HP Operations Orchestration Software

Software Version: 7.50

Release Notes

Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 2009 Hewlett-Packard Development Company, L.P.

Trademark Notices

All marks mentioned in this document are the property of their respective owners.

Finding or updating documentation on the Web

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.

Where to Find Help, Tutorials, and More

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.

Support

For support information, including patches, troubleshooting aids, support contract management, product manuals and more, visit one of the two following sites:

- *http://support.openview.hp.com*

What's new

Documents and training

- HP OO 7.50 contains a Software Development Kit (SDK) which you can download from the HP Live Network. The SDK is composed of the *SDK Guide* (SDKGuide.pdf), tools, libraries, and code samples for developers and IT professionals who want to:
  - Learn best practices for designing flows and operations.
  - Create IActions to run OO operations through a Remote Action Service (RAS).
  - Use RSFlowInvoke.exe, JRSFlowInvoke.jar, and the WSCentralService SOAP API to run flows from outside Central.
  - Use repoutil to run repository functions outside Studio.
  - Package content for distribution.
  - Debug OO client/server problems.
- Five "How Do I:" flows are included in the OO Library. The purpose of the flows is to show users how to use operations to perform simple yet important tasks.

Horizontal scalability

- You can easily add nodes to the Central cluster and quickly start processing automation requests.
- Improved queuing mechanisms allow improved handling of large demand spikes.
- Faster automated resumption of flows that were running on a failed Central server.

Platform enhancements

- The HP Live Network allows you HP to publish new content independent of platform releases.
- Additional platform support for:
  - Windows 2003 (64 bit) (Central, Studio, RAS)
  - Windows with Oracle database (Central)
  - Red Hat Enterprise Linux (RHEL) 5.0/5.1/5.2 (32 bit and 64 bit) (Central and RAS only)
  - Red Hat Enterprise Linux (Central) using MSSQL 2000/2005 database
- The process of specifying operation and step inputs in Studio has been streamlined and made more usable.
- The reporting interface in Central has a new look and improved usability.

Improved multi-author support

OO 7.50 supports a true concurrent multi-author environment that allows authors to work in a shared repository. This new feature complements the previous version's model of working locally and doing publish/updates. The concurrent multi-author support is based on:

- **A private, per-user workspace**. In a public repository, you must check out an OO object (an operation, flow, or other Library object such as a system account or filter) to work on it. You are then working on it in your private workspace, while other authors see the object as it was the last time it was checked in. When you save the changes to the object in your workspace, you can

then check the object back in to the public repository. This makes your new version available for other authors to see and check out.

- The **Version Management** feature allows you to open an earlier version of an object and compare it to the current version, abandon saved changes, open a previous version of the object and then save it with a new name, and restore an object to an earlier version of itself.

Other multi-author features include:

- **Remote debugger**. When the user is connected to a remote repository, flows launched from the Studio debugger are executed remotely inside the Central process. In previous OO releases, flows were run and debugged inside the Studio process. When Studio is connected to a local repository, then the flows are run and debugged locally, inside the Studio process.
- Input Inspector UI modified for improved ease of use.

New Promoter role

- The new Promoter role allows the separation of duties between authors who write flows and promoters who control when flows move into production**.**

Generate Documentation operation

The Generate Documentation feature allows you to:

- Generate documentation for a library folder, flow, or operation.
- Produce accurate and up-to-date documentation with minimal effort.
- Embed document generation in other business work flows using a new operation named **Generate Documentationm** located in the \Library\Integrations\Hewlett-Packard\Operations Orchestration\ folder. This operation allows you to specify the Library path for the flows and operations for which you want documentation generated as well as the target directory where you want the generated documentation to be placed. You can generate documentation for a specific operation or flow, or for all of the operations and flows in a folder.

The documentation that is generated consists of information provided by flow authors on the **Description** tab, the diagram of a flow, the inputs, raw results, available outputs, responses, scriplet (if any), and the steps of a flow.

To schedule the generation of documentation, create a flow that uses the **Generate Documentation** operation, and then schedule the flow in Central.

Extensive out-of-the-box content

OO 7.50 comes with extensive content including:

- XML processing such as filtering XML elements, retrieving XML attributes, and evaluate XPath expressions.
- PowerShell operations (OO 7.50 supports PowerShell 1.0).
- HP-UX Accelerator Pack (supports HP-UX B11.31).
- Enhanced Active Directory content including **Create User** and **Set User Terminal Services Configuration**.
- Windows file security operations such as **FS Set Security Properties** and **FS Readable**.

