HP Operations Orchestration

For the Windows and Linux

Software Version: Content Pack 8

HP Integrated Lights Out (iLO) Integration Guide

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Contents

Chapter 1

Introduction

This chapter includes:

Purpose of the iLO Integration

This integration enables administrators to build HP Operations Orchestration (OO) flows that are integrated into Integrated Lights Out (iLO) management processors for HP Proliant Servers.

This document explains how this integration has been implemented and how the operations included communicate between OO and iLO.

Supported Versions

Operations Orchestration Version	Proliant iLO Version	Proliant iLO 2 Version	Proliant iLO 3 Version	Proliant iLO 4 Version
OO Content Pack 8	1.94 or later	1.60 or later	1.26 or later	1.01 or later

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:

https://hpln.hp.com/

> **Note:** This site requires that you register for an HP Passport and sign-in.

To register for an HP Passport ID:

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

   Or

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

2. 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.

3. On the left-hand side, click **Operations Orchestration Content Packs**.

4. In the **Operations Orchestration Content Packs** box, click **Content**. The HP Passport and sign-in page appears.

5. Enter your user ID and Password to access to continue.

6. Click **HP Operations Orchestration 9.00**.

7. Search for the required HP Operations Orchestration Content Pack.

Chapter 2

Getting Started with the iLO Integration

This chapter includes:

iLO Use Cases

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

1. Samples to show how to use the **Execute RIBCL** operation:

   - Activate iLO License

   - Deactivate iLO License

   - Get Auto Power On

   - Get iLO Firmware Version

   - Set Unit ID Light State

2. Set Unit ID Light State:

   - Create User

   - Delete User

   - Modify User

3. Manipulate the physical system's power state:

   - Host Power Status

   - Power On Host

   - Get Power Cap Values

   - Restart Host

   - Restart iLO Processor

   - Set Auto Power On

   - Set Power Saver Mode

     Enables you to set low power, dynamic power, high power, and OS controlled power on

