HP Operations Orchestration Software

Software Version: 9.00

HP Integrated Lights Out 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
- BSA Essentials 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

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.

BSA Essentials Network

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.

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

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 runs

  The 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 flows

  The 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.

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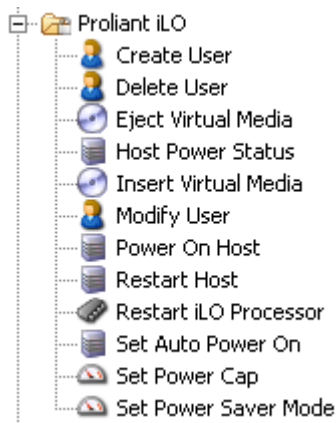# Tools

Overview of Integrated Lights Out integration

With this integration, administrators can 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.

Use cases and scenarios

1. Manipulate iLO user accounts from a flow:
   - Create user
   - Delete user
   - Modify user
2. Manipulate physical system's power state:
   - Get current power state (on/off)
   - Power system on
   - Power system off
   - Reset server
   - Restart the iLO processor
   - Configure auto power on
   - Set Power Saver Mode

     Enables you to set low power, dynamic power, high power, and OS controlled power on supported hardware.
   - Set power cap
3. Manipulate iLO Virtual Media:
   - Mount virtual media from URL
   - Dismount virtual media

iLO integration flows and operations

Operations support the following types of tasks:

- User administration
- Power state changes
- Power management
- Virtual media configuration

Common inputs in the integration

The following inputs are used consistently throughout the integration's operations.

host

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

username

The login name for the user account that has privileges on the target iLO processor.

password
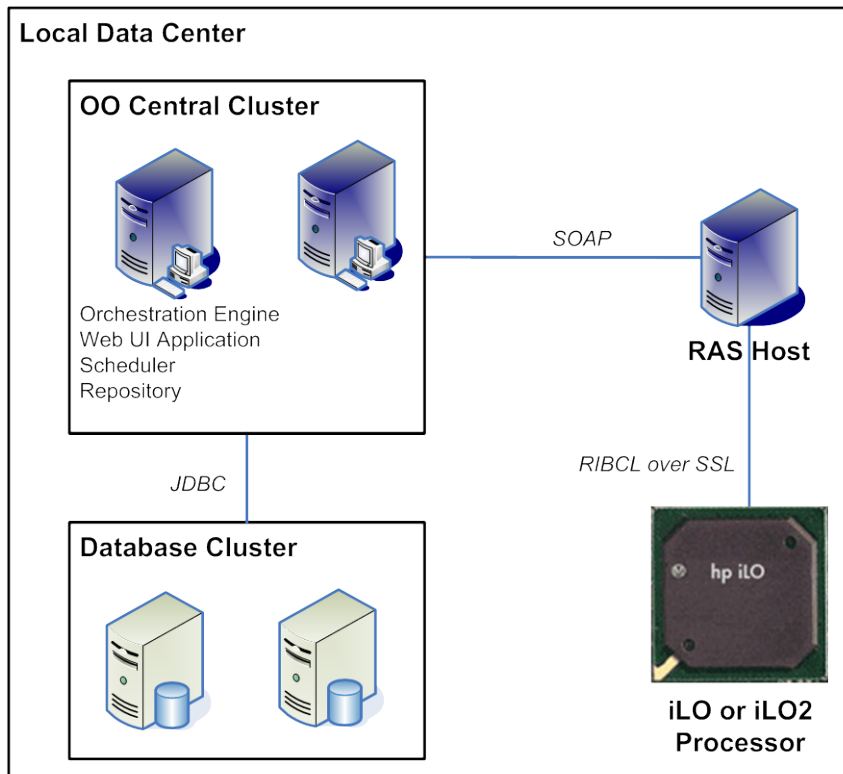
The password for the iLO user account.

port

The SSL port to connect to on the target iLO processor. This is the same SSL port that is used for the iLO web interface. The default is 443.

Versions and components

Operations Orchestration Version	Proliant iLO Version	Proliant iLO2 Version
9.00	1.94 or greater	1.60 or greater

Architecture

Local Data Center

OO Central Cluster

Orchestration Engine
Web UI Application
Scheduler
Repository

SOAP

RAS Host

JDBC

RIBCL over SSL

Database Cluster

hp iLO

iLO or iLO2 Processor

Operation specifics

Create User operation

The **Create User** operation creates a new user on the Proliant iLO processor.

userFullName

A descriptive name for the new user (optional).

userLogin

The login name for the new user.

userPassword

The new user's password.

adminPrivilages (optional)

Allows the new user to administer user accounts. The valid values are **yes** and **no** (the default is **no**).

remoteConsolePrivilages (optional)

Allows the new user to access the remote console. The valid values are **yes** and **no** (the default is **no**).

resetServerPrivilages (optional)

Allows the new user to switch server power and reset server. The valid values are **yes** and **no** (the default is **no**).

virtualMediaPrivilages (optional)

Allows the new user to configure virtual media. The valid values are **yes** and **no** (the default is **no**).

configureIloPrivilages (optional)

Allows the new user to configure other iLO settings (global settings, networking). The valid values are **yes** and **no** (the default is **no**).

