HP Operations Orchestration Software

Software Version: 9.00.05

HP Operations Manager Incident Web Service Integration Guide

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On the Web: Finding OO support and documentation

There are two Web sites where you can find support and documentation, including updates to OO Help systems, guides, and tutorials:

- The OO Support site
- HP Live Network

Support

Documentation enhancements are a continual project at Hewlett-Packard Software. You can obtain or update the HP OO documentation set and tutorials at any time from the HP Software Product Manuals Web site. You will need an HP Passport to log in to the Web site.

To obtain HP OO documentation and tutorials

- Go to the HP Software Product Manuals Web site (*http://support.openview.hp.com/selfsolve/manuals*).
- 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.
- In the **Product** list box, scroll down to and select **Operations Orchestration**.
- In the **Product Version** list, click the version of the manuals that you're interested in.
- In the **Operating System** list, click the relevant operating system.
- Click the **Search** button.
- In the **Results** list, click the link for the file that you want.

HP Live Network

For support information, including patches, troubleshooting aids, support contract management, product manuals and more, visit the following site: *https://www.www2.hp.com/*.

This is the **HP Live Network** Web page. To sign in:

- Click **Login**.
- On the **HP Passport sign-in** page, enter your HP Passport user ID and password and then click **Sign-in**.
- 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**.
- On the **HP Live 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.

In OO: How to find Help, PDFs, and tutorials

The HP Operations Orchestration Software (HP OO) documentation set is made up of:

- 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 runs

  The Central Help system is also available as a PDF document in the HP OO home directory, in \Central\docs.

- 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 \Studio\docs directory.

- 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 flows

  The tutorials are available in the Central and Studio subdirectories of the HP OO home directory.

- Self-documentation for HP OO operations, flows, and Accelerator Packs

  Self-documentation is available in the descriptions of the operations and steps that are included in the flows.

Table of Contents

Overview of HP Operations Manager Incident Web Service integration

With the HP Operations Manager (HPOM) Incident Web Service integration, administrators can build HP Operations Orchestration (OO) flows that are integrated with HPOM through the Incident Web Service interface.

This document explains how this integration has been implemented and how the integration's OO operations communicate between OO and the HPOM Incident Web Service interface.

The HP Operations Manager Incident Web Service interface exposes its messages as IT Infrastructure Library (ITIL) incidents and uses terminology (such as Close and Reopen) that is compliant with the Distributed Management Task Force (DMTF) Web Services for Management (WS-Management) standard. This terminology is different, yet similar, to HPOM native terminology.

Use cases and scenarios

The following are the major use cases for the HP Operations Manager Incident Web Service integration, and the operations that you can use to implement them.

- Manage HPOM messages and Operations Manager actions using the Incident Web Services:
    - **Add Annotation** – Adds an annotation to an Operations Manager incident.
    - **Close Incident** – Closes a request in HPOM.
    - **Create Incident** – Creates an incident.
    - **Delete Annotation** – Deletes an annotation from an HPOM incident.
    - **Delete Custom Attribute** – Deletes a custom attribute from an incident.
    - **Disown Incident** – Clears the incident owner.
    - **Enumerate Incidents** – Finds the incident IDS that match the search criteria.
    - **Get Annotations** - Gets all of the annotations of the given incident.
    - **Get Incident** – Gets detailed information about an incident.
    - **Own Incident** – Sets the incident owner to the current Operations Manager user.
    - **Reopen Incident** – Reopens a closed incident.
    - **Set Custom Attribute** - Sets a custom attribute of an incident.
    - **Update Annotation** - Modifies an existing annotation of an incident.
    - **Update Incident** – Updates the properties (severity and text) of an incident.

Installation and configuration instructions

There is no special installation required for HPOM Incident Web Service integration for Windows. For HPOM Incident Web Service integration for UNIX you must also install the HPOM for UNIX Incident Web Service. For more information, see *HP Operations Manager Incident Web Service for the UNIX and Windows Operating Systems Integration Guide* available on *http://support.openview.hp.com/selfsolve/manuals*.

