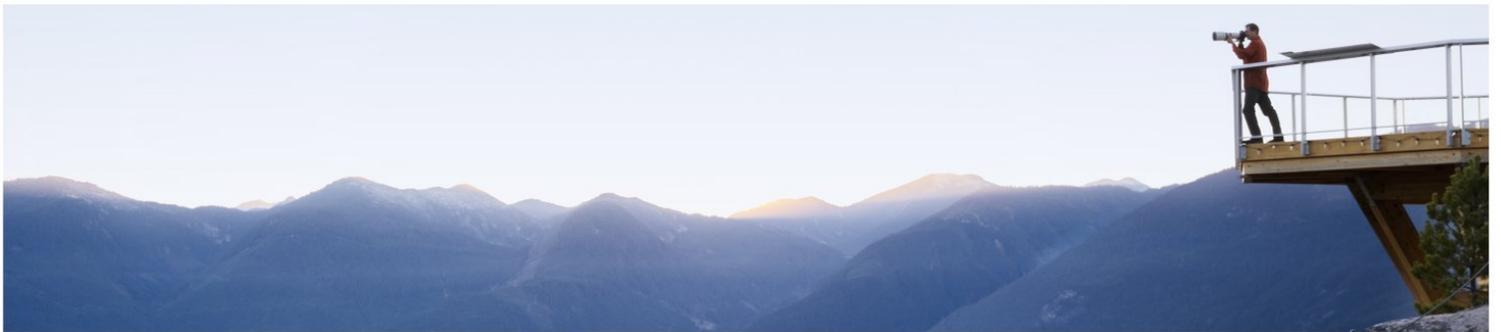**Hewlett Packard Enterprise**

Application Performance Management

Version 9.40, Released August 2017

APM - Operations Orchestration Integration Guide

Published August 2017

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APM - Operations Orchestration (OO) Integration Overview

Operations Orchestration (OO) provides a simple way for customers to run scripts for automatic actions. The integration with Application Performance Management (APM) uses the OO capabilities for building investigation tools or service remediation scripts, providing the operators with a simple way to validate a problem, investigate it, or automatically correct it. A run book can be executed manually.

OO run books can be launched from the Service Health and Event Browser applications.

The integration of APM and OO provides the capability of mapping CI types to OO run books.

After you create such mappings, you can run the mapped OO run books:

- **On CIs, using the Invoke Run Books CI context menu option in Service Health.** The OO run book parameters are populated using the map to the CI attributes defined in the "Run Book Mapping Configuration Wizard" on page 15.
- **At the event level in Operations Management.** OMi opens an event and checks if the CI for this event has a run book assigned to it, and if the run book is set to run automatically. The OO run book parameters are populated using the map to the CI or event attributes defined in the "Run Book Mapping Configuration Wizard" on page 15.

How to Integrate APM and OO

This task describes the working order required to integrate APM and OO.

Details about the supported versions of APM and Operations Orchestration are provided in the Integrations tab of the HPE Software Integrations site.

1. **Prerequisites**

    - To integrate APM and OO, OO must be version 10.51 or later.

    - Before you configure the integration, the OO administrator needs to perform the following:

        i. Enable User Authentication and create an integration user; the user must have the **ADMINISTRATOR** role. For details, see "Grant permissions" on page 10.

        ii. Deploy the following Operations Orchestration CPs on the OO server: **Base**, **Middleware**, and **Operating Systems**.

            First deploy the **Base** CP, then the other CPs.

            For details how to get these CPs refer to the OO documentation. For details how to deploy CPs in OO, refer to the section "Deploying a Content Pack" in the *HP OO Central Guide*.

2. **Import the OO flows for OMi delivered with APM into OO**

    For OO <10.0: Using HP OO Studio, complete the following steps:

    a. Import the OO flows (`HPOprOO*.jar` files) delivered with OMi. The OO flows are located on the Data Processing Server in the following folder:

       `TOPAZ_HOME/conf/opr/oo`

       For details, see the chapter entitled *Importing a repository* in the *HP Operations Orchestration Studio Authoring Guide*.

    b. Deploy the imported flows to OO Central.

