HP Operations Orchestration

For the Windows and Linux operating systems

Software Version: CP14 (9.x)

Onboard Administrator Integration Guide

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Contents

Introduction

This chapter includes:

Overview

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

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

Operations Orchestration Version	Onboard Administrator Version
OO Content Pack 14	3.31, 3.71, 4.01

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.

Note: The Community page requires that you register for an HP Passport and sign-in.

To register for an HP Passport ID:

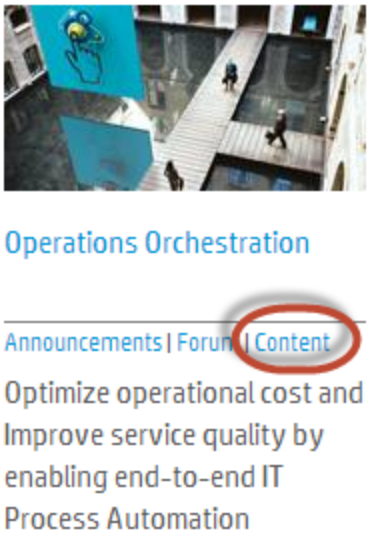
Go to: http://h20229.www2.hp.com/passport-registration.html

Or

Click the **New users - please register** link on the HP Passport login page

To download OO releases and documents:

1. Go to the HPLN site: https://hpln.hp.com/. Page 1 of HP Live Network page opens.
2. Go to page 2 and click the **Content** link under **Operations Orchestration**.



3. From the **Content Catalog** tab, select **Operations Orchestration Content Packs**.
4. Select the Downloads link.

5. Click **Downloads > HP Operations Orchestration 9.00**.
6. Click on HP Operations Orchestration Content Pack 14.

Getting Started

This chapter includes:

Installing and Configuring the Integration

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

Use Cases

Local User Account Management

Local user account management allows the administrator the capability to add, modify, and remove users.

The following are restrictions and notes concerning the user. The validation is done by the Onboard Administrator.

- A maximum of 30 users are allowed including the reserved accounts.
- The user name is case sensitive.
- The user name must be 1 to 40 characters long and can include all alphanumeric characters, the dash, and the underscore.
- The user name must begin with a letter.

- The password must be 3 to 8 characters long for OA firmware 1.00 through 1.30 and 3 to 40 characters long for firmware 2.00 and later. The character set includes all printable characters.
- Reserved user names are: ALL (case insensitive), Administrator (case insensitive), switch1, switch2, switch3, switch4, switch5, switch6, switch7, switch8, ldapuser, nobody, vcmuser, and root (for firmware 1.00 through 1.30).
- The user full name can have up to 20 characters which can include alphanumeric, the dash, the underscore, and the space characters. The default full name is blank.
- If the user have administrator access privileges and if the user is allowed Onboard Administrator (OA) bay access, then all the device and interconnect bays will be selected for access.

The following OA commands will be used to manage the users in the flow:

- add user <user name> <password>
- assign server [<bay number> | all | <bay number>-<bay number>] <user name>
- assign interconnect [<bay number> | all | <bay number>-<bay number>] <user name>
- assign oa <user name>
- disable user <user name>
- enable user <user name>
- remove user <user name>
- set user access <user name> [administrator | operator | user]
- set user password <user name> <new password>
- unassign server [<bay number> | all | <bay number>-<bay number>] <user name>
- unassign interconnect [<bay number> | all | <bay number>-<bay number>] <user name>
- unassign oa <user name>
- set user contact <user name> <contact info>
- set user fullname <user name> <full name>

Session Management

Session management allows the Administrator to change various parameters for a session.

The following are restrictions and notes on password and timeout. The validation is done by the Onboard Administrator.

- Strong password requires the user's password contain at least one character from three of the four categories. These four categories are:
  - Uppercase
  - Lowercase
  - Numeric
  - Nonalphanumeric
- The minimum password length can be set to be between 3 to 40 characters. When set, a user's password must contain at least the number of characters specified.
- The session timeout is the number of minutes before an inactive sessions are termiated. The default setting is 1440 minutes. The valid session timeout values range from 0 (disable) to 1440 minutes (24 hours).