Versions

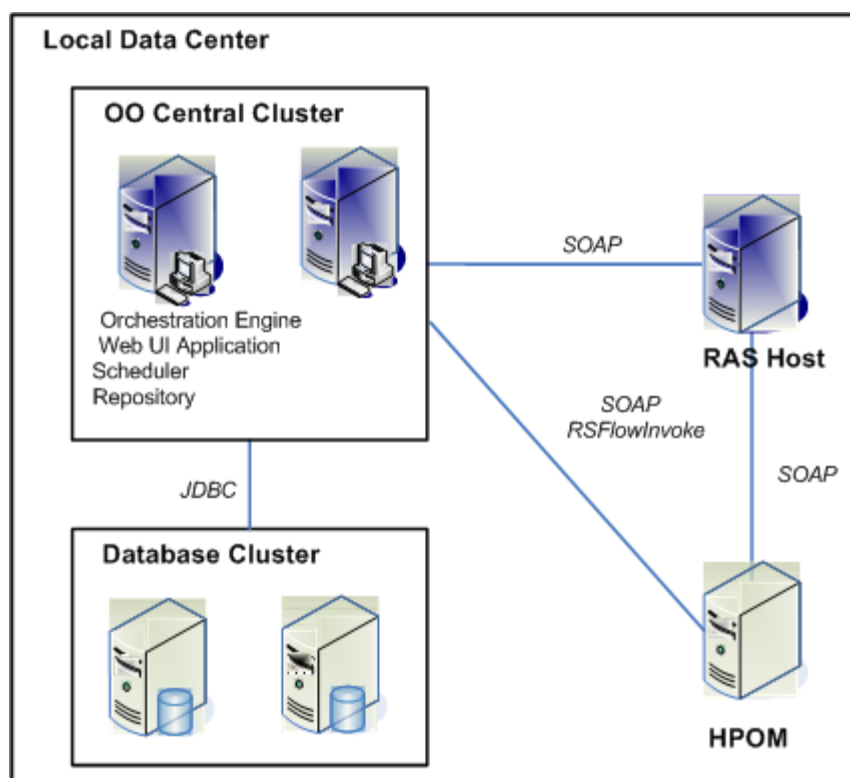| Operations Orchestration Version	HP Operations Manager Incident Web Service Version
9.00.05	8.0, 9.0
	Included automatically in Windows HP Operation Manager 8.10 or later
	Available for download for Unix HP Operations Manager 8.30 or later

Architecture

Figure 1 - HPOM Incident Web Service architecture

HPOM Incident Web Service integration operation infrastructure

The HPOM Incident Web Service integration includes the following operations in the Studio Library, in the Library\Integrations\Hewlett-Packard\Operations Manager\ folder.
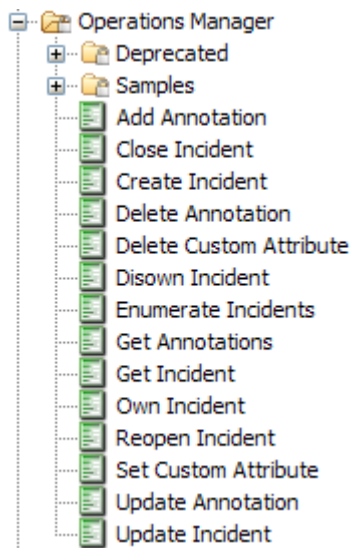
Figure 2 - HPOM Incident Web Service integration operations

Common inputs in the integration

OO flows and operations use inputs to specify how they obtain the data that they need and when the data is obtained. The following inputs are used consistently throughout the HPOM Incident Web Service integration's operations. They control the HTTP connection to the Web service, including:

- Location
- Protocol
- Credentials
- Timeout

host

    The host on which the HPOM Incident Web Service is running.

port

    The port on which the HPOM Incident Web Service is running. The default value is **443** (the standard for HTTPS).

protocol

    The protocol used to communicate with the HPOM Incident Web Service. The default value is **https**.

username

    The HPOM user account name under which the operation is performed.

password

    The password corresponding to the user account name.

timeout

    The amount of time in milliseconds (ms) that can elapse before the connection to the HPOM Incident Web Service is terminated. A value of **0** indicates an unlimited timeout. The default value is **0**.

Additional inputs for the operations are included in the operation descriptions in the *Operation specifics* section.

Operation specifics

This section introduces the operations for the HPOM Incident Web Service integration. The operations for this integration support tasks such as:

- Creating an incident
- Closing and reopening an incident
- Updating the title and the severity of an incident
- Retrieving the details of an incident
- Enumerating (searching for) incidents that match specific criteria
- Managing annotations
- Managing custom attributes

The destination URL for the Web service is built as:

<protocol>://**<host:port>**/opr-webservice/Incident.svc

Add Annotation

The **Add Annotation** operation adds an annotation to an existing HPOM incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The ID of the incident to which to add the annotation.

annotationText

> The annotation text to add to the incident.

The operation returns the following:

returnResult

> A string containing the entire output of the operation.