Miscellaneous enhancements

- Oracle operations located in the \Library\Operations\Databases\Oracle\ folder, now support tnsnames.ora.
- Most Unix Accelerator Packs no longer require SSH.
  - They support SSH, Telnet, RSH, or ROSH (with SAS client).
  - The Solaris Accelerator Pack is still SSH only.
- NTLM version 2 support for HTTP Client operations. This is needed for default IIS 6 and 7 configuration (W2K3+).
- .NET LDAP operations support server BIND, needed for non-Microsoft LDAP servers.
- Platform-independent Ping operations support Solaris, Linux, and Windows.
- Added support for WS-security in Web service operations.
- OO 7.50 has been upgraded to support Rhino library version 1.7R1, which supports the features of JavaScript 1.7. The release notes for this version are located on https://developer.mozilla.org/en/New_in_Rhino_1.7R1.

Deep product integrations

- Enhanced VMware Virtual Infrastructure content including operations for controlling virtual machine (VM) states, administering VMs and virtual network devices, networking VMs, and managing snapshots.
- Microsoft Hyper-V content including operations for creating, deleting, taking snapshots of, and enumerating virtual machines, and managing virtual harddisks.
- Citrix XenServer content including operations for starting and shutting down VMs, managing snapshots, and administering virtual network devices.
- HP Project and Portfolio Management content including operations for creating and updating requests for bug and enhancement tickets using the Default PPM Bug ticket.
- HP Server Automation (versions 6.6, 7.0, and 7.50) including operations for approving jobs, performing audits, installing patches, and attaching custom attributes and fields to SA objects.
- HP Network Automation including operations for managing configurations, devices, and tasks.
- HP Operations Orchestration including operations for updating system properties and accounts, generating documentation, and the checkin operation.
- HP Storage Essentials including operations for provisioning, storage, HBA, zoning, and Oracle data migration.

Installation or upgrade issues

Bug 88344: OO 7.50 Windows installer does not handle Oracle RAC

If you plan to use Oracle RAC as the OO 7.50 Central database, read the *Guide to Installing HP OO with Oracle Real Application Clusters* (InstallingHPOO_RACGuide.pdf) in the \%OO_HOME%\Central\docs\ folder before performing the installation.

Bug 89122: When upgrading from OO 7.0 to 7.50 in a Windows environment, Scheduler (Quartz) tables are not created in MySQL databases if other databases with Quartz tables exist on the database machine

If you upgrade from OO 7.0 to 7.50 on a database machine that has other databases with Scheduler (Quartz) tables in it, the upgrade does not create Quartz tables in the OO MySQL database schema undergoing upgrade. This is not a problem in 7.10 to 7.50 or 7.20 to 7.50 upgrades.

To avoid this problem, make sure that the database that hosts OO has no other OO schemas that might have Scheduler tables.

Bug 88143: When upgrading a Central that has browser Single Sign-On (SSO) enabled, the browser SSO setting does not get migrated

The browser SSO setting in applicationcontext.xml does not get migrated when you upgrade to OO 7.50, so the browser SSO functionality is lost after upgrade.

To re-enable the browser SSO, open the file applicationContext.xml in the \%OO_HOME%\Central\WEB-INF\ folder, search for `bean id="authenticationEntryPoint"`.

```
- <bean id="authenticationEntryPoint"
     class="net.sf.acegisecurity.ui.webapp.AuthenticationProcessingFilterEntryPoint"
     lazy-init="default" autowire="default" dependency-check="default">
  - <property name="loginFormUrl">
    <value>/static/Login.htm</value>
    </property>
  - <property name="forceHttps">
     <value>false</value>
    </property>
  </bean>
```

In the line `<value>/static/Login.htm</value>`, change `/static/Login.htm` to `/static/SSOLogin.htm`.

Bug 89773: Central upgraded to OO 7.50 shows icons and font from previous version

If you upgrade to 7.50 Central and open it in a browser without clearing its cache, you may see icons and fonts from the OO version from which you updated. Clear the browser cache and then OO 7.50 icons and fonts will appear as expected.

No longer supported

In OO 7.50, Red Hat Enterprise Linux (RHEL) version 3 is no longer supported.

Known issues

Documentation

Most tutorials need updating to version 7.50

As of the release date of version 7.50, only Studio Tutorial 1: Modify flow in directory has been updated for version 7.50. Once the other 7.50 tutorials are updated, they will be available on the HP Live Network.

Central, Studio, and the HP OO Library—Accelerator packs, integrations, operations, and utility operations

Bug 84927: Non-English input numbers in Scheduler

The OO 7.50 Scheduler will not accept non-English numbers as input. To avoid this problem, pick the numbers from the Scheduler combo boxes or switch your browser input to English. This does not apply to the other Scheduler inputs.

Bug 85265: VMWare Virtual Infrastructure Configuration operations with a VM identified by IP, UUID, or hostname fail with a 'Datacenter"" not found' error

A new input named **vmDatacenter** has been added to the following flows located in the \Library\Integrations\VMWare\VMWare Virtual Infrastructure\Configuration\ folder:

- Add NIC to VM
- Configure NIC on VM
- Remove NIC from VM

In any of these operations, if you identify a VM by IP address, UUID, or hostname, you must specify the datacenter in which to look for the VM in the **vmDatacenter** input.

