HPE Service Activator

Migration Guide

for Microsoft Windows Server 2012 R2®, and Red Hat
Enterprise Linux 6.7 operating systems

Release: 8.0

March 15, 2016

Hewlett Packard
Enterprise

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Document id: p158-pd002109

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Install Location Descriptors

The following names are used to define install locations throughout this guide.

Descriptor	What the Descriptor Represents
$ACTIVATOR_OPT	The base install location of HPE Service Activator. The UNIX® location is `/opt/OV/ServiceActivator` The Windows® location is `<install drive>:\HP\OpenView\ServiceActivator`
$ACTIVATOR_ETC	The install location of specific HPE Service Activator files. The UNIX location is `/etc/opt/OV/ServiceActivator` The Windows location is `<install drive>:\HP\OpenView\ServiceActivator\etc`
$ACTIVATOR_VAR	The install location of specific HPE Service Activator files. The UNIX location is `/var/opt/OV/ServiceActivator` The Windows location is `<install drive>:\HP\OpenView\ServiceActivator\var`
$ACTIVATOR_BIN	The install location of specific HPE Service Activator files. The UNIX location is `/opt/OV/ServiceActivator/bin` The Windows location is `<install drive>:\HP\OpenView\ServiceActivator\bin`
$ACTIVATOR_THIRD_PARTY	In HPE Service Activator 5.1 and earlier, this was the location for Java components such as workflow nodes and modules. In HPE Service Activator 7.0 this location is no longer used; the new location is `$JBOSS_EAR_LIB`. The UNIX location was `/opt/OV/ServiceActivator/3rd-party` The Windows location was `<install drive>:\HP\OpenView\HPE Service Activator\3rd-party` Customized inventory files used to be stored in the following locations: UNIX: `$ACTIVATOR_THIRD_PARTY/inventory` Windows: `$ACTIVATOR_THIRD_PARTY\inventory`
$JBOSS_HOME	The install location for JBoss. The UNIX location is `/opt/HP/jboss` The Windows location is `<install drive>:\HP\jboss`
$JBOSS_DEPLOY	The install location of the HPE Service Activator J2EE components. The UNIX location is `/opt/HP/jboss/server/standalone/deployments` The Windows location is `<install drive>:\HP\jboss\server\standalone\deployments`
$JBOSS_EAR_LIB	Location for libraries (Java *.jar files) to be executed by the HPESA engine (workflow manager and resource manager): `$JBOSS_DEPLOY/hpsa.ear/lib`
$SOLUTION_HOME	The directory in which your solution resides: `$ACTIVATOR_OPT/SolutionName`

Conventions

The following typographical conventions are used in this guide.

Font	What the Font Represents	Example
Italic	Book or manual titles, and manpage names	Refer to *HPE Service Activator, Workflows and the Workflow Manager* and the *Javadocs* for more information
	Provides emphasis, introduces a new term	You *must* follow these steps.
	Identifies a variable or parameter	Run the command: `InventoryBuilder` *<sourceFiles>* The *assigned_criteria* parameter returns an ACSE response.
	Location descriptor	*$JBOSS_DEPLOY*
`Computer`	Text and items on the computer screen	The system replies: `Press Enter`
	Command names	Use the `InventoryBuilder` command
	Method names	The `get_all_replies()` method does the following…
	File and directory names	Edit the file *$ACTIVATOR_ETC*`/config/mwfm.xml`
	Window/dialog box names	In the `Test and Track` dialog…
`Computer Bold`	Text that you must type	At the prompt, type: **`ls -l`**
Keycap	Keyboard keys	Press **Return**
`[Button]`	Buttons on the user interface	Click `[Delete]`. Click the `[Apply]` button.
`Menu Items`	A menu name followed by a colon (`:`) means that you select the menu, then the item. When followed by an arrow (`->`), a cascading menu follows.	Select `Locate:Objects->by Comment`

In This Guide

This guide gives instructions on migrating your HPE Service Activator solution from version 7.0 to version 8.0. The guide lists the changes that have been made in version 8.0 and explains how those changes affect the migration process.

First of all, read the Migration Overview sections in this guide to acquaint yourself with the migration issues. Then, when reading the Migration Tasks section, notice how those issues influence your migration tasks.

Before starting the migration process, read the *Release Notes* for HPE Service Activator 8.0. Also read the *Installation Guide* to become familiar with the installing and configuring HPE Service Activator 8.0 as well as the document *Solution Separation and the Deployment Manager* to get a full overview of HPE Service Activator solutions. The documents are available either in the `Documentation/` directory on your HPE Service Activator DVD or in the `$ACTIVATOR_OPT/docs/` directory of the installed product.