    For OO 10.x: The OO flows included with OMi are delivered in the HP OO 9.x format. The format of OO flow has been changed for HP OO 10.x. Existing OO flows must be converted to the HP OO 10.x format using the converter delivered with HP OO 10.x.

    a. Convert the OO flows (`HPOprOO*.jar` files) delivered with OMi using the converter delivered with OO 10.x. The original OO flows are located on the Data Processing Server at the in the following folder:

       `TOPAZ_HOME/conf/opr/oo`

       For details, see the section entitled *Phase 2: Content Upgrade* in the *HP Operations Orchestration Upgrade Guide* for version 10.x.

    b. Import the OO flows converted from those delivered with OMi.

       For details, see the chapter entitled *Importing a repository* in the *HP Operations Orchestration Studio Authoring Guide*.

    > **Note:** To import the flows, you need to unzip the jar file and point to the location where the pathrefs.xml file can be found in the extract location. Here's an example flow:

    i. Copy %TOPAZ_HOME%/conf/opr/oo/*90 from APM to C:\data\BSM_Content_OO9 on OO.

    ii. Unzip each jar file into its own directory.

    iii. mkdir C:\data\BSM_Content_OO10

    iv. cd C:\Program Files\Hewlett-Packard\HP Operations Orchestration\studio\bin

    v. upgrade-content.bat --name HPOprOOADS90 --publisher HP --repo C:\data\BSM_Content_OO9\HPOprOOADS90\Repositories\0 --output C:\data\BSM_Content_OO10\HPOprOOADS90

c. Deploy the imported flows to OO Central.

3. **Configure the link between APM and OO**

   To configure the integration between APM and OO, in APM select **Admin > Platform > Setup and Maintenance > Infrastructure Settings**:

   - Select **Foundations**.

   - Select **Integrations with other applications**.

   - In the **HP Operation Orchestration** table, locate **Operation Orchestration application URL**, and modify the setting to the URL used to access the OO application.

     When connecting an application that employs LWSSO to HP OO 10.x, you must specify the connection URL of HP OO using the following format: **<protocol>://<FQDN>:<portNumber>** (for example, http://lab.lab:8080). The port in OO 10.x can be 8080 for HTTP or 8443 for HTTPS, according to your needs.

     For OO versions lower than 10.00: https://<fully qualified server name>:8443.

   - If you want to enable run books to be invoked automatically, you must enter a User Name and Password in the same table. In this case, the user should be defined as **internal** in OO.

4. **Configure Lightweight Single Sign-On (LW-SSO) authentication**

   Configure Lightweight Single Sign-On (LW-SSO) authentication between APM and OO. You must configure LW-SSO in both APM and OO. Proceed to the relevant section depending on your version of OO.

   For OO versions lower than 9.06:

   a. In APM, select **Admin > Platform > Users and Permissions > Authentication Management**, and copy the **Token Creation Key**(the initString) to OO, and replace, in OO, all the initStrings in the **lwssofmconf.xml** file located in the **<OO installation directory>\Program Files\Hewlett-Packard\Operations Orchestration\Central\conf** directory.

   b. In OO, in the **web.xml** and **applicationContext.xml** files located in the **<OO installation directory>\Program Files\Hewlett-Packard\ Operations Orchestration\Central\WEB-INF** directory, enable all filters and mappings between **LWSSO_SECTION_BEGIN** and **LWSSO_SECTION_END.**

   c. If OO and APM are in different domains in the Windows operating system, you must make sure that the **Trusted Hosts/Domains** parameter is the same in OO and APM. To set the parameter in APM, select **Admin > Platform > Users and Permissions > Authentication Management**, and configure the **Trusted Hosts/Domains** parameter.

d. Restart the following OO services:

For OO versions earlier than 9.03: **RSCentral**, **RSJRAS**, and **RSScheduler**.