Bug 88270: Flows reach Success response when invalid credentials are used as input

The following flows complete with a **Success** response when invalid credentials (username and password) are used as input.

In the \Library\Accelerator Packs\Operating Systems\HP-UX\Information Gathering\ folder:

- CPU Metrics
- Display File Systems and How Full
- Display Last Boot Time
- Display OS Info
- Network Metrics
- Recent Reboot

In the \Library\Accelerator Packs\Operating Systems\HP-UX\Utility\ folder:

- Check For Vital Processes
- Check Load Average
- Check Process by PID
- Get PID from Process Name

Note: If **ssh** is chosen for the **protocol** input, flow execution reaches a **Failure** response as expected.

HP-UX truncates passwords after 8 characters when authenticating via Telnet. This means that if a user password is "password5", the passwords "password", "passwordpassword ", and "passwordbad" will all be accepted. This is a defect with HP-UX and not an issue with HP OO.

Bug 88485: HP-UX State Change flows fails when specifying nfs.client service

The following flows located in the \Library\Accelerator Packs\Operating Systems\HP-UX\State Change\ folder fail when you specify the nfs.client service:

- **Start Service**
- **Start Service with Notification**

This occurs because the process name for the **nfs.client** service is **nfs4cbd**, and the subflow **Check Processes By Command Line** in these flows uses **nfs.client** as its argument to command input. This causes the **Start Service** and **Start Service with Notification** flows to fail.

Bug 88683: Red Hat Delete File flow reaches Success response with invalid path input when using Telnet protocol

When using the Telnet protocol, the **Delete File** flow located in the \Library\Operations\Operating Systems\Linux\Red Hat\Disk and File Operations\ folder reaches the **Success** response when an invalid file name is entered in the **path** input.

Since the file name is invalid, the flow should go to the **Failure** response. Instead, the flow goes to the **Success** response but fails internally giving an error report like this one:

```
'{returnCode=0;stdErr=;returnResult=rm: cannot lstat `/root/b.txt': No such file or
directory
;Result=rm: cannot lstat `/root/b.txt': No such file or directory
;sessionId=iconclude-5959874682577630572;stdOut=rm: cannot lstat `/root/b.txt': No
such file or directory;}'
```

Bug 89716: Red Hat Start Service flows reach Success response but fail internally for Telnet protocol

When executed using the Telnet protocol, the following flows reach the **Success** response but fail internally when the services they are trying to start are already running:

- \Library\Accelerator Packs\Operating Systems\Red Hat\State change\Start Service with Notification
- \Library\Accelerator Packs\Operating Systems\Red Hat\State change\Start Service

Since the service is already running, the flow should go to the **Failure** response at the **Run Service** step. Instead, the flow goes to the **Success** response at the **Run Service** step but fails internally giving the following error report:

```
{returnCode=0;stdErr=;returnResult=Starting crond: cannot start crond: crond is
already running. [60G[ [0;31mFAILED [0;39m]
;Result=Starting crond: cannot start crond: crond is already running. [60G[
[0;31mFAILED [0;39m]
;sessionId=iconclude2432099503651565201;stdOut=Starting crond: cannot start crond:
crond is already running. [60G[ [0;31mFAILED [0;39m];}
```

Bug 88768: Red Hat Kill Process with Retry flow reaches Success response with invalid PID (process to kill) input but fails internally

The **Kill Process with Retry** flow, located in \Library\Accelerator Packs\Operating Systems\Red Hat\Utility\ folder, reaches the **Success** response when the **PID** input value is invalid but fails internally with an error message like the following:

```
"{returnCode=0;stdErr=;returnResult=-bash: kill: (234567) - No such process;Result=-
bash: kill: (234567) - No such
process;sessionId=iconclude1624793938258725529;stdOut=-bash: kill: (234567) - No such
process;}"
```

Bug 89173: PowerShell Get Event Log flow reaches Success response but fails internally

The **Get Event Log** flow, located in the \Library\Accelerator Packs\Operating Systems\Windows\PowerShell\Events\ folder, reaches the **Success** response but returns a blank result. The output of the flow looks like the following:

```
{returnCode=0;returnResult=;Result=0;sessionId=fc997b5c-b9f2-4a42-beb5-dd175ec75ba9;}
```

The flow returns a blank result if the **source** input is left static and not given a valid value.

Bug 89183: The DIG Operation fails

The DIG operation, located in the \Library\Operations\Network\DNS\ folder, fails when the **class** or **type** input is assigned a null value using the **Prompt User** input variable.

Bug 89533: Windows Remote Command Execution operation cannot execute a batch file without referencing the call command

In the **Remote Command Execution** operation located in the \Library\Operations\Operating Systems\Windows Management\ folder, if you enter a batch file name in the **Command** input ("*batchfilename.*bat") the operation will fail. To execute a batch file using the **Remote Command Execution** operation, enter "call *batchfilename.*bat"' in the **Command** input.