If you wish to migrate your solution from HPE Service Activator 6.2, you should also read the *HPE Service Activator 6.2 to 7.0 Migration Guide*. This document is available in the `Documentation/` directory on your HPE Service Activator DVD. The migration database scripts for this migration are included in the HPE Service Activator 8.0 and can be found in the directory specified in the migration guide.

Please note that the operating system Red Hat Enterprise Linux 6.6 is no longer supported. Instead HPE Service Activator 8.0 has added support for Red Hat Enterprise Linux 6.7. The supported databases are Oracle 12g, Oracle 12g RAC, and Postgres Plus Advanced Server 9.4.

A number of file/directory locations are specified in this guide as environment variables, e.g. `$ACTIVATOR_OPT`, `$SOLUTION_HOME`, etc. You can find the definition for these install locations in the "Install Location Descriptors" section.

> **NOTE** This guide does *not* describe how to migrate an existing Oracle database to Postgres Plus Advanced Server. For information about how to migrate an Oracle database to Postgres Plus Advanced Server, you should study the document *Postgres Plus Advanced Server Migration Guide* which is available on EnterpriseDB's homepage (`http://www.enterprisedb.com`).
>
> **IMPORTANT** HPE cannot be held responsible for the methodologies and processes described in the document *Postgres Plus Advanced Server Migration Guide*.

Audience

The audience for this guide is the Solutions Integrator who has developed the HPE Service Activator 7.0 solution and wishes to migrate it to HPE Service Activator 8.0.

Chapter 1
Migration Overview

Migration is a multi-staged manual process that requires careful planning. There are several steps to follow to ensure the successful migration of a HPE Service Activator solution. These steps will be covered in more detail later in this document:

- Develop an understanding of whether the components of an earlier version of HPE Service Activator must be modified in order to work correctly in a new version.
- Record and understand the customizations and configurations that have been made in an earlier version in order to properly migrate these customizations to a new installation.
- Install the new version of HPE Service Activator on new hardware using an evaluation license.
- Migrate all components of the customer specific solution that have been applied to the earlier installation HPE Service Activator.
- Export the content of the old database and import is into the new database and run the database migration scripts in order to make the DB schema compatible with HPE Service Activator 8.0. You can skip this step, if you don't wish to reuse the content of the old database or if you have your own procedure to migrate the solution data.
- Carefully test your deployment in a production environment.
- Shut down the earlier version of HPE Service Activator.
- Move the license file used by the earlier version of HPE Service Activator to the new installation.
- Start the new version of HPE Service Activator.

> **NOTE 1** This guide assumes that the solution has been deployed using the Deployment Manager; i.e. all solution components are located in the `$SOLUTION_HOME` directory.
>
> **NOTE 2** Migration to a newer version of Oracle or to Postgres Plus Advanced Server is outside the scope of this document.

Chapter 2
Migration Tasks by Component

The following sections break down the migration tasks by HPE Service Activator component. These sections will point out the information you will need to record and carefully consider before migrating your solution.

2.1 Database

In HPE Service Activator 8.0 the system database plays a major role. The schema and the contents of the system database have changed slightly since HPE Service Activator 7.0; hence, your old database needs to be modified if you wish to reuse it in your new installation. The majority of the changes in the system database are a result of the added support for Service Order registry, conflict module using master/slave concept, and the Queue Notification Module.

HPE Service Activator 8.0 comes with three SQL scripts that can be used to migrate a HPE Service Activator 7.0 system database to version 8.0.

> IMPORTANT   There are is no scripts to roll back a HPE Service Activator 8.0 system database to version 7.0. Hence, you should make sure to make a backup of the system database before attempting to migrate it to version 8.0.

It is recommended that you create a new database instance and/or a new database user to be used by HPE Service Activator 8.0 and then decommission your old database after you have completed all migration tasks.

Migrating service data from the old resource tables to the new database is not a major migration project, however it must be planned.

2.2 Workflows and the Workflow Manager

Workflow Manager modules and nodes that have been developed for HPE Service Activator 7.0 can be reused with HPE Service Activator 8.0. They just need to be recompiled with java 8. Except for one thing. The sender_module interface has got a number of new methods which must be implement. Please see the Javadoc for the interface.

Workflows developed for HPE Service Activator 7.0 can be used "as-is" with HPE Service Activator 8.0.

However have in mind if you have been using in HPE Service Activator 7.0 the HTTPSenderModule (com.hp.ov.activator.mwfm.engine.module.HTTPSenderModule) then the name of the module has changed to HTTPRequestModule and the class name to com.hp.ov.activator.mwfm.engine.module.HTTPRequestModule.