For OO versions 9.03 and higher: **RSCentral**, **RSJRAS**.

> **Note:** If you need to enable logging for debugging LWSSO: In OO, in the **<OO installation directory>\jetty\resources\log4j.properties** file, uncomment the line that appears under the LWSSO comment.

For OO versions 9.06 or higher:

a. In APM, select **Admin > Platform > Users and Permissions > Authentication Management**.

b. Click **Configure** to open the SSO Configuration Wizard, and press **Next**.

c. The Single-Sign-On Configuration screen contains a Token Creation Key. Copy this key; you will need it soon.

d. In OO, access the following:

   ○ If you are using OO 10.x, select **System Workspace > Security > SSO**.

   ○ If you are using OO 9.06 and 9.07, select **Administration > System Configuration > Authentication**.

e. In the **Lightweight SSO Settings** area, check the **Enable** checkbox.

f. Replace the value of the **LWSSO** passphrase or **initString** parameter with the Token Creation Key you copied from APM. (This must have the same value on all applications that are integrated using LWSSO.)

g. Define domain-related parameters in the **Lightweight SSO Settings** area:

   ○ **Domain.** The domain of the HP OO server.

   ○ **Protected Domains.** List of comma-separated domains used by the applications that employ LWSSO.

   If OO and APM are in different domains in the Windows operating system, make sure that the **Trusted Hosts/Domains** parameter is the same in OO and APM.

   In APM, select **Admin > Platform > Users and Permissions > Authentication Management**, and configure the **Trusted Hosts/Domains** parameter.

> **Note: Limitation with OO 10.x and BSM 9.2x.**
>
> The integration of OO 10.x with BSM 9.2x is currently only supported if OO and APM are in the same domain. If they are in different domains, the integration fails.

For further details on configuring LW-SSO in OO, see "Setting Up Security – LWSSO" in *the HP OO 10.01 Central Guide*.

For further details on configuring LW-SSO in APM, see Authentication Strategies in *the APM Platform Administration Guide*.

5. **In Windows - export server certificates from OO**

   To export server certificates from OO and import them into APM in a Windows environment, you use the **keytool** utility, which is included in Sun JRE, to export and import certificates.

   For OO versions before v10:

   a. On the OO server enter: `<OO install folder>\jre1.6\bin\keytool" -export -alias pas -file "<path to your certificate>.cer" -keystore "<OO install`

```
folder>\central\conf\rc_keystore"
```

b. When prompted for passwords enter: `bran507025`.

For OO version 10.x, if the integration is over SSL:

a. On the OO server enter: `<OO install folder>\central\java\bin\keytool.exe -keystore central\var\security\key.store -export -alias tomcat -file "<Operations Orchestration fully qualified host name>.cer"`

b. When prompted for passwords enter: `changeit`.

6. **In Windows, if the integration is over SSL - import OO server certificates to APM**

   Import the server certificate from the OO server to the APM Gateway Server so that the two systems can communicate with each other securely.

   > **Tip:** If your **%JAVA_HOME%** environment variable points to the JRE directory instead of the JDK directory, remove **jre** from the keystore path (`C:\> "%JAVA_HOME%\bin\keytool" -keystore`) in the commands.

   a. **Import the Server Certificate to** APM**.** To import the server certificate you exported from OO to the APM cacerts keystores, on the APM Gateway Server enter:

      - **C:\> "%JAVA_HOME%\jre\bin\keytool" -keystore "%TOPAZ_HOME%\JRE\lib\security\cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"**

      - **C:\> "%JAVA_HOME%\jre\bin\keytool" -keystore "%TOPAZ_HOME%\JRE64\lib\security\cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"**

   b. When prompted for password enter: `changeit`.

      > **Note:** If JAVA_HOME is not set, use TOPAZ_HOME.

   c. In order to prevent a certificate error, place this certificate into the Trusted Root Certificate Authorities on any browser that will be accessing APM as follows:

      - Click the **Install certificate** button to start the wizard.
      - Click **Next**.
      - Select the **Place all certificates in the following store** radio button.
      - Click **Browse.**
      - Select **Trusted root certification authorities**.
      - Click **Next**.
      - Click **Finish**.

