HP Operations Orchestration

for the Windows and Linux operating systems

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HP BladeSystem Onboard Administrator Integration Guide

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Contents

1 Introduction

This section includes the following topics:

Purpose of the HP BladeSystem Onboard Administrator Integration

With this integration, administrators can create HP Operations Orchestration (OO) flows that are integrated with Onboard Administrator (OA).

To learn how to create OO flows, see the *Studio Guide to Authoring Operations Orchestration Flows* (Studio_AuthorsGuide.pdf) in the documentation set for the current OO release,

The Onboard Administrator integration uses the Secure Shell (SSH) technology to integrate with OO.

This document explains how this integration has been implemented, and how the integration's operations and flows communicate between OO and OA.

Audience

This guide is intended for system administrators who establish and maintain the implementation of the integration between Onboard Administrator and HP OO. This guide assumes that you have full administrative access to both systems.

Prerequisites

To use this integration successfully, you should have Administrator-level knowledge of the Onboard Administrator using the command line interface through SSH to integrate with OO.

Supported Versions

Table 1 Supported Versions

Operations Orchestration Version	Onboard Administrator Version
9.00.06	Version 3.31

Downloading OO Releases and Documents on HP Live Network

HP Live Network provides an **Operations Orchestration Community** page where you can find and download supported releases of OO and associated documents.

To download OO releases and documents, visit the following site:

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This site requires that you register for an HP Passport and sign-in. To register for an HP Passport ID, go to:

http://h20229.www2.hp.com/passport-registration.html

Or click the **New users - please register** link on the HP Passport login page.

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.

Related Documents

- *Studio Guide to Authoring Operations Orchestration Flows*
- *HP BladeSystem Onboard Administrator User Guide*
- *HP BladeSystem Onboard Administrator Command Line Interface User Guide*

2 Getting Started with the Onboard Administrator Integration

This section includes the following topics:

Installing and Configuring the Integration

No special installation and configuration instructions are required for this integration.

Onboard Administrator — OO Integration Architecture

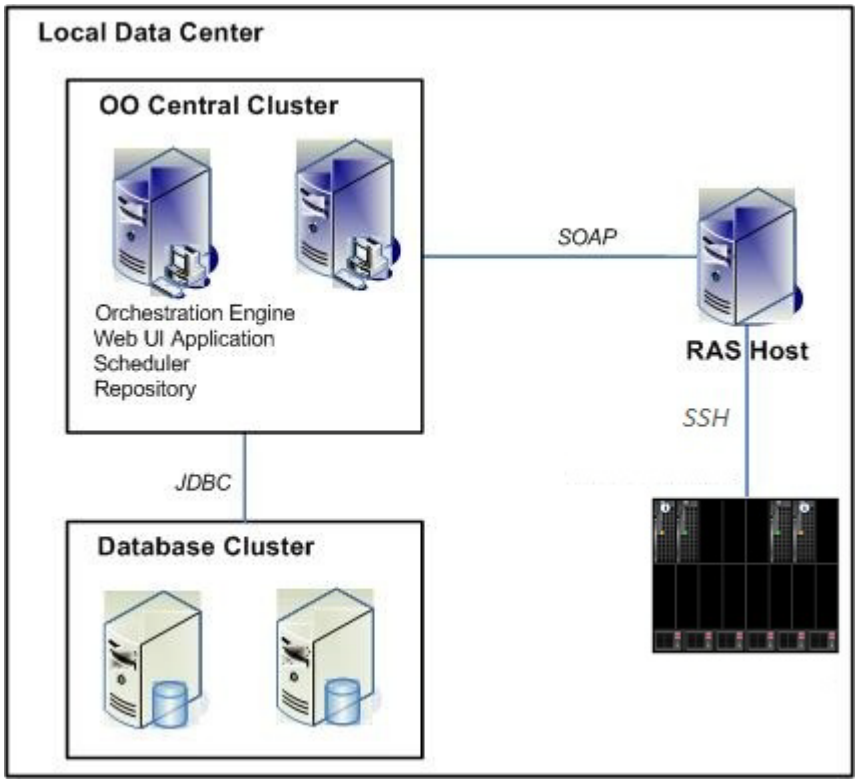

Figure 1 - HP BladeSystem Onboard Administrator Architecture

Onboard Administrator Use Cases

Following are the major use cases for the Onboard Administrator integration, and the operations and flows that you can use to implement them.