2.3 Inventory

The layout of the database schema generated by the Inventory Builder has not changed between HPE Service Activator 7.0 and 8.0 if you do not use any of the new features in 8.0. Fields in the beans are now private and getter and setter methods must be used instead of direct access. CommonBean has been split in two (CommonBean & CommonBean_) java files like it is done for regular inventory java beans..

2.4 Inventory Trees

Inventory trees developed for HPE Service Activator 7.0 can be used directly in HPE Service Activator 8.0.

2.5 Plug-ins

If you have developed your own plug-ins for HPE Service Activator 7.0, you can use them directly after recompiling with java 8 in HPE Service Activator 8.0.

2.6 Compound Tasks

Compound tasks can be reused without changes.

2.7 Custom JSPs

If your solution contains custom JSPs, you can use them without modification in HPE Service Activator 8.0.

2.8 Web UI

The file `$JBOSS_DEPLOY/hpsa.ear/activator.war/WEB-INF/web.xml` has been changed slightly since HPE Service Activator 7.0. So if you have manually changed the `web.xml` file you need to manually merge the changes into the new `web.xml` file.

2.9 Data Sources

As in HPE Service Activator 8.0, data-sources are configured in one common file named `$JBOSS_HOME/standalone/configuration/standalone.xml`.

2.10 Deployment Manager and Solutions

Solutions built to be deployed with HPE Service Activator 7.0's Deployment Manager should be deployable in HPE Service Activator 8.0..

2.11 Localization (l10N)

As in HPE Service Activator 7.0, all resource bundle files are grouped in a single JAR file called `$JBOSS_EAR_LIB/nls.jar`. Hence, if you need to follow this procedure in order to localize the resource bundle files that are located in the `$ACTIVATOR_ETC/nls` directory:

- Create copies of the resource bundle files and prefix them appropriately (i.e. using the country code).
- Edit the messages in the copied resource bundle files.
- Create a new JAR file named `nls.jar` (it must contain *all* resource bundle files) and copy it to the `$JBOSS_EAR_LIB` directory.

2.12 Common Network Resource Model

If your solution makes use of the Common Network Resource Model (CRModel) and you do not want to preserve the database tables then use deploy_oracle.xml or deploy_ppas.xml. If you want to migrate from HPE Service Activator 7.0 then use the deploy_update7.0.xml file when deploying the solution on the new installation. When doing this then the "create inventory tables" checkbox should not be checked.

However before doing any migration from 7.0 then in the 7.0 installation you need to ensure no dataload process is ongoing and no post process dataload activities are pending. You can check this by open the dataload inventory tree and see that the "Dataload Status" is "no dataload is processing" and that the branch "Post process" must be empty. Apart from this you must also run manually in the new installation the sql script etc/sql/update7.0_crmodel_oracle.sql or etc/sql/update7.0_crmodel_ppas.sql to migrate the the database for the CRModel for version 8.0. The scripts are part of the CRModel for 8.0.

The model has been changed in different places to make it easier to support virtual network equipment. The main changes are the following:

- The Network Element bean now inherits from a new zystem (sytem) bean
- The termination point bean does not exist any more only interfaces exist now
- A new common component bean has been introduced which both zystem and interface inherit from
- Location can be used directly as a root element and does not need to be included in a region anymore

In general the beans Network Element, Interface, Network, Location, and Region contain the same fields as in the previous version. For full detail about the new CRModel then please read chapter 8 in "System Integrator's Overview".

2.13 Integrations with NA and NNMi

HPE Service Activator 8.0 integrates with NA version 10.10 and NNMi version 10.00 are supported. Older versions of NA and NNMi are not supported.

Chapter 3
Migration Tasks

This chapter is grouped into nine major steps:

1. Install the new version of HPE Service Activator on new hardware using an evaluation license.
2. Copy the solution files, i.e. all files from the `$SOLUTION_HOME` directory, from the old server to the `$SOLUTION_HOME` directory of the new server.
3. Update the solution files on the new server so that they are compatible with HPE Service Activator 8.0.
4. Migrate your old system database as well as the old inventory database so that they work with HPE Service Activator 8.0. (Optional)
5. Configure the new version of HPE Service Activator.
6. Deploy your solution on the new version of HPE Service Activator.
7. Shut down the old HPE Service Activator version.
8. Get a new license for HPE Service Activator 8.0 (or move your current HPE Service Activator 7.0 license) and install it in the new installation.
9. Start the new version of HPE Service Activator and test your solution.