Delete User operation

The **Delete User** operation deletes an existing user on the Proliant iLO processor.

userLogin

The login name of the user to delete.

Eject Virtual Media operation

The **Eject Virtual Media** operation ejects the virtual media form the selected virtual media device.

device

The virtual media device to eject. The valid values are **CDROM** and **FLOPPY**.

Host Power Status operation

The **Host Power Status** operation retrieves the host power state using Proliant iLO or Proliant iLO2.

Insert Virtual Media operation

The **Insert Virtual Media** operation inserts and configures the mount behavior of virtual media images.

url

The URL of the virtual media image.

Examples:

- http://hostname/image.iso
- http://username:password@hostname:port/image.bin

device

The virtual media device to which to mount the image. The valid values are **CDROM** and **FLOPPY**. Use the **FLOPPY** device for USB key drive images.

virtualMediaBootOption (optional)

Specifies how virtual media behaves during the boot phase of the server. The following options are available:

- **CONNECT –** The virtual media is connected immediately and stays connected through subsequent server boot cycles (default option).

- **BOOT_ALWAYS —** The virtual media device is connected on the next and subsequent server boot cycles.
- **BOOT_ONCE —** The virtual media device is connected on the next server boot cycle and disconnected on subsequent boot cycles.

virtualMediaWriteProtect (optional)

Write protects the virtual media. This is only applicable to the **FLOPPY** device. The valid values are **yes** and **no** (the default is **yes**).

Modify User operation

The **Modify User** operation modifies an existing user on Proliant iLO and Proliant iLO2 processors Optional parameters that are left empty will not be modified for the target user.

userLogin

The login name of the user to modify.

userFullName (optional)

The new full name (real name) of the user.

userPassword (optional)

The new password for the user.

adminPrivilages (optional)

Specifies whether to allow the user to administer user accounts. The valid values are **yes** and **no**.

remoteConsolePrivilages (optional)

Specifies whether to allow the user access to the remote console. The valid values are **yes** and **no**.

resetServerPrivilages (optional)

Specifies whether to allow the user to switch server power and reset the server. The valid values are **yes** and **no**.

virtualMediaPrivilages (optional)

Specifies whether to allow the user access to virtual media. The valid values are **yes** and **no**.

configureIloPrivilages (optional)

Specifies whether to allow the user to configure other iLO settings (such as global settings, and networking). The valid values are **yes** and **no**.

Power On Host operation

The **Power On Host** operation switches the host power on or off via either a "momentary press" (force = no) or "press and hold" (force = yes) of the virtual power button.

hostPower

The desired power state for the host. The valid values are yes (on) and no (off). If power is on and hostPower is no, an ACPI signal is initiated to start a graceful shutdown of the operating system (the same as momentary press of the power button).

force (optional)

If force is set to **yes**, the virtual power press and hold method is used. The default value is **no**.

Restart Host operation

The **Restart Host** operation performs a warm boot of the server if it is currently on via the Proliant iLO or iLO2 processor.

Restart iLO Processor

The **Restart iLO Processor** operation restarts the Proliant iLO or iLO2 processor.

Set Auto Power On operation

The **Set Auto Power On** operation sets automatic power on settings for the host. This configures whether or not the host automatically powers on when power has been restored after a power outage. This can be configured with a variable delay for hosts with iLO2.

autoPowerOn

The desired auto power on setting. The valid values include:

- **yes –** Enables automatic power on with a minimum delay.
- **no** – Disables automatic power on.
- **15** – Enables automatic power on with a 15-second delay (no delay if not iLO2).
- **30** – Enables automatic power on with a 40-second delay (no delay if not iLO2).
- **45** – Enables automatic power on with a 45-second delay (no delay if not iLO2).
- **60** – Enables automatic power on with a 60-second delay (no delay if not iLO2).
- **random** – Enables automatic power on with a random delay up to 60 seconds (no delay if not iLO2).

Set Power Cap operation

The **Set Power Cap** operation sets the power cap on the server. Valid values are determined using a power test run on the server at boot.

watts

The desired power cap. The valid values are numeric. Use **Zero** (0) to disable.

Set Power Saver Mode operation

The **Set Power Saver Mode** operation configures the power regulator setting for the server CPUs (if supported).

powerSaverMode

The desired power-saving mode. The valid values include:

- **1 –** Operating system control mode.
- **2 –** HP Static Low Power mode.
- **3 –** HP Dynamic Power Savings mode.
- **4** – HP Static High Performance mode.

Troubleshooting

General troubleshooting procedures and tools

The best troubleshooting tools are the iLO Web interface and 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 hostname provided.

Invalid Login

The iLO username and/or password specified 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 was not supported for the specified system. Different generations of HP Proliant systems have different power saving capabilities.

Security

HP Proliant iLO and iLO2 are accessed via the RIBCL XML Scripting interface over SSL. The SSL server certificates on the iLO processor are not verified. This is the same method used as the HPONCFG utility that is included with the Proliant Support Pack.

Tools

JRSFlowInvoke.exe

A command-line tool with which flows can be started from outside the OO Central Web application.

Web Service Wizard (wswizard.exe)

A tool that displays a list of the methods in the interface of the Web service that you specify in the Wizard. Within the Wizard, you pick the methods that 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.

These tools are located in the %OO-home%/Studio/tools/ folder.