1 Power Management:

- Get Power
- Get Power Cap
- Get Power Cap Excluded Bays
- Get Power Summary
- Get Power Supply
- Set PDU Type

- Set Power Cap
- Set Power Cap Bays to Exclude
- Set Power Limit
- Set Power Mode
- Set Power Savings

2 Rack and Enclosure Management:

- Get Enclosure Info
- Get Enclosure Status
- Get Enclosure Temp
- Get FRU
- Get Rack Name
- Get Topology
- Set Asset Tag
- Set Enclosure Name
- Set Enclosure UID LED
- Set Part Number
- Set Rack Name
- Set Serial Number

3 User Account Management:

- Add User
- Delete User
- Get Password Settings
- Get Session Timeout
- Get User
- Get Users
- Modify User
- Set Password Settings
- Set Session Timeout

Onboard Administrator Terminology

The following terms are used in the *HP BladeSystem Onboard Administrator Integration Guide*.

BIOS

Basic Input/Output System

CA

Certificate Authority

CLI

Command Line Interface

CPU

Central Processing Unit

DDNS

Dynamic Domain Name System

DHCP

Dynamic Host Configuration Protocol

DNS

Domain Name System

EBIPA

Enclosure Bay IP Addressing

FRU

Field Replaceable Unit

FTP

File Transfer Protocol

GUI

Graphical User Interface

HP SIM

HP Systems Insight Manager

HTTP

Hypertext Transfer Protocol

HTTPS

Hypertext Transfer Protocol Secure Sockets

IA

Interface Adapter

ICMP

Internet Control Message Protocol

iLO

Integrated Lights-Out

IP

Internet Protocol

LDAP

Lightweight Directory Access Protocol

LED

Light-Emitting Diode

MAC

Media Access Control

NIC

Network Interface Controller

NTP

Network Time Protocol

OA

Onboard Administrator

OS

Operating System

PDU

Power Distribution Unit

PKCS

Public-Key Cryptography Standards

PXE

Preboot Execution Environment

RBSU

ROM-Based Setup Utility

RIBCL

Remote Insight Board Command Language

SNMP

Simple Network Management Protocol

SOAP

Simple Object Access Protocol

SSH

Secure Shell

SSO

Single Sign-On

TFTP

Trivial File Transfer Protocol

UID

Unit Identification

URB

Utility Ready Blade

URL

Uniform Resource Locator

XML

Extensible Markup Language

3 Using the Onboard Administrator – OO Integration

This section includes the following topics:

Location of Onboard Administrator Integration Operations and Flows in OO Studio

The Onboard Administrator integration includes the following operations and flows in the OO Studio Library/Integrations/Hewlett-Packard/Onboard Administrator/ folder.

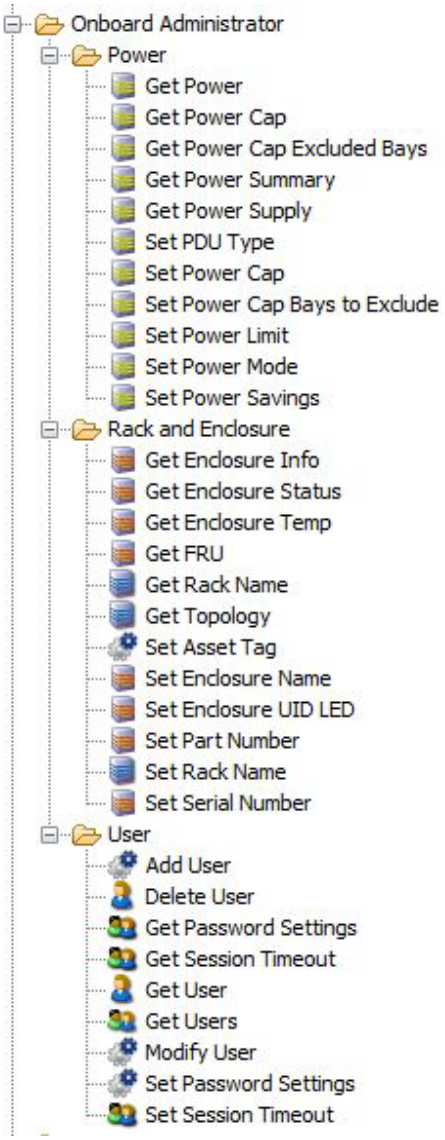

Figure 2 – Location of HP Onboard Administrator Integration Location in Studio

Common Inputs in the Integration

OO operations and flows 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 Onboard Administrator integration's operations and flows.