      (You can also import the certificate; for example in Windows IE: Internet Options > Content > Certificates > Import...)

   d. Restart APM on the Gateway server.

   e. Repeat the above steps on the Data Processing Server as well.

7. **In Linux - export server certificates from OO**

   To export server certificates from HP Operations Orchestration (OO) and import them into APM, you use

the **keytool** utility to export and import certificates.

For OO versions before v10:

a. On the OO server enter:
Keytool -keystore "$ICONCLUDE_HOME/Central/conf/rc_keystore" -export -alias pas -file "<Operations Orchestration fully qualified host name>.cer"

b. When prompted for passwords enter: `bran507025`.

For OO version 10.x, if the integration is over SSL:

a. On the OO server enter:
Keytool -keystore central/var/security/key.store -export -alias tomcat -file "<Operations Orchestration fully qualified host name>.cer"

b. When prompted for passwords enter: `changeit`.

8. **In Linux, if the integration is over SSL - import OO server certificates to APM**

Import the server certificate from the OO server to the APM Gateway Server so that the two systems can communicate with each other securely.

a. **Import the Server Certificate to** APM. To import the server certificate you exported from OO to the APM cacerts keystores, on the APM Gateway Server, go to **$TOPAZ_HOME/jre/bin** and enter the following commands:

> **Note:** If TOPAZ_HOME is not set, use the following script:
> **./opt/HP/BSM/scripts/topaz_env.sh**

   ○ **./keytool -keystore "$TOPAZ_HOME/JRE/lib/security/cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"**

   ○ **./keytool -keystore "$TOPAZ_HOME/JRE64/lib/security/cacerts" -import -alias "<Operations Orchestration fully qualified host name>" -file "<Operations Orchestration fully qualified host name>.cer"**

b. When prompted for password enter: `changeit`.

c. In order to prevent a certificate error, place this certificate into the Trusted Root Certificate Authorities on any browser that will be accessing APM as follows:

   ○ Click the **Install certificate** button to start the wizard.
   ○ Click **Next**.
   ○ Select the **Place all certificates in the following store** radio button.
   ○ Click **Browse.**
   ○ Select **Trusted root certification authorities**.
   ○ Click **Next**.
   ○ Click **Finish**.

d. Restart APM on the Gateway server.

e. Repeat the above steps on the Data Processing Server as well.

9. **Grant permissions**

Grant administrator permissions so that users can create, view, and modify the mapping between APM CI types and OO run books, and invoke OO run books from APM.

> **Note:** After you create a user in APM for the OO integration, login and open RTSM (**Admin > RTSM Administration > Modeling Studio**) to avoid errors with run books.

a. Select **Admin > Platform > Users and Permissions > User Management**.

b. Either select a user or create a new user.

c. Select the **Permissions** tab, and select the **Operations Orchestrations** context. (For further details on this topic, see *Permissions* in *the APM Platform Administration Guide*.)

To integrate with OO, you must set up users with specific permissions:

- To enable a APM user to start runbooks, the operator must have the same user name in APM and in OO.

- **In OO 10.x**, users must have the **ADMINISTRATOR** role.

- **In OO versions before 10.00**, the user must be defined in OO as **external**. If you want to enable a user to launch run books automatically, you must define an additional user in OO as **internal**.

  In addition, in OO versions before 10.00 users must belong to OO groups with the following capabilities: AUTHOR, SCHEDULE, MANAGE_RUNS, RUN_REPORTS, and HEADLESS_ FLOWS. You can either add the users to groups with these capabilities (for example the administrator group), or you can create such a group if necessary.

- In APM, the user must have the Execution right in the Operations Orchestration context.

- To enable a APM user to configure runbook-CI type mappings, you have to set up the following:

  ○ In APM, give the user the Administration right in the Operations Orchestration context.

