

HP Operations Orchestration

For Windows[®] and Linux operating systems

Software Version: 9.07.0005

Release Notes

Document Release Date: December 2013

Software Release Date: December 2013



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 Notice

© Copyright 2005-2013 Hewlett-Packard Development Company, L.P.

Trademark Notices

Adobe™ is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to: <http://h20230.www2.hp.com/selfsolve/manuals>

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.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support Online web site at: <http://www.hp.com/go/hpsupport>

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

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

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

HP Software Solutions Now accesses the HPSW Solution and Integration Portal Web site. This site enables you to explore HP Product Solutions to meet your business needs, includes a full list of Integrations between HP Products, as well as a listing of ITIL Processes. The URL for this Web site is

<http://h20230.www2.hp.com/sc/solutions/index.jsp>

Contents

Release Notes	1
Contents	3
Introduction	6
Features Added in Versions 9.03 - 9.07.0005	7
Modifications to the Support Matrix	7
Modifications to the Support Matrix	7
Japanese Support	7
Restarting an Interactive Run from an Intermediary Step	7
Tracking Scheduled Flows by Scheduled User	9
Database Changes	10
Authentication Settings Take Effect Immediately	11
Embedded Instant Run Link	11
Return Flow History by RunID from SDK	11
Apache Load Balancer Update	12
Renamed Column in Scheduler tab	12
Heap Dump File	12
Setting the Timeout Parameter for SSH	12
Runtime Error after 9.06 Installation	13
Preventing Objects from Being Stored in Caches	13
Opening Multiple Selected Flows	13
Configuring LightWeight SSO Settings	14
Scheduler Enhancements	14
Default Grid Activation	15
Items Inserted at Current Cursor Position	15
Modifications to the Support Matrix	15
Export System Properties Without Encryption	15
Logging for Security-related Events	16
-keepKeystore Option	16
New SOAP API Methods	17

List of Video Tutorials	18
HP OO Portal	18
Auditing Security-related Application Events	19
Preventing System Account Password Reset When Exporting a Repository	19
Modifications to the Support Matrix	19
Reliability Issues	19
Studio Usability	20
Fixed Defects	20
Database Changes	20
Application Notes	21
Time Zone	21
Browser	21
SDK	22
Studio wswizard Tool	22
LnC Installer	22
Multilingual Support	23
Localization Limitations and Workarounds	23
Known Issues	25
Status Display Window of Instant Run Does Not Refresh	25
Windows Server 2012 Not Displayed as RAS Platform	25
Load Balancer Requires OpenSSL 0.9.8e	25
Gated Transitions with User-defined Groups are Lost	25
Time Zone	26
Installing OO	27
Supported Environments	27
Storage Requirements	27
Installation Notes	27
Upgrade and Downgrade Notes	29
Installing HP OO 9.07.0005 on Linux or Solaris	31
Installing HP OO 9.07.0005 on Windows	33
Upgrade and Downgrade Logs	34

Upgrade.log File Information	34
Uninstall.log File Information	37
Uninstalling HP OO	40
Uninstalling HP OO 9.07.0005 on Windows	40
Uninstalling HP OO 9.07.0005 on Linux	41
Fixed Defects in 9.07.0005	42
Fixed Defects in 9.07.0004	44
Fixed Defects in 9.07.0003	45
Fixed Defects in 9.07.0002	46
Fixed Defects in 9.07.0001	47
Fixed Defects in 9.07	48
Fixed Defects in 9.06	50
Fixed Defects in 9.05	57
Previous Defect Fixes Included in HP OO Versions 9.00.01 to 9.04	58
Working with the MySQL Database	59

Introduction

This document provides an overview of the changes made to HP Operations Orchestration (HP OO) for the 9.07.0005 version. It contains important information not included in the manuals or in the online help.

These Release Notes are intended for customers, HP Operations Orchestration (HP OO) Systems Engineers (SEs), and Customer Engineers (CEs) who have installed or are deploying HP OO version 9.07.0005.

Features Added in Versions 9.03 - 9.07.0005

Modifications to the Support Matrix

Note: The following item was introduced in version 9.07.0003.

OO now supports Red Hat Enterprise Linux 6.4.

Modifications to the Support Matrix

Note: The following item was introduced in version 9.07.

HP OO now supports the following:

- Java Runtime Environment (JRE) version 1.6.0_37
- Latest service packs for all the supported operating systems and databases
- .NET 4 and .NET 4.5
- ESXi 5.1 Virtual Machine
- Apache Load Balancer has been upgraded to 2.2.22 for Windows and 2.2.23 for Linux

For more information, see the *HP OO 9.07 System Requirements*.

Japanese Support

Note: The following item was introduced in version 9.07.

HP OO 9.07 was localized into Japanese. For Japanese users, the OO 9.07 patch supersedes the previous 9.05.0001 patch for the Japanese language.

- If you have previously installed patch 9.06 or 9.06.0001, which did not include Japanese support for the new features, installing 9.07 will apply the Japanese language to the new features.
- If the last upgrade you did was the 9.05.0001 patch for the Japanese language or the 9.00.02 patch for the Japanese language, installing 9.07 will upgrade your system to include all the new features that were added since then.

Restarting an Interactive Run from an Intermediary Step

Note: The following item was introduced in version 9.07.

It is now possible to restart an interactive finished run from an intermediary step, from the **Reports** page. You can restart your own runs if you have EXECUTE permissions on the run flow, or others' runs if you have MANAGE_RUNS capability and EXECUTE permissions on the run flow


This is useful if you have a flow with many steps and the flow fails during a run, due to some external reason—for example, an incorrect configuration in a system, a computer being down, and so on. After fixing the external problem, you can now run the flow from the step where it failed.

This feature is enabled for every step that has had a checkpoint set in Studio.

To set a checkpoint for a step:

1. In Studio, open the step inspector for the step.
2. In the **Advanced** tab, in the **Step Persistence** area, select the following check boxes for the steps for which you want to enable this feature:
 - **This step saves the whole run state**
 - **This step saves the run history**

To restart a flow run:

1. After a flow finishes, click the **Reports** tab in Central, and display the **One Run Instance** report for the flow run that failed.
2. Click the **Restart from this step**  button for the desired step.

Central loads the context and configures a new run for the flow, starting with the step selected for restart.

Note: Please note the following limitations:

- Live connections/sessions are not guaranteed to be in the same state during the resumed run.
- Permissions are checked as for a regular run.
- You need to take into account the irreversible changes of the previous run.
- You need to take into account that the restart uses a previously saved context.
- You cannot restart headless runs.
- You cannot restart a flow that has been modified.
- You cannot restart an unfinished run. Only finished runs can be restarted.
- You cannot restart from a step inside a parallel lane.

- You cannot restart from a multi-instance substep.
- You cannot restart from a non-blocking step.

For more information about resuming a flow run, see "Restarting a Finished Run from an Intermediary Step" in the *HP OO 9.07 Central User Guide*.

For more information about setting a checkpoint for a step, see "Checkpoints: Saving a flow run's progress for recovery" in the *HP OO 9.07 Studio Authoring Guide*.

Tracking Scheduled Flows by Scheduled User

Note: The following item was introduced in version 9.07.

In Central, it is now possible to:

- Display information about the user who scheduled each run (in the **Scheduler** tab)
- Filter reports to display runs that were scheduled by a particular user or users (in the **Reports** tab)

Changes in the Scheduler tab

A new **Scheduled by** column has been added in the **Scheduled For One Ops Flow** grid, displaying the user who most recently created, edited, or cloned the schedule. An empty value appears for schedules created prior to 9.07.

Icons are used to differentiate between internal and external users.

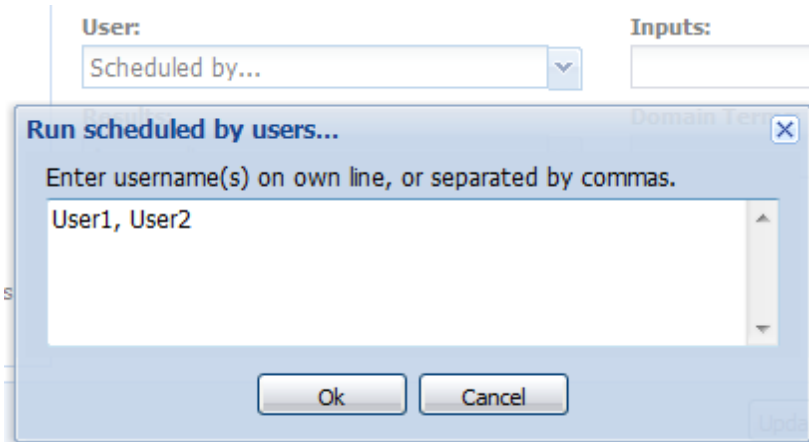
Schedule Name	Starting Date/Time	Ending Date/Time	Recurrence	State	Controls	Previous run	Next run	Parameters	Scheduled by
02fcae4f-f6c6-4721-8797-08b67f6452a7	Jan 9, 2013 5:53:39 AM		the third day of every 1 month(s)	00	▶ Enable		Feb 3, 2013 5:53:39 AM		admin
0356333e-97f1-447f-a661-02228f786854	Jan 9, 2013 5:53:37 AM		the second Tuesday of every 1 month(s)	00	▶ Enable		Feb 12, 2013 5:53:37 AM		admin
06364397-9c42-4263-9b37-9f320bf0d2b8	Jan 9, 2013 6:20:40 AM		day 28 of April	00	▶ Enable		Apr 28, 2013 5:20:40 AM		external
073adc01-bb82-4d7e-ab2a-d4d0bd3cf8d	Jan 9, 2013 5:53:23 AM		the last Friday of every 1 month(s)	00	▶ Enable		Jan 25, 2013 5:53:23 AM		admin

Changes in the Reports tab

A new **Scheduled by** column has been added to the **Results > One Flow Type** grid, displaying the user who created, edited, or cloned the schedule at the time of the run. An empty value appears for non-scheduled runs or for runs that were scheduled prior to 9.07.