> **NOTE 1** Step 4 can be skipped if you do not want to migrate your old data or if you have defined other processes for migrating your data.
>
> **NOTE 2** If you are running your solution in a cluster environment, you need to deploy the modified solution on all your cluster nodes. However, you must only migrate the system and inventory databases once.

3.1 Install the New Version of HPE Service Activator

Install HPE Service Activator 8.0 on new hardware following the instructions in the *Installation Guide*. This includes installing Java Development Kit 8.0.

Install an evaluation license during the install phase. The evaluation license is valid for 180 days.

When installing the new version of HPE Service Activator, you will need to supply the username, password, and database hostname, and database instance name values to ActivatorConfig. Make sure that you use the new database instance and make sure that the "Create database tables" checkbox is selected since ActivatorConfig will not accept the database schema from an earlier version of HPE Service Activator.

> **NOTE** If you want to migrate the system database from HPE Service Activator 7.0, you must *not* run ActivatorConfig as part of the installation process.Just close the window when it is displayed.

3.2 Copy the Solution Files

Copy all solution files from the old server to the new server using the following steps:

- Create a `$SOLUTION_HOME` directory on the new server. The name of the directory must match that of the solution and its length must not exceed 8 characters.

- Copy all files from `$SOLUTION_HOME` directory on the old server to the `$SOLUTION_HOME` directory on the new server

3.3 Update the Solution Files on the New Server

This section describes at a high-level the steps that you need to follow in order to migrate your solution from HPE Service Activator 7.0 to version 8.0. The solution components that do *not* need any modifications will not be mentioned.

3.3.1 HPE Service Activator RMI Interface

The Java RMI interface in HPE Service Activator 8.0 is backward compatible with HPE Service Activator 7.0. If your solution makes use of the RMI interface, you should not need to make any modifications. However there is one exception and that is there are a few methods which was used by Service Provisioner 7.0 which have been removed.

3.3.2 Custom Workflow Nodes and Handlers

You can reuse your own custom workflow nodes and handlers with HPE Service Activator 8.0. They will be deployed to the runtime system as part of the Deployment Manager's solution deployment process. The only thing you need to do is to recompile the java classes with Jave 8.

3.3.3 Custom Workflow Module

You can reuse your own custom workflow modules with HPE Service Activator 8.0. The only thing you need to do is to recompile the java classes with Jave 8.

3.3.4 Workflows

Your workflows from HPE Service Activator 7.0 can be reused directly in HPE Service Activator 7.0. If you migrate the system database using the procedure described later in this chapter, your workflows will be migrated automatically. Otherwise, your workflows will be deployed in the new system database as part of the Deployment Manager's solution deployment process.

3.3.5 Inventory

You can reuse your resource definition files from HPE Service Activator 7.0. The only thing you need to do is to recompile the java classes with Jave 8 if you have any customized bean which are not compiled as part of the standard procedure.

3.3.6 Inventory Trees

If you migrate the system database from HPE Service Activator 7.0 to version 8.0, the inventory trees will be migrated automatically. Otherwise, you will need to use the Deployment Manager to deploy your inventory trees to HPE Service Activator 8.0.

> NOTE   If you undeploy your old inventory trees, you will need to recreate all role mappings to tree, operation types, and branch types.

3.3.7 Plug-ins

Plug-ins can be reused without changes with HPE Service Activator 7.0. If you migrate the system database from HPE Service Activator 7.0 to version 8.0, the plug-ins should be deployed again after recompiled to java 8..

Alternatively, your plug-ins can be deployed using the Deployment Manager as part of the solution deployment process.

If your solution uses any of the plug-ins delivered with HPE Service Activator (GenericCLI, GenericHTTP, or GenericLDAP), you should deploy the new plug-ins.

3.3.8 Compound Tasks

Compound tasks can be reused without changes. If you migrate the system database from HPE Service Activator 7.0 to version 8.0, the compound tasks will be migrated automatically. Alternatively, your compound tasks can be deployed using the Deployment Manager as part of the solution deployment process.

3.3.9 Custom JSPs

Your custom JSPs should work with HPE Service Activator 8.0 without any modifications.

3.3.10 Customized AskFor Node JSPs

No changes are required for the customized AskFor node JSPs. Your customized AskFor node JSPs will be copied to the proper location as part of the Deployment Manager's solution deploy process.

If you are using customized AskFor JSPs you need to edit the configuration file `$JBOSS_DEPLOY/hpsa.ear/activator.war/WEB-INF/web.xml` and set the value of the `customizeAskForNodeJSP` to `true`.

