
HP Service Activator

Release Notes

Edition: V62-1A

for Microsoft Windows Server 2008 R2®, HP-UX 11i v3,
and Red Hat Enterprise Linux 6.4 operating systems



October 2013

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Document ID: p158-rn002357

Introduction

This document provides late-breaking information about the *HP Service Activator V62-1A* product. It specifies the system requirements as well as known issues and workarounds.

Note that you must read the *HP Service Activator Installation Guide* prior to installing the Service Activator product. This guide can be found on the distribution DVD in the `/Documentation` directory.

The *HP Service Activator* DVD is organized as follows:

- `/Binaries/Unix`:
Contains the HP-UX and Linux install files for *HP Service Activator*
- `/Binaries/Windows`:
Contains the Windows install file for *HP Service Activator*
- `/Documentation`:
Contains all product documentation,
- `/ReadMe`:
Location of the end user license agreement
- `/OpenSource`:
Contains terms and conditions for Open Source software used in HP Service Activator, including source code for all Open Source components

Required Hardware and Software

This section describes the system requirements that must be considered prior to installing and running *HP Service Activator*. Below are the minimum requirements for HP Service Activator. The disk space requirements for the database software (Oracle or Postgres Plus Advanced Server), the Java Development Kit, Cygwin, and Secure Shell can be found in the product literature for those applications.

Activation Server, Database Server and Web Browser Client Systems

Hardware Requirements, HP-UX

The Service Activator server system must meet the following minimum requirements:

- Itanium