Run Id	Run Name	Start Time	Executed by	Scheduled by	Time To Run	Result Type	Number of..	Last Modifie...	Revision
1444	d013c320-ba03-4...	Dec 20, 2012 3:35:26...	admin	admin	0.011	Failed to Ex...	1	admin	41
1443	eac56fd9-b154-4b...	Dec 20, 2012 3:34:51...	admin	admin	0.014	Failed to Ex...	1	admin	41
1442	d013c320-ba03-4...	Dec 20, 2012 3:34:26...	admin	admin	0.016	Failed to Ex...	1	admin	41

The **User** filter has new **Scheduled by** filtering option, letting you filter a report to display only runs that were scheduled by one or more particular users. Select **User > Scheduled by** and then type the user names of the users whose scheduled runs you want to look at.



For more information about creating and configuring schedules, see the Scheduler chapters in the *HP OO 9.07 Central User Guide*.

For more information about filtering reports according to the user that scheduled them, see "Run histories: What happened and why" in the *HP OO 9.07 Central User Guide*.

Database Changes

Note: The following item was introduced in version 9.07.

As part of the "Tracking Scheduled Flows by Scheduled User" functionality, the database has been updated as follows:

- A new column, **QRTZ_TRIGGERS.JOB_DATA**, contains the name of the user that created the schedule.

As part of the "Restarting an Interactive Run from an Intermediary Step" functionality, the database has been updated as follows:

- A new column, **step_context**, has been added to the **runstep_history** table.
- A new column, **column step_uuid**, has been added to the **runstep_history** table.

Column	Type	KEY	Nullable	Index
step_context	blob		true	false
step_uuid	varchar(36)		true	false

Authentication Settings Take Effect Immediately

Note: The following item was introduced in version 9.07.

It is no longer required to restart the Central service after making configuration changes in the Central **Administration > System Configuration > Authentication** tab. In previous versions, when changes were made to the authentication configurations, Central had to be stopped and restarted for the change to take effect. This applies to authentication settings for AD, LDAP, and Kerberos.

For more information, see "Allowing external users into the Central system" in the *HP OO 9.07 Central User Guide*.

Embedded Instant Run Link

Note: The following item was introduced in version 9.07.

An instant run link that can be embedded into an external application is now available.

The instant run link for a flow is available in the **Execution Links** section of the **Preview** page in Central.

Note: To display the **Preview** page, right-click a flow in the **Flow Library** tab and select the **Preview** option. The **Preview** page is also available after performing a search.

You can copy this link and embed it as the source of an HTML iframe.

When a user clicks the embedded instant run link, a Web page opens, similar to the **Instant Run** page. This page includes flow name and description, inputs if necessary, run status, run controls, and result summary.

For more information about embedding an instant run link, see "Starting a flow from outside Central" in the *HP OO 9.07 Central User Guide*.

Return Flow History by RunID from SDK

Note: The following item was introduced in version 9.07.

Using the new **getFlowRunHistoryByRunId** SOAP API method with the Software Development Kit, you can retrieve flow history details, based on run IDs. This is useful if you ran a flow and want to know how that flow ran.

This includes information such as the ID of the user who started the run, the flow run status, the flow revision, the number of flow steps, the start time, duration, and so on.

For more information, see the *HP OO 9.07 Software Development Kit Guide*.

Apache Load Balancer Update

Note: The following item was introduced in version 9.07.

The Apache Load Balancer was updated to version 2.2.22 for Windows, and to version 2.2.23 for Linux. This update prevents some security vulnerabilities.

Renamed Column in Scheduler tab

Note: The following item was introduced in version 9.07.

In the **Scheduler** tab in Central, the **Enabled** column has been renamed to **State**. This column displays information about the state of the schedule: **Enabled** or **Disabled**. The new name more accurately reflects the purpose of the column.

Heap Dump File

Note: The following item was introduced in version 9.07.

It is now possible to configure the application to create a heap dump file if it runs out of memory. If OO crashes with an "out of memory" exception, this file saves a record of the memory, and can help identify memory leaks and high memory consumption. This option is available for Central, RAS, and cluster services and is enabled by editing the **wrapper.conf** file.

For more information, see "Configuring a Heap Dump File" in the *HP OO 9.07 Administrator Guide*.

Setting the Timeout Parameter for SSH

Note: The following item was introduced in version 9.07.

There is now an option to specify the time to wait for the exit status for the SSH command. For example, if the SSH target server is behind a slow connection, you can set this to a longer time.

To activate this option:

1. Open the **Central.properties** file in a text editor.
2. Adjust the value of the **dharma.wait.for.channel.exit.status** property to a the number of milliseconds to wait for the SSH channel to receive the exit status.
3. Restart the RSCentral service (for Windows) and the Central process (for Linux) for the change to take effect.

Runtime Error after 9.06 Installation

Note: The following item was introduced in version 9.06.0001.

When the HP OO 9.06 patch is installed in a standalone Studio environment (with Studio on one computer and Central on another), a runtime error appears when Studio starts. The HP OO 9.06.0001 patch prevents this from occurring.

Preventing Objects from Being Stored in Caches

Note: The following item was introduced in version 9.06.

There is now an option to prevent SSL objects from being stored in caches (proxy or browser). This helps prevent the accidental disclosure of sensitive data.

In the **Central.properties** file, the **dharma.allow.browser.cache** property is set to **true** by default. This means that the caching is enabled by default. If you set it to **false**, this prevents SSL objects from being cached.

To activate this option:

1. Open the **Central.properties** file in a text editor.
2. Set the **dharma.allow.browser.cache** property to **false**.
3. Restart the RSCentral service for the change to take effect.

Limitations in FireFox:

- The URLs are stored in the memory cache, regardless of the **No-Cache** headers. Closing the browser clears the memory cache.
- The URLs for the reports are stored in the disk cache.

Opening Multiple Selected Flows

Note: The following item was introduced in version 9.06.

It is now possible to open multiple selected flows, operations, or configuration items, with one click. Select the flows, operations, or configuration items, right-click and select the **Open** command. All selected items open.

Configuring LightWeight SSO Settings

Note: The following item was introduced in version 9.06.

It is now possible to configure LightWeight SSO from within Central. A **LightweightSSO Settings** area has been added to the **Authentication** tab on the **System Configuration** page in Central.

In previous versions, Lightweight SSO settings could only be added by manually editing the `applicationContext.xml` and `web.xml` files.

For more information, see "Using external authentication for Central users" in the *HP OO Central User Guide*.

Scheduler Enhancements

Note: The following item was introduced in version 9.06.

A number of enhancements have been added to the Central Scheduler feature:

- It is now possible to configure the default number of occurrences when a new flow is scheduled. Previously, when a user scheduled a flow, the default was to run every minute, with no end. A new configuration item was added in the **Administration>System Configuration>Scheduler** panel.
- It is now possible to schedule a flow after performing a Central search. A **Schedule** button has been added to the **Preview** page, where a user is redirected after accessing a flow from the search results.
- It is now possible to set a time interval in a schedule to a defined number of months. When you select the **Monthly** recurrence pattern, you can now define the number of months. For example, you can select three months for a quarterly interval.
- It is now possible to search for a flow schedule in the **Scheduler** tab, by entering the name of a flow in the search box and clicking the **Search** button.
- It is now possible to delete multiple scheduled flows on the **Scheduler** tab. Previously, these had to be deleted one at a time, waiting for the page to refresh between each delete.
- There is now a **Delete** button on the toolbar under the **Scheduler** tab. This replaces the **Delete** column from previous versions.
- It is now possible to clone an existing schedule item. A new **Clone** button has been added to the toolbar under the **Scheduler** tab for individual flows.
- There is now an **Edit** button on the toolbar under the **Scheduler** tab for individual flows. This replaces the clock icon in the **Edit Schedule** column.

- A **Disable All** button is now available in the toolbar under the **Scheduler** tab for individual flows. Previously, this was only available for All Flows With Schedules.

For more information, see "Scheduling Flow Runs" in the *HP OO Central User Guide*.

Default Grid Activation

Note: The following item was introduced in version 9.06.