- Set Power Cap

4. Manipulate iLO virtual media:

   - Insert Virtual Media

   - Eject Virtual Media

5. Manipulate host data:

   - Get Host Data

6. Run RIBCL script:

   - Execute RIBCL Script

7. Manage firmware update:

   - Update Firmware

8. Manage SNMP and Insight Manager (IM) Configuration:

   - Get SNMP IM Settings

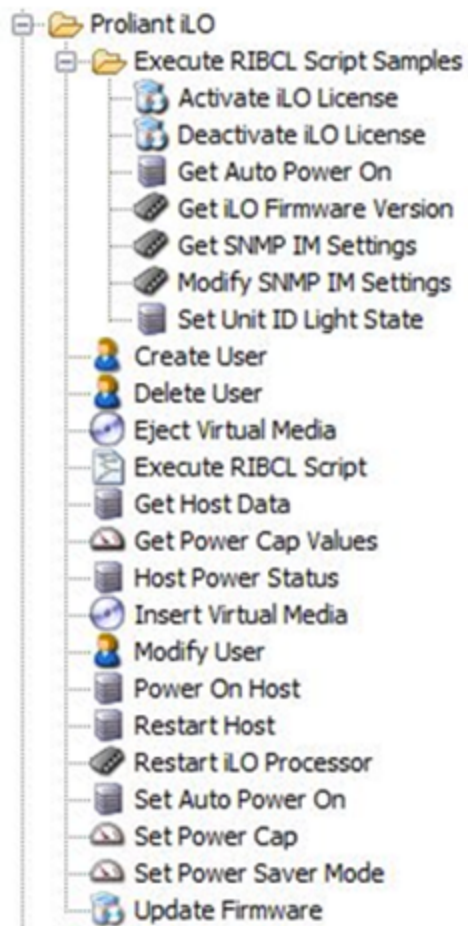   - Modify SNMP IM Settings

iLO — OO Integration Architecture
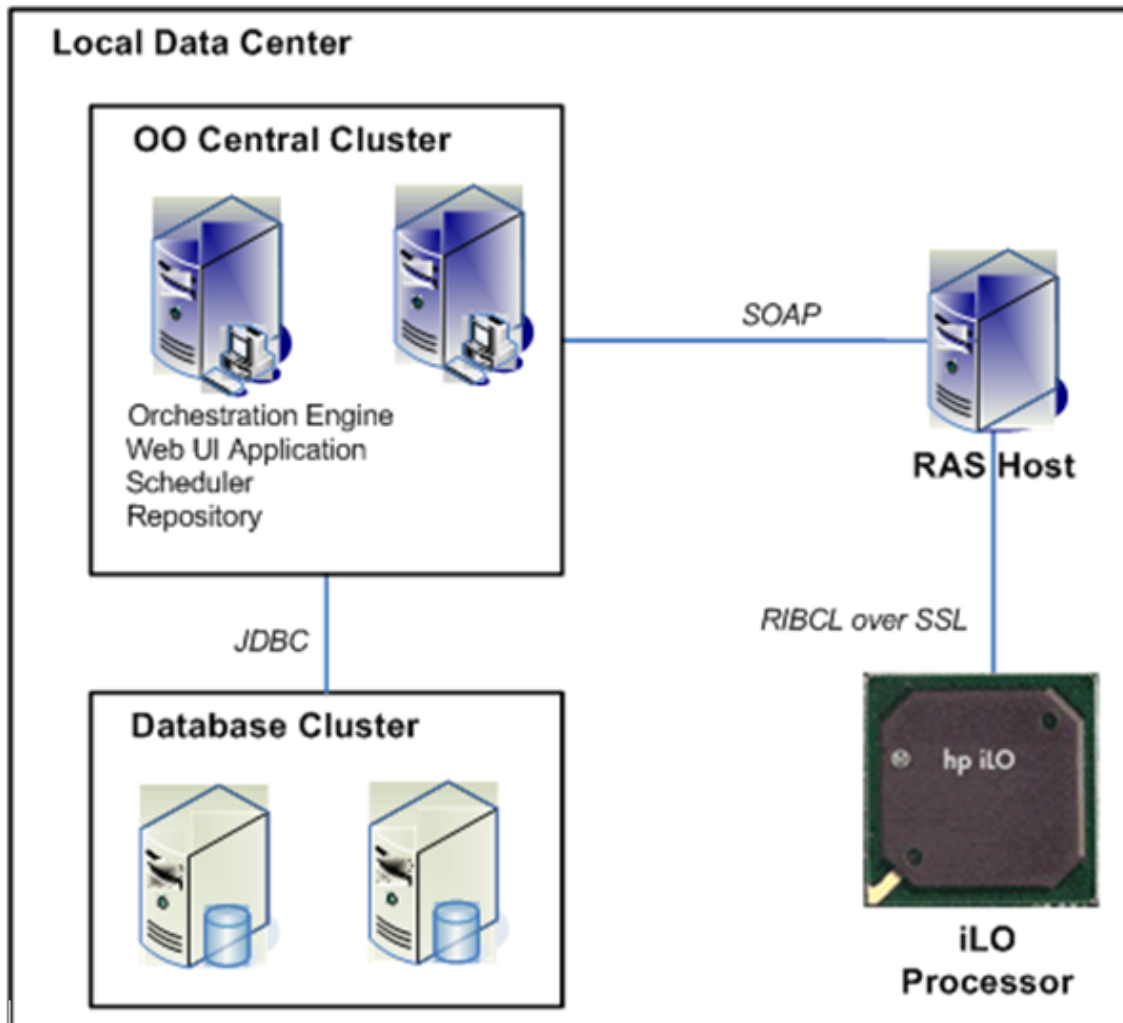
Location of iLO Integration Operations and Flows in OO Studio

The HP Proliant iLO integration includes the following operations and flows in the **OO Studio Library/Integrations/Hewlett-Packard/Proliant iLO/** folder.

The operations and flows apply to the original iLO version, iLO 2, iLO 3, and iLO 4 unless otherwise noted.

- Proliant iLO
  - Execute RIBCL Script Samples
    - Activate iLO License
    - Deactivate iLO License
    - Get Auto Power On
    - Get iLO Firmware Version
    - Get SNMP IM Settings
    - Modify SNMP IM Settings
    - Set Unit ID Light State
  - Create User
  - Delete User
  - Eject Virtual Media
  - Execute RIBCL Script
  - Get Host Data
  - Get Power Cap Values
  - Host Power Status
  - Insert Virtual Media
  - Modify User
  - Power On Host
  - Restart Host
  - Restart iLO Processor
  - Set Auto Power On
  - Set Power Cap
  - Set Power Saver Mode
  - Update Firmware

Chapter 3

Troubleshooting

This chapter includes:

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

The best troubleshooting tools are the iLO Web interface and the iLO online configuration utility (HPONCFG). This integration uses the same protocol and scripting language as the HPONCFG utility.

Error Messages

- `Failed to Connect`

  Could not establish a connection to the iLO system with the provided host name.

- `Invalid Login`

  The specified iLO username and/or password are incorrect.

- `This feature requires an installed license key`

  Virtual media and power cap features are enabled with the Proliant iLO Advanced Pack.

- `An invalid Virtual Media option has been given`

  The only valid options are CDROM and FLOPPY.

- `Unsupported Feature`

  The feature requested is not supported for the specified system. Different generations of HP Proliant systems have different power saving capabilities.

- `The Value specified is invalid.`

  The submitted value for the Set Power Cap operation is not acceptable or is out of range.

- `The firmware image file is not valid.`

  The firmware image file is not the right one for the targeted iLO.

- `Firmware flash failed.`

  One cause for this error on iLO 3 or iLO 4 is that a bad firmware image file was given for the Update Firmware operation.

- `Improper IP address`

  The given DNS or IP address is invalid.

Chapter 4

Security

HP Proliant iLO and iLO 2 are accessed via the RIBCL XML Scripting interface over SSL. HP Proliant iLO 3 and iLO 4 is accessed via the RIBCL XML Scripting interface over HTTP/1.1 using SSL. The SSL server certificates on the iLO processor are not verified. This is the same method used by the HPONCFG utility that is included with the Proliant Support Pack.

Chapter 5

OO Tools You Can Use with the iLO Integration

Following are OO tools that you can use with the iLO 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 folder in **/Studio/tools/**.