deploy the SAP J2EE Discovery Aspect to discover J2EE Application Server CIs on the SAP nodes.
3. Identify and deploy the SAP J2EE Management Template as per your monitoring requirement. For more information about Identifying and Deploying SAP Management Templates, see Task 6: Identifying and Deploying an SAP Management Template.

The following figure shows a typical deployment scenario where the OMi MP for SAP is deployed to monitor SAP J2EE Application Servers running on Multiple Hosts:

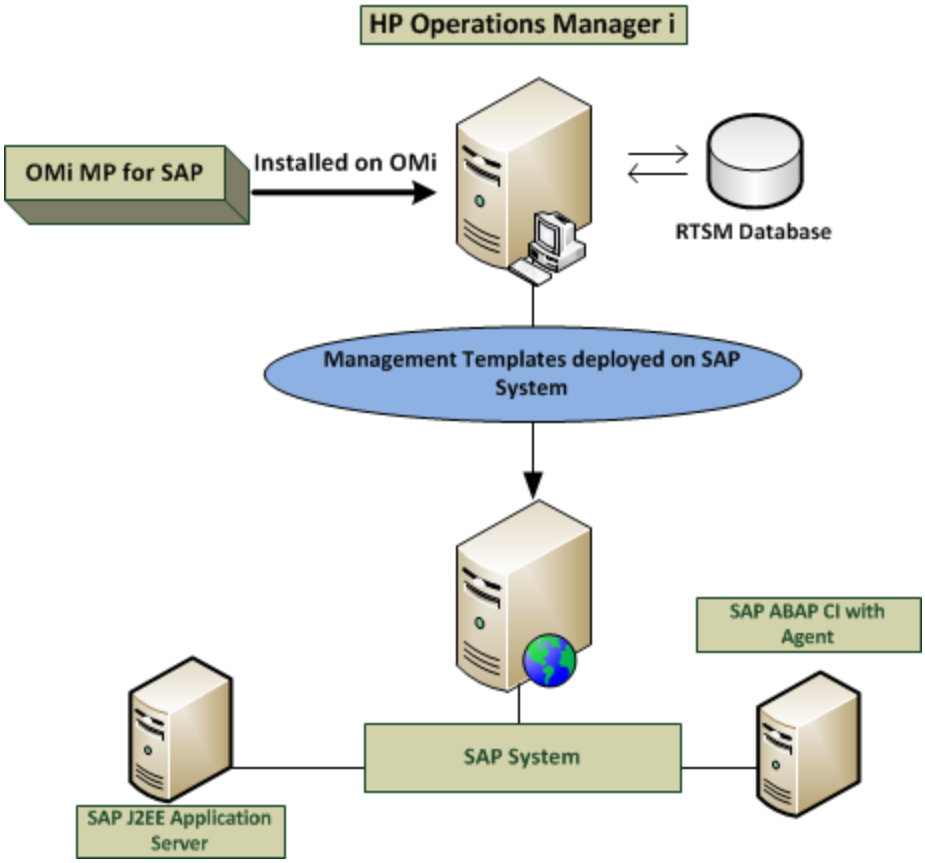


Monitoring Standalone SAP ABAP Application Servers

OMi MP enables you to monitor Standalone SAP ABAP Application Servers in your SAP Landscape. To deploy OMi MP for SAP on SAP ABAP Application Servers, follow these steps:

1. You must add the nodes you want to monitor to the OMi console.
2. Deploy the SAP ABAP Discovery Aspect to discover ABAP Application Server CIs in your SAP environment.
3. Deploy SAP ABAP Configuration Aspect.
4. Identify and deploy the SAP ABAP Management Template as per your monitoring requirement. For more information about Identifying and Deploying SAP Management Templates, see Task 6: Identifying and Deploying an SAP Management Template.
5. Configure SAP ABAP Monitoring Templates.

The following figure shows a typical deployment scenario where the OMi MP for SAP is deployed to monitor SAP ABAP Application Servers running on SAP CIs:



Monitoring Remote SAP ABAP Application Servers

OMi MP for SAP enables you to monitor ABAP Application Servers running on remote nodes which does not have Operations Agent installed. For using this functionality you must deploy SAP ABAP Remote Configuration Aspect. The SAP ABAP Remote Configuration Aspect enables you to configure the Proxy Node (with Agent) you want to use as host for monitoring and collecting required information from ABAP Application Server running on the remote node.

> **Note:** You can configure an SAP CI managed by OMi to monitor any number of SAP ABAP Application Server running on remote nodes.

To deploy OMi MP for SAP to monitor ABAP Application Servers running on remote nodes, follow these steps:

1. Add the Node with Agent installed to the OMi console.
2. Deploy the SAP Remote Configuration Aspect to populate remote ABAP Application Server CIs in your SAP environment.

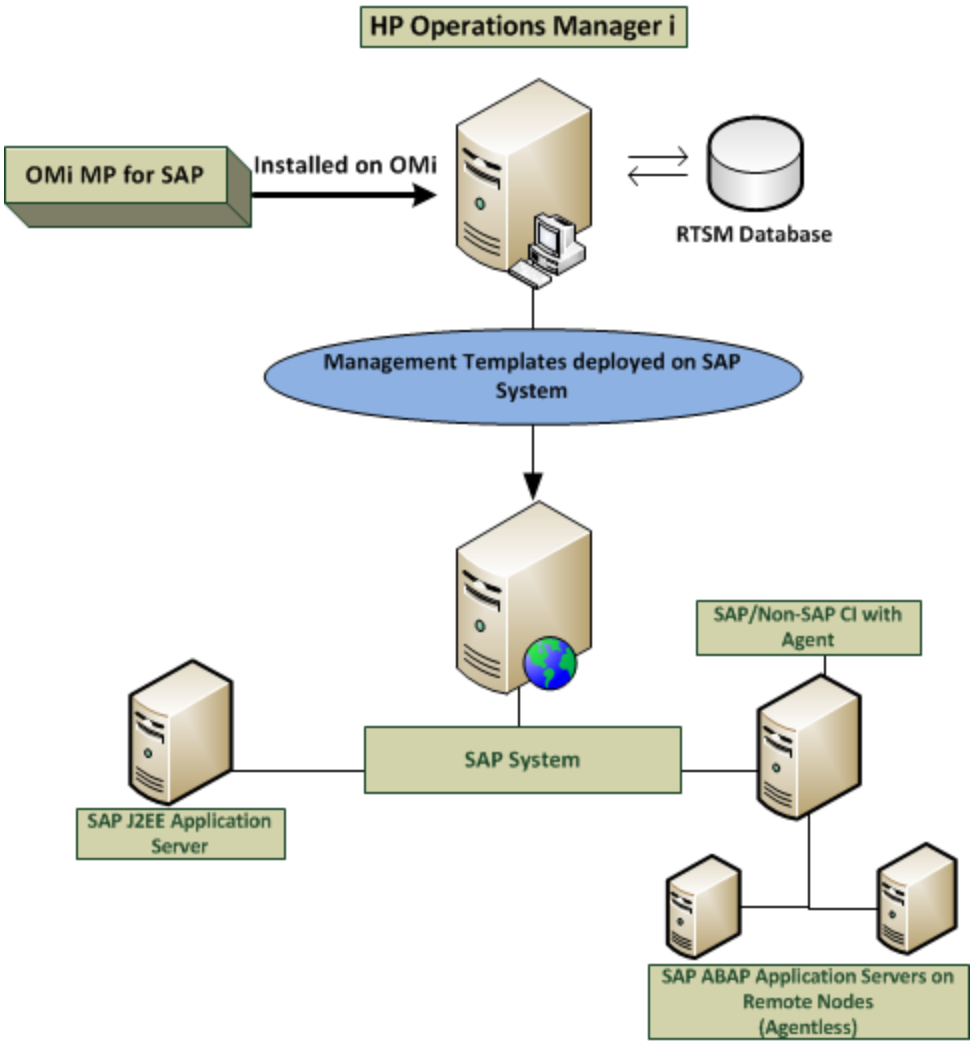
The ABAP Application Servers on Remote nodes gets populated in RTSM View.

3. Configure ABAP Monitoring Templates to support Remote Monitoring by adding RemoteHost keyword.

   For more information on configuring ABAP Monitoring Template to support ABAP Remote Monitoring, see "Remote Monitoring with SAP ABAP Monitoring Templates ".

4. Identify and deploy the SAP ABAP Management Template as per your monitoring requirement. For more information about Identifying and Deploying SAP Management Templates, see Task 6: Identifying and Deploying an SAP Management Template.