There is now a configuration property in the **Studio.properties** file, which enables you to set the grid to be activated by default. To set the grid to be activated by default, use `dharmastudio.ui.activegrid=true`.

For more information, see "Changing Studio Configurations" in the *HP OO Administrator Guide*.

Items Inserted at Current Cursor Position

Note: The following item was introduced in version 9.06.

When you add a new input field, response, selection list item, or domain term, it is added at the current cursor position. Previously, the new item was added at the end of the list.

For more information, see "Creating an Input", "Responses: evaluating results", "Selection lists for user prompts", and "Domain terms for Dashboard charting" in the *HP OO Studio Authoring Guide*.

Modifications to the Support Matrix

Note: The following item was introduced in version 9.06.

OO now supports the following:

- Microsoft SQL Server 2012
- Microsoft Windows 2012
- FireFox 15.x
- Internet Explorer 9.x

For more information, see the *HP OO System Requirements*.

Export System Properties Without Encryption

Note: The following item was introduced in version 9.06.

In previous versions, system properties were always encrypted when a repository was exported. Users who wanted to import these repositories into versions of HP OO earlier than 9.04 needed to manually update the values of the system properties.

There is now an **Encrypt system properties** check box in the Export Options dialog box. By keeping this check box clear, you can choose not to encrypt the system properties, so that they are exported as plain text. This makes it possible to use these system properties when the repository is imported into HP OO versions earlier than 9.04.

If you are exporting content that includes only configuration sections (for example, domain terms or system properties), the Export Options dialog box is not displayed. In this case, the **Encrypt system properties** check box is included in the Select Repository Directory dialog box.

For more information, see "Exporting a repository" in the *HP OO Studio Authoring Guide*.

Logging for Security-related Events

Note: The following item was introduced in version 9.06.

You can now set up the `log4j.properties` file to log the following kinds of security-related application events:

- Failed authentication / login attempts
- Disabled accounts
- Failed session identifier validations
- Accesses with insufficient user rights
- Access to invalid file paths

Note: This option is available by changing the Boolean property **dharmalog.validation.failure** in the `Central.properties` file. This property is not included in the template and defaults to **false**. When it is set to **true**, HP OO logs every validation failure during flow executions to the Central audit log file.

Log entries identify the individual whose action is being audited, the individual affected by the action, and the time of the action.

For more information, see "Auditing Security-related Application Events" in the *HP OO Administrator Guide*.

-keepKeystore Option

Note: The following item was introduced in version 9.06.

The HP OO installer now has a **-keepKeystore** option, which enables you to choose whether to replace the current keystores (for Central, Studio, RAS and Load Balancer) with the default keystores, or whether to keep them as is.

- If the **-keepKeystore** option is provided as an argument to the installer, the current keystores are kept.
- If the **-keepKeystore** option is *not* provided as an argument to the installer, the keystores are replaced with the default ones.

Examples:

```
install_9_06.bat -keepKeystore  
install_9_06.bat -logDirectory "C:\Windows\Temp\00 9.06" -keepKeystore
```

The default behavior is to replace the keystores with the default ones. In order to keep the current keystores, you must use the **-keepKeystore** argument.

You should keep the current keystores if you replaced the Central certificate with a custom one (self-signed), as described in the "Replace the Default Security Certificate" section in the *HP OO Administrator Guide*.

In previous versions, the keystores were always replaced with the default keystores, and if you were using a custom security certificate, you would need to repeat the process of replacing the default security certificate.

Note: The keystores are replaced during the 9.02 patch upgrade. If the patch is installed over HP OO 9.02, then the keystores are kept, regardless of whether the **-keepKeystore** argument is provided.

For more information, see the *HP OO Installation Guide*.

New SOAP API Methods

Note: The following item was introduced in version 9.06.

The following SOAP API methods have been made available:

- getLWSSOConfig
- updateLWSSOConfig
- createGroup
- updateGroup
- deleteGroup

- getPermissions
- setPermission
- renameRepoEntity
- deleteRepoEntity
- updateDescription
- createUser
- updateUser
- deleteUser
- getUserGroups

For more information, see the *HP OO Software Development Kit Guide*.

List of Video Tutorials

Note: The following item was introduced in version 9.06.

On the Studio **Welcome** page, the **Tutorial** button label has been changed to **Tutorials**. Clicking the button displays a list of video tutorials, grouped by category. You can open a tutorial in an external browser by clicking a tutorial title.

New tutorials have been added. These are indicated by an icon with an asterisk  , while older

tutorials are indicated by an icon without an asterisk  .

HP OO Portal

Note: The following item was introduced in version 9.05.

The HP OO Portal is a new tool that provides you with means to execute and customize flows. It includes Automated Tasks that are associated with flows in HP Operations Orchestration. The HP OO Portal allows you to customize the Automated Tasks from an intuitive user interface, with the ability to embed them as tasklets in any external Web page. You can open the HP OO Portal in a Web browser or tablet.

For more information, see the *HP OO Portal Deployment Guide*, *HP OO Portal Release Notes*, and *HP OO Portal Online Help*, in the HP OO Portal. These documents can also be downloaded from <http://support.openview.hp.com/selfsolve/manuals>.

Auditing Security-related Application Events

Note: The following item was introduced in version 9.05.

It is now possible to set up the `log4j.properties` file to log security-related application events, such as failed authentication/login attempts and accesses with insufficient user rights. Log entries identify the individual whose action is being audited, the individual affected by the action, and the time of the action. This enables easier detection of security threats.

For more information, see the *HP OO Administrator Guide*, available from <http://support.openview.hp.com/selfsolve/manuals>.

Preventing System Account Password Reset When Exporting a Repository

Note: The following item was introduced in version 9.05.

By default, when a repository containing system accounts is exported, the password is erased. It is now possible to prevent this from happening by adding the following line to the `Central.properties` and `Studio.properties` files:

```
dharmarepo.allow.system.accounts.travelling=true
```

Modifications to the Support Matrix

Note: The following item was introduced in version 9.04.

HP OO supports the following:

- Firefox 10.0
- Ability to run HP OO on ESXi5
- Redhat Linux 6.2
- Terracotta 3.6.0

Reliability Issues

Note: The following item was introduced in version 9.03.

Fixed reliability issues for the Scheduler, by unifying the Scheduler and Central services.

Scheduler log messages are printed out to the `Central_wrapper.log` file. The trigger log data is printed to a specific trigger log inside the `Central logs` folder (located at `%ICONCLUDE_HOME%/Central/logs/Scheduler/` on a Windows environment and `$ICONCLUDE_HOME/Central/logs/Scheduler/` on a Linux environment).

Studio Usability

Studio usability improvements.

Fixed Defects

This release includes fixed defects from previous versions.

Database Changes

The 9.07 patch installer updates the `build_info` table with the current patch version and build date.

Application Notes

Time Zone

Note: The following issues are relevant to version 9.03 and later.

- Users who open the HP OO web user interface from an external application URL (BSM), or log in to HP OO from a non-basic authentication login page (LWSSO configuration), need to add a time zone parameter to the URL.

Add the parameter: **?x-VisitorTimeZoneOffset=180** to the URL, where 180 is the GMT +3 time zone.

Following are examples of URLs containing the time zone parameter:

- **http://localhost:8080/PAS/app?x-VisitorTimeZoneOffset=180**

The parameter is added after the ?.

- **http://localhost:8080/PAS/app?service=page/Scheduler&x-VisitorTimeZoneOffset=180**

You can also add the time zone to an external link, by adding: **&x-VisitorTimeZoneOffset=180**

- When you change the time zone on your computer, you must log out and log back into Central in order to see the changes.
- The client and server times need to be synchronized with GMT to display the correct date and time information.
- The DST time is always displayed by the current time zone of the user. If the user is currently on DST, the scheduled time is not (or vice versa).

For example: If today is the 29.3.2012, and the flow is scheduled for the 1.4.2012 04:00 AM (on the 30.3.2012 02:00 AM – DST starts), the time that will be display for that flow on the schedule table will be 1.4.2012 03:00 AM. From 30.3.2012 02:00 AM, the time moves to DST. From now on the time displayed for that schedule is 1.4.2012 04:00 AM.

- The time zone cannot be different between the nodes in a cluster.

Browser

Note: The following issues are relevant to version 9.03 and later.

- You must clean the browser cache after upgrading the version.
- In Firefox 3.6.4 and above, the default browser proxy is set to **Use system proxy settings**.

When you upgrade to Firefox 9.01, the browser proxy settings are changed to the default, overriding any other existing settings. These proxy settings might cause connection problems in the **Current Runs** view in Central. If you encounter these problems, contact your system administrator to verify the required proxy settings.

SDK

Note: The following issues are relevant to version 9.03 and later.

Important: In order to use the new API you need to download **WSCentralService.zip**. Extract the **WSCentralService.zip** and replace the **WSCentralService.jar** for JAVA, and **wscentr1.dll** for .NET.

Studio wswizard Tool

Note: The following issues are relevant to version 9.03 and later.