Bug 88846: Control characters are not supported when using local protocol

Using the **local** protocol can cause a command containing control characters (&& or |) to fail.

The Unix Accelerator Pack commands in the following folders:

- \Library\Accelerator Packs\Operating Systems\Red-Hat\
- \Library\Accelerator Packs\Operating Systems\Solaris

- \Library\Accelerator Packs\Operating Systems\SUSE Linux

allow users to select local as the protocol, but do not actually support being run locally.

The **Remote Command** operation in the \Library\Operations\Remote Command Execution\ folder does not support the control characters && or || when run against a local protocol.

Bug 89695: Storage Automation issues

The following are known limitations with the **Storage Automation** Accelerator Pack:

1. End-to-end host storage provisioning fails on the Windows platform. The affected flow is **Create Logical Volume on Windows Host** located in the \Library\Accelerator Packs\ Storage Automation\Provisioning\Windows\ folder.

   To fix this problem, follow these steps:

   a. Check out the **Create Logical Volume on Windows Host** flow.

   b. Open the **Disk Partition Run Script** step.

   c. On the **Inputs** tab, open the **command** input.

   d. In the **Constant Value** text box, replace the text in the box with the following text:

   ```
   for /F "skip=20 tokens=4" %%I IN ('%SystemRoot%\system32\diskpart /s
   script.scr') DO ( echo Y|format %%I: /FS:NTFS /Q )
   ```

   e. Save and check-in the flow.

2. End-to-end Oracle storage provisioning for Windows always provisions storage from the attached storage array. The affected flow is **Create Extended Logical Drive on Host** located in the \Library\Accelerator Packs\ Storage Automation\ Provisioning\ Windows\ folder.

   The flow ignores any unused disk storage already available on the host, before deciding to provision storage from an attached storage array.

   To fix this problem, follow these steps:

   a. Check out the **Create Extended Logical Drive on Host** flow.

   b. Open the **Create Script to Get Disks with Free Partition** step.

   c. On the **Inputs** tab, open the **command** input.

   d. In the **Constant Value** text box, replace the text in the box with the following text:

   ```
   echo @echo off>getfd.bat&&echo @set dd=>>getfd.bat&&echo set
   inuse=no>>getfd.bat&&echo for /F "skip=7 tokens=2,4,5,6,7" %%%I IN ('diskpart
   /s script.scr') DO (IF %%%J EQU %%%L call :setdrives %%%I %%%J %%%K %%%L
   %%%M)>>getfd.bat&&echo echo freedisks=%%dd%%>>getfd.bat&&echo @set
   errorlevel=0 1>>getfd.bat&&echo GOTO end:>>getfd.bat&&echo
   :setdrives>>getfd.bat&&echo set inuse=no>>getfd.bat&&echo for /F "skip=1
   tokens=1,2,4,6" %%%I IN ('wmic diskdrive list SCSI') DO (IF %%%J EQU %%1 call
   :setdrives1 %%%I %%%J %%%K %%%L)>>getfd.bat&&echo IF %%inuse%%==no set
   dd=%%dd%%/%%1,%%2,%%3,%%4,%%5>>getfd.bat&&echo :setdrives1>>getfd.bat&&echo for
   /F "skip=1 tokens=1,2,4,6" %%%I IN ('wmic diskdrive list SCSI') DO (IF %%%K
   EQU %%3 IF %%%L EQU %%4 call :setdrives2 %%%J)>>getfd.bat&&echo
   :setdrives2>>getfd.bat&&echo for /F "skip=8 tokens=2,4,5,6,7" %%%I IN
   ('diskpart /s script.scr') DO (IF %%%I EQU %%1 IF %%%L EQU 0 set
   inuse=yes)>>getfd.bat&&echo :end>>getfd.bat&&echo exit 0>>getfd.bat
   ```

   e. Open the **Run Script to Get Disks** step.

   f. On the **Inputs** tab, open the **command** input.

   g. In the **Constant Value** text box, replace the text in the box with the following text:

   ```
   call getfd.bat
   ```

   h. Save and check-in the flow

8

3. The **Refresh SE On UCMDB** flow, located in \Library\Accelerator Packs\ Storage Automation\Utility\ folder, fails with the following exception:

```
FailureMessage=AxisFault
 faultCode:
{http://schemas.xmlsoap.org/soap/envelope/}Server.userException
 faultSubcode:
 faultString: java.rmi.RemoteException: execute failed for
storageautomation.jar:com/hp/storage/SE/automation/general/IActionRefreshSEOnUcmdb
.class; nested exception is:
    java.lang.RuntimeException: error instantiating action class:
storageautomation.jar/com/hp/storage/SE/automation/general/IActionRefreshSEOnUcmdb
.class, reason: java.lang.ExceptionInInitializerError
...
```