  ○ Set up the same integration user in OO (for example, BSMOO_integr_user) and in the RTSM.

    You can access RTSM from the APM UI here: Admin > RTSM Administration > IT Universe Manager. For instructions on working with RTSM, see the RTSM help within the APM documentation.

10. **Map run books to CI Types**

You can map OO run book parameters to:

- CI type attributes. For details on the user interface, see "Run Books Configuration Page" on page 14.

  The child CIs of a CI, for which you configure a run book, are also assigned that run book.

  > **Note:** In order to be able to map run books to CI types, either create a run book flow in OO, or import a content pack in OO with the Content Workspace.

- The OMi event attributes are pre-defined in OMi. For details, see OMi documentation.

11. **Use OO functionality from APM applications**

You can trigger a run book:

- From Service Health using the **Invoke Run Books** context menu option.

- From Event browser using the context menu or from the Action panel.

Troubleshooting Integration Problems

Connection Errors

If you receive a connection error when you select run books in the **Available Run Books** pane (**Library > Operations**), change the timeout settings **run.book.timeout** and **service.center.ws.timeout** from 10000 to 60000 (1 minute):

1. Open a JMX console on the APM server: **http://localhost:8080/jmx-console**.

2. Select **Foundations > service=Infrastructure Settings Manager**.

3. To set the values, use **setSettingValuePerCustomerId()** with **contextName: integrations** and **settingName: settings.pm.settings.run.book.timeout** or **settings.pm.settings.service.center.ws.timeout**. Change to **newValue: 60000**.

4. You do not need to restart APM.

Connection Issues Between APM and OO

If APM is having problems connecting to OO, check if there is an LDAP configuration in OO that is incorrectly configured. If the LDAP server doesn't respond it will take ~10 seconds until APM can log in to OO with the internal user. The solution is to disable the wrong LDAP configuration in OO.

Different Domains

If APM and OO are in different domains, and you are using Internet Explorer as your browser, you may need to add the domains to the list of allowed domains in the Privacy tab (**Internet Options > Privacy > Sites**).

Problem After Exporting and Importing Certificates

If you receive an error after importing the server certificate from the OO server to the APM Gateway Server, check if APM is configured to use a different keystore than the default one.

In addition, check if your certificate on OO was issued by a CA that is not part of the normal Java trust store. In that case, also import the trust to this CA to APM. Java must be able to verify the full certificate chain (i.e. any intermediate CAs must also be imported to the trust store as well).

After APM - OO Integration, Some APM Actions Fail

If you create a special user for the integration, you must open any RTSM applet. This action automatically provides you with permissions on the RTSM level.

Examples of APM and OO Integrations

This section describes two possible scenarios to integrate APM and Operations Orchestration (OO).

Use-Case Scenario in Service Health

In OO, the `Restart a Node` run book is associated with a Node CI Type. The parameters of the run book are mapped to the relevant CI attributes of the Node CI.

In Service Health, the operator detects that a host has a system problem. The operator right-clicks the CI to get a list of the run books relevant to the CI. One of the run books is `Restart a Node`. The run book can execute automatically because the values of the parameters, such as host name/IP are automatically populated by data taken from the CI context.

Use-Case Scenario in OMi

In the OMi Event Browser, the operator is going through his assigned events. The operator detects an event related to a lack of disk space that causes a database performance issue. From the event context the operator can get a list of relevant run books. The operator can launch the appropriate run book, manually. The run-book continue running without further input from the operator as all run book parameters are extracted from the event or related CI.

> **Tip:** If you have set up the integration between OO and APM, you can also use **Operations Management > Automatic Runbook Execution** to run an OO flow as an automatic action. For details, see *Automatic Run Book Execution* in the APM Application Administration Guide.
>
> Although OO flows are not set up as an "automatic action" in the policy (like OM automatic actions), you can run OO flows automatically when the event comes into OMi – or as a result of time-based event automation.