The following figure shows a typical deployment scenario where the OMi MP for SAP is deployed to monitor SAP ABAP Application Servers running on remote nodes:



Configuring OMi MP for SAP in High-Availability Cluster

OMi MP for SAP enables you to monitor SAP Application Servers configured in High-Availability cluster. The information in this section helps you to understand the process of configuring OMi MP for SAP on SAP servers running in a high-availability environment such as an MC/ServiceGuard cluster. Although the information provided in this section uses MC/ServiceGuard to explain cluster configurations, the basic concepts for monitoring are same for high-availability environment.

Pre-requisites

The information in this section is designed to help you configure OMi MP for SAP in a high-availability environment: it is not intended to explain either how to set up the high-availability software or Operations Manager i. Before you start the process of configuring OMi MP for SAP in a high-availability environment, it is recommended to read through and consider the information included in the following sections:

- "Configuration Requirements "
- "Reports"
- "Views"

Configuration Requirements

You must complete the following tasks before starting to configure OMi MP for SAP with SAP High - Availability cluster:

- High-availability software must already be correctly installed and configured in your SAP landscape, and the cluster should function correctly. For example, SAP servers in the MC/ServiceGuard cluster must already be configured as OMi managed nodes with the appropriate Operations Agent software and functionality installed and running. You have to decide whether to configure one package for the central instance and the database server or set up separate packages for each part.
- Set the `SAPOPC_HOSTNAMES` variable on the managed node.
  a. On the managed node, run the following in the command prompt:

     ```
     ovconfchg –edit
     ```

  b. Enter the SAPOPC_HOSTNAMES variable as following:

     ```
     [ctrl.env]
     SAPOPC_HOSTNAMES=<hostnames of the Cluster environment>
     ```

     Example :

     ```
     [ctrl.env]
     ```

```
SAPOPC_HOSTNAMES=sov02om139 sov02om140
```

c. Restart Operaions Agent using the following command:

```
ovc-restart
```

- Deploy the `SAP ABAP Discovery` Aspect on all Nodes in the cluster.
- You must configure and deploy SAP ABAP Configuration Aspect. The SAP ABAP Configuration Aspect enables you to configure SAP ABAP Application Server CIs discovered from HA environment.

> **Note:** The HostName entry in `SAP ABAP Application Server Message Node for HA` defines the name of the host with which you want to associate messages generated by nodes in the SAP high-availability cluster.

Reports

If you want to generate OMi MP for SAP reports for all the nodes in the MC/ServiceGuard cluster, make sure that:

- OMi MP for SAP's R3 Performance Agent Service is started on all nodes in the cluster
- Operations Bridge Reporter (OBR) is installed and correctly configured.

Views

OMi MP for SAP provides SAP_Cluster_Deployment view which enables you to you to build and visualize a subset of the overall RTSM model. For more information about OMi MP for SAP Views, see "Run-time Service Model (RTSM) Views".

> **Note:** You must deploy the SAP ABAP Discovery and SAP ABAP Configuration Aspect on all cluster nodes for the OMi MP for SAP to generate SAP_Cluster_Deployment view.

Configuring OMi MP for SAP in a High-Availability Environment

This section provides information about configuring the OMi MP for SAP in a High-Availability Environment.

To configure OMi MP for SAP in SAP High-Availability Cluster Environment, follow these steps:

1. **SAP ABAP Configuration Aspect and Login Credentials**

   You must deploy the **SAP ABAP Discovery Aspect** to identify SAP Cluster nodes in high-availability environment. You must then deploy SAP ABAP Configuration Aspect on all the discovered SAP CIs in High-Availability Cluster.

Make sure that the SAP Log-in Credentials provided in the SAP ABAP Configuration Aspect is having sufficient permissions to access the nodes in the SAP cluster.

2. **Configure the OMi MP for SAP ABAP Monitoring Templates**

   You must configure the SAP ABAP Monitoring Templates provided with OMi MP for SAPdeploy their respective Aspects to monitor SAP ABAP Application Server as per your monitoring requirements. For more information on configuring SAP ABAP Monitoring Templates, see "SAP ABAP Monitoring Templates".

   > **Note:** You must increment the version of SAP ABAP Management Templates after configuring or customizing SAP ABAP Monitoring Templates to make sure the changes in Monitoring Template Configuration are synced at Management Template Level. For more information on SAP ABAP Aspects and corresponding SAP ABAP Monitoring Templates, see SAP ABAP Monitoring Templates, Monitors, and History Files.

3. **Deploy OMi MP for SAP Management Templates**

   You must deploy OMi MP for SAP's Management Templates on SAP SIDs in the cluster as per your monitoring requirements. For more information on deploying Management Templates and Aspects, see Getting Started.

4. **Availability of OMi MP for SAP Monitoring Template History Files**

   You must make sure that each node in the MC/ServiceGuard cluster, can access respective history file (r3<monitor_name>.his) before and after a fail-over package switch. For more information on setting history path and history files used by SAP ABAP Monitoring Templates, see "SAP ABAP Monitoring Templates, Monitoring Template Configuration Files, and History Files".

Advanced Configuration

This section provides additional information about configuring OMi MP for SAP in SAP High-Availability Environment.

Host Mapping on Cluster Nodes

If the Agent discovers that multiple IP addresses are assigned to a single physical node in the high-availability cluster, the messages the agent sends show the host name associated with the IP address that is registered on the OMi management server for the cluster node, this is the name of the node where the cluster package is running at the time the message is sent.

Although this behavior is a feature of the OMi HTTPS agent in cluster environments, it overrides the OMi MP for SAP's host-mapping functionality, which can lead to a situation where the wrong name appears to be associated with messages displayed in the message browser. To ensure that the host-mapping feature works as intended and the correct hostname is displayed in OMi MP for SAP

messages coming from the high-availability cluster, you must disable the OMi HTTPS agent feature on the managed node, as follows:

1. Log on as a user with administrative privileges to each physical node in the high-availability cluster where an OMi HTTPS agent is running and open a command shell.
2. On HTTPS agents managed by OMi for Unix:

   ```
   ovconfchg -ns eaagt -set OPC_SET_PROXY_FLAG_FOR_IP_ADDRESSES

   '<IP_Address,IP_Address,...>'
   ```

   Use the `ovconfchg` command on each physical node in the high-availability cluster to specify the IP address of the package (the virtual node) that you want to replace the cluster-node name as registered on the OMi management server, when a message from one of the cluster nodes appears in the message browser. If multiple packages are running in the cluster (for example, for OMi and for Oracle), use commas "," to separate multiple IP addresses in the list.

   > **Note:** Spaces are not allowed in the list of IP addresses defined by OPC_SET_PROXY_FLAG_FOR_IP_ADDRESSES. Never include the IP address specified in OPC_IP_ADDRESS in the list of IP addresses.

3. Restart the agent with the new configuration using the following command:

   ```
   opcagt -kill; opcagt -start
   ```

SAP ABAP Monitoring Template History Files in a High-availability Cluster

The SAPABAP_CCMSIntegrationMon, SAPABAP_TraceMon, SAPABAP_ProcMon, and SAPABAP_StatRecMon SAP ABAP Monitoring Template have their own history files with the extension .his, for example, `r3monal.his`. Each time one of these OMi MP for SAP SAP ABAP Monitoring Template starts, it relies on the contents of its history file `r3<monitor_name>.his` to determine the last events monitored and, as a result, the point at which the current monitor run should start. This mechanism is designed to avoid the problem of duplicate messages.

Note that SAPABAP_CCMSIntegrationMon Monitoring Template writes new information to its history file only if the SAP System it is monitoring is available and the OMi MP for SAP monitors can connect. If the SAP System being monitored is not available, SAPABAP_CCMSIntegrationMon Monitoring Template only updates the time stamp to reflect the time of the latest monitor run. The monitoring templates SAPABAP_TraceMon, SAPABAP_ProcMon, and SAPABAP_StatRecMon SAP ABAP Monitoring Template, on the other hand, write to their respective history file after each monitor run whether the SAP System they are monitoring is available or not.