To fix this problem, follow these steps:

a. Close Studio.

b. Stop the RAS service

c. Delete the following files in the \%HP OO_Home%\RAS\RAS-7.50\RAS\Java\Default\repository\lib\storageautomation\ folder:

```
jbossall-client.jar
commons-logging.jar
```

d. Copy the following jboss client jars from jboss version 4.0.1 SP1 to the \%HP OO_Home%\RAS\RAS-7.50\RAS\Java\Default\repository\lib\storageautomation\ folder::

```
jboss-client.jar
jboss-common-client.jar
jbossjmx-ant.jar
```

The jars can be downloaded from http://www.jboss.org.

e. Start the RAS service.

Note: If the above workaround is applied, the copied files need to be manually deleted after un-installation.

4. The **Provision Storage to Host - Create Change Ticket** and **Provision Storage to Host - Update and Approve Change Ticket and Execute** flows, located in the \Library\ Accelerator Packs\ Storage Automation\ Provisioning\ Storage Provisioning\ folder, fail with the following exceptions:

```
status=ERROR: Failed to parse provisioning XML
String;exception=com.hp.seoo.common.SEOOException: Failed to parse provisioning
XML String
    at
com.hp.seoo.general.XMLParsing.parseProvisioningXMLString(XMLParsing.java:214)
    at
com.hp.storage.SE.automation.general.IActionParseProvisioningDetailsFromXML.execut
eOps(IActionParseProvisioningDetailsFromXML.java:35)
    at
com.hp.storage.SE.automation.general.IActionSEConnection.execute(IActionSEConnecti
on.java:67)
    at
com.iconclude.webservices.ras.classLoadedIaction.execute(JavaExtensionService.java
:554)
    at
com.iconclude.webservices.ras.JavaExtensionService.executeFromThisDelegator(JavaEx
tensionService.java:233)
```

. . .

To correct these problems, you need to add filters for certain step results.

For the **Provision Storage to Host - Create Change Ticket** flow, follow these steps:

a. Check out the **Provision Storage to Host - Create Change Ticket** flow.

b. Open the **Convert Provisioning Details to XML** step.

c. Click the **Results** tab.

d. Open the **provisioningXMLString** result.

e. In the filter properties window, add the **Replace** filter with the following inputs:

Find: `<?xml version="1.0" encoding="UTF-8"?>`

Replace: `All`

With: `<?xml version="1.0" encoding="UTF-8" standalone="no"?>`

f. Save and check-in the flow.

For the **Provision Storage to Host - Update and Approve Change Ticket and Execute** flow, follow these steps:

a. Check out the **Provision Storage to Host - Update and Approve Change Ticket and Execute** flow.

b. Open the **ModifyProvisiongXML** step.

c. Click the **Results** tab.

d. Open the **provisioningXML** result.

e. In the filter properties window, add the **Replace** filter with the following inputs:

Find: `<?xml version="1.0" encoding="UTF-8"?>`

Replace: `All`

With: `<?xml version="1.0" encoding="UTF-8" standalone="no"?>`

f. Save and check-in the flow.

5. End-to-end provisioning workflows for Windows and HPUX hosts currently work only with SecurePath multi-pathing software.

6. REST execution of the **End-to-End VMware Storage Provisioning** flow, located in the \Library\Accelerator Packs\ Storage Automation\ Provisioning\VMWare\ folder, prompts for input.

To fix this problem, follow these steps:

a. Check out the **End-to-End VMware Storage Provisioning** flow.

b. On the **Inputs** tab, add a flow input named **vmName** with the following values:
Input Type: Single Value

Otherwise: Use Constant

Constant value: *<leave blank>*

c. Save and check-in the flow.

Known defect fixes

Bug 7128: Server Automation Accelerator Pack should support all SAS versions

All of the Server Automation Accelerator Pack operations now work with SAS versions 6.x, 7.0, and 7.5. These operations are available in the \Library\Integrations\Hewlett-Packard\Server Automation\ folder.

Bug 8379: Support for Red Hat Enterprise Linux (RHEL) v5

HP OO now supports RHEL 5.0, 5.1, and 5.2 (32 bit and 64 bit).

Note: RHEL version 3 will no longer be supported in HP OO 7.5.

Bug 9132: Add authtype input for Backup Exec operations

The operations in the \Library\Operations\Backup Exec\Log Analyzer\ folder connect to an MS SQL database, but they need to support both MS SQL authentication and Windows authentication. To accomplish this, an **authtype** input has been added to each of the operations in the \Log Analyzer\ folder. The **authtype** input allows you to select MS SQL or Windows authentication.

Bug 9254: Rebuild SUSE Linux and Red Hat operations so that they do not require SSH

The SUSE Linux and Red Hat operations have been rebuilt as flows using the **Remote Command** operation. This allows them to support Telnet, SSH, and RSH. The existing content has been deprecated.