You cannot run operations that have no inputs. To use **wswizard** generated operations (flows) with no inputs, add the **trimNullComplexTypes** input, and set it to false.

LnC Installer

Note: The following issues are relevant to version 9.03 and later.

LnC installer can be downloaded from: <https://hpln.hp.com/node/4/otherfiles>.

The HP Live Network Connector User Guide is located at: https://hpln.hp.com/system/files/hpln_inc_users_guide.pdf. This document contains information on how to configure HP OO in the *Configuring HP OO Stream* section.

Multilingual Support

HP OO 9.07 was localized for Japan, so that all text strings that appear in the user interface have been translated to Japanese.

Localization Limitations and Workarounds

Some Folder Names not Localized

Some of the folder names in Studio are not translated, and appear in English.

Messages in Flow Run Summary are all not Localized

The messages in the Flow Run Summary are not translated, and appear in English.

Some Central UI Items are Garbled

In Linux 6.2, if the Japanese font Sazanami is missing, some UI items are displayed as garbled text in Central.

Workaround:

1. Download the Sazanami font from <http://sourceforge.jp/projects/efont/>.
2. Create the following directory: `/user/share/fonts/japanese/TrueType`.
3. Extract the downloaded `tar.bz2` file, and copy `sazamai-gothic.ttf` and `sazanami-mincho.ttf` to `/user/share/fonts/japanese/TrueType`.
4. Restart the Central process (`bin/Central.sh restart`).

New Strings Appear in English

If new text strings are added to the application in subsequent minor releases, these strings will appear in English.

Japanese Documentation is Overwritten with English

Note: This issue is relevant to version 9.03 and later.

The Japanese online help and guides are overwritten with English version after an upgrade.

To retrieve the Japanese documentation:

- **Central:**

- a. Go to the %ICONCLUDE_HOME%/Central/updates/9.07/9.07.0005/backups folder.

Note: The home location is %ICONCLUDE_HOME% on a Windows environment. On a Linux environment, go to the \$ICONCLUDE_HOME\Central\updates\9.07\9.07.0005\backups folder.

- b. Extract the central.zip file.
- c. Copy the docs folder, and replace the new %ICONCLUDE_HOME%/Central/docs folder.

Note: On a Linux environment, replace the \$ICONCLUDE_HOME\Central\docs folder.

- **Studio:**

- a. Go to the %ICONCLUDE_HOME%/Studio/updates/9.07/9.07.0005/backups folder.

Note: On a Linux environment, go to the \$ICONCLUDE_HOME\Studio\updates\9.07\9.07.0005\backups folder.

- b. Extract the studio.zip file.
- c. Copy the docs folder, and replace the new %ICONCLUDE_HOME%/Studio/docs folder.

Note: On a Linux environment, replace the \$ICONCLUDE_HOME\Studio\docs folder.

Known Issues

Status Display Window of Instant Run Does Not Refresh

When you run a flow in Central using the **Instant Run** option, if you move the status display (the yellow message box) so it touches the edge of the browser display window, the box is not updated anymore with the timestamp or next steps.

Workaround: If you force an update by clicking the arrows or the **Display most recent** on/off icon in the **Result Summary** section, the status report will continue to update normally.

Windows Server 2012 Not Displayed as RAS Platform

If you have Windows Server 2012 as a RAS platform, this information is not displayed correctly on Central. Under the **Administration** tab, in the **Remote Action Service (RAS) Infrastructure** view, the RAS platform will be displayed as "Windows NT (Unknown)".

This is because Java system properties are used to retrieve this information, and Java 1.6.0_37 does not recognize Windows Server 2012.

Load Balancer Requires OpenSSL 0.9.8e

The new Apache Load Balancer versions require the OpenSSL 0.9.8e library.

Before upgrading the Load Balancer on Linux, make sure you have installed OpenSSL. The version for this library must be 0.9.8e. The packages containing this library are:

- openssl098e-0.9.8e-17.el6_2.2.i686 - for Linux x32 bit
- openssl098e-0.9.8e-17.el6_2.2.x86_64 - for Linux x64 bit

Gated Transitions with User-defined Groups are Lost

Note: The following issue is relevant to version 9.05 and later.

If a flow includes a gated transition and a user-defined group is selected as the required group, when the flow is published to a non-default public repository, information about the gated transition is lost, even if the user-defined group exists in both repositories.

This is a limitation caused by the HP OO 9.x repository design. In the repository, each group is referenced by a random unique key, called the UUID. Even if the groups have the same name in both repositories, they will have different UUIDs. When the flow is published, the target repository attempts to assign the gated transition to the UUID of the group defined in the source repository and, because this UUID does not exist in the target repository, nothing is selected.

A hotfix for this issue is available at

<https://quixy.deu.hp.com/quixy/query/detail.php?ISSUEID=QCCR1D149165>.

Time Zone

Note: The following issue is relevant to version 9.03 and later.

- If you log in to HP OO using LWSSO, the time zone is displayed as the server time zone.

Installing OO

Supported Environments

Operations Orchestration runs in these operating system environments:

- Windows
- Linux and Solaris

Note: For more information, refer to the *Operations Orchestration System Requirements Guide*.

Storage Requirements

HP OO Central server

The HP OO Central server requires 10 GB of hard-drive space. This includes room for the flows and operations that are included in the installation and for their rolling backups.

Note: The required disk space depends on the size of your repository, because it will be backed up during the upgrade.

For more information about the upgrade installation, see "[Upgrade.log File Information](#)" on page 34.

When the database and Central are installed on the same machine, add together the requirements for the database and the Central servers.

HP OO Studio server

The HP OO Studio server requires 5 GB of hard-drive space.

HP OO RAS server

The HP OO RAS server requires 5 GB of hard-drive space.

For more information about storage requirements, see the *HP OO 9.07 System Requirements* document.

Installation Notes

This release is a cumulative release that includes updates from all the previously released 9.0x.

When you are upgrading the load balancer, the patch installer needs to be run using root permissions. This is required because the updated load balancer needs to have a newer version of dependent system libraries.

If it is not possible to run the patch installer using the root user, use one of the following workarounds:

Option 1

1. Because **hpooadm** is the **ICONCLUDE_USER** specified in the Central **install.config** file and **hpoop** is the main group for the **hpooadm** user, run the following commands:

```
touch /usr/lib/libapr-1.so.0 /usr/lib/libapr-1.so.0.4.5 /usr/lib/libaprutil-1.so.0 /usr/lib/libaprutil-1.so.0.4.1 /usr/lib/libexpat.so.0 /usr/lib/libexpat.so.0.5.0 /usr/lib64/libapr-1.so.0 /usr/lib64/libapr-1.so.0.4.5 /usr/lib64/libaprutil-1.so.0 /usr/lib64/libaprutil-1.so.0.4.1 /usr/lib64/libexpat.so.0 /usr/lib64/libexpat.so.0.5.0
```

```
chown hpooadm:hpoop /usr/lib/libapr-1.so.0 /usr/lib/libapr-1.so.0.4.5 /usr/lib/libaprutil-1.so.0 /usr/lib/libaprutil-1.so.0.4.1 /usr/lib/libexpat.so.0 /usr/lib/libexpat.so.0.5.0 /usr/lib64/libapr-1.so.0 /usr/lib64/libapr-1.so.0.4.5 /usr/lib64/libaprutil-1.so.0 /usr/lib64/libaprutil-1.so.0.4.1 /usr/lib64/libexpat.so.0 /usr/lib64/libexpat.so.0.5.0
```

2. Update the new APR binaries during the path installation.

Option 2

1. Create a group called, for example, **oogroup** in **/etc/groups**.
2. Add the **hpooadmin** and root users to this group.
3. Run the following command:

```
chgrp oogroup /usr/lib /usr/lib64 and then chmod 775 /usr/lib /usr/lib64
```

Upgrade and Downgrade Notes

- Before you downgrade your version, make sure that you back up your local and remote repositories. They are not backed up automatically.

During installation, individual zip backups are created for each of the HP OO products in `{HP_OO_Product}\updates\{version}\{version}/backups`.

For example, Central is backed up in

`%ICONCLUDE_HOME%\Central\updates\9.07\9.07.0005\backups\central.zip`,

and Studio is backed up in

`%ICONCLUDE_HOME%\Studio\updates\9.07\9.07.0005\backups\studio.zip`.

When you upgrade Central in a cluster environment, perform the upgrade one node at a time. Do not upgrade all nodes at the same time.

- The installer checks if any zip backups were created.
 - If such files are found, the installer checks them.
 - If the zip files are found to be corrupt, the installer deletes them.
 - If the installer cannot delete the corrupt zip files, it fails with the message **BUILD FAILED**. You will need to manually delete the corrupt zip files and restart the installer. It is not required to perform an uninstall.
- In a command window, run the patch upgrade command with Administrator rights.

When you install a standalone Load Balancer, you must set the `JAVA_HOME`.

- Windows: If Java is not installed, install JRE 1.6_37 and set the `JAVA_HOME` environment variable.
- Linux: Set the `JAVA_HOME` environment variable.
- When you perform an install or uninstall, a log file containing the executed tasks is created in the **upgrade.log** and **uninstall.log** in the `<location of the upgrade folder>/logs` folder.

