

# HP Operations Orchestration Software

Software Version: 7.51

*HP Business Availability Center Integration*

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## Finding or updating documentation on the Web

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### To obtain HP OO documentation and tutorials

1. Go to the HP Software Product Manuals web site (<http://support.openview.hp.com/selfsolve/manuals>).
2. Log in with your HP Passport user name and password.  
OR

If you do not have an HP Passport, click **New users – please register** to create an HP Passport, then return to this page and log in.

If you need help getting an HP Passport, see your HP OO contact.

3. In the **Product** list box, scroll down to and select **Operations Orchestration**.
4. In the **Product Version** list, click the version of the manuals that you're interested in.
5. In the **Operating System** list, click the relevant operating system.
6. Click the **Search** button.
7. In the **Results** list, click the link for the file that you want.

## Where to find Help, tutorials, and more

The HP Operations Orchestration software (HP OO) documentation set is made up of the following:

- Help for Central  
Central Help provides information to the following:
  - Finding and running flows
  - For HP OO administrators, configuring the functioning of HP OO
  - Generating and viewing the information available from the outcomes of flow runsThe Central Help system is also available as a PDF document in the HP OO home directory, in the \Central\docs subdirectory.
- Help for Studio  
Studio Help instructs flow authors at varying levels of programming ability.  
The Studio Help system is also available as a PDF document in the HP OO home directory, in the \Studio\docs subdirectory.
- Animated tutorials for Central and Studio  
HP OO tutorials can each be completed in less than half an hour and provide basic instruction on the following:
  - In Central, finding, running, and viewing information from flows
  - In Studio, modifying flowsThe tutorials are available in the Central and Studio subdirectories of the HP OO home directory.

- Self-documentation for operations and flows in the Accelerator Packs and ITIL folders  
Self-documentation is available in the descriptions of the operations and steps that are included in the flows.

## Support

For support information, including patches, troubleshooting aids, support contract management, product manuals and more, visit the following site: <http://www.hp.com/go/bsaessentialsnetwork>

This is the **BSA Essentials Network** Web page. To sign in:

1. Click **Login Now**.
2. On the **HP Passport sign-in** page, enter your HP Passport user ID and password and then click **Sign-in**.
3. If you do not already have an HP Passport account, do the following:
  - a. On the **HP Passport sign-in** page, click **New user registration**.
  - b. On the **HP Passport new user registration** page, enter the required information and then click **Continue**.
  - c. On the confirmation page that opens, check your information and then click **Register**.
  - d. On the **Terms of Service** page, read the Terms of use and legal restrictions, select the **Agree** button, and then click **Submit**.
4. On the **BSA Essentials Network** page, click **Operations Orchestration Community**.  
**The Operations Orchestration Community** page contains links to announcements, discussions, downloads, documentation, help, and support.

**Note:** Contact your OO contact if you have any difficulties with this process.

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# Overview

This integration enables administrators to build HP Operations Orchestration (OO) flows that are integrated into their HP Business Availability Center (BAC) dashboard, and to control the OO flows with their BAC dashboard.

This document explains how this integration has been implemented and how to launch flows from within BAC. It also explains the operations that are included for communicating back and forth between OO and the BAC dashboard.