Close Incident

The **Close Incident** operation closes an HPOM incident request. This is also known as *acknowledging* a message.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The ID of the incident to close.

The operation returns the following:

returnResult

> A string containing the entire output of the operation.

Create Incident

The **Create Incident** operation creates an incident in HPOM with the properties you specify, and returns the ID of the newly-created incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

description

A detailed description of the incident. This information is stored in a custom attribute named **Description**.

severity

The severity of the event related to the incident. The valid values are **Critical**, **Major**, **Minor**, **Warning**, and **Normal**.

title

The text of the incident, which is a brief description of the event to which the incident relates.

category

The HPOM category, which is used for organizing incidents that have some logical connection. This information is stored in the HPOM **Message Group** field.

subcategory

A string used for more detailed organization of incidents that have the same category.

nodeDnsName

The domain name system (DNS) name of the host.

collaborationMode

A string that you can use for integrating with a service management product. The service management product defines the string's value and purpose.

solution

A description of the steps taken in response to the incident.

problemType

A string that you can use for integrating with a service management product. The service management product defines the string's value and purpose.

productType

A string that you can use for integrating with a service management product. The service management product defines the string's value and purpose.

type

A string you can use for organizing incidents, for example to group different types of incidents within a category. This information is stored in the HPOM **Message Type** field.

emittingCI

The ID of the service to which the incident relates.

customAttributes

Each incident can have any number of custom message attributes, which are pairs of names and values. This input can contain multiple name=value pairs, separated by commas. For example, `color=green,flavor=pear`. The HPOM Incident Web Service maps several inputs into custom message attributes, including **description**, **solution**, **subcategory**, **productType**, **problemType**, and **collaborationMode**.

correlationKey

A string that enables other processes to identify incidents that relate to each other. This information is stored in the HPOM **Message Key** field.

application

The name of the application to which the incident relates.

object

> The name of the object to which the incident relates.

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

id

> The unique identifier for the incident.

isDuplicate

> Indicates whether the newly created incident is a duplicate of an existing incident.

Note: If HPOM detects that the new incident is a duplicate of an existing incident, it does not create the new incident. Instead it updates the original incident with the information that a duplicate was received. In this situation, the ID of the original event is returned by the operation.

Delete Annotation

The **Delete Annotation** operation deletes an annotation from an existing HPOM incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The ID of the incident.

annotationId

> The ID of the annotation. The **annotationId** input is a long string of hexadecimal digits that is generally only available from the Incident Web Service interface. This identifier is not the same ID that is presented in the HPOM console, which is normally a small integer (beginning with 1 and incremented with each annotation).

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

Delete Custom Attribute

The **Delete Custom Attribute** operation deletes a custom attribute from an existing incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The ID of the incident.

caName

> The name of the custom attribute to delete.

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

Disown Incident

The **Disown Incident** operation disowns one or more incidents by clearing the **owner name** attribute.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

ids

A list of incident IDs, separated by the **delimiter** input value.

delimiter

The delimiter to place between the incident IDs in the **ids** list. The default is a comma (,).

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

Enumerate Incidents

The **Enumerate Incidents** operation finds the incident IDs that match the values you specify in the operation's inputs. The operation returns the IDs for incidents that match all of the specified input values. The most common use for this operation is in a flow where each of the returned IDs is passed to the **Get Incident** operation.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

application

The name of the application to which the incident relates.

category

The HPOM category for organizing incidents that have some logical connection.

conditionMatched

This indicates whether the incident is sent to the server because of a matched condition in a policy or template.

correlationKey

A string that enables other processes to identify incidents that relate to each other. Related incidents have similar message keys. Message keys are not unique.

customAttributes

A set of key=value attribute pairs separated by commas (,). For example, color=green,flavor=pear.

emittingCI

The ID of the service to which the incident relates. The severity of an incident can affect the status of a service to which it relates.

emittingNode

The name of the node generating the incident.

object

The name of the object to which the incident relates.

receivedTime

The date and time at which the management server receives the incident.

receivedTimeOperator

The operator that specifies how to interpret the **receivedTime** input value. The valid values are **>** (after), **<** (before), and **=** (equal to). The operator indicates whether the operation finds incidents whose received time is after, before, or equal to the **recievedTime** input value.

severity

The severity of the event to which the incident relates. The valid values are **Critical**, **Major**, **Minor**, **Warning**, and **Normal**.

title

The text that is contained in the title of the incident. You don't have to enter the entire title, just a substring of it.

maxIncidents

The maximum number of matching incident IDs that this operation can return. The default is **10**.