The following commands are used to manage the session:

- disable strong passwords
- enable strong passwords
- set minimum password length <length>
- set session timeout <timeout>
- show password settings
- show session timeout
- show user list

OA Management

OA management allows the Administrator to perform the following functions on the Onboard Administrator:

- Restart OA
- Set time manually
- Set time using an NTP server
- Reset to factory defaults. Note that the Administrator account password does not change.
- Clear the various syslog

The following commands are used to manage OA:

- clear syslog [enclosure | oa <bay number>]
- restart oa <bay number> – see issue below.
- set date mmddhhmm [[cc]yy] [tz] where:
  - mm: month
  - dd: day
  - hh: housr (24-hour time)
  - mm: minute
  - cc: century
  - yy: year
  - tz: time zone
- set timezone <timezone>
- set factory
- show date
- show oa certificate [all | <bay number>]
- show oa info [all | <bay number>]
- show oa network [all | <bay number>]
- show oa status [all | <bay number>]
- show oa usb [all | <bay number>]
- show syslog oa [<bay number>]
- set oa name <bay number>
- set oa uid <bay number> [on | off]
- set ipconfig dhcp oa <bay number> dynamicdns
- set ipconfig static oa <bay number> <ip address> <netmask> [<gateway> [<dns1 address> [<dns2 address>]]]
- add oa address ipv6 <bay number> <ipv6 address/prefix length>
- add oa dns <bay number> <ip address>

- add oa dns ipv6 <bay number> <ipv6 address/prefix length>
- disable dhcpv6 <bay number>
- disable https
- disable ipv6 <bay number>
- disable telnet
- enable dhcpv6 <bay number>
- enable https
- enable ipv6
- enable telent
- remove oa address ipv6 <bay number> <ipv6 address/prefix length>
- remove oa dns oa <bay number> <ip address>
- remove oa dns ipv6 oa <bay number> <ipv6 address/prefix length>
- Set the time manually
- Set the time using an NTP server
- clear ntp primary
- clear ntp secondary
- disable ntp
- enable ntp
- set oa gateway <bay number> <ip address>
- set ntp poll <seconds>
- set ntp primary <host>
- set ntp secondary <host>

Rack & Enclosure Management

Rack and enclosure management allows the administrator to perform various functions on the rack and enclosure which may include the following:

- Set the rack name
- Set the enclosure name
- Set the Asset tag
- Get the rack name
- Get the topology
- Turn enclosure UID on or off
- Get field replaceable unit information
- Get enclosure information
- Get enclosure status
- Get enclosure temperature
- Set enclosure part number
- Set enclosure serial number

The following commands are used to manage the enclosure:

- set rack name <rack name>
- show rack name
- show topology
- set enclosure asset <asset tag>
- set enclosure name <enclosure name>
- set enclosure uid [on | off]
- show enclosure status
- show enclosure temp
- show fru
- show enclosure info
- set enclosure part_number <part number>
- set enclosure serial_number <serial number>

Power Management

Power management allows the control of various power management functions which include:

- Setting the power supply mode
- Setting the power limit for enclosure
- Get power summary
- Get power cap excluded bay
- Get power cap
- Get power
- Get power supply
- Set PDU type
- Set power cap bays to exlude
- Set power limit
- Set power savings

The following commands are used to manage the power settings:

- set power mode [notredundant | redundant | powersupply]
- set power limit [<number> | off]
- set power savings [on | off]
- show enclosure power_summary
- show enclosure powersupply [all | <power supply number>]
- show power
- set enclosure power_cap <cap> [<derated_circuit_capacity> <rated_circuit_capacity>]
- set enclosure power_cap off
- set enclosure power_cap_bays_to_exclude [none | <bay number>]
- show enclosure power_cap
- show enclosure power_cap_bays_to_exclude

Network Management

Network management allows the Administrator to configure the various parameters for network access. The various functions include:

- SNMP configuration
- Static IP address for the various devices

The following commands are used to manage the network settings:

- add snmp trapreceiver <host> <community name>
- disable snmp
- enable snmp
- remove snmp trapreceiver
- set snmp contact <contact info>
- set snmp community read <community name>
- set snmp community write <connunity name>
- set snmp location <location>
- show network
- show snmp
- test snmp

Blade Management

Blade management allows the Administarator to configure various aspect of the blade server like how to boot, power on, power off, etc and to show various information about the blade.