The new flows reside in the following folders:

- \Library\Operations\Operating Systems\SUSE Linux\Disk and File Information
- \Library\Operations\Operating Systems\SUSE Linux\Memory and Processor Operations
- \Library\Operations\Operating Systems\SUSE Linux\Network Operations
- \Library\Operations\Operating Systems\SUSE Linux\OS and Server Operations
- \Library\Operations\Operating Systems\SUSE Linux\Process Operations
- \Library\Operations\Operating Systems\Red Hat\Disk and File Information
- \Library\Operations\Operating Systems\Red Hat\Memory and Processor Operations
- \Library\Operations\Operating Systems\Red Hat\Network Operations
- \Library\Operations\Operating Systems\Red Hat\OS and Server Operations
- \Library\Operations\Operating Systems\Red Hat\Process Operations

Bug 9409: Add new functionality for XML Processing

The following new operations have been added to the \Library\Utility Operations\XML Processing\ folder:

- **XML Get Attributes** - Retrieves attributes from the root element of the given XML. By default, this operation returns all attributes unless you specify a specific attribute to be returned.
- **XML Element Filter** - Filters XML based on specified criteria. You can filter by path, by path specified from the root element, by the existence of a specified child element or by that child having a specific value, or by the existence of a specified attribute or by that attribute having a specified value.
- **XML Get Element Value** - Retrieves the value from a given XML element. Child nodes are not considered values.
- **XPath Evaluator** - Evaluates the given XPath expression and returns the results in a form of an iterator. The **type** field of the XPath expression specifies the type of xml result returned. Possible values for the **type** field are ELEMENT, ATTRIBUTE, TEXT, and OTHER. This powerful operation can be used to retrieve XML elements, attributes, text, or filters based on element names, paths, and attributes. The XPath specification is available on the Wide Web Consortium (W3C) Web site (http://www.w3.org).

Bug 9457: Create LDAPUpdatePropertyValue operations

There are some properties that you can have multiples of. For example, calling **LDAP Set Property Value** creates another instance of that property. There needs to be an operation that searches for the property and, if found, updates the value instead of just calling set.

OO version 7.50 has two new operations located in the \Library\Operations\LDAP\.Net\ folder:

- **LDAP Add Property Value** – this operation adds an item to a multi-valued property.
- **LDAP Remove Property Value** – this operation removes an item from a multi-valued property.

Bug 9511: Make timeout for Change Service Status operation configurable

The **Change Service Status** operation in the \Library\Operations\Operating System\Windows Management\Services\ folder has a default timeout of 30 seconds, but some services take longer than this to change state.

The following inputs have been added to the **Change Service Status** operation:

- **serviceTimeout** – The amount of time, in seconds, a single service is allowed to change status (this affects the main service and its dependant services). The default value is 30 seconds.
- **operationTimeout** – The total amount of time, in seconds, the operation is allowed to change status for all services combined. By default, their values are set to 30 seconds.

Bug 9637: Add header_<headername> input to the InvokeMethod2 operation

The **InvokeMethod2** operation in the \Library\Operations\Wizards\Web Service Wizard\ folder now has a **header_<headername>** input on its **Description** tab. If you add new step-level inputs with the name header_<headername>, where <headername> is the name of an HTML header, then that HTML header will be set to the given value in the HTTP request.

Bug 9667: The fields for LDAP Authentication are only 1024 characters long

In OO 7.50, the maximum length attribute for the **LDAP Authentication Settings** fields has been removed. The lengths of these fields are now governed by the browsers' limitations.

Bug 9681: Support SQL Server 2005 encrypted connections

OO 7.50 supports SSL connections to SQL Server 2005 if you add the string ";ssl=request" (no quotes) after the database name when installing.

Bug 9693: Step response cannot be changed within scriplet

In OO 7.50, both operation- and step-level scriplets can read and write the variable **scriptletResponse**.

Bug 9730: Not receiving the correct output from the Get Devices operation in an OO flow

A flow that uses the **Get Devices** operation, located in the \Library\Integrations\Hewlett-Packard\Network Automation\7.x\Devices\ folder, produces the following correct output:

- Device hostnames
- Device types

It also produces the following incorrect output:

- No IP addresses
- Numbers instead of names for the device site names.

Bug 9756: Add new operations to support all attributes of an Active Directory user

In OO 7.50, all attributes of an Active Directory user can be configured using new Windows and Exchange operations.

The following operations are located in the \Library\Operations\Active Directory\.NET\Users\ folder:

- **Set User General information** – Sets the general information for the AD user.
- **Set User Address** – Sets the user address information for the AD user.
- **Set User Account** – Sets the user account information for the AD user.
- **Set User Profile** – Sets the user profile information for the AD user.
- **Set user telephone information** – Sets the user telephone information for the AD user.
- **Set user organization** – Sets the user organization information for the AD user.
- **Set User Remote Control** – Sets the user remote control information for the AD user.
- **Set User Dialin** – Sets the user dial-in information for the AD user.
- **Set User Environment** – Sets the user environment information for the AD user.
- **Set User Sessions** – Sets the user sessions information for the AD user.