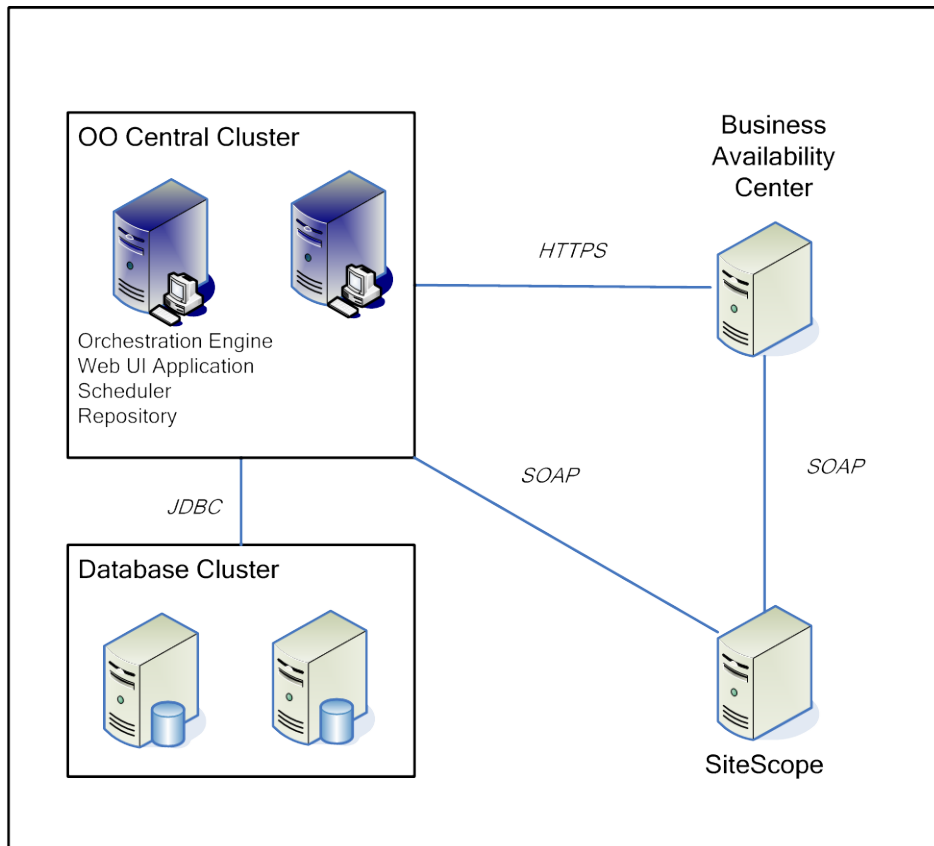
## Use cases and scenarios

1. Launch OO flow from within the BAC dashboard. This allows administrators to wire together specific event/alarms in BAC to OO flows. This type of integration is a simple Incident Management/Runbook use case.
  - Error detected by BAC module and alarm raised on the dashboard.
  - Context-Sensitive runbook launched to remediate fault.
  - OO automatically acknowledges event and runs runbook.
  - OO remediates problem.
  - OO updates/resets alarm.
2. OO Operations allow the automation of BAC administrative tasks. This includes tasks such as doing automatic SiS template deployment. This allows administrators to tie BAC administrative functions to provisioning and maintenance.

## Versions and components

<b>Operations Orchestration Version</b>	<b>Business Availability Center Version</b>
7.51	7.00

## Architecture



## Installation and configuration instructions

### Operation specifics

The BAC to OO integration will add a context menu to the dashboard from which users can click a configuration item to launch an OO flow specified by the integrator. This flow is run via a Web browser window launched by BAC.

The integration method/path requires creation of a menu item and menu. It only allows execution of an OO flow. Because the OO headless execution REST service is invoked in the browser, any user of the integration will see raw XML results.

In the BAC administration interface, you create a new context menu item (**Admin > Dashboard > Repositories** tab > **Context Menu Items**) to invoke a flow from the context menu.

This context menu item should use the Generic URL preprocessor, populate the parameters with information from the configuration item using uCmdb properties, and invoke the headless flow execution service in OO (see **Launching Flows**). The postprocessor will, for example, open up a Web browser window with certain settings. You can open the (XML) result of running the flow.

With this context menu item, you can now use it in different menus, including the default menu (used when right-clicking a host configuration item from monitored hosts).



# Troubleshooting

## General troubleshooting procedures

Be cautious when using BAC in a VM. Changing the IP or hostname of the BAC server can break the hooks to the LDAP server and possibly force a reinstallation of BAC. There is currently no support for changing the IP of BAC 7.00.

The standard BAC license does not include the discovery probe support featured in the documentation for autodiscovery of configuration items (CIs). To automatically discover CIs outside those under Monitored Hosts that are provided by BAC's integration to SiteScope, contact HP support. You will be provided with a license and further instructions for enabling autodiscovery. To contact HP support for this purpose, open a ticket at [support.opsware.com](http://support.opsware.com). You will need to have login credentials to do so.

## Troubleshooting this operation

### 401 Unauthorized

This error is usually the result of improper credentials. It can also result if OO Central is older than version 7.20. This is because the starting of a flow by the REST service requires preemptive HTTP authorization prior to version 7.20. As a result, OO flows may not be invoked from outside Central on most Web browsers.

### 500 Internal Server Error

This occurs when a flow fails to execute or the REST service encounters an error with the flow. Please make sure you are passing all required inputs to the flow and that the flow is valid in Central.

# Customizing the Integration

## uCMDB Web Service

To allow integrations from OO into the embedded uCMDB component of BAC through the Web service, you will need to create a BAC user with permissions to use the Web service.