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

ids

A comma-delimited list of the matching incident IDS.

Get Annotations

The **Get Annotations** operation returns a list of the annotations on the specified incident. .

All of the operation's inputs except the following are described in *Common inputs in the integration.*

id

The incident ID.

delimiter

The delimiter to use to separate the annotations in the list. The default value is a comma (,).

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

annotationAuthor

The name of the user who created the annotation.

annotationDate

The date on which the annotation was created.

annotationId

Annotation id

annotationText

The text of the annotation.

Get Incident

The **Get Incident** operation returns the details of an existing incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The incident ID.

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

Own Incident

The **Own Incident** operation sets the user name of the currently authenticated HPOM user to the incident owner's name.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

ids

> The list of incident IDs, separated by the delimiter character.

delimiter

> The delimiter used to separate the incident IDs. The default is a comma (,).

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

Reopen Incident

The **Reopen Incident** operation reopens a closed incident. This is also known as *unacknowledging* a message.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

> The incident ID.

The operation returns the following:

returnResult

> The main string containing the entire output of the operation.

Set Custom Attribute

The **Set Custom Attribute** operation sets a custom attribute on an existing incident. If a custom attribute with the specified name already exists, this operation updates its value; otherwise, the operation creates a new custom attribute with the specified name and value and adds it to the incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

The incident ID.

caName

The name of the custom attribute to set.

caValue

The value of the custom attribute to set.

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

Update Annotation

The **Update Annotation** operation updates an existing annotation of an incident.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

The incident ID.

annotationId

The ID of the annotation. The **annotationId** input is a string of hexadecimal digits that is generally only available from the Incident Web Service interface. This identifier is not the same ID that is shown in the HPOM console, which is normally a small integer (beginning with 1 and incremented with each annotation).

annotationText

The new text of the annotation.

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

Update Incident

The **Update Incident** operation updates the modifiable attributes of an incident—**Severity** and **Title**.

All of the operation's inputs except the following are described in *Common inputs in the integration*.

id

The incident ID.

title

The text of the incident. A brief description of the event to which the incident relates.

severity

The severity of the event to which the incident relates. The valid values are **Critical**, **Major**, **Minor**, **Warning**, and **Normal**.

The operation returns the following:

returnResult

The main string containing the entire output of the operation.

Launching flows

You can learn how to invoke OO flows using the HPOM Incident Web Service operations in the *HP Operations Manager Integration Guide* (*HP Operations Manager Integration Guide.pdf*) available on the HP Software Product Manuals Web site (*http://support.openview.hp.com/selfsolve/manuals*).

Troubleshooting

This section provides troubleshooting procedures and tools you can use to solve problems you may encounter while using this integration. It also includes a list of the error messages you may receive while using the integration and offers descriptions and possible fixes for the errors.

General troubleshooting procedure

If you encounter an error, you should attempt to replicate the error through the HPOM console.

Error Messages

The destination represented by the WS-Addressing To EPR with address unable to find specified incident

The requested incident ID is not found in HPOM. IDs are displayed in the HP Operations Manager Console on the **General** tab of the properties page for a message, and they are normally composed of dash-separated hexadecimal characters, such as 96148820-3f38-71de-1398-0f178f0d0000.

org.apache.axis2.AxisFault.... Caused by: java.net.UnknownHostException

The **hostname** input value refers to a host that cannot be found.

org.apache.axis2.AxisFault.... Caused by: java.net.ConnectionException: Connection refused

The HPOM Web service is not listening to the indicated port. The specified port may be incorrect or the HPOM Web service not running or is listening on a different port.

Security

The HPOM Incident Web Service is accessed via SOAP over HTTPS (or HTTP, if enabled on the host), and requires valid credentials to access OM.

Tools

Following are OO tools that you can use with the <technology name> integration:

- **RSFlowInvoke.exe** and **JRSFlowInvoke.jar**

  RSFlowInvoke (RSFlowInvoke.exe or the Java version, JRSFlowInvoke.jar) is a command-line utility that allows you to start a flow without using Central (although the Central service must be running). RSFlowInvoke 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 (wswizard.exe)**

  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. The Web Services Wizard displays a list of the methods in the API of the Web service that you specify. When you run the wizard, pick the methods you want to use, and with one click for each method you have selected, the wizard creates an HP OO operation that can execute the method. This allows you to use the Web Services Wizard to create operations from your monitoring tool's API.

These tools are available in the Operations Orchestration home directory under the /Studio/tools/ folder.