Note: The following views only exist if the **Active Directory Users and Computers** snapin is installed from the Exchange CD (viewable on any Exchange server). These operations are located in the \Library\Operations\Exchange\ folder and subfolders:

- **Set Delivery Restrictions** – Sets the user delivery restrictions.
- **Set Delivery Options** – Sets the user delivery options.
- **Set Storage Limits** – Sets the user storage limits.
- **Set Basic Information** – Sets the basic user Exchange information.

- **Add Email Addresses** – Adds new Exchange e-mail addresses.
- **Remove Email Addresses** – Removes Exchange e-mail addresses.
- **Change Email Addresses** – Changes Exchange e-mail addresses.
- **Change Exchange Features** – Changes Exchange features such as Outlook Mobile Access and Outlook Web access. The features have possible input values of **true** or **false**. If **true**, enable the feature; if **false**, disable the feature; if unspecified, leave unchanged.
- **Add Custom Attribute** – Adds a value for an Exchange custom attribute.
- **Get Custom Attribute** – Gets the value of an Exchange custom attribute.
- **Remove Custom Attribute** – Removes the assigned value to an Exchange custom attribute.
- **Set User ILS Information** – Sets the user Internet Locator Server (ILS) information.
- **Change Mailbox Rights** – Changes the mailbox rights.
- **Create Mailbox** – Creates a mailbox.
- **Remove Mailbox** – Removes mailbox information for a given user.
- **Establish Email Address** – Establishes an e-mail address.

Bug 9758: AD copy a new user from a template

OO 7.50 has a new operation named **Create User From Template** located in the \Library\Operations\Active Directory\.NET\Users\ folder that can copy a new user from a template user along with the following attributes:

COUNTRY
CITY
STREET_ADDRESS
COUNTRY_ABBREVIATION
STATE
POBOX
POSTAL_CODE
ORGANIZATION_TITLE
ORGANIZATION_DEPARTMENT
ORGANIZATION_MANAGER
ORGANIZATION_COMPANY
OFFICE
DESCRIPTION
ACCOUNT_OPTIONS
ACCOUNT_MUST_CHANGE_PASSWORD
ACCOUNT_EXPIRES
PROFILE_PATH
SCRIPT_PATH
HOME_DIRECTORY
HOME_CONNECT_DRIVE
TELEPHONE_NR
OTHER_TELEPHONE_NR
HOME_PAGE
HOME_PHONE
OTHER_HOME_PHONE
PAGER
OTHER_PAGER
MOBILE
OTHER_MOBILE
FAX
OTHER_FAX

IP_PHONE
OTHER_IP_PHONE
NOTES
URL
MAIL
ALLOW_DIALIN
SAVED_CALLING_STATION_ID
CALLING_STATION_ID
RADIUS_SERVICE_TYPE
RADIUS_CALLBACK_NUMBER
RAS_IP
RADIUS_IP
RAS_ROUTE
RADIUS_ROUTE
LOGON_HOURS
WORKSTATIONS
CERTIFICATE
SHARE_FOLDER
SHARE_FOLDER_OTHER
MAX_STORAGE

as well as the Terminal Service attributes.

Bug 9759: Ability to set the user profile in AD for Terminal Services

OO 7.50 has a new operation named **Set User Terminal Services Configuration** in the \Library\Operations\Active Directory\.NET\Users\ folder that allows users to set the user profile in Active Directory for Terminal Services.

The inputs for this operation are:

- host - The active directory domain controller to connect to.
- username – The Windows user name for Active Directory.
- password – The password for the username.
- OU - The organizational unit in which that the user that should be disabled resides.
- userCommonName - The common name of the user to change.
- profilePath - The Terminal Services profile path.
- homeFolderType – The Terminal Services home folder type. Valid inputs are **remote** and **local**.
- homeFolderPath – The Terminal Services home path.
- homeFolderDrive – The Terminal Services home drive; **homeFolderType** should be remote.
- denyLogon - True/false

Bug 9760: Need an operation for changing the security permissions of a Windows file or folder

OO 7.50 has a new operation named **FS Set Security Properties** located in the Library\Operations\FileSystem\Windows Only\ folder that allows users to set the security properties on files and folders both locally and remotely.

Bug 9778: Need an operation for adding and updating system properties

OO 7.50 has a new operation named **Set System Property** located in the \Library\Integrations\Hewlett-Packard\Operations Orchestration\Repository\ folder that allows users to create or update system properties.