History File r3monal.his for the SAPABAP_CCMSIntegrationMon Monitoring Template

```
#-----------------------------------------------------------
```

```
# Keyword SAP SAP SAP Last Scan

# System Number Instance Time

LastScannedSystem =SP6 =33 =DVEBMGS33 =1073908785

-----------------------------------------------------------------
```

The history files for the OMi MP for SAP SAP ABAP Monitoring Template are usually stored on the managed node where the monitors are running in a directory specified in each monitor's configuration file, r3<monitor_name>.cfg. By default, this directory is `/var/opt/OV/conf/sapspi` for all UNIX managed nodes except AIX, which uses the directory `/var/lpp/OV/conf/sapspi`, and `%OVAGENTDIR%/conf/sapspi`for Microsoft Windows managed nodes. However, if the cluster package switches to another node, then the OMi MP for SAPABAP Monitoring Template can no longer access the most recent history files stored on the failed cluster node. This may lead to the generation of duplicate messages that have already been sent to OMi. For `SAPABAP_CCMSIntegrationMon`, the duplicate messages can be avoided by enabling CCMSAcknowledgeMessage, see SAPABAP_ CCMSIntegrationMon.

> **Note:** The OMi MP for SAPcollector monitors keep their history information in the SAP tables. As a result, they do not have a `.his` history file. The SAPABAP_TraceMon monitor reads the SAP trace and log files, and keeps the line number for each file in `r3mondev.his`. Therefore, in principle, SAPABAP_TraceMon is prone to sending duplicate messages if the package is switched to the other node. If `r3mondev.his` is stored on the local disks and `SAPABAP_TraceMon` on the new node, the OMi MP for SAP starts scanning from a point that was scanned on the previous node already.

However, after starting an SAP instance, new `dev_*` files will be created. Most of the `dev_*` files will be copied to `dev_*.old` files before creating new files. Therefore, `r3mondev` never monitors the `dev_ *.old` files.

SAPABAP_TraceMon detects (through the `Inode` column in `r3mondev.his`) if a file is created as new, and then starts scanning the new file from the beginning. Therefore, you can use the default configuration for SAPABAP_TraceMonand it is not necessary to place `r3mondev.his` on a shared disk. For more information on SAP monitor to SAP ABAP Monitoring Template Mapping, see "OMi MP for SAP ABAP Monitoring Template Configuration Files".

Special Considerations for the SAP ABAP Monitoring Templates

This section contains information which is intended to help you set up the OMi MP for SAP alert monitors in a high-availability environment. To set up the OMi MP for SAP
SAP ABAP Monitoring Templates in a high-availability environment, follow these steps:

1. Enable (=1) the **SAPABAP_CCMSIntegrationMon** Monitoring Template's auto-acknowledgment feature for CCMS alerts in SAP to avoid duplicate messages appearing in the OMi message

browser.

2. Define a CCMS monitor set. For example, "OMi", and a CCMS monitor: for example, "SAPMP Monitoring", for the messages you want to forward from CCMS to the OMi message browser. Note that the monitor-set feature can be only used with the XAL interface.

Special-Case Scenarios

For reasons of efficiency or cost, the secondary (or backup) node in a high-availability cluster might already be in use as an application server. If this in the case in your environment and regular high loads mean that you need the central instance to maintain the same performance level after the fail-over package switch as before, you have the option of shutting down the application server on the secondary node after the fail-over so that the machine's performance is available solely to the central instance. You can then share the user load between any other available application servers.

If performance is not an issue in your environment, you can choose to keep the application server instance running on the secondary node even after the fail-over package switch. However, if an instance of an SAP application server is running on the same machine as an SAP central instance, you will need to ensure that the OMi MP for SAP SAP ABAP Monitoring Template monitors are made aware of this fact and do not generate messages for both the central instance and the application server. The OMi MP for SAP SAP ABAP Monitoring Template monitors which are only designed to work with the central instance should be set up to exclude monitoring of the application-server instance. The OMi MP for SAP collector monitor and SAPABAP_ProcMon, for example, require special attention.

Each OMi MP for SAP SAP ABAP Monitoring Template monitor has a configuration file that you use to define which SAP NetWeaver instances in your SAP landscape it should watch and, in addition, what information it should collect. For example, you can use the SAPABAP_ProcMon Monitoring Template configuration to collect information about either the central-instance processes or the processes tied to the application-server instance.

> **Note:** The SAP instance number associated with the application server already running on the secondary node cannot be the same as the SAP instance number associated with the SAP central instance, which starts on the secondary node after the fail-over package switch.

OMi MP for SAP ABAP Monitoring Template Configuration Files

SAP ABAP Monitoring Template	Monitoring Template Configuration File (cfg)	Central Instance	Application Server
SAPABAP_TempSeqFileMon	r3monaco	✓	
SAPABAP_IdocStatusMon	r3monale	✓	

SAPABAP_CCMSIntegrationMon	r3monal [a]	✓	
SAPABAP_SysChgOptMon	r3monchg	✓	
SAPABAP_CTSMon	r3moncts	✓	
SAPABAP_TraceMon	r3mondev	✓	✓
SAPABAP_DispMon	r3mondisp	✓	✓
SAPABAP_DmpMon	r3mondmp	✓	
SAPABAP_BatJobMon	r3monjob	✓	
SAPABAP_StatRecMon	r3perfstat	✓	✓
SAPABAP_PerfMon	r3perfagent	✓	✓
SAPABAP_LckChkMon	r3monlck	✓	
SAPABAP_ProcMon	r3monpro	✓	✓
SAPABAP_RFCDestMon	r3monrfc	✓	
SAPABAP_SplMon	r3monspl	✓	
SAPABAP_SecMon	r3monsec	✓	
SAPABAP_StatusMon	r3status	✓	✓
SAPABAP_TransMon	r3montra	✓	
SAPABAP_UpdProcMon	r3monupd	✓	
SAPABAP_UsrMon	r3monusr	✓	
SAPABAP_WPMon	r3monwpa	✓	

a. CCMS 4.x only

The OMi MP for SAPCollector in a High-Availability Cluster

The OMi MP for SAPcollector collects alerts from all the OMi MP for SAPABAP Monitoring Templates such as, for example, SAP ABAP Idoc Status Monitoring Template, SAP ABAP Dump Status Monitoring Template, etc. The alert monitors themselves ensure that alert collectors are executed according to a defined schedule and report any messages that come back from the called function.

> **Note:** The OMi MP for SAP collector monitor is only intended to run on an SAP central instance: it is not designed to run on an application server.

If the secondary node in a high-availability cluster is running an application server, care has to be taken to ensure that the monitors that are started when the central instance comes up on the secondary node

after the fail-over switch do not become confused about which SAP instance to monitor—application server or central instance.

To avoid problems when the central instance and the application server are running on the same cluster node at the same time, for example, after a system fail over, you need to ensure that each of the monitors which the collector monitor starts when the central instance comes up on the secondary node is configured to ignore alerts associated with the application server and monitor only those alerts that belong to the central instance. This means modifying the configuration file of each of the OMi MP for SAP's central-instance monitors in such a way as to make sure that the monitor is tied to a particular SAP central-instance number, for example, 00. By default, the OMi MP for SAP ABAP Monitoring Template monitors are configured to monitor all SAP instances present on the node, which in this special-case scenario would include the unwanted application-server instance, too.

Tying the SAPABAP_IdocStatusMon to an SAP Instance Number illustrates how the configuration for the SAPABAP_IdocStatusMon Monitoring Template on the secondary node would look if you configured SAPABAP_IdocStatusMon Monitoring Template to monitor only the central instance (for example=00) on the secondary node nodename2.com and not the instance of the application server (=01), which is already running. Note that the node name you specify in this file is the name of the physical cluster node.

Tying the SAPABAP_IdocStatusMon Monitoring Template to an SAP Instance Number

```
#AlertMonFun SAP SAP SAP SAP Alert Enable=1 (...)

# Host System Number Client Monitor Disable=0 (...)

#-------------------------------------------------------------------------

--

AlertMonFun =ClusterNodeA =CI =00 =099 =ALE =1 (...)

AlertMonFun =ClusterNodeB =CI =00 =099 =ALE =1 (...)
```

The SAPABAP_ProcMon Monitoring Template in a High-Availability Cluster

The SAPABAP_ProcMon Monitoring Template scans for and checks all processes associated with a given SAP instance, for example, the dialog, en queue, update, batch, dispatch, message, gateway, and spool work processes. However, the SAPABAP_ProcMon Monitoring Template can be used to monitor database processes, too.

If the secondary node in a high-availability cluster is running an application server, then care has to be taken after a package switch that the SAPABAP_ProcMon Monitoring Template started by the package does not assume that the processes associated with the application server also need to be monitored along with the processes belonging to the central instance. One way of ensuring this is to specify the exact number of processes to be monitored by SAPABAP_ProcMon Monitoring Template

in the configuration (in the column: Process number=#). The number of processes to monitor must be the same on each node both before and after the fail-over package switch.