- Power server on or off
- Set how the server boot
- Show various server information

The following commands are used to manage the blade:

- poweroff server {all | <bay number> [{-|,} <bay number>]} [force]
- poweron server {all | <bay number> [{-|,} <bay number>]} [{normal|pxe|hdd|rbsu}]

- reboot server {all | <bay number> [{-|,} <bay number>]} [{normal|pxe|hdd|rbsu}]
- set nic
- set server boot once {normal|hdd|pxe|rbsu} {all | <bay number> [{-|,} <bay number>]}
- set server boot {first|once} {normal|hdd|pxe|rbsu} {all | <bay number> [{-|,} <bay number>]}
- set server powerdelay {all | <bay number> [{-|,} <bay number>]} {number of seconds to delay power | nopoweron}
- set server uid {all | <bay number> [{-|,} <bay number>]} {on|off}
- show server boot {all | <bay number> [{-|,} <bay number>]}
- show server info {all | <bay number>\ [{-|,} <bay number>]}
- show server list
- show server names
- show server port map {all | <bay number> [{,|-} <bay number>]}
- show server powerdelay {all | <bay number> [{,|-} <bay number>]}
- show server status {all | <bay number> [{,|-} <bay number>]}
- show server temp {all | <bay number> [{,|-} <bay number>]}
- show syslog server <bay number>

Interconnect Management

Interconnect management allows the Administrator to mange various aspect of the interconnect which can include setting the power delay, powering on, powering off, turning UID on or off and to show various information concerning the interconnect.

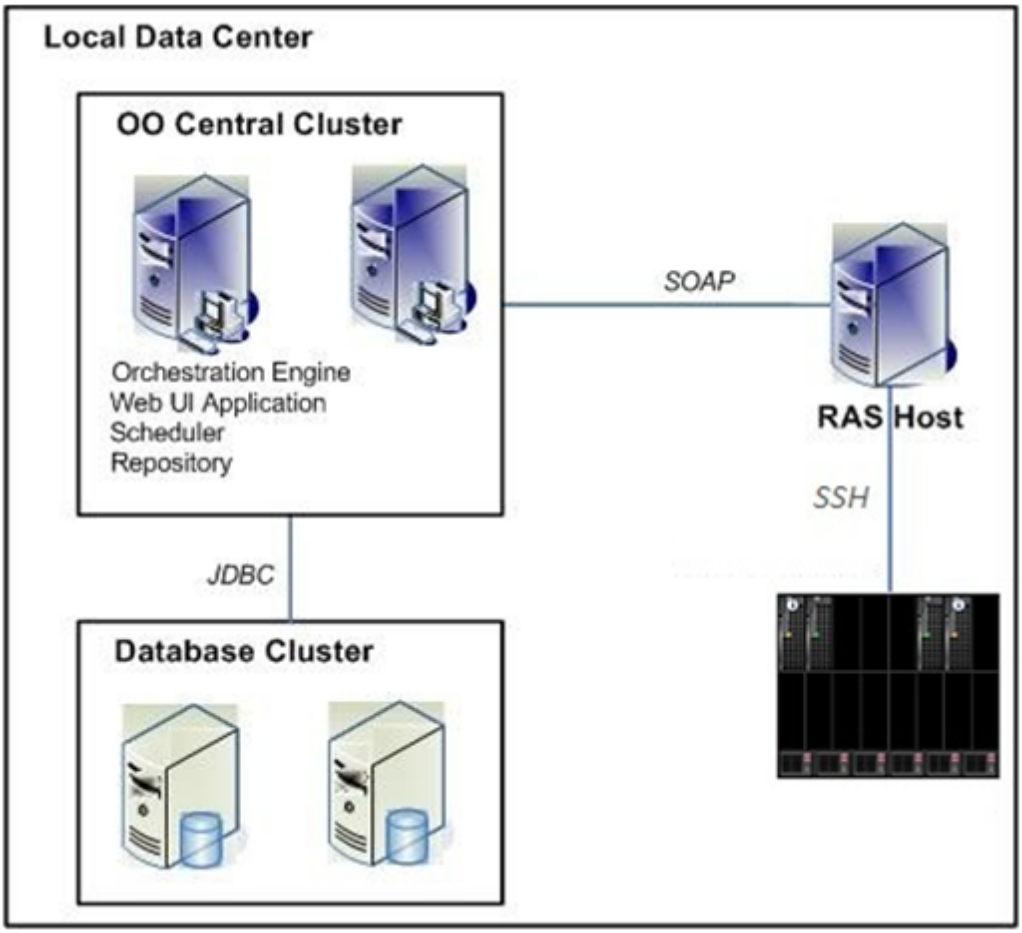
- Power interconnect on or off
- Restart interconnect
- Turn UID on or off
- Show various interconnect information

The following commands are used to manage the interconnect:

- poweroff interconnect {all | <bay number> [{,|-} <bay number>]}
- poweron interconnect {all | <bay number> [{,|-} <bay number>]}