Bug 9796: Using the WSCentralService API, receive OutofMemory exception in the cache

A fix has been implemented for this issue in OO 7.50

Bug 9819: Studio is caching data incorrectly

This is a RAS problem fixed in OO 7.50.

Bug 84589: Add an input that allows SSH Shell, Remote Shell, and Telnet shell to specify the newline type

A new input named **newlineCharacters** has been added to the following operations:

- **JRAS Telnet Shell** in the \Library\Operations\Remote Command Execution\Telnet\ folder
- **SSH Shell** in the \Library\Operations\Remote Command Execution\SSH folder
- **Remote Shell** in the \Library\Operations\Remote Command Execution\ folder

The **newlineCharacters** input allows you to specify the character sequence to send when the **Enter** key is pressed after each **send** statement in a send expect script is processed. The choices are:

- **\n** for newline
- **\r** for carriage return
- **\r\n** for carriage return and newline
- A comma-delimited list of ASCII escape sequences

Bug 84646: The Description tab of the Is User Enabled operation has incorrect information

The **Is User Enabled** operation located in the \Library\Operations\Active Directory\.NET\Users\ folder has an incorrect definition for the **OU** input on the **Description** tab.

The Description tab now contains the following definitions:

- OU - The organizational unit that the user that should be checked is in. (i.e. "OU=OUTest1").
- userFullName - The common name of the user to check (i.e. "testUser1").

Bug 84703: Add the ability to pick system accounts dynamically

There is now a **Store System Account in Flow Variable** operation in the Library\Integrations\Hewlett-Packard\Operations Orchestration\Repository\ folder which will retrieve a system account name and, if the system account is valid, dynamically store it in a flow variable.

Bug 84754: Database connection timeout in case of high volume SQL queries

When running a high volume of queries, the following error message may appear:

```
{exception=System.InvalidOperationException: Timeout expired. The timeout period
elapsed prior to obtaining a connection from the pool. This may have occurred because
all pooled connections were in use and max pool size was reached. at
System.Data.ProviderBase.DbConnectionFactory.GetConnection(DbConnection
owningConnection) at
System.Data.ProviderBase.DbConnectionClosed.OpenConnection(DbConnection
outerConnection, DbConnectionFactory connectionFactory) at
System.Data.SqlClient.SqlConnection.Open() at
dotNETWebActions_SQL.AbstractDBOp.Execute(ActionRequest req, ISession s,
IActionRegistry reg);returnResult=Timeout expired. The timeout period elapsed prior
to obtaining a connection from the pool. This may have occurred because all pooled
connections were in use and max pool size was reached.;sessionId=06d0e7b3-75d6-4626-
833b-b97e7845d038;returnCode=1;Result=Timeout expired. The timeoutperiod elapsed
prior to obtaining a connection from the pool. This may have occurred because all
pooled connections were in use and max pool size was reached.; }
```

In OO 7.50, the SQL query operation has been changed so that it closes old SQL connections.

Bug 84779: Cluster hangs with IE6 due to problem with apache SSL TSL support

When IE6 connects to the cluster apache service, it can't support the TSL, so it attempts to negotiate downward to a lower version of SSL. The apache cluster then fails to get to an SSL version that is it can work with.

This has been fixed in OO 7.50.

Bug 84803: Certain Exchange operations fail when the authentication type is not defined

The following Exchange operations fail when the authentication type is not defined.

In the \Library\Operations\Exchange\Emails\ folder:

- **Get Email List** operation
- **Read Email** operation
- **Read Attachments** operation
- **Reply Mail** operation
- **Send Mail** operation

In the \Library\Operations\Exchange\Mailbox\ folder:

- **Get Folder List** operation
- **Remove Object** operation
- **Move Object** operation

OO 7.50 has a new optional input named **authType** which allows you to specify the authentication type. The available values are **NTLM** (Integrated Windows Authentication**)**, **Basic**, and **Digest**.

For Exchange 2003, you should choose one of the values: **NTLM**, **Basic**, or **Digest** (the default is **NTLM**).

For Exchange 2007, no value is required, and the values **NTLM** or **Basic** work for all authentication types.

Bug 85440: The Flow Run counter operation is not incrementing properly

The **Flow Run Counter** operation in the \Library\Integrations\Hewlett-Packard\Operations Orchestration\ folder was only counting completed flows that resulted in a **Success** response. To fix this problem, a new input named **onlyResolvedFlows** has been added to the operation. If the value of this new input is set to **false**, the operation will count all completed flows ending with **Success**, **Failure**, **Diagnosed**, or **No Action Taken** responses.

If the value of the **onlyResolvedFlows** input is set to **true** or is left blank, the operation will only count completed flows that end with a **Success** response.

Bug 87729: Concurrent Studio sessions with the same credentials can corrupt the shared repository

Actively doing checkouts/modifications/check-ins as the same user from multiple Studios (on multiple computers) can corrupt the repository. OO 7.50 does not support the same user having multiple concurrent Studio sessions.