OO Integration Administration User Interface

If you have set up an integration between APM and Operations Orchestration (OO), you can configure mappings between CIs and run books, to launch OO run books directly from Service Health.

This section describes:

- "Run Books Configuration Page" below
- "Run Book Mapping Configuration Wizard" on the next page
- "Select Topology Dialog Box" on page 18

Run Books Configuration Page

This page displays the mappings between APM CI types and Operations Orchestration (OO) run books, and enables you to create new mappings or edit existing ones.

To access	Admin > Integrations > Operations Orchestration tab
Important information	Click a row in the table to select an existing mapping for editing or deletion.

User interface elements are described below:

UI Element (A-Z)	Description
	New. Opens the **Run Book Mapping Configuration** wizard, where you configure the mapping between a CI type and OO run books. For details on the user interface, see "Run Book Mapping Configuration Wizard" on the next page.
	Edit. Opens the **Select CI Type** page of the **Run Book Mapping Configuration** wizard where you can edit the selected mapping. For details on the user interface, see "Select CI Type Page" on the next page.
	Delete. Delete the selected mapping.
CI Type	Displays the CI types to which OO run books are already mapped.
Operation Orchestration Flows	Displays the OO run books that are mapped to each CI type.

Run Book Mapping Configuration Wizard

This wizard enables you to create mappings of CI Type attributes, event attributes, or both, and Operations Orchestration (OO) run book parameters.

To access	Use one of the following: • To create a new mapping, select **Admin > Integrations > Operations Orchestration** tab, and click the **New** button. • To edit an existing mapping, select **Admin > Integrations > Operations Orchestration** tab, select the existing mapping, and click the **Edit** button.

Important information	• The child CIs of a CI, for which you configure a run book, are also assigned that run book.
	
	• When using the Run Book Mapping Configuration wizard to edit a previously configured mapping:
	
	  • The Welcome and Summary pages of the wizard are not displayed.
	
	  • You do not have to access the wizard pages in a specific order. Click a wizard page name on the left to go directly to that page.
	
	  • From any of the wizard pages, click the **OK** button to save the mapping configuration and exit the wizard.
	
	• The Welcome and Summary pages are displayed only when you create a new run book mapping.

Wizard map	The Run Book Mapping Configuration Wizard contains: Welcome Page > "Select CI Type Page" below > "Select Run Books Page" on the next page > "Configure Parameters Page" on page 17 > "Summary Page" on page 18

Select CI Type Page

This page enables you to select a CI type to which to map Operations Orchestration (OO) run books. This is part of the "Run Book Mapping Configuration Wizard" above.

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<CI type tree>	Displays a list of CI types from which you select the required CI type to which to map OO run books. Click a CI type to select it. **Note:** - CI types that already have run books mapped to them appear in the tree, but are disabled. - When you edit an existing mapping, only the configured CI type is displayed and you cannot edit it.
<Search string>	You can search for CI types with names containing a specific string that you enter in this field. Click the **Search** button to run the search. Only matching results are displayed in the tree. **Note:** - The search is not case sensitive. - You can use the asterisk (*) wildcard in your string to match one or more words of text.
Clear	Click to clear the current search string and display all CI types.
Search	Click to display only CI types that match the search string.

Select Run Books Page

This page enables you to select the Operations Orchestration (OO) run books to map to the selected CI type.This is part of the "Run Book Mapping Configuration Wizard" on the previous page.

User interface elements are described below:

UI Element (A-Z)	Description
	Select run book to map. Adds the run book you selected in the Flow Library area to the list in the Selected Run Books area.
	Remove run book from mapping. Removes the run book you selected in the Selected Run Books area from the list and moves it back to the Flow Library area.
Flow Library	Displays a tree of the available run books in the OO flow library. Click a run book to select it.
Run Book Description	Displays the description of a selected run book.