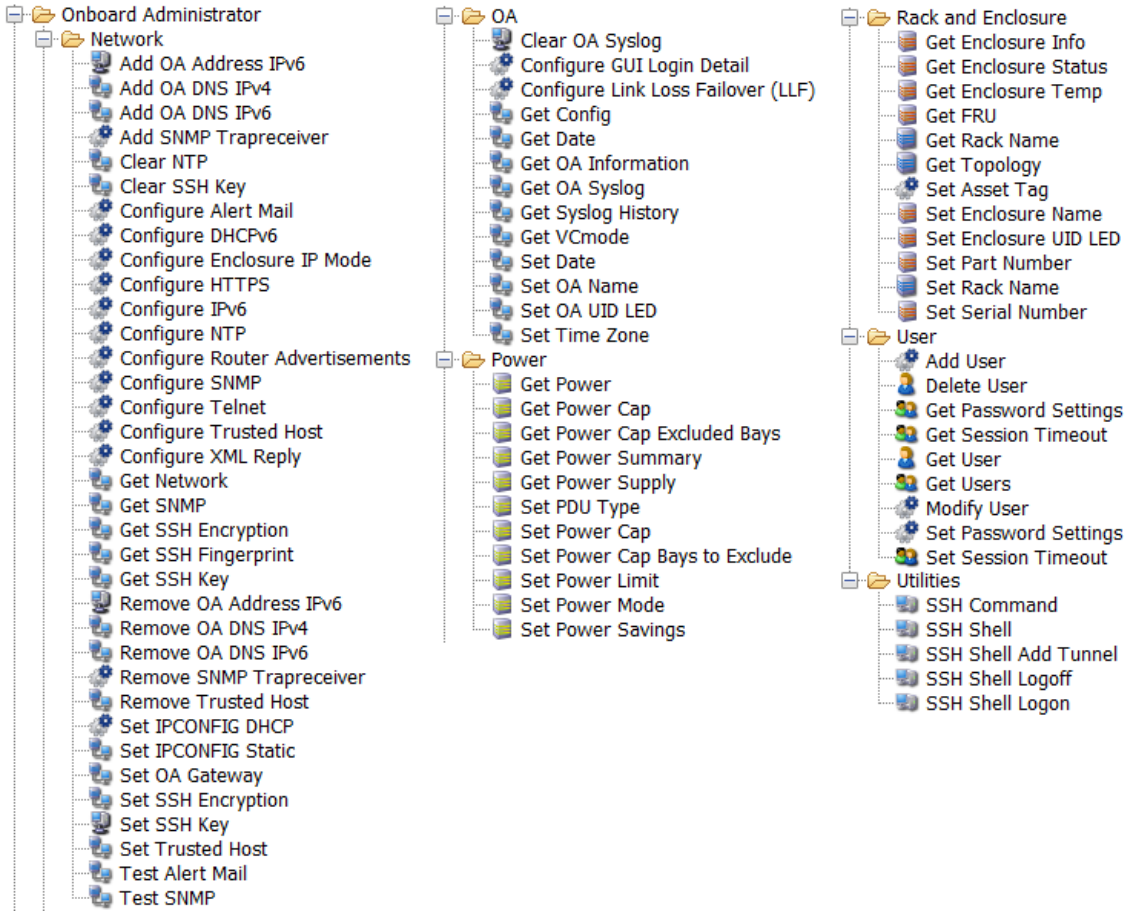
- restart interconnect <bay number>
- set interconnect powerdelay {all | <bay number> [{,|-} <bay number>]} {number of seconds to dealy power | nopoweron}
- set interconnect uid {all | <bay number> [{,|-} <bay number>]} {on|off}
- show interconnect info {all | <bay number> [{,|-} <bay number>]}
- show interconnect list
- show interconnect port map {all | <bay number> [{,|-} <bay number>]}
- show interconnect powerdelay {all | <bay number> [{,|-} <bay number>]}
- show interconnect status {all | <bay number> [{,|-} <bay number>]}

HP BladeSystem Onboard Administrator – OO Integration Architecture



Location of HP Onboard Administer Operations and Flows in OO Studio

The HP Onboard Administer integration includes the following operations and flows in the **Library/Integrations/Hewlett-Packard/Onboard Administrator/** folder:



Troubleshooting

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.

Open Issues

- The restart OA operation success cannot be determined. Once the command is issue to the OA, the board does a immediate reset without completing the ssh transaction. Thus, ssh will return an error with no reason why it failed.
- The "add sshkey" command do not work as documented in the Command Line Interface User Guide.

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.

OO Tools You Can Use with the Onboard Administrator – OO Integration

Following are OO tools that you can use with the OM Incident 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.

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