Note: By default, when you install or uninstall the 9.07.0005 patch the log files are placed in the `{installer_location_folder}/logs`. During installation or uninstall you can select a different folder to store the logs using the `-logDirectory` option.

For example, the syntax for a Linux installation is: `./install.sh -logDirectory /tmp/009.07.0005\ Upgrade/.`

- If you are using your own certificate/keystore and you applied the 9.07.0005 patch, then you have to manually restore them from the backups created by the patch installer. Your own certificate/keystore is located in the list under the **From** section below, and must be restored to the corresponding locations listed in the **To** section:

From:

- %ICONCLUDE_HOME%\Central\updates\9.07\9.07.0005\backups, open the zip, and locate **rc_keystore** in central\conf.
- %ICONCLUDE_HOME%\Studio\updates\9.07\9.07.0005\backups, open the zip, and locate **rc_keystore** in \studio\conf\ rc_keystore.
- %ICONCLUDE_HOME%\RAS\updates\9.07\9.07.0005\backups, open the zip, and locate **ras_keystore.jks** in \RAS\java\default\webapp\conf.
- %ICONCLUDE_HOME%\LB\updates\9.07\9.07.0005\backups, open the zip, and locate **ras_keystore.key, ras_keystore.jks, ca.pem, ic.pem,** in \clustering\apache\conf.

To:

- Central: %ICONCLUDE_HOME%\Central\conf\rc_keystore
- RAS: %ICONCLUDE_HOME%\RAS\java\default\webapp\conf\ras_keystore.jks
- LB: %ICONCLUDE_HOME%\Clustering\apache\conf\ras_keystore.key, ras_keystore.jks, ca.pem, ic.pem,
- Studio: %ICONCLUDE_HOME%\Studio\conf\ rc_keystore

Installing HP OO 9.07.0005 on Linux or Solaris

Note: If you have a version lower than 9.x, you must upgrade to a 9.x version before installing 9.07.0005.

To install the Linux version of HP OO 9.07.0005 for an HP OO installation on a Linux or Solaris system

1. Exit Central, and then stop the HP OO services:
 - Central.sh
 - JRAS.sh
 - CLUSTER.sh
 - PASLB.sh
 - Scheduler.sh (this applies to upgrades from versions prior to 9.03)

Note: For any standalone installation, you only need to stop the relevant service and apply the patch separately.

Note: For standalone installations without JRE 1.6, install java 1.6.0_X JDK and set the JAVA_HOME accordingly.

2. Unzip the file **hpoo_9.07.0005.zip** to a temporary folder.
3. Set the `$ICONCLUDE_HOME` variable to point to the HP OO home directory.
4. Set the `$ICONCLUDE_CLUSTER_HOME` variable to point to the HP OO cluster home directory.
5. On a Solaris SA RAS, set the `$JAVA_HOME` environment variable to the JRE home directory.
6. Run the **install_9_0x.sh** file.
7. Check the script for errors.
8. Restart the HP OO services.

IMPORTANT: If you install 9.07.0005 and did not have previously installed 9.03 or 9.04, the Scheduler.sh service is removed and unified with the Central.sh service.

IMPORTANT: If Central is installed in a cluster configuration, make sure that you apply this release to all Central installations in the clustered nodes (one node at a time) after stopping the services.

IMPORTANT: Changes in this upgrade require clearing all the browser history & caches.

The installation files from the previous installation are backed up, as they are overwritten during the upgrade.

After the upgrade, you can verify the patch version in the **About** dialog box in Studio and Central. For this release, the version in the **About** dialog box shows **9.07.0005**.

Installing HP OO 9.07.0005 on Windows

Note: If you have a version lower than 9.x, you must upgrade to a 9.x version before installing 9.07.0005.

To install the Windows version of 9.07.0005

1. Exit **Studio** and **Central**, and then stop the HP OO services:
 - RSCentral
 - RSJRAS
 - RSCLuster
 - RSGridserver (Load Balancer Service).
 - RSScheduler (this applies to upgrades from versions prior to 9.03).

Note: For any standalone installation, you only need to stop the relevant service and apply the patch separately.

Note: For standalone installations without JRE 1.6, install java 1.6.0_X JDK and set the JAVA_HOME accordingly.

2. Unzip the file **hpoo_9.07.0005.zip** to a temporary folder.
3. Check to make sure that the %ICONCLUDE_HOME% variable points to the HP OO home directory.
4. Change the directories to the location of the unzipped patch and run the **install_9_0x.bat** file.
5. Restart the HP OO services.

IMPORTANT: If you install 9.07.0005 and did not have previously installed 9.03 or 9.04, the RSScheduler service is removed and unified with the RSCentral service.

IMPORTANT: If Central is installed in a cluster configuration, make sure that you apply this release to all Central installations in the clustered nodes (one node at a time) after stopping the services.

IMPORTANT: Changes in this upgrade require clearing all the browser history and caches.

The installation files from the previous installation are backed up, as they are overwritten during the upgrade.

After the upgrade, you can verify the patch version in the **About** dialog box in Studio and Central. For this release, the version in the **About** dialog box shows **9.07.0005**.

Upgrade and Downgrade Logs

During the install and uninstall process of the HP OO software the progress is tracked on screen in a command window, and in addition the information is stored in a log file.

The logs are located in the <location of the upgrade folder>/logs folder:

- Upgrade logs are stored in the file `upgrade.log`.
- Downgrade logs are stored in the file `uninstall.log`.

Note: By default, when you install or uninstall the 9.07.0005 patch, the log files are placed in the `{installer_location_folder}/logs` folder. During installation or uninstall you can select a different folder to store the logs using the `-logDirectory` option.

For example, the syntax for a Linux installation is:

```
./install.sh -logDirectory /tmp/009.07.0005\ Upgrade/.
```

Note: During installation, individual zip backups are created for each of the HP OO products in `{HP_OO_Product}/updates/{version}/{version}/backups`.

For example, Central is backed up in

```
%ICONCLUDE_HOME%\Central\updates\9.07\9.07.0005\backups\central.zip,
```

and Studio is backed up in

```
%ICONCLUDE_HOME%\Studio\updates\9.07\9.07.0005\backups\studio.zip.
```

Note: Before you downgrade your version, make sure that you back up your local and remote repositories. They are not backed up automatically.

Upgrade.log File Information

The `Upgrade.log` file is located in the patch installation directory, in the `logs` subdirectory.

Following are extracts with an explanation from the `upgrade.log` file:

Note: The extracts below also appear on the screen when you are upgrading the software.

- Displays the upgrade version:

```
resolve.target.version:
```

```
[echo] Resolving target version...
```

```
[echo] Target version is 9.07.0005
```

```
[echo] Target minor version is 9.07.0005
```

- HP OO home directory:

```
resolve.target.home:
```

```
[echo] Resolving target home...
```

```
[echo] Target home is C:\Program Files\Hewlett-Packard\Operations Orchestration
```

```
[echo] Cluster home is C:\Program Files\Hewlett-Packard\Operations Orchestration\Clustering
```

- Displays the installed components. The following example is only for Central and RAS:

```
resolve.central.source.version:
```

```
[echo] The source version of Central is 9.0.0
```

```
resolve.ras.source.version:
```

```
[echo] The source version of RAS is 9.0.0
```

```
resolve.studio.source.version:
```

```
resolve.cluster.source.version:
```

```
resolve.load balancer.source.version:
```

- Displays the database version:

```
resolve.database.version:
```

```
[echo] Resolving database version...
```

```
[sql] Executing commands
```

```
[sql] 1 of 1 SQL statements executed successfully
```

```
[delete] Deleting: C:\Program Files\Hewlett-Packard\hp...
```

```
[echo] Database version is 9.00
```

- Backup location:

```
studio-backup:
```

```
central-backup:
```

```
[echo] Backing up Central files
```

```
[mkdir] Created dir: C:\Program Files\Hewlett-Packard\...
```

```
[zip] Building zip: C:\Program Files\Hewlett-Packard\...
```

```
[touch] Creating C:\Program Files\Hewlett-Packard\...
```

- General upgrade:

```
upgrade.platform.components:
```

```
  [echo] *****
```

```
update.central:
```

```
  [echo] Applying new Central files
```

```
  [copy] Copying 4014 files to C:\Program Files\Hewlett-Packard\...
```

```
  [copy] Copying 249 files to C:\Program Files\Hewlett-Packard\...
```

```
  [copy] Copying 60 files to C:\Program Files\Hewlett-Packard\...
```

- Database upgrade path:

```
build.upgrade.database.version.flow:
```

```
[build-version-flow] Available versions: [9.02, 9.03, 9.04, 9.05, 9.06, 9.07,
9.07.0001, 9.07.0002, 9.07.0003, 9.07.0004, 9.07.0005]
```

```
[build-version-flow] Source version: 9.00
```

```
[build-version-flow] Upgrade versions: 9.02, 9.03, 9.04, 9.05, 9.06, 9.07, 9.0
7.0001, 9.07.0002, 9.07.0003, 9.07.0004, 9.07.0005
```

- Each version is upgraded separately (cumulative):

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.02
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.03
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.04
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.05
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.06
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.07
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.07.0001
```

```
run.single.database.upgrade:
```

```
  [echo] Upgrade to 9.07.0002
```

```
run.single.database.upgrade:
    [echo] Upgrade to 9.07.0003
run.single.database.upgrade:
    [echo] Upgrade to 9.07.0004
run.single.database.upgrade:
    [echo] Upgrade to 9.07.0005
```

- Upgrade path for a specific component (Central):

```
build.upgrade.source.version.flow.central:
[build-version-flow] Available versions: [9.02, 9.03, 9.04, 9.05, 9.06, 9.07,
9.07.0001, 9.07.0002, 9.07.0003, 9.07.0004, 9.07.0005]
[build-version-flow] Source version: 9.0.0
[build-version-flow] Upgrade versions: 9.02, 9.03, 9.04, 9.05, 9.06, 9.07, 9.0
7.0001, 9.07.0002, 9.07.0003, 9.07.0004, 9.07.0005
```

- When the upgrade completes successfully, with no errors:

```
BUILD SUCCESSFUL

Total time: 3 minutes 52 seconds

Log file upgrade.log was created in "C:\Program Files\Hewlett-Packard\hpoo_9.0
7.0005\Upgrade_9.07.0005\logs"
```

Uninstall.log File Information

Following are extracts with an explanation from the uninstall.log file:

Note: The extracts below also appear on the screen when you uninstall the software.

- HP OO home directory:

```
resolve.target.home:
    [echo] Resolving target home...
    [echo] Target home is C:\Program Files\Hewlett-Packard\Operations Orchest
ration
    [echo] Cluster home is C:\Program Files\Hewlett-Packard\Operations Orches
tration\Clustering
```

- Displays the versions that you want to downgrade from the database:

```
build.uninstall.version.flow:
```

```
[build-uninstall-version-flow] Get database uninstall versions
```

```
[build-uninstall-version-flow] Uninstall versions: 9.07.0005, 9.07.0004, 9.07.0003, 9.07.0002, 9.07.0001, 9.07, 9.06, 9.05, 9.04, 9.03, 9.02
```

- Each version is downgraded separately:

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07.0005
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07.0004
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07.0003
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07.0002
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07.0001
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.07
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.06
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.05
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.04
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.03
```

```
run.single.database.downgrade:
```

```
    [echo] Downgrade database for version 9.02
```

- Restore a component:

```
restore-central:
```

```
    [echo] Backing up log files
```

```
[move] Moving 8 files to C:\Program Files\Hewlett-Packard\...
```

```
[echo] Deleting Central files
```

```
[echo] Restoring previous Central files
```

```
[unzip] Expanding: C:\Program Files\Hewlett-Packard\...
```

```
[echo] Deleting Central backup files
```

- When the downgrade completes successfully, with no errors:

```
BUILD SUCCESSFUL
```

```
Total time: 1 minute 9 seconds
```

```
Log file uninstall.log was created in "C:\Program Files\Hewlett-Packard\hpoo_9  
.07.0005\Upgrade_9.07.0005\logs"
```

Uninstalling HP OO

Uninstalling HP OO 9.07.0005 on Windows

Note: Before you downgrade your version, make sure that you backup your local and remote repositories. They are not backed up automatically.

To uninstall the Windows version of 9.07.0005

1. Exit Studio and Central, and then stop the HP OO services:
 - RSCentral
 - RSJRAS
 - RSCLuster
 - RSGridserver

Note: For any standalone installation, you only need to stop the relevant service and uninstall the patch separately.

2. Unzip the file **hpoo_9.07.0005.zip** to a temporary folder.
3. Check to make sure that the `%ICONCLUDE_HOME%` variable points to the HP OO home directory.
4. Change directories to the location of the unzipped patch and run the **uninstall_9_0x.bat** file.
5. Restart the HP OO services.

IMPORTANT: After this procedure, the RSScheduler service is added back to the version, if 9.03, 9.04, or 9.05 was not installed. If you downgrade to 9.03, 9.04, or 9.05, the Scheduler service is not restored.

IMPORTANT: If Central is installed in a cluster configuration, make sure that you uninstall this release to all Central installations in the clustered nodes (one node at a time) after stopping the services.

IMPORTANT: Changes in this downgrade require clearing all the browser history and caches.

Uninstalling HP OO 9.07.0005 on Linux

Note: Before you downgrade your version, make sure that you backup your local and remote repositories. They are not backed up automatically.

To uninstall the Linux version of HP OO 9.07.0005 for a Linux or Solaris system

1. Exit Studio and Central, and then stop the HP OO services:

- Central.sh
- JRAS.sh
- CLUSTER.sh
- PASLAB.sh

Note: For any standalone installation, you only need to stop the relevant service and uninstall the patch separately.

2. Unzip the file **hpoo_9.07.0005.zip** to a temporary folder.
3. Set the `$ICONCLUDE_HOME` variable to point to the HP OO home directory.
4. Set the `$ICONCLUDE_CLUSTER_HOME` variable to point to the HP OO cluster home directory.
5. On a Solaris SA RAS, set the `$JAVA_HOME` environment variable to the JRE home directory.
6. Run the **uninstall_9_0x.sh** file.
7. Check the script for errors.
8. Restart the HP OO services.

IMPORTANT: After this procedure, the Scheduler.sh service is added back to the version, if 9.03, 9.04, or 9.05 was not installed. If you downgrade to 9.03, 9.04, or 9.05, the Scheduler service is not restored.

IMPORTANT: If Central is installed in a cluster configuration, make sure that you uninstall this release to all Central installations in the clustered nodes after stopping the services.

IMPORTANT: Changes in this downgrade require clearing all the browser history and caches.

Fixed Defects in 9.07.0005

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D142081	Run name is wrong in print run history exports	When run history reports are exported using the Print option, the run name is shown without RunID.
QCCR1D172517	After changing AntiSamy policy to anythinggoes a ClassNotFoundException java exception is thrown when viewing Advanced Reports	After the AntiSamy policy was changed to anythinggoes , a ClassNotFoundException java exception was thrown when viewing Advanced Reports
QCCR1D142598	Changing default account used to run scheduled flows to empty account makes Central unavailable due to the fact that cannot start Scheduler	Central would become unavailable if the default account used to run scheduled flows was changed to an empty account.
QCCR1D174612	OO CPU reaches 100% randomly - after multiple SOAP API calls	After multiple SOAP API calls, the CPU would reach 100% and not stop. Running flows would slow down and time out.
QCCR1D174615	Publishing changes for a flow that has been deleted in a remote Central is not possible	On two remote Centrals, if a flow was created on Central 1 and then published on Central 2 and then deleted on Central 2, if changes were made to the flow on Central 1, it was not possible to publish these changes to Central 2. The original flow on Central 2 was not deleted properly and a copy still existed in the metadata.

CR Number	Title	Description
QCCR1D174841	Step of Remote Command (protocol=local) does not finish even if timeout is reached	<p>If a step was created using the operation /Library/Operations/Remote Command Execution/Remote Command and Protocol was set to Local, the step would not finish even if timeout was reached.</p> <p>The Remote Command step would finish with failure when the command was finished. The step result would not include the complete output of the command, but only included the output of the command when timeout was reached.</p>

Fixed Defects in 9.07.0004

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
155963	Central reports truncate the variable data if contains <code><script></script></code> tags in it.	If the run history reports contained the <code><script></script></code> tags, they were incorrectly removed.
157079	Acquire Lock operation writes unnecessary exception stack trace in Central log	When the Acquire Lock operation (Library/Integrations/Hewlett-Packard/Operations Orchestration) fails to acquire the lock, the Central log reports the full java exception stack trace even though the operation fails only logically and does not represent a Central failure or problem.
167483	During the login process, SSH uses a hard-coded timeout of 10 seconds that should be configurable	Added new timeout configuration item in Central, Studio and RAS configuration files. The configuration parameter is <code>dharma.ssh.session.timeout</code> .
169809	Intermittent "Network name not found" error when accessing shared repository	Under certain conditions, repository I/O operations can fail pointing to a "Network name not found" root cause.
170045	Auto refresh on Central UI --> Admin --> Node Admin broken in Internet Explorer	The link now works correctly.
170686	Instant Run preview window fails to display with Internal Server Error 500	The error is no longer returned.
172070	Under certain conditions, Advanced Reports and Run All page can be blank	If the following configuration line <code>dharma.antisamy.default.policy=slashdot.xml</code> is missing from Central.properties , the Advanced reports page will show as blank.

Fixed Defects in 9.07.0003

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D119813	Add CSRF-protection in OO	CSRF protection has been added to the URLs that are modifying internal OO data.
QCCR1D158455	Flow Utilization chart sends an exception	<p>When a user logs in the Central WebUI the dashboard does not display the default Flow Metrics/Flow Utilization-chart when it is set to 7 or 30 days. The exception is sent in the first week after New Year's Eve.</p> <p>When items are added to the chart, a check for duplicates has been added.</p>
QCCR1D164900	After disabling Kerberos configuration, Central displays an error in the logs as if the configuration is still enabled	<p>If you remove kerberos authentication and have deleted all the entries related in the configuration tab, the following error is displayed in the Central_wrapper.log</p> <pre>org.acegisecurity.providers.jaas.JaasAuthenticationProvider - Krb5 authentication module validation failure; kerberos authentication most likely not functional. java.lang.IllegalArgumentException: You have to either specify a valid Kerberos conf file, or a default <realm, kdc> pair</pre> <p>Validation of the Kerberos Settings is now performed only if Kerberos Authentication is enabled in the System Configuration.</p>

CR Number	Title	Description
QCCR1D166241	Add configuration option to decrypt references to encrypted variables (use constant, step result assignment, flow output field assignment)	<p>Before 9.07.001, encrypted values could be retrieved by using the <code>\${input}</code> reference in Use Constant option or by <code>myData = inputName;</code> in a scriptlet. However, after applying hotfix hf_144807, the above options are no longer valid and the values are retrieved as <code>*****</code> instead of the actual values.</p> <p>A new property has been added in the Central.properties and Studio.properties configuration files, in order to allow the decryption of encrypted values by using the <code>\$(dollar)</code> reference.</p> <p>The default value of this value persists the already existing functionality.</p>
QCCR1D168301	Specifying ERROR in the Results field doesn't work in Japanese environment.	In a Japanese installation, the option to filter run reports by ERROR is missing.

Fixed Defects in 9.07.0002

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D155146	OO doesn't gracefully handle the return error if the result value is 'null'	If a result value is "null", an exception is no longer thrown.
QCCR1D160974	9.07 patch installation fails if not run with root user	The <i>HP OO 9.07.0002 Release Notes</i> contains a workaround to used when it is not possible to run the patch installer using the root user. See "Installation Notes" on page 27 .
QCCR1D162808	Sometimes the installer creates a duplicate backup	The installer would update the Java backup again, creating a redundant backup in Java/Updates/9.07.0001 .

CR Number	Title	Description
QCCR1D163610	ORA-12899: value too large for column "xxxxxx"."PROPERTY_HISTORY"."VALUE4	An error message would appear, saying that a value was too large for a column, even when the value was less than the maximum of 900 characters. Changing the NLS_LENGTH_SEMANTICS of the VALUE4 column to CHAR enables the storage of up to 900 multibyte characters.
QCCR1D165945	Schedule flow operation fails after 9.07.0001 upgrade	The Central Client SOAP API library was modified to comply with the new changes in the Scheduler API.
QCCR1D155156	Running a flow in Instant Run sometimes stops with error: Page recorder for page PlainRun is locked after commit(), but received a change in property historyStepsList of component PlainRun	When a flow was run as an Instant Run, it would stop with this error: "Page recorder for page PlainRun is locked after commit(), but received a change in property historyStepsList of component PlainRun".
QCCR1D163747	The SSH Command operation found at "/Library/Operations/Remote Command Execution/SSH" randomly fails with a returnCode=-1 when starting a script on a linux machine	The SSH Command operation found at /Library/Operations/Remote Command Execution/SSH did not work as expected. The operation would randomly fail with returnCode=-1 when starting a script on a Linux computer.

Fixed Defects in 9.07.0001

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D144305	In Studio and Central encrypted input appears as not encrypted in the Result sections	In a Do Nothing operation, when any of the inputs were set as encrypted, after the step completed, the raw results did not show the decrypted value anymore.

CR Number	Title	Description
QCCR1D144807	When passing an encrypted parameter to an unencrypted parameter the encrypted data will be revealed	When an encrypted parameter was passed to an unencrypted parameter, the encrypted data was revealed
QCCR1D144870	Flow not advancing to next step in a Guided run if run history contains non-printable ASCII characters	In a guided run, if the run step history contained non-printable ASCII characters, the flow would freeze, and would not continue to the next step.
QCCR1D158358	After resuming a modified handed-off flow OO should use the old version of the flow	When a flow was handed off and resumed, the run context would be saved in the database. This meant that if changes were made to other properties, these would not be used in the flow.
QCCR1D158803	RAS wrapper.log prints the stack traces URL encoded	In the case of an error, the RAS wrapper log would print the error URL encoded.
QCCR1D160286	'Get Run Status' operation does not return the correct status of a flow	If a Get Run Status operation was called several times in a short period of time, an incorrect flow status was reported after the second call.
QCCR1D160274	Flags introduced in 9.03 to allow skipping of run history persistence do not work as described	The flags Don't save history for any flow steps and Save history based on flags did not work. Even when they were set to true, the data was saved.
QCCR1D160275	Error when doing a full repository export	When a full repository export was attempted, the process terminated with an exception in the middle of the export. The target repository was only partially created.

Fixed Defects in 9.07

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit [HP Software Support Online](#), or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D117819	Ability for AD authentication to be able to recursively search AD paths	The Central User Guide provides instructions for how to recursively search Active Directory paths.
QCCR1D139047	Apache vulnerabilities in Load balancer	Fixed
QCCR1D152526	Add option to continue flow execution from a particular step	If a flow fails in Central, it is now possible to resume the flow from the point at which it failed.
QCCR1D152882	Remove references to <code>dharma.runengine.parallel.max.runs</code> from configuration files	All references to dharma.runengine.parallel.max.runs have been removed from the <i>HP OO Administrator Guide</i> .
QCCR1D153093	Avoid restarting Central after making AD related configuration changes	It is no longer required to restart Central after making configuration changes related to Active Directory.
QCCR1D153737	Ability to return flow history details based on run IDs using SDK	Using the new - getFlowRunHistoryByRunId SOAP API method with the Software Development Kit, you can retrieve flow history details, based on run IDs.
QCCR1D155484	Studio fails to recognize ROI value change if check-in before save	When users changed the ROI value on a transition, and then clicked the check in icon, Studio did not prompt to save the change but proceeded to end the check in without saving the new value.
QCCR1D155839	After upgrading to 9.03, results under Current Runs take longer to display	It could take eight minutes for the Current Runs tab to load in Central.
QCCR1D156087	Localized <not_used> column is displayed on Reports Advanced tab of Web GUI	After an upgrade to 9.05.0001 (Japanese localized version of 9.05), localized strings with '<not_used>' appeared on the Advanced tab of the Reports tab in Central.
QCCR1D156703	Remove Session ID token from URL	Fixed
QCCR1D156299	After upgrading to 9.06, a Standalone Studio fails to start	Standalone Studio would not start, and an exception error occurred.

CR Number	Title	Description
QCCR1D156984	Change Studio guide regarding the execution permissions required to run a flow and its dependent subflows	The HP OO 9.07 Studio Guide has been updated to reflect the fact that to run or debug a flow, a user must have Read and Execute permission for every object in it, including dependent subflows.
QCCR1D157564	OO reports page displays negative numbers for run history ID values that exceed 2147483647	The OO reports page would display negative numbers for run history ID values that exceeded 2147483647.
QCCR1D157794	Node hyperlinks on Node Administration page are hardcoded to use https	This information has been added to the HP OO 9.07 Administrator Guide.

Fixed Defects in 9.06

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D113258	Request ability to schedule a flow from Central search results	A new Schedule button has been added to the Preview page, where search results are shown.
QCCR1D114069	The file name of the exported report becomes "____.txt"	In a Japanese installation of HP OO, after a report is run and exported as text, the file name is changed to "_____.txt".
QCCR1D120440	Stop objects from SSL communication from being cached & stored	It is now possible to prevent objects from being stored in caches (either proxy or browser), to prevent the accidental disclosure of sensitive data.
QCCR1D122821	HP OO Validation doesn't work on a List of Values (it validates the entire list instead of the individual items)	The flow didn't run because a validation was attempted against the whole list, instead of each list item.

CR Number	Title	Description
QCCR1D135294	Deleting multiple scheduled flows on the scheduler tab is not possible.	On the Scheduler tab, it was not possible to select and delete multiple scheduled flows at the same time. These had to be deleted one at a time, waiting for the page to refresh between each delete.
QCCR1D137842	Is any Central IP information stored in the HP OO Database?	The Administration Guide now describes how to change the IP information in a Central/clustered environment.
QCCR1D139414	Domain Name in HPHP OO AD-LDAP configuration is case-sensitive.	If a domain was configured in the HP OO AD-LDAP configuration in lower case, the user had to also enter the domain in lower case. For example, for domain\accountname , if DomMain\accountname was entered, logon was not possible.
QCCR1D142469	Add default number of occurrences when scheduling flows.	When a user scheduled an HP OO Flow, the default was to run every minute, with no end. It is now possible to configure the default number of occurrences when a new flow is scheduled.
QCCR1D142770	"Get Cluster Servers" operation fails in Web Interface if the user running it authenticates using AD.	In a cluster environment, if a user created a simple flow using the operation: /Library/Integrations/Hewlett-Packard/Operations Orchestration /Cluster/Get Cluster Servers and logged into Central using an Active Directory account, the flow would fail with an authentication error message. This occurred even though the user running the flow had the appropriate capabilities.
QCCR1D142775	Add property to allow grid activation by default in Studio.	There is now a configuration property in the Studio.properties file, which enables you to set the grid to be activated by default. To set the grid to be activated by default, use <code>dharmastudio.ui.activegrid=true</code> .

CR Number	Title	Description
QCCR1D142788	Enhance Input Inspector so new Input Fields can be inserted at the current cursor position	In the Input Inspector, when you add a new input field, it is added at the current cursor position, rather than at the end of the list.
QCCR1D142789	Add option to allow opening of all selected flows.	It is now possible to open multiple selected flows, with one click. Select the flows, right-click and select the option to open all.
QCCR1D142793	Configured responses for Error operations are not copied.	If a response was copied from one flow to another, customized responses were not copied. The newly pasted step would be set to the default response.
QCCR1D143434	Ability to duplicate/clone an existing schedule item	It was not possible to duplicate or clone an existing schedule item.
QCCR1D144942	After upgrading to 9.03.001 message [...] note: volatile triggers are effectively non-volatile in a clustered environment is printed more often in logs.	After an upgrade in a clustered environment, the following message was entered into the Central_wrapper.log file every minute: com.iconclude.dharma.scheduler.jobstore.SQLServerJobStoreTX - note: volatile triggers are effectively non-volatile in a clustered environment.
QCCR1D146271	Add API to allow managing permissions on repository objects	Two SOAP API methods have been added: <code>getPermissions</code> , <code>setPermissions</code>

CR Number	Title	Description
QCCR1D146362	Dojo library creates HTTP requests to nonexistent resources when opening Central web interface with Internet Explorer.	<p>When users logged in to Central with Internet Explorer, the Dojo library created HTTP requests to non-existent resources, resulting in error messages. Requests were made to the following files, and were repeated 10 -15 times:</p> <ul style="list-style-type: none"> • Central/js/dojo/cvml/manifest.js • Central/js/dojo/cvml.js • Central/js/dojo/dojo-0.4.3-opsware /__package__.js
QCCR1D146490	Disabling RAS heartbeat causes 'getRASInfo failed' on RAS Connection Status in RAS wrapper.log	<p>When the RAS heartbeat was disabled, the RAS was not initialized correctly. The connection status of the RAS on Central (under Administration > Node Administration > Remote Action Service (RAS) Infrastructure View) would show a connection failure status.</p>
QCCR1D147336	Pasting multi line data via IE for instant run truncates data.	<p>In a flow with a display input with a prompt, if a user tried to copy and paste multi-line data via Internet Explorer, only the data in the first line was pasted.</p>
QCCR1D148700	SDK Guide contains incorrect parameters for wget command.	<p>The incorrect parameters for the wget command have been corrected in the HP OO SDK Guide.</p>
QCCR1D148704	Update SDK Guide to reflect that RSFlowInvoke can be run from any location.	<p>The SDK Guide now reflects that RSFlowInvoke can be run from any location.</p>
QCCR1D120375	Add logging for specific security-related events	<p>Security related application events (such as failed authentication / login attempts, account locks, accesses with insufficient user rights, and so on) could not be logged on the application level.</p>

CR Number	Title	Description
QCCR1D149234	Adding SQLNET.ALLOWED_LOGON_VERSION=11 causes Central to fail with ORA-12514 error.	When a customer tried to connect after adding the SQLNET.ALLOWED_LOGON_VERSION=11 parameter, an error message would appear in Central and Studio could not connect to the repository.
QCCR1D150260	Invalid documented path to sample client code for WSCentralService	The SDK Guide, in <i>WS Central Service: Sample client code</i> , there is now a valid documented path to the sample client code for WSCentralService in SDK and .Net.
QCCR1D150486	Help links from Central and Studio are broken in 9.05	The Help Contents link was not working.
QCCR1D151162	Execution time of flows launched in Instant Run increases as more steps are being executed.	Flows launched in an instant run, which should have taken 70 seconds, would take four minutes or more to execute.
QCCR1D151204	HP OO 9.0x uninstaller script should stop in case the install procedure failed at the back-up step, and it did not perform any modifications on the system.	The installer now checks if any zip backups were created. If such files are found, the installer checks the archive files and deletes them if they are corrupt, and exits if it cannot delete the corrupt files.
QCCR1D151754	Export repository utility should allow the unencrypted export of system properties for backward compatibility issues with pre - 9.04 versions.	System properties were always encrypted when a repository was exported. Users who wanted to import these repositories into versions of HP OO earlier than 9.04 needed to manually update the values of the system properties.
QCCR1D152413	Rename getRunID method to getRunHistoryID in HP OO SDK	9.06 SDK Guide has been updated to specify that <code>WSRunHistoryDetails.getRunID()</code> is the ID of run history.

CR Number	Title	Description
QCCR1D152835	Flow reports filtering by location not working when folder names are not unique	In Web reports filtering, if you use the location field when trying to select a folder whose name is not unique, the last one is always selected. The Web filtering doesn't take into account that there may be nested folders sharing the same name.
QCCR1D152987	After 9.03 upgrade, saving a flow that contains an error is no longer possible	It was not possible to save a flow that had errors in it.
QCCR1D153218	After upgrading to 9.03, .NET SDK samples fail with: Could not establish trust relationship for the SSL/TLS secure channel	Any certificate that is used by Central can now be used from .NET SDK.
QCCR1D154852	Requirements for Flash Player in "System Requirements" document are not consistent	The System Requirements document has been updated.
QCCR1D155132	SSH Command operation execution becomes much slower after upgrade to 9.05	SSH Command operation execution is now as fast as it was in earlier versions.
QCCR1D142089	In Central UI: Flow Library> Flow Execution a "System Problem Detected" message appears when pausing a flow several times in a row.	If a flow was paused several consecutive times, an error would appear both in the Central user interface and in the logs. The page rendering was not released soon enough for the second request to take effect.
QCCR1D139356	Allow deletion of scheduled jobs only by the user who created the job.	Users were able to see and delete flows that were created by other users.
QCCR1D140228	Render HTML in Advanced reports page.	If the Response column in the Advanced tab of a run's report contains HTML content, it is not rendered correctly, and the HTML tags are visible.
QCCR1D143382	The filter result of "RegEx"+"Line Count" gets incorrect, if lines unmatched by "RegEx" exist.	If you used a RegEx filter and then a Line Count filter, this would result in incorrect results if there were some lines unmatched by RegEx .

CR Number	Title	Description
QCCR1D150624	Enable search functionality in the scheduler tab	It is now possible to search for a flow schedule in the Schedule tab, by entering the name of a flow in the box and clicking the Search button.
QCCR1D146368	Fixed	
QCCR1D132442	Fixed	

Fixed Defects in 9.05

The reference number for each fixed defect is the Quality Center Change Request (QCCR) number.

For more information about fixed defects, visit HP Software Support Online, or contact your HP Support representative directly.

CR Number	Title	Description
QCCR1D146458	Fixed	
QCCR1D149165	Running a RAS command sometimes fails with org.xml.sax.SAXParseException: Premature end of file	
QCCR1D144651	Exception java.lang.NullPointerException is thrown when performing a subflow hand off	This error occurs after a hand off. The error is only on this step, which uses system accounts. Without the hand off, there is no error.
QCCR1D120375	Adding logging for security-related events	Security-related application events must be logged on application level within a scalable logging system.
QCCR1D148701	High Availability Guide references incorrect paths for HP OO log files	The referenced path to central_wrapper.log is invalid on Linux environments.

Previous Defect Fixes Included in HP OO Versions 9.00.01 to 9.04

For more information about fixed defects from HP OO versions 9.00.01 to 9.04, download the relevant release notes from HP Software Support Online at <http://support.openview.hp.com/selfsolve/manuals>.

Working with the MySQL Database

Note: Perform this procedure only once.

1. Unzip the file **hpoo_9.07.0005.zip** to a temporary folder.
2. Run the **sp_reset_run_id.sql** script located under the temporary folder **/Upgrade_9.07.0005/resources** in order to add the stored procedure to your database, using the following command:

```
>mysql -u <database_user> -p <database_name> < sp_reset_run_id.sql
```

3. Modify the **init.sql** file to use the HP OO database schema name (replace dhama).
4. Copy the **init.sql** file to the installation directory of MySQL (for example, **C:\Program Files\MySQL\MySQL Server 5.1**).
5. Add the **init-file** option to **MySQLINSTALLDIR\my.ini**. For example, modify **C:\Program Files\MySQL\MySQL Server 5.1\my.ini** and add the following line:

```
init-file="C:\Program Files\MySQL\MySQL Server 5.1\init.sql"
```

6. Restart the MySQL server.
7. For more information on the **init-file** option:

<http://dev.mysql.com/doc/refman/5.0/en/option-files.html>

<http://dev.mysql.com/doc/refman/5.1/en/server-options.html#option%5Fmysqld%5Finit-file>

Note: Wait until the database is fully up before working with HP OO.