host

The hostname or IP address that is assigned to the target OA.

username

The login name for the user account that has Administrator and OA privileges on the target OA.

password

The password for the OA user account.

port

The port number for running the command.

command

The command to execute for the operation. The user should not change the command.

arguments

The arguments to pass to the command. The user should not change the arguments.

pty

Specifies whether to use pty. The valid values are **true** and **false**. The default is **false**.

privateKeyFile

The path to the private key file, relative to ICONCLUDE_HOME on the RAS.

timeout

The time in milliseconds to wait for the command to complete (optional). The default is **90** seconds.

characterSet

The character set name for input stream encoding from the target machine.

For example, **SJIS**, **DUC-HP**, or **UTF-8**. The default is **UTF-8**.

closeSession

Specifies whether to close the SSH session at completion of this operation. The valid values are **true** and **false**. If you specify a value of **false**, the SSH session is cached for future calls of this operation during the life of the flow. If you specify a value of **true**, the SSH session used by this operation is closed. The default is **true**.

Common Results in the Integration

The following results are used consistently throughout the Onboard Administrator integration's operations and flows.

returnResult

This is the primary output.

STDERR

The STDERR of the operation from using SSH.

STDOUT

The STDOUT of the operation from using SSH.

Common Responses in the Integration

The following responses are used consistently throughout the Onboard Administrator integration's operations and flows.

success

The operation completed as stated in the description.

failure

The operation completed unsuccessfully.

Descriptions of Onboard Administrator Integration Operations and Flows

Power Management

The operations in this group are used to manage the power in the enclosure.

Get Power

The **Get Power** operation gets the current power configuration.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Power Cap

The **Get Power Cap** operation gets the current Enclosure Dynamic Power Cap in watts.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Power Cap Excluded Bays

The **Get Power Cap Excluded Bays** operation gets the bays in the enclosure that are exempt from the Enclosure Dynamic Power Cap.

Inputs

All of the *flow*'s inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Power Summary

The **Get Power Summary** operation gets a detailed summary of the enclosure's present power state.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Power Supply

The **Get Power Supply** operation gets power supply information that includes power supply status, AC input status, capacity, part number, and serial number.

Inputs

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

powerSupplyNumber

The power supply number. The valid values are a comma-delimited list of numbers, a comma-delimited list of ranges, or **all**.

For example, **1** for power supply number 1; **1-4** for power supplies 1 through 4; **1-2, 5** for power supplies 1 through 2 and 5; **1, 3, 5** for power supplies 1, 3, and 5; **all** for all power supplies; or **1-2, 5-6** for power supplies 1 through 2 and 5 through 6.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set PDU Type

The **Set PDU Type** operation sets the enclosure's power distribution unit (PDU) type.

Inputs

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

pduType

Specifies the PDU type. The valid values are **1** for single-phase, **2** for two-phase, **3** for three-phase international, and **4** for DC power input module.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Power Cap

The **Set Power Cap** operation sets the Enclosure Dynamic Power Cap in watts. OFF disables the Enclosure Dynamic Power Cap. Average power will not exceed the value of **cap** or **derated_circuit_capacity**. Peak power will not exceed **rated_circuit_capacity**.

For example, suppose the PDU powering the enclosure has a rated capacity of 30 amps. In North America and Japan, the standard de-rating ratio is 80%, so the PDU has a derated capacity of 24 amps (0.80 * 30). At 208 volts, the Rated Circuit Capacity would be entered as 6240 watts (30 * 208), and the Derated Circuit Capacity would be entered as 4992 watts (24 * 208). When specifying only **cap**, the other values are calculated using the standard de-rating ratio for North America. So, **derated_circuit_capacity** is equal to **cap** and **rated_circuit_capacity** is equal to 1.25 * **cap**.