3.3.11 Solution

Since the files in the `$SOLUTION_HOME` directory on your new server are a copies of the old solution (including the old DTD files), you need to do the following before deploying your solution on HPE Service Activator8.0:

- Copy $ACTIVATOR_ETC/config/deploy.dtd and $ACTIVATOR_ETC/config/version.dtd to $SOLUTION_HOME.
- Copy $ACTIVATOR_ETC/workflows/workflow.dtd to $SOLUTION_HOME/etc/workflows.
- Copy $ACTIVATOR_ETC/config/inventoryTree/inventoryTree.dtd to $SOLUTION_HOME/etc/config/inventoryTree.
- Copy $ACTIVATOR_ETC/config/bean.dtd to $SOLUTION_HOME/inventory.

> **NOTE**   Not all DTDs are strictly necessary for the solution to be deployable. However, for your own convenience you should ensure that all HPE Service Activator 7.0 DTDs are replaced with their HPE Service Activator 8.0 counterparts.

3.4 Migrate the System and Inventory Databases

> **NOTE**   This step is optional. If you do not wish to reuse your old data or if you have defined your own procedure for migrating data, you can skip this step.

The HPE Service Activator system database schema has changed slightly from version 7.0 to 8.0. In order to migrate your system database, you need to perform the following steps:

- Log into the old system database server and export the database to a file using standard Oracle/PPAS utilities. You need to do this when no jobs are running and no scheduled jobs will be scheduled during the migration period.
- Log into the new system database server and import the file that you just exported.
- The migration SQL scripts will create temporary copies of some of the database tables. Therefore, you should ensure that you have approximately 50% free space on the new database server to secure a successful database migration.
- On the new database server, run the following migration SQL script:

```
For Oracle $ACTIVATOR_OPT/migration/migrate_7.0_to_8.0_Oracle.sql
For PPAS
$ACTIVATOR_OPT/migration/migrate_7.0_to_8.0_PPAS.sql
```

Now, your HPE Service Activator system database will be ready for use with HPE Service Activator 8.0.

In order to migrate your inventory database, you need to perform the following steps:

- Nothing to be done.

Now, your HPE Service Activator inventory database will be ready for HPE Service Activator 8.0.

> NOTE   If your system and inventory data are stored in the same database (which is frequently the case) you only need to run the export/import steps once.

3.5 Configure the New Version of HPE Service Activator

If you have completed step 4 and migrated your databases from HPE Service Activator 7.0 to 8.0 you will now need to run ActivatorConfig in order to generate new configuration files. You must remember to uncheck the "Create database tables" checkbox.

If, on the other hand, you have skipped step 4, you must now run ActivatorConfig and remember to *check* the "Create database tables" checkbox.

After having run ActivatorConfig you may want to make manual changes to HPE Service Activator's configuration files. This migration guide will not walk you through all HPE Service Activator configuration files. However, the following configuration files are commonly modified in HPE Service Activator solutions:

- `$ACTIVATOR_ETC/config/mwfm.xml`
- `$ACTIVATOR_ETC/config/resmgr.xml`
- `$ACTIVATOR_ETC/role_mappings.xml` (optional)
- `$JBOSS_DEPLOY/hpsa.ear/activator.war/WEB-INF/web.xml`

Go through all these files (as well as the other configuration files that you need to modify) and carefully migrate your configuration changes from the corresponding configuration files on the old HPE Service Activator server.

3.6 Deploy Your Solution

After having modified your solution so that it is compatible with HPE Service Activator 8.0, you can deploy it using the Deployment Manager's deploy solution operation. If you are running HPE Service Activator in a cluster environment, you need to deploy your solution on all cluster nodes. In this case you need to make sure that you only perform database operations (such as deployment of workflows, inventory tree, etc.) once.

3.7 Shut Down the Old Version of HPE Service Activator

The recommended way to shut down HPE Service Activator is as follows:

- Stop feeding new workflows into the Workflow Manager.
- Allow all running workflows to complete.

Now, you can stop the old version of HPE Service Activator as follows:

- **HP-UX:** /sbin/init.d/activator stop
- **Linux:** service activator stop
- **Windows:** Stop the service called "HPE Service Activator"

3.8 Install a New License File

Once you have obtained a new license file for HPE Service Activator 8.0 you need to install it. This is done by running the following utility and following the on-screen instructions:

- **UNIX:** $ACTIVATOR_OPT/bin/updateLicense
- **Windows:** $ACTIVATOR_OPT/bin/updateLicense.bat

3.9 Start the New Version of HPE Service Activator

Start the new version of HPE Service Activator as follows:

- **Linux:** service activator start
- **Windows:** Start the service called "HPE Service Activator"

Finally, you should test the correct operation of your solution according to your test specification.