### To add a uCMDB Web service user

1. **Admin > Platform > Users and Permissions** tab.
2. Create a user as an Operations user according to instructions on the Web page in the browser.
3. Click the **Permissions** tab in the right-hand frame.
4. Under the **Select context** drop-down menu, select **UCMDB WS API**.
5. In the middle pane, click **cmdb.open\_api**.
6. On the **Predefined Roles** tab, check all the available boxes.
7. To verify that permissions are granted, click the **Operations** tab and check **Grant** for the operations listed.

Normally this is inherited, but this should ensure that proper permissions are granted to your Web service user.

## Launching Flows

You can interact with HP OO from BAC by using the various REST based services:

- `https://ooserver:port/PAS/services/http/list`  
Retrieves a list of flows from OO.
- `https://ooserver:port/PAS/services/http/execute/<Library Path>`  
Used to execute a flow by name (waits for flow to finish before returning).
- `https://ooserver:port/PAS/services/http/execute/<Flow UUID>`  
Used to execute a flow by UUID (waits for flow to finish before returning).
- `https://ooserver:port/PAS/services/http/execute_async/<Library Path>`  
Used to execute a flow by name (returns immediately after the flow is launched).
- `https://ooserver:port/PAS/services/http/execute_async/<Flow UUID>`  
Used to execute a flow by UUID (returns immediately after the flow is launched).

BAC is able to launch a flow from the BAC Dashboard through the context menu system. BAC provides an interface to create a custom context menu. You can use this context menu to launch a flow from a context-sensitive menu.

## Preprocessor Generic URL

**Key:** Parameter to the preprocessor or postprocessor.

**Value:** UCMDB or static variable.

**Convert To:** The variable name to use in the resulting URL to the postprocessor.

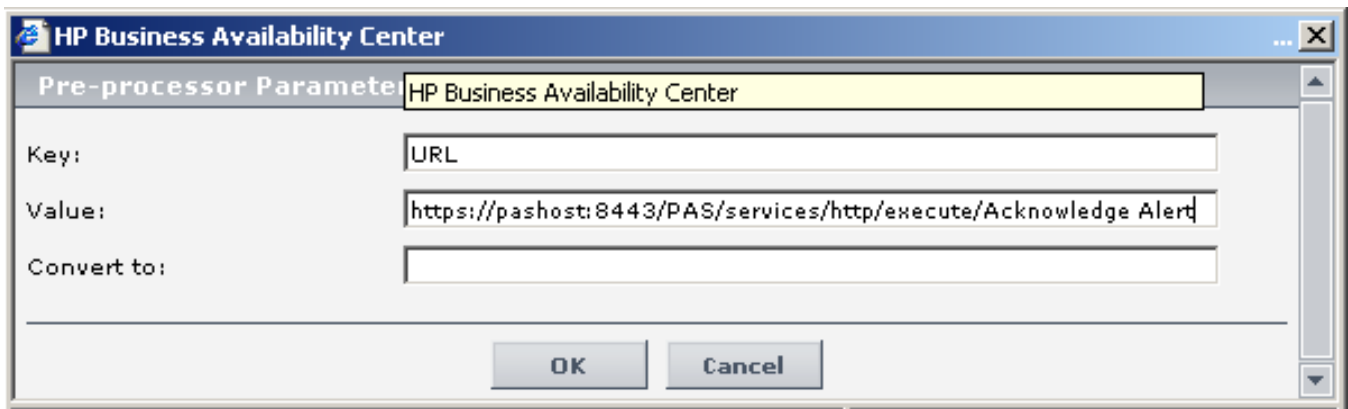
### **Example**

Launch the flow **Acknowledge Alert** and pass the configuration item ID and its hostname to a flow that accepts the variables `configItem` and `hostname`, respectively.

Using the Dashboard URL Preprocessor, we can pass in variables to OO flows:

Key: URL

Value: `https://ooserver:ooport/PAS/services/http/execute/Acknowledge Alert`

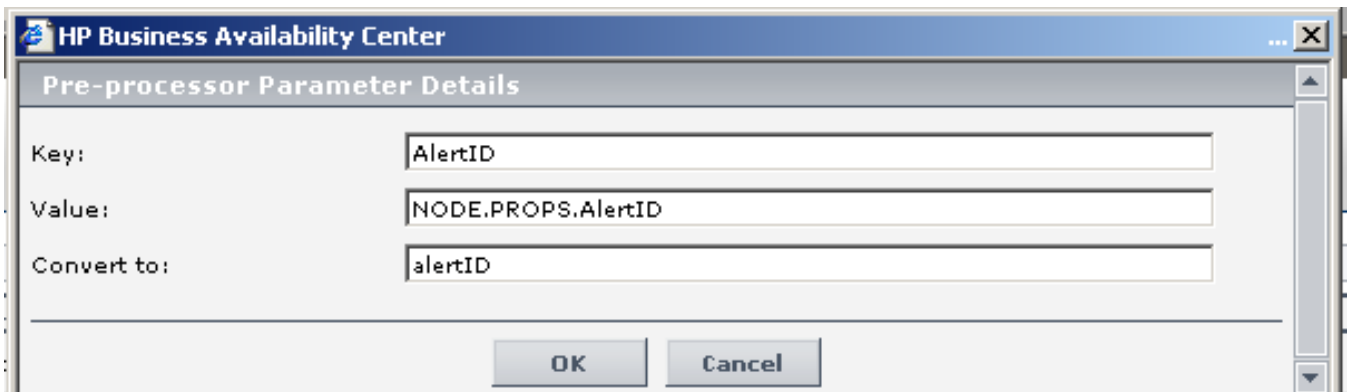


**Pre-processor window**

Key: CI

Value: NODE.ID

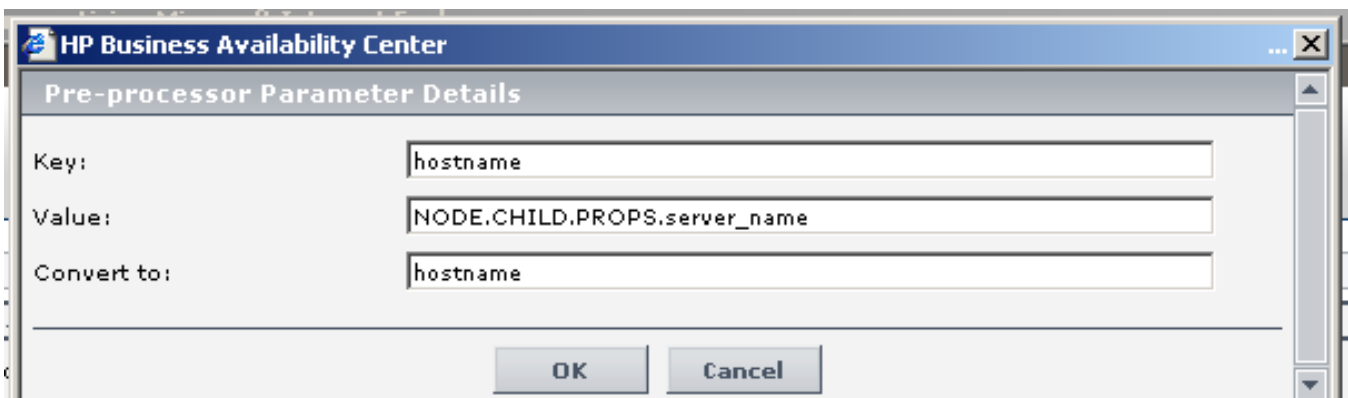
Convert To: configItem



Key: hostname

Value: NODE.CHILD.PROPS.server\_name

Convert To: hostname



This will setup the URL preprocessor to pass the URL <https://pashost:8443/PAS/services/http/execute/AcknowledgeAlert/?alertID=value1&hostname=value2>, where value1 and value2 are from the CI properties

clicked on, to the postprocessor. The postprocessor will attempt to open URL in some manner. Open New Window is recommended.

For more examples and uses of different uCMDB CI properties, refer to the preexisting menu items in the Dashboard administration section, the uCMDB documentation, or the BAC documentation itself.

## Security

The headless REST service authenticates using HTTP Basic, Digest, and OO's single sign-on feature (see OO documentation). Because this authentication is performed by the Web browser, the security implications for this integration are equivalent to using OO Central.

## Tools

The following are OO tools that you can use to integrate OO with SiteScope:

- **RSFlowInvoke and JRSFlowInvoke**  
RSFlowInvoke (Rsflowinvoke.exe or the Java version, Jrsflowinvoke.jar) is a command-line utility that substitutes for a Web-browser call in starting a flow. Substituting a command-line for a Web-browser call enables you to start a flow without using Central (although the Central service must be running). RSFlowInvoke (or JRSFlowInvoke) is useful when you want to start a flow from an external system, such as a monitoring application, that can use a command line to start a flow.
- **Web Services Wizard**  
The Web Services Wizard creates OO operations based on the API in the Web Service Definition Language (WSDL) of the Web service that you identify in the wizard. Thus you can use the Web Services Wizard to create operations from your monitoring tool's API.

When you run the Web Services Wizard, you provide it with the WSDL for a given Web service. The WSDL string you provide as a pointer can be a file's location and name or a URL.