The Enclosure Dynamic Power Cap and Derated Circuit Capacity can be specified as any value in the allowable range. The Derated Circuit Capacity must be at least as large as the Enclosure Dynamic Power Cap and no larger than the Rated Circuit Capacity. The Enclosure Dynamic Power Cap can be used to limit the enclosure's power consumption based on a cooling constraint that may be lower than the Derated Circuit Capacity.

Inputs

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

powerCap

Specify the power values as **<cap>**, **<cap> <derated_circuit_capacity> <rated_circuit_capacity>**, or **off**.

For example, **3000**, **4000 4992 6240**, or **off**.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Power Cap Bays to Exclude

The **Set Power Cap Bays to Exclude** operation specifies bays to omit from Enclosure Dynamic Power Cap. Blades in omitted bays are treated as unmanaged components of the system. They receive a maximum power allocation even when the power is not being consumed, raising the minimum Enclosure Dynamic Power Cap value that can be applied to the enclosure. Any blades in bays not specified are managed.

Inputs

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

excludeBays

The bays to be excluded. The valid values are a comma-delimited list of numbers, a comma-delimited list of ranges, or **none**. If you have previously specified bays to exclude, using this operation again replaces that specification rather than augmenting it.

For example, **1** for bay number 1; **1-4** for bays 1 through 4; **1-2, 5** for bays 1 through 2 and 5; **1, 3, 5** for bays 1, 3, and 5; **none** for no exclusion; or **1-2, 5-6** for bays 1 through 2 and 5 through 6.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Power Limit

The **Set Power Limit** operation sets or removes a limit on how much input power can be consumed by the enclosure. This setting is helpful if the enclosure receives power from a PDU with a limited power rating.

Inputs

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

powerLimit

The power limit number or **off** to remove the power limit.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Power Mode

The **Set Power Mode** operation configures the power supply redundancy settings.

Inputs

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

powerMode

Specifies the type of redundancy settings. The valid values are **notredundant** to enable all power supplies to function without regard for redundancy, **powersupply** to enable one power supply to fail without being over committed on power, and **redundant** to enable half of the power supplies to fail without being over committed on power.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Power Savings

The **Set Power Savings** operation turns power savings mode on or off. Power savings mode turns unneeded power supplies off. The increased load on the remaining power supplies increases their efficiency, resulting in less power consumption.

Inputs

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

powerSavings

Specifies the power savings mode. The valid values are **on** to turn on power savings and **off** to turn off power savings.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Rack and Enclosure Management

The operations and flows in this group are used to manage the rack and enclosure.

Get Enclosure Info

The **Get Enclosure Info** operation gets the enclosure information including the enclosure name, enclosure type, Onboard Administrator hardware version, enclosure part number, serial number, and asset tag.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Enclosure Status

The **Get Enclosure Status** operation gets the basic health and status of the enclosure subsystem.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Enclosure Temp

The **Get Enclosure Temp** operation gets the highest ambient temperature reported by the installed blade devices. If no blade devices are installed, it gets the temperature of the OA module as an approximation of the ambient temperature.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get FRU

The **Get FRU** operation gets FRU and provides information on all field replaceable units within the enclosure.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Rack Name

The **Get Rack Name** operation gets the user-defined rack name setting for the enclosure.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Topology

The **Get Topology** operation gets the list of enclosures connected by the enclosure link and lists a table with the enclosure name, overall health of the enclosure, and the IP address.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Asset Tag

The **Set Asset Tag** flow sets the enclosure asset tag.

Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

assetTag

The asset tag. The value must be 1 to 32 characters long and may includes all alphanumeric, underscore (_), and dash (-) characters. If you do not specify a value for this input, the asset tag is cleared.

Results

returnResult

This is the primary output.

Responses

All of the flow's responses are described in *Common Responses in the Integration*.

Set Enclosure Name

The **Set Enclosure Name** flow sets the enclosure name. The enclosure name must be 1 to 32 characters long and can include alphanumeric, underscore (_), and dash (-) characters.

Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

enclosureName

The enclosure name.

Results

All of the flow's results are described in *Common Results in the Integration*.