UI Element (A-Z)	Description
Selected Run Books	Displays the run books you select for mapping to the CI type and their path in the OO flow library. Click a run book to select it for removal from the list. **Note:** - A run book that is included in an existing mapping, but that is not found in OO, is denoted by the icon. Remove the run book from the mapping. - A run book included in an existing mapping that contains different parameters than those defined in the mapping (that is, additional or deleted parameters), is denoted by the icon.

Configure Parameters Page

This page enables you to configure the settings and default values of the parameters used by the selected Operations Orchestration (OO) run books.This is part of the "Run Book Mapping Configuration Wizard" on page 15.

User interface elements are described below:

UI Element (A-Z)	Description
CI	The default CI from the selected CI type topology to use as the source for the required run book parameter. Click the arrow to open a drop-down list of all the CIs included in the CI type topology. Select a different CI if required. **Note:** If there is no configured topology for the selected CI type, the CI corresponding to the selected CI type itself is the only available option.
CI Attribute	The default CI attribute, of the selected CI, to use as the source for the required run book parameter. Click the arrow to open a drop-down list of all the attributes for the selected CI. Select a different attribute if required.
Default Value	A default value to be used for the CI attribute, if required.
Enable to run automatically	Select the option when you want to automatically run the run book. **Note:** The run book runs automatically only when all the parameters listed in the Configure Parameters page have been assigned a value, and the run book runs without user intervention.
Event Attribute	The default event attributes for events that correspond to the selected CI type. The field automatically lists all the default event attributes and custom attributes that were defined in OMi. You can select one of the listed default event attributes or add your own. For details about the attributes, see OMi Online Help documentation.

UI Element (A-Z)	Description
Run Book/Parameter Name	A hierarchical list of the selected run books and the parameters they require. **Note:** • Only parameters that are configured as flow input parameters for run books are included. For example, a parameter that is included in an operation configured in a run book is not displayed and cannot be mapped. • Mandatory parameters for which settings are required are denoted by a red asterisk. • A parameter included in an existing mapping, but that is not found in a run book, is denoted by the icon. • A parameter found in a run book, but not included in an existing mapping, is denoted by the icon. • Additional and deleted parameters are automatically added to or removed from the mapping, when you click the **OK** button on the wizard page.
To choose an attribute that is not part of the selected CI click here	Click the link to open the **Select Topology** dialog box, where you can select a CI from a related CI topology to use as the source for the required run book parameter. For details on the user interface, see "Select Topology Dialog Box" below.

Summary Page

This page summarizes the configuration of the mapping of the parameters used by the selected Operations Orchestration (OO) run books to the CI attributes or to the event attributes, as well as the default values of the attributes. This is part of the "Run Book Mapping Configuration Wizard" on page 15.

Select Topology Dialog Box

This dialog box enables you to select a different CI type or node CI from a topology related to the CI type selected in the **Run Book Mapping Configuration** wizard. This CI is used as the source for a required run book parameter for the CI type selected in the wizard.

To access	Click the **Select Related CIs** link in the **Configure Parameters** page in the **Run Book Mapping Configuration** wizard. For details on the user interface, see "Configure Parameters Page" on the previous page.
See also	"Run Book Mapping Configuration Wizard" on page 15

User interface elements are described below (unlabeled elements are shown in angle brackets):

UI Element (A-Z)	Description
<Topology map>	Displays a map of the selected CI topology.
Select the node to which the run books are mapped	Select a specific node from the selected topology to use as the source for a required run book parameter for the CI type selected in the **Run Book Mapping Configuration** wizard. Available nodes are those applicable for the CI type selected in the wizard, and their descendants.
Select topology	Select a topology from the drop-down list of topologies that are related to the CI type selected in the **Run Book Mapping Configuration** wizard. Related topologies are those topologies in the Run Book folder in Modeling Studio that include a node for the CI type selected in the wizard. **Note:** • Topology names in the Run Book folder in Modeling Studio cannot contain spaces. • You can create topologies using Query Manager (**Admin > RTSM Administration > Modeling > Modeling Studio**). For details on the user interface, see Modeling Studio Page in the Modeling Guide.

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