In addition, if you want to ensure that the SAPABAP_ProcMon Monitoring Template monitors only those processes belonging to a specific SAP instance on a node where multiple SAP instances are running, for example, after a package switch, you have to make sure that the SAPABAP_ProcMon Monitoring Template knows which SAP instances it is supposed to watch. You can do this by modifying the SAPABAP_ProcMon Monitoring Template configuration on the adoptive node in the cluster in such a way that each SAP instance number (defined in the column: SAP Number=) is linked to the appropriate process name, as illustrated in the following example:

Tying the SAPABAP_ProcMon Monitoring Template to an SAP Instance Number

```
#AlertInstMonPro SAP SAP Process Enable Mode Process (...)

# System Number name =1 number (...)

#-------------------------------------------------------------------------

AlertInstMonPro =T11 =00 =saposcol =1 =Exact =1 (...)

AlertInstMonPro =T11 =01 =saposcol =1 =Exact =1 (...)
```

OMi MP for SAP R3 Performance Agent in a High-availability Environment

> **Note:** Since OMi MP for SAP Performance Agent will always use the physical hostname in a cluster environment, you must specify the clustered SAP-system details by configuring OMi MP for SAP Performance Agent with the manual mode (`r3perfconfig -manual`).

In the event of a fail over and subsequent package switch, the Performance Agent stops collecting values for the SAP metrics on the host node and, as soon as the package comes up on the *secondary* node, starts to monitor and report the appropriate SAP metrics on the *secondary* node. Metrics for physical components such as CPU and disk performance continue to be collected on both nodes irrespective of where the package is running. This needs to be taken into account when generating and publishing performance reports and graphs.

Removing the OMi MP for SAP in a High-availability Environment

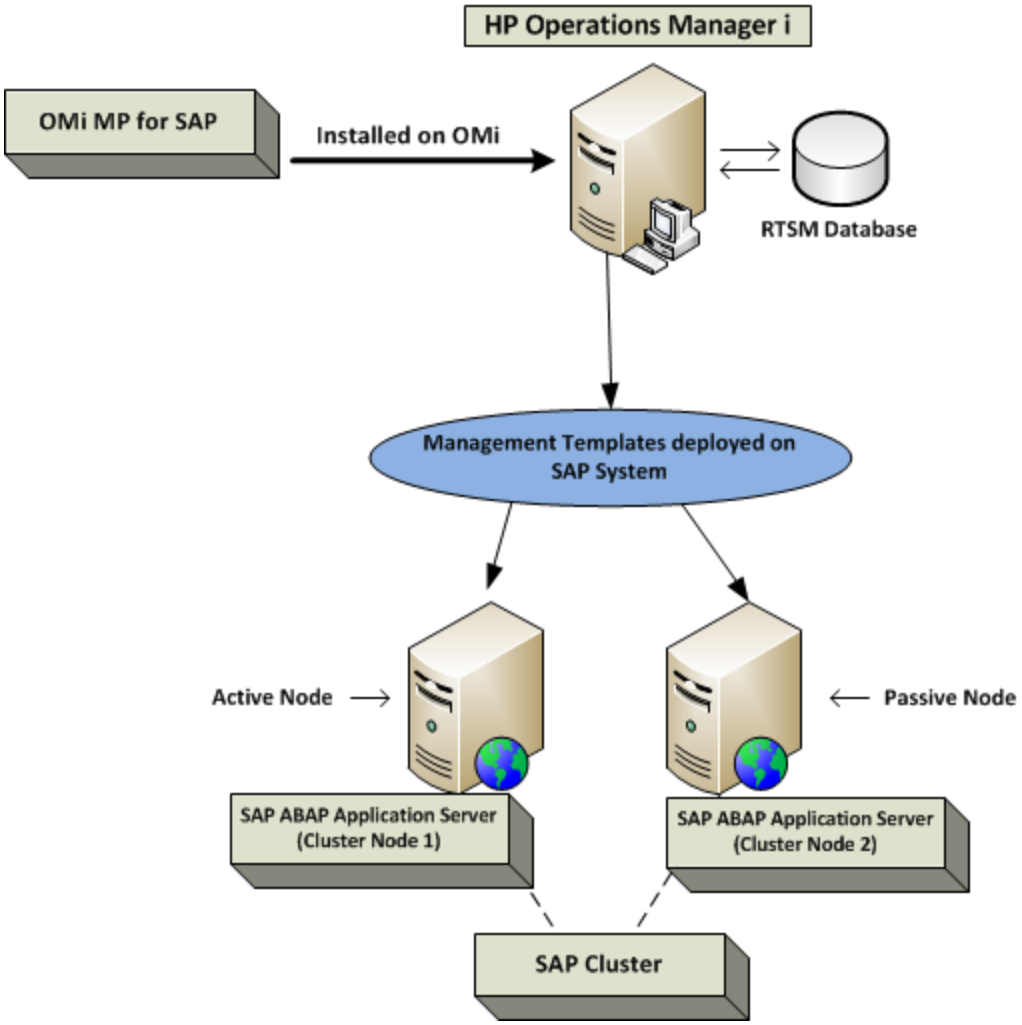
The OMi MP for SAP software and functionality has to be removed from each individual physical node in the MC/ServiceGuard cluster, where the product was installed and configured. This will involve the following steps:

1. If you installed the OMi MP for SAP R/3 Performance Agent on the managed nodes in the cluster, you will have to remove it and its components from the SAP managed nodes in the MC/ServiceGuard cluster before you proceed to step two. For more information, see"Removing

the OMi MP for SAP R/3 Performance Agent"

2. After removing the OMi MP for SAP R/3 Performance Agent, you must remove the OMi MP for SAPcomponents from the SAP managed nodes in the MC/ServiceGuard cluster.

The following figure shows a typical deployment scenario where the OMi MP for SAP is deployed in High Availability Environment:



Chapter 6: Troubleshooting

The following section provides information about troubleshooting scenarios:

> **Note:** On UNIX nodes, you must replace `%OvDataDir%` with `/var/opt/OV` while running commands mentioned in this section.

Multiple SAP CIs discovered on MA Server with same Display Label

Problem: Display Label does not have name attribute.

Solution: If you want to You must add `name` as part of the default display label for SAP ABAP Application Server and SAP J2EE Application Server CI. For more information, see *OMi MP for SAP Installation Guide*.

"Request does not match component version" error while adding the SAP MP Transports to the import queue

Problem: “Request does not match component version” error displayed while adding the SAP MP transports to the import queue.

Solution: You can select the option “Ignore the invalid component version” while importing Transport request. The “Ignore the invalid component version” option can be used as the contents of the OMi MP for SAP Transports are independent of the component version and SAP support pack.

SAP ABAP Performance Monitor is not logging the performance data for DBINFO_PERF Performance Monitor

Problem: SAP reports the following runtime error along with errors in the `r3perfmon.log`:

Runtime Errors DBIF_DSQL2_OBJ_UNKNOWN

Exception CX_SY_NATIVE_SQL_ERROR

Date and Time [...]

r3perfmon.log on an SAP System contains the following errors:

```
140520-11:10:23 Info : Try to get performance data from ASE interface

140520-11:10:23 Info : Calling rfc function module /HPOV/OV_DISPATCH

140520-11:10:23 Info : Timeout variable is set to: 30.000000

140520-11:10:28 ERROR: RFC CALL ERROR.KEY :

140520-11:10:28 ERROR: RFC CALL ERROR.STATUS :
```

```
140520-11:10:28 ERROR: RFC CALL ERROR.MESSAGE: - Table does not exist in database.

140520-11:10:28 ERROR: RFC CALL ERROR.INTSTAT:

140520-11:10:28 Info : call RfcLastError

140520-11:10:28 Info : set rfc error variables

140520-11:10:28 ERROR: OvCHandleIO::vHandle > Can't call the Performance Monitor :
- DBINFO_PERF

140520-11:10:28 ERROR: OvCPerfScheduler::RemoveSAPLoginPtr - No Connection to SAP

140520-11:10:28 Info : Scheduled Monitor: - Wed May 20 11:10:28 2014

S99 00 DBINFO_PERF
```

Solution: The `DBINFO_PERF` performance monitor works only with Oracle database data structures. It does not work with data structures from other database products. Disable `DBINFO_PERF` in the policy template `r3perfagent.cfg` associated with the OMi MP for SAP Aspect to avoid the unnecessary error. For more information about `DBINFO_PERF` performance monitor, see "DBINFO_PERF"

"librfc32.dll not found" error while executing the OMi MP for SAP Aspects

Problem: OMi MP for SAP displays SAP RFC SDK Files not found errors while deploying OMi MP for SAP.

Solution: To resolve SAP RFC SDK Files not found error, follow these steps:

1. Download **SAP RFC SDK 6.40** from SAP Software Download Center.

   > **Note:** You must download SAP RFC SDK 6.40 irrespective of SAP version in your environment. Select the appropriate RFC Library from the list based on the Operating System of the SAP system that needs to be monitored.

2. Uncar the downloaded RFC Library files and copy the library to Instrumentation folder on SAP managed nodes. Instrumentation folder is available at the following locations:

   Windows Node:

   `%OvAgentDir%\bin\instrumentation`

   UNIX Node:

   `/var/opt/OV/bin/instrumentation`

   For more information about OMi MP for SAP Transports and un-carring the Transport files, see *OMi MP for SAP Installation Guide*.

Checking OMi MP for SAP Transports currently installed on SAP system

Problem: OMi MP for SAP ABAP Monitoring is not working as expected. You want to check the Transports currently installed on SAP system.

Solution: To check OMi MP for SAP Transports currently installed on SAP system, follow these steps:

1. Log into the SAP system using the SAPGUI.
2. Open `STMS` (/nstms) transaction.
3. Go to **Menu Overview > Imports (F5)**. Select the queue for the SID of the SAP System you want to check.
4. Click **History > Import history**. 'No log information in selected area' notification window appears. Close the window. Last week's import history is displayed. The list may be empty.
5. Select the **Date** column, and click on **Edit > Filters (Ctrl+F10)**. In the window, specify a start date to cover the installation of OMi MP for SAP Transports. A list of requests for the specified time range is displayed.
6. If the result list contains many non-OMi MP for SAP Transports, then you can restrict the list by filtering on the Transport owner.
7. Select the **Owner** column title, and click on **Edit -> Filters (Ctrl+F10)**. In the window, specify owner `HPMP`, and press **ENTER**. The list of Transports is now restricted to `HPMP` owner.

OMi MP for SAP JAVA Discovery not working as expected

Problem: OMi MP for SAP JAVA Discovery not working as expected.

Solution: To troubleshoot the OMi MP for SAPJAVA Discovery, perform the following checks on SAP managed nodes:

1. Check Environment Variable:

   Set `SAPMP_REMOTE_CLUSTID` Environment variable with Remote Application Server cluster ID for SAP NetWeaver 7.0.

2. Check if SAP J2EE Discovery `ovpolicy -l -polname SAPJ2EE_Discovery` is present and enabled.

   You deploy SAP J2EE Discovery Aspect if SAP J2EE Discovery `ovpolicy -l -polname SAPJ2EE_Discovery` is not present. Confirm successful deployment at deployment tab in OMi server. For more information about deploying SAP J2EE Discovery Aspect, see Task 3: Deploying the SAP Discovery Aspect.

3. Check if SAP J2EE Discovery policy is in enabled state.

Enable SAP J2EE Discovery policy using `ovpolicy -e -polname SAPJ2EE_Discovery` if the SAP J2EE Discovery policy is not in enabled state.

4. Check if OMi MP for SAP instrumentation is available at the following location on the SAP node:

   %ovDataDir%\bin\instrumentation

   You can deploy SAP J2EE Discovery Aspect if the OMi MP for SAP Instrumentation is not present at the required location.

5. You can identify errors by verifying the `sapmp_j2ee_discovery.log` file available at the following location:

   `%OvDataDir%\App_Monitoring\SAPJ2EE\log\sapmp_j2ee_discovery.log`

6. If you have the Discovery policy ID, you can check the availability of the following files:

   The files are available at `%OvDataDir%\tmp\agtrep`

   - `<Policy ID>.cis.xml`
   - `<Policy ID>.out`
   - `<Policy ID>.services.xml`
   - `<Policy ID>_ci.xml`
   - `<Policy ID>.ci_refs.xml`

   If you do not have the Discovery policy ID, you can get the policy ID by running the following command on SAP managed node:

   ```
   ovpolicy -list -level 4 -polname "SAPJ2EE_Discovery"
   ```

   In case of failover, check if the above mentioned files are updated on all cluster nodes.

   You can run the following command on respective cluster node to update the policy files:

   ```
   Ovagtrep -run "SAPJ2EE_Discovery"
   ```

OMi MP for SAP ABAP Remote Discovery is not working as expected

Problem: OMi MP for SAP ABAP Remote Discovery not working as expected.

Solution: To troubleshoot the OMi MP for SAPABAP Remote Discovery, perform the following checks on SAP managed nodes:

1. Check if SAP ABAP Discovery **`ovpolicy -l -polname SAPABAP_RemoteDiscovery`** is available.

You can deploy SAP ABAP Remote Configuration Aspect to make policy available. After deployment, you can confirm successful deployment job at deployment tab in OMi Server.

2. Check if Remote Discovery policy is in enabled state.

   You can enable policy using **`ovpolicy -e -polname SAPABAP_RemoteDiscovery`**.

3. Check if OMi MP for SAP Instrumentation is available on SAP node at the following location:

   `%ovDataDir%\bin\instrumentation\`

   You can deploy SAP ABAP Remote Configuration Aspect to confirm availability of OMi MP for SAP instrumentation.

4. Check and identify errors in the `sapmp_abap_remotediscovery.log` file available at the following location:

   `%OvDataDir%\App_Monitoring\SAPABAP\log\sapmp_abap_remotediscovery.log`

5. If you have the Discovery policy ID, you can check the availability of the following files:

   The files are available at `%OvDataDir%\tmp\agtrep`

   - `<Policy ID>.cis.xml`
   - `<Policy ID>.out`
   - `<Policy ID>.services.xml`
   - `<Policy ID>_ci.xml`
   - `<Policy ID>.ci_refs.xml`

   If you do not have the Discovery policy ID, you can get the policy ID by running the following command on SAP managed node:

   ```
   ovpolicy -list -level 4 -polname "SAPABAP_RemoteDiscovery"
   ```

   In case of failover, check if the above mentioned files are updated on all cluster nodes.

   You can run the following command on respective cluster node to update the policy files:

   ```
   Ovagtrep -run "SAPABAP_RemoteDiscovery"
   ```

SAP ABAP Discovery not working as expected

Problem: SAP ABAP Discovery is not working after deploying SAP ABAP Discovery Aspect.

Solution: To troubleshoot the OMi MP for SAP ABAP Discovery, perform the following checks on SAP managed nodes:

1. Make sure that you have provided Fully Qualified computer name for all SAP managed nodes.
2. Check if SAP ABAP Discovery **`ovpolicy -l -polname SAPABAP_Discovery`** is available.

   You can deploy SAP ABAP Discovery Aspect to make ABAP Discovery available. You can confirm successful deployment job at deployment tab in OMi Server.
3. Check if SAP ABAP Discovery policy is in enabled state.

   You can enable the SAP ABAP Discovery policy using **`ovpolicy -e -polname SAPABAP_Discovery`**.
4. Check if OMi MP for SAP Instrumentation is available on SAP node at the following location:

   `%ovDataDir%\bin\instrumentation\`

   You can deploy SAP ABAP Discovery Aspect to ensure availability of Instrumentation.
5. You can identify errors by verifying the `r3sdisc.log` file available at the following location:

   `%OvDataDir%\App_Monitoring\SAPABAP\log\r3sdisc.log`
6. If you have the Discovery policy ID, you can check the availability of the following files:

   The files are available at `%OvDataDir%\tmp\agtrep`

   - `<Policy ID>.cis.xml`
   - `<Policy ID>.out`
   - `<Policy ID>.services.xml`
   - `<Policy ID>_ci.xml`
   - `<Policy ID>.ci_refs.xml`

   If you do not have the Discovery policy ID, you can get the policy ID by running the following command on SAP managed node:

   `ovpolicy -list -level 4 -polname "SAPABAP_Discovery"`

   In case of failover, check if the above mentioned files are updated on all cluster nodes.

   You can run the following command on respective cluster node to update the policy files:

   `Ovagtrep -run "SAPABAP_Discovery"`

OMi MP for SAP Discovery is working on node but CIs are not discovered in RTSM

Problem:OMi MP for SAP Discovery is working on node but CIs are not discovered in RTSM.

Solution: If the OMi MP for SAP Discovery runs successfully on node,you can troubleshoot the problem by checking the following logs at specific locations on MA Server:

On OMi Server (for debugging Service Discovery)

1. You can enable Trace Level to `DEBUG`:
   a. In `%TOPAZ_HOME%\conf\core\Tools\log4j\wde\opr-svcdiscserver.properties`
   b. Select value `loglevel=`, and update value to `DEBUG`.
   c. Select value `loglevelcitrace=`, and update value to `DEBUG`.
2. You can check and identify errors from the Discovery logs available at the following locations:
   - `%TOPAZ_HOME%\log\wde\opr-svcdiscserver-citrace.log`
   - `%TOPAZ_HOME%\log\wde\opr-svcdiscserver.log`
   - `%OvDataDir%\shared\server\log\OvSvcDisc.log`

OMi MP for SAP J2EE Data collection is failing or alerts are not reaching MA Event browser

Problem: OMi MP for SAP J2EE Data collection is failing or alerts are not reaching MA Event browser.

Solution: You can troubleshoot the problem by performing the following checks on SAP managed nodes:

1. Check if SAP J2EE Discovery policy is available and is in enabled state.
2. Check if OMi MP for SAP Instrumentation is available at the following location:

   `%ovDataDir%\bin\instrumentation\`

   If Instrumentation is available but the Instrumentation file which starts with **sapmp** is missing, you can redeploy SAP J2EE Discovery Aspect.
3. Check SiteConfig availability at the following location:

   `%OvDataDir%\conf\sapspi\global\SiteConfig`

   If SiteConfig is unavailable, you can run the following command from the instrumentation folder to run the OMi MP for SAP Discovery:

   `r3mon_perl -S sapmp_j2ee_discovery.pl`
4. Check SAP J2EE Discovery log available at the following location for errors:

   `%OvDataDir%\App_Monitoring\SAPJ2EE\log\sapmp_j2ee_cfg.log`

   Identify and resolve the errors from log. You can run the following command from the instrumentation folder to re-run the SAP J2EE configuration:

   `r3mon_perl -S sapmp_j2ee_cfg.pl`
5. OMi MP for SAP uses MetricDefinitions.xml file for J2EE data collection.The

`MetricDefinitions.xml` is available at the following location:

`%OvDataDir%/conf/sapspi/global/`

You can run the following command from the instrumentation folder if the MetricDefinitions.xml is not available:

```
r3mon_perl -S r3mon_configCheck -f
```

6. Check if OMi MP for SAP J2EE policies starting with `SAPJ2EE_*` is available and is in enabled state.

   You can perform the check running the following command:

   ```
   ovpolicy -l
   ```

7. You can run the SAP J2EE data collection manually in debug mode and check logs to identify the errors. To run the SAP J2EE data collection manually in debug mode:

   ```
   SAPMP_CollMgr -app=SAPJ2EE -freq=<VERYHIGH|HIGH|MEDIUM|LOW> -d
   ```

   Check the following logs to identify the errors:

   - `%OvDataDir%\App_Monitoring\SAPJ2EE\log\SAPMP_CollMgr.pl.log`
   - `%OvDataDir%\App_Monitoring\SAPJ2EE\log\SAPMP_ConfHandler.pl.log`

OMi MP for SAP J2EE Data logging is failing

Problem: J2EE Data logging is failing for OMi MP for SAP

Solution: Perform the following checks on SAP managed node:

1. Check if SAP J2EE policies starting with `SAPJ2EE_*` is available and is in enabled state.

   You can perform the check by running the following command:

   ```
   ovpolicy -l
   ```

2. Check the availability of Datasources.

   You can run the following command to check the availability of Datasources:

   ```
   ovcodautil -showds SAPSPINW_RPT_METRICS
   ```

   If the Datasources are unavailable, you can run the following command to activate Datasources:

   On Windows:

   ```
   "%OvDataDir%\bin\R3PerfAgent\bin\r3PerfConfig.exe" -j2ee
   ```

   On UNIX:

```
"/var/opt/OV/bin/R3PerfAgent/bin/r3PerfConfig" -j2ee
```

3. Check if the SAP J2EE data logging is enabled.

   You can check the value `DATA_LOGGING_ENABLED=TRUE` in the configuration file available at the following location:

   ```
   %OvDataDir%\conf\sapspi\global\SPIConfig
   ```

4. You can run the SAP J2EE data collection manually in debug mode and check logs to identify the errors. To run the SAP J2EE data collection manually in debug mode:

   ```
   SAPMP_CollMgr -app=SAPJ2EE -freq=<VERYHIGH|HIGH|MEDIUM|LOW> -d
   ```

   Check the following logs to identify the errors:

   - `%OvDataDir%\App_Monitoring\SAPJ2EE\log\SAPMP_CollMgr.pl.log`
   - `%OvDataDir%\App_Monitoring\SAPJ2EE\log\SAPMP_ConfHandler.pl.log`

OMi MP for SAP ABAP Data collection is failing or alerts not reaching on MA event browser

Problem: OMi MP for SAP Data collection is failing or alerts not reaching on MA event browser.

Solution: Perform the following checks on SAP managed node:

1. Check if SAP ABAP Discovery policy is available and is in enabled state.
2. Check the availability of OMi MP for SAP Instrumentation at the following location:

   ```
   %ovDataDir%/bin/instrumentation/
   ```

   Deploy SAP ABAP Discovery Aspect again if OMi MP for SAPInstrumentation is available but the files which starts with `sapmp` are missing.

3. Check the availability of `r3itodsap` at the following location:

   ```
   %OvDataDir%/conf/sapspi/global/r3itosap
   ```

   If `r3itosap` is unavailable, re-run the SAP ABAP Configuration by running the following command from the instrumentation folder:

   ```
   r3mon_perl -S sapmpcfg.pl
   ```

4. You can check for errors in the SAP ABAP Configuration log file. You can check the availability of SAP ABAP Configuration log file at the following location:

   ```
   %OvDataDir%/App_Monitoring/SAPABAP/log/sapmp_abap_cfg.log
   ```

   You can verify and resolve the errors using the log file. To run the SAP ABAP Configuration again, run the following command from the instrumentation folder:

```
r3mon_perl -S sapmpcfg.pl
```

5. Check if the Client and Username (password is in encrypted state) values in `r3itosap` file is same as provided during deployment of SAP ABAP Configuration Aspect.
6. Check SAP ABAP policies for type `sapconfigfile` is available and is in enabled state.
7. You can run the SAP ABAP data collection manually in debug mode and check logs to identify the errors. To run the SAP ABAP data collection manually in debug mode:

   ```
   SAPMP_CollMgr -app=SAPABAP -freq=<VERYHIGH|HIGH|MEDIUM|LOW> -d
   ```

   Check the following logs to identify the errors:

   - `%OvDataDir%/App_Monitoring/SAPABAP/log/SAPMP_CollMgr.pl.log`
   - `%OvDataDir%/App_Monitoring/SAPABAP/log/SAPMP_ConfHandler.pl.log`

OMi MP for SAP ABAP Data Logging is failing

Problem: OMi MP for SAP ABAP Data Logging is failing.

Solution: Perform the following checks on SAP managed nodes:

1. Make sure the OMi MP for SAP performance agent is started using Performance Agent tool from MA server.

   You can check the status of OMi MP for SAP performance agent by running the following command:

   On Unix nodes:

   ```
   /var/opt/OV/bin/instrumentation/r3mon_perl -S SAPMP_Tool.pl Status
   ```

   You can start the Performance Agent by running the following command:

   ```
   /var/opt/OV/bin/instrumentation/r3mon_perl -S SAPMP_Tool.pl Start
   ```

   On Windows nodes:

   ```
   %OvAgentDir%\bin\instrumentation\r3mon_perl -S SAPMP_Tool.pl Start
   ```

2. Check the availability of Datasources.

   You can run the following command to display status of datasources for configured instances:

   ```
   ovcodautil -showds
   ```

   You can run the following command to activate Datasources for configured instances:

   UNIX:

```
"/var/opt/OV/bin/R3PerfAgent/bin/r3PerfConfig.exe" -abap
```

Windows:

```
"%OvDataDir%\bin\R3PerfAgent\bin\r3PerfConfig" -abap
```

3. You must manually create Datasources for Remote Application servers using the following command:

   UNIX:

   ```
   "/var/opt/OV/bin/R3PerfAgent/bin/r3PerfConfig.exe" -manual
   ```

   Windows:

   ```
   "%OvDataDir%\bin\R3PerfAgent\bin\r3PerfConfig" -manual
   ```

   You must provide the SAP SID, HostName, and Instance to create data sources.

4. Agent Installation command returns errors if the `r3PerfConfig` file is not available on managed node at the following location:

   ```
   %OvDataDir%\bin\R3PerfAgent\bin\r3PerfConfig
   ```

   You can run the following command to re-install OMi MP for SAPPerformance Agent:

   ```
   %OvAgentDir%\bin\instrumentation\r3mon_perl -S SAPMP_Tool.pl Install
   ```

5. You can identify datasources errors by verifying the `sapmp_abap_dscmd.log file` available at the following location:

   ```
   %OvDataDir%\App_Monitoring\SAPABAP\log\sapmp_abap_dscmd.log
   ```

OMi MP for SAP ABAP Data collection on ABAP Application Server in HA environment is failing or alerts are not reaching MA event browser

Problem: OMi MP for SAP ABAP Data collection on ABAP Application Server in HA environment is failing or alerts are not reaching MA event browser.

Solution: You can perform the following checks on managed nodes to troubleshoot the problem:

1. Check if SAP ABAP Discovery policy and SAP ABAP Configuration policy is available and is in enabled state.
2. Check the availability of OMi MP for SAP Instrumentation at the following location:

   ```
   %ovDataDir%\bin\instrumentation\
   ```

   Deploy SAP ABAP Discovery Aspect again if OMi MP for SAP Instrumentation is available but the files which starts with `sapmp` are missing.

3. Check the availability of `r3itosap` at the following location:

   `%OvDataDir%/conf/sapspi/global/r3itosap`

   If `r3itosap` is unavailable, re-run the SAP ABAP Configuration by running the following command from the instrumentation folder:

   `r3mon_perl -S sapmpcfg.pl`

4. You can check for errors in the SAP ABAP Configuration log file. You can check the availability of SAP ABAP Configuration log file at the following location:

   `%OvDataDir%\App_Monitoring\SAPABAP\log\sapmp_abap_cfg.log`

   You can verify and resolve the errors using the log file. To run the SAP ABAP Configuration again, run the following command from instrumentation folder:

   `r3mon_perl -S sapmpcfg.pl`

5. Check if the Client and Username (password is in encrypted state) values in `r3itosap` file is same as provided during deployment of SAP ABAP Configuration Aspect.

6. Check for the `HostMapping` value in `r3itosap` file. The HostMapping value provides details about cluster nodes participating in HA environment, Central Instance, SID, Virtual Server node name, and Hostname with which you associate the messages at MA event browser.

   The following is a sample HostMapping line syntax:

   ```
   HostMapping =<SID> = <Central Instance> =<Physical node name1 >, <Physical Node Name 2>,<Virtual Node Name > = <Message Node Name>
   ```

   Message Node Name is optional. If not specified, Virtual Server Name would act as Message Node Name.

   The following is a sample HostMapping configuration:

   ```
   HostMapping =NA9 =09 =ipv6winclus1.hpeswv6lab.com,ipv6winclus2.hpeswv6lab.com,saphanw.hpeswv6lab.com =IXYZE01XXX.hpeswlabs.adapps.hpe.com
   ```

   Make sure the details provided in HostMapping entry is valid. If the HostMapping configuration is invalid, you can check the `sapmp_cluster_details.txt` available at the following location to verify the details:

   `%OvDataDir%\App_Monitoring\SAPABAP\sapmp_cluster_details.txt`

OMi MP for SAP Cluster discovery is not working as expected

Problem: OMi MP for SAP Cluster discovery is not working as expected.

Solution: You can perform the following checks to troubleshoot the problem:

1. Make sure that you have provided Fully Qualified computer name for all SAP managed nodes.
2. Check if SAP ABAP Discovery **`ovpolicy -l -polname SAPABAP_Discovery`** is available.

   You can deploy SAP ABAP Discovery Aspect to make ABAP Discovery available. You can confirm successful deployment job at deployment tab in OMi Server.
3. Check if SAP ABAP Discovery policy is in enabled state.

   You can enable the SAP ABAP Discovery policy using the **`ovpolicy -e -polname SAPABAP_Discovery`** command.
4. Check the availability of OMi MP for SAP Instrumentation at the following location:

   `%ovDataDir%\bin\instrumentation\`

   You can deploy SAP ABAP Discovery Aspect again if OMi MP for SAP Instrumentation is unavailable.
5. You can verify the Discovery logs files available at the following locations for more details:
   - `%OvDataDir%\App_Monitoring\SAPABAP\log\r3sdisc.log`
   - `OvDataDir%\App_Monitoring\SAPABAP\log\sapmp_cluster_discovery.log`
6. If you have the Discovery policy ID, you can check the availability of the following files:

   The files are available at `%OvDataDir%/tmp/agtrep`
   - `<Policy ID>.cis.xml`
   - `<Policy ID>.out`
   - `<Policy ID>.services.xml`
   - `<Policy ID>_ci.xml`
   - `<Policy ID>.ci_refs.xml`

   If you do not have the Discovery policy ID, you can get the policy ID by running the following command on SAP managed node:

   `ovpolicy -list -level 4 -polname "SAPABAP_Discovery"`

   In case of failover, check if the above mentioned files are updated on all cluster nodes.

   You can run the following command on respective cluster node to update the policy files:

   `Ovagtrep -run "SAPABAP_Discovery"`
7. Make sure that after Discovery the `removeRelationOnPassive` file is present only on active node at the following location:

`%OvDataDir%\App_Monitoring\SAPABAP\`

> **Note:** SAP Cluster Deployment view will not get updated for passive nodes, if the `removeRelationOnPassive` file is not available.

8. The SAP_Cluster_Deployment view will not get updated for first run of Discovery immediately after fail over. The SAP_Cluster_Deployment view will get updated after the first run of Scheduled Discovery on Passive node.

   If you want to update the view before the Scheduled Discovery run, you can run the discovery manually on active nodes (passive before failover) after failover using the following commands:

   To run the SAP ABAP Discovery:

   ```
   Ovagtrep -run "SAPABAP_Discovery"
   ```

   To publish CIs to RTSM:

   ```
   Ovagtrep -publish -all
   ```

SAP Cluster Deployment view not getting updated with current SAP active node after SAP Cluster failover

Problem: SAP Cluster Deployment view is not getting updated with current SAP active node after SAP Cluster failover.

Solution: SAP Cluster Deployment view is updated with the next schedule of SAP ABAP Discovery. If you want to update the SAP Cluster Deployment view before scheduled run of SAP ABAP Discovery, deploy SAP ABAP Discovery Aspect on current active node.

"Could not connect to the node. Please check if the agent is up and running, the certificates are in place and your firewall configuration is correct" error when deploying SAP Management Templates on Remote SAP Systems.

Problem: On remote configured SAP Application Server CI, Management Template deployment shows the `Could not connect to the node. Please check if the agent is up and running, the certificates are in place and your firewall configuration is correct”` error message in Deployment Jobs Wizard.

Solution: This error is only for SAP systems where the Operations Agent is not installed. You can ignore this error since the SAP Aspects are successfully deployed. This error shows when the system attempts to deploy the Infrastructure Aspects within the SAP Management Templates on SAP systems which do not have the Operations Agent. For more information, see Task 5: Deploying SAP ABAP Remote Configuration Aspect.

Appendix: Metrics and Datasources

The OMi MP for SAP creates data store tables to enable data collection from metrics. OMi MP for SAP uses two separate Datasources and related metrics for logging the data collected from SAP ABAP Application Servers and SAP J2EE Application Servers in your SAP Environment.

SAP ABAP Application Server

The OMi MP for SAP creates the following data store table to log the data collected by metrics from SAP ABAP Application Server:

> **Note:** `R3_<SAP_Hostname>_<SAP_SID>_<SAP_Instance_ Number>_DATA` is the Datasource used by SAP ABAP Application Server Policy Templates. The `R3_<SAP_Hostname>_<SAP_SID>_<SAP_Instance_ Number>_DATA` Datasource is created for every SAP ABAP Application Server Instance to log the collected data.

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
SAP ABAP Performance Monitor	SAPABAP_PerfMon	DBINFO_PERF	CPUUSAGE	R64
			BUFPREADS	I32
			BUFPWRITES	I32
			BUFQUAL	R64
			BUFSIZE	I32
			BUFWAITS	I32
			BUFWTIME	I32
			DICTSIZE	I32
			DDQUAL	R64
			LOGBLOCKS	I32
			LOGENTRIES	I32
			LOGSIZE	I32
			LOGFAULT	R64

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			LOGALLOC	I32
			ROLLBACKS	I32
			SCANLONG	I32
			SORTDISK	I32
			SORTMEM	I32
			SORTROWS	I32
			HOSTNAME_ DBINFO	UTF8
			SID_DBINFO	UTF8
			INSTANCE_DBINFO	UTF8
			KEY_DBINFO	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	DOCSTAT_ PERF	APPMODE_DOC	UTF8
			CNTHEADER	I32
			CNTITEM	I32
			CNTDIV	I32
			CNTTOTAL	I32
			CNTLINE	I32
			CNTCHGDOC	I32
			CNTTEXT	I32
			HOSTNAME_ DOCSTAT	UTF8
			SID_DOCSTAT	UTF8
			INSTANCE_ DOCSTAT	UTF8
			KEY_DOCSTAT	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	EP_PERF	SID_EP	UTF8
			HOSTNAME_EP	UTF8
			START_TIME_EP	UTF8
			NO_REQ_EP	I32

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			AVG_RESP_TIME_EP	R64
			AVG_CPU_TIME_EP	R64
			REQ_PER_SEC_EP	I32
			AVG_OUTBND_DATA_EP	I32
			ACC_RESP_TIME_EP	R64
			ACC_CPU_TIME_EP	R64
			OUTBND_DATA_REQ_EP	I32
			ACC_OUTBND_DATA_EP	I32
			NO_COMPCALLS_REQ_EP	I32
			AVG_CMPCALLPERREQ_EP	I32
			VALID_MONDATA_REQ_EP	I32
			REQ_NOT_CORR_CLSD_EP	I32
			REQCLSD_TOOMNYCMP_EP	I32
			REQS_RUNLEVEL_0_EP	I32
			REQS_RUNLEVEL_1_EP	I32
			REQS_RUNLEVEL_2_EP	UTF8
			USRS_SINCE_1_REQ_EP	UTF8
			USRS_SINCE_	UTF8

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			LSTRST_EP	
			LST_REQ_RST_ TSTMP_EP	
			LST_CMPREQ_ TSTMP_EP	
			LST_USRREQ_ TSTMP_EP	
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	ICMSTAT_ PERF	ICM_STATUS	I32
			MAX_THREADS	I32
			PEAK_THREADS	I32
			CUR_THREADS	I32
			MAX_ CONNECTIONS	I32
			PEAK_ CONNECTIONS	I32
			CUR_ CONNECTIONS	I32
			MAX_ QUEUEENTRIES	I32
			PEAK_ QUEUEENTRIES	I32
			CUR_ QUEUEENTRIES	I32
			RUNNING_ THREADS	I32
			DEAD_THREADS	UTF8
			PROCESSED_ THREADS	UTF8
			HOSTNAME_ ICMSTAT	UTF8
			SID_ICMSTAT	
			INSTANCE_ ICMSTAT	

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			KEY_ICMSTAT	
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	JOBREP_PERF	RUNNING	UTF8
			READY	I32
			SCHEDULED	I32
			RELEASED	I32
			ABORTED	I32
			FINISHED	I32
			PUT_ACTIVE	I32
			UNKNOWN_STATE	I32
			HOSTNAME_ JOBREP	UTF8
			SID_JOBREP	UTF8
			INSTANCE_ JOBREP	UTF8
			KEY_JOBREP	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	SAPBUFFER_ PERF	BUFFER_NAME	UTF8
			HITRATIO	R64
			ALLOCATED_SIZE	I32
			FREE_SPACE	I32
			FREE_SPACE_ PERCENT	R64
			MAXDIR_ENTR	I32
			FREEDIR_ENTR	I32
			FDIR_ENTR_ PERCENT	R64
			BUFFER_SWAPS	I32
			BUFFER_SWAPS_ DELTA	I32
			DB_ACCESSES	I32
			DB_ACCESSES_	UTF8
				UTF8

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			DELTA	UTF8
			HOSTNAME_ SAPBUFFER	UTF8
			SID_SAPBUFFER	
			INSTANCE_ SAPBUFFER	
			KEY_SAPBUFFER	
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	SAPMEMORY_ PERF	MEMORY_AREA	UTF8
			CURRENT_USE_ PERCENT	R64
			CURRENT_USE	I32
			MAX_USE	I32
			IN_MEMORY	I32
			ON_DISK	I32
			HOSTNAME_ SAPMEMORY	UTF8
			SID_SAPMEMORY	UTF8
			INSTANCE_ SAPMEMORY	UTF8
			KEY_SAPMEMORY	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	SPOOL_PERF	ALL_SJ	I32
			SJ_ARCHIVE	I32
			PRINT_REQ	I32
			OPEN_PR	I32
			SUCCESS_PR	I32
			ERROR_PR	I32
			FAILED_PR	I32
			HOSTNAME_ SPOOL	UTF8
			SID_SPOOL	UTF8
				UTF8

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			INSTANCE_SPOOL	UTF8
			KEY_SPOOL	
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	SAP_ STATRECS_ PERF	SAP_TCODE	UTF8
			SAP_RESPONSE_TIME	I32
			SAP_NET_TIME	I32
			SAP_REC_COUNT	I32
			SAP_HOST_ STATRECS	UTF8
			SAP_SID_ STATRECS	UTF8
			SAP_INSTNO_ STATRECS	UTF8
			SAP_KEY_ STATRECS	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	UPDATE_PERF	ALL_TASKS	UTF8
			INITIAL_TASKS	I32
			ERRONOUS_ TASKS	I32
			VB1	I32
			V2	I32
			HOSTNAME_ UPDATE	UTF8
			SID_UPDATE	UTF8
			INSTANCE_ UPDATE	UTF8
			KEY_UPDATE	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	USER_PERF	USER_CLIENT	UTF8
			USER_CNT	I32
			SESSION_CNT	I32
			HOSTNAME_USER	UTF8

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			SID_USER	UTF8
			INSTANCE_USER	UTF8
			KEY_USER	UTF8
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	SAP_WLSUM_ PERF	SAP_HOSTNAME _ WLSUM	UTF8
			SAP_SID_WLSUM	UTF8
			SAP_INSTANCE_ WLSUM	UTF8
			SAP_KEY_WLSUM	UTF8
			SAP_TASKTYPE	I32
			SAP_CNT	I32
			SAP_DBACTIVCNT	R64
			SAP_RESPTI	R64
			SAP_CPUTI	R64
			SAP_QUEUETI	R64
			SAP_LOADGENTI	R64
			SAP_COMMITTI	R64
			SAP_DDICTI	R64
			SAP_QUETI	R64
			SAP_CPICTI	I32
			SAP_ROLLINCNT	R64
			SAP_ROLLINTI	I32
			SAP_ROLLOUTCNT	R64
			SAP_ROLLOUTTI	I32
			SAP_READDIRCNT	R64
			SAP_READDIRTI	I32
			SAP_ READSEQCNT	R64
			SAP_READSEQTI	I32
				R64

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			SAP_CHNGCNT	I32
			SAP_CHNGTI	R64
			SAP_BYTES	I32
			SAP_GUITIME	R64
			SAP_GUICNT	
			SAP_GUINETTIME	
SAP ABAP Performance Monitor	SAPABAP_ PerfMon	WP_PERF	ALL_WP	I32
			SEMAPHORE_WP	I32
			DEBUG_WP	I32
			LONG_RUNNING	I32
			PRIVAT_WP	I32
			NOSTART_WP	I32
			DIA_IDLE	I32
			DIA_ALL	I32
			DIA_RUNNING	I32
			BTC_IDLE	I32
			BT_ALL	I32
			BTC_RUNNING	I32
			SPO_IDLE	I32
			SPO_ALL	I32
			SPO_RUNNING	I32
			ENQ_IDLE	I32
			ENQ_ALL	I32
			ENQ_RUNNING	I32
			UPD_IDLE	I32
			UPD_ALL	I32
			UPD_RUNNING	I32
			UPD2_IDLE	I32

Aspect Name	Policy Template Name	Table Name	Metric Name	Metric Data Type
			UPD2_ALL	I32
			UPD2_RUNNING	I32
			HOSTNAME_WP	UTF8
			SID_WP	UTF8
			INSTANCE_WP	UTF8
			KEY_WP	UTF8
		SYSUP_PERF	SYSTEM_STATUS	UTF8
			HOSTNAME_ SYSUP	UTF8
			SID_SYSUP	UTF8
			INSTANCE_SYSUP	UTF8
			KEY_SYSUP	UTF8

Note: The default frequency of the SYSUP_PERF availability monitor is one minute and the value cannot be changed.

SAP J2EE Application Server

The OMi MP for SAP creates the following data store table to log the data collected by metrics from SAP J2EE Application Server:

Note: `SAPSPINW_RPT_METRICS` is the Datasource and table used by SAP J2EE Application Server Policy Templates for logging the collected data.

Table Name	Metric Name	Metric Data Type
SAPSPINW_RPT_METRICS	METRICID	I32
	VALUEID	I32
	VALUE	R64
	SORTID	UTF8
	SERVERNAME	UTF8
	OBJECTNAME	UTF8

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