Responses

All of the flow's responses are described in *Common Responses in the Integration*.

Set Enclosure UID LED

The **Set Enclosure UID LED** operation turns the UID LED of the enclosure on or off.

Inputs

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

uidOption

A selection list consisting of **On** and **Off** to turn the LED on or off, respectively.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Part Number

The **Set Part Number** operation sets the enclosure's part number.

Inputs

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

partNumber

The new part number for the enclosure. The part number must be 10 characters in length. The first character must be a number; the rest can be alphanumberic or dash characters.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Rack Name

The **Set Rack Name** operation sets the rack name. The rack name can be 1 to 32 characters long. Acceptable characters are alphanumeric, dash (-), and the underscore (_).

Inputs

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

rackName

The rack name.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Set Serial Number

The **Set Serial Number** operation sets the enclosure's serial number.

Inputs

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

serialNumber

The new serial number for the enclosure. The serial number must be 10 characters in length. The valid characters include alphanumerics, dashes, and underscores.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

User

The operations and flows in this group are used to manage the user accounts and user sessions on the Onboard Administrator.

Add User

The **Add User** flow adds a new user to the Onboard Administrator (OA) system with the desired full name, contact information, access rights, and privileges. Note that this flow uses multiple SSH operations. If a command fails, all changes before the failure remain. All changes after the failure including the failed command are not executed. If the user is created, you can use the **Modify User flow** to modify the existing user account attributes.

Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

addUsername

The name of the new user to add to the OA system.

addPassword

The password for the new user.

fullname

The user's full name. The default full name is blank.

contact

The contact information for the user. The default is blank.

userAccess

Specifies the user access level. The valid values are **administrator**, **operator**, and **user**. The default is **user**.

oaAccess

Specifies whether to assign Onboard Administrators access to the user. The valid values are **yes** and **no**. The default is **no**.

enableUser

Specifies whether to enable the user account. The valid values are **yes** and **no**. The default is **yes**.

serverAccess

Assigns access to server bay. Specify a value of **all** to assign all device bays.

For example, **1-1b** for bays 1, 1a, 1b; **7-8a** for bays 7, 7a, 8, 8a; **10-12** for bays 10, 11, 12; **13b** for bay 13b; **1-4, 7-8b** for bays 1, 2, 3, 4, 7, 7a, 7b, 8, 8a, 8b; and **1, 3, 7a, 16** for bays 1, 3, 7a, 16.

interconnectAccess

Assigns access to interconnect bay. Specify a value of **all** to assign all interconnect bays.

For example, **1-2, 7-8** for bays 1, 2, 7, 8; **3, 5** for bays 3, 5.

Results

All of the operation's responses except the following are described in *Common Results in the Integration*.

returnResult

This is the primary output.

Responses

All of the flow's responses are described in *Common Responses in the Integration*.

If the user access level is administrator and if OA access is allowed, all server or device bays and all interconnect bays are selected by the Onboard Administrator for that user.

Delete User

The **Delete User** operation deletes an OA user.

Inputs

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

deleteUsername

The name of the user in the OA system account to delete.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Password Settings

The **Get Password Settings** operation gets the current OA user minimum password length and strong password settings.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Session Timeout

The **Get Session Timeout** operation gets the current OA user session timeout. The timeout is the number of minutes before inactive sessions are removed.

Inputs

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

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get User

The **Get User** operation gets a user's full name, contact information, user rights, account status, server bay access list, interconnect bay access list, and OA access status. The user rights can be **Admin**, **Operator**, or **User**. The account status can be **Enabled** or **Disabled**. The OA access status can be **Yes** or **No**.

Inputs

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

getUsername

The name of the user in the OA system account.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Get Users

The **Get Users** operation gets a list of OA users along with their full names, privilege levels, and account statuses. The privilege level can be **Admin**, **Operator**, or **User**. The account status can be **Enabled** or **Disabled**.

Inputs

All of the operation's inputs are described in *Common Inputs in the Integration*.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

Modify User

The **Modify User** flow modifies an existing user password, full name, contact information, access rights, and privileges in the Onboard Administrator (OA) system. Note that this flow uses multiple SSH operations. If one command fails, all changes before the failure remain. All changes after the failure including the failed command are not executed.

Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

modifyUsername

The name of the user in the OA system to modify.

modifyPassword

The new password for the user. If you leave this input blank, no changes are made.

fullname

The new user's full name. If you leave this input blank, no changes are made.

contact

The new contact information for the user. If you leave this input blank, no changes are made.

userAccess

Specifies the user access level. The valid values are **administrator**, **operator**, **user**, or **no change**. The default is **no change**.

oaAccess

Specifies whether to assign Onboard Administrators access to the user. The valid values are **yes**, **no**, and **no change**. The default is **no change**.

enableUser

Specifies whether to enable the user account. The valid values are **yes**, **no**, and **no change**. The default is **no change**.

serverAccess

Assigns access to the server bay. Specify a value of **all** to assign all device bays. All previous assignments are removed before applying the new assignment. If you leave this input blank, no changes are made. Specify a value of zero (**0**) to remove all assigned bays.

For example, **1-1b** for bays 1, 1a, 1b; **7-8a** for bays 7, 7a, 8, 8a; **10-12** for bays 10, 11, 12; 13b for bay 13b; **1-4, 7-8b** for bays 1, 2, 3, 4, 7, 7a, 7b, 8, 8a, 8b; or **1, 3, 7a, 16** for bays 1, 3, 7a, 16.

interconnectAccess

Assigns access to the interconnect bay. Specify a value of **all** to assign all interconnect bays. If you leave this input blank, no changes are made. Specify a value of zero (**0**) to remove all assigned bays.

For example, **1-2, 7-8** for bays 1, 2, 7, 8 or **3, 5** for bays 3, 5.

Results

returnResult

This is the primary output.

Responses

All of the flow's responses are described in *Common Responses in the Integration*.

Set Password Settings

The **Set Password Settings** flow enables or disables the strong passwords and modifies the minimum password length for the user session on the Onboard Administrator (OA) system.

Inputs

All of the flow's inputs except the following are described in *Common Inputs in the Integration*.

enableStrongPasswords

Specifies whether to enable a strong password. The valid values are **No Change**, **Yes**, and **No**. The default is **No**. When it is enabled, the user's password must contain at least one character from three of the following four categories: **uppercase**, **lowercase**, **numeric**, and **nonalphanumeric**.

minPasswordLength

Sets a minimum length for passwords. The default length is **3**. The maximum length is **40**. If you leave this input blank, no changes are made to the password length.

Results

returnResult

This is the primary output.

Responses

All of the flow's responses are described in *Common Responses in the Integration*.

Set Session Timeout

The **Set Session Timeout** operation sets the number of minutes before inactive user sessions are removed. Valid session timeout values range from **10** to **1440** minutes (24 hours). The session timeout can be disabled by setting it to zero (**0**). The default setting is **1440** minutes.

Inputs

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

sessionTimeout

The timeout value in minutes.

Results

All of the operation's results are described in *Common Results in the Integration*.

Responses

All of the operation's responses are described in *Common Responses in the Integration*.

If the session timeout value is lowered, currently inactive sessions may be removed.

4 Troubleshooting

This section includes the following topics:

Troubleshooting Overview

This section provides troubleshooting procedures and tools that 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 Procedures and Tools

If an operation or flow fails, the primary output **returnResult** should contain the output from the SSH command that indicates the reasons or causes for the failure.

Error Messages

This section lists the error messages you may receive while using this integration. Each error message includes possible causes and fixes for the error.

Invalid Arguments

If the wrong or invalid arguments are specified for an operation or flow, the primary output displays the help message corresponding to the OA command with the valid arguments.

java.net.ConnectException: Connection refused: connect

This is usually caused by providing the wrong hostname or credentials for the target OA.

5 Security

This section includes the following topics:

About Onboard Administrator Security

This section describes how security is handled by the Onboard Administrator integration.

The HP BladeSystem Onboard Administrator is accessed by using the Secure Shell (SSH) with the user providing the username and password of the OA Administrator.

6 OO Tools

This section includes the following topic:

OO Tools You Can Use with the Onboard Administrator

The following is an OO tool that you can use with the Onboard Administrator 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.

This tool is available in the Operations Orchestration Home folder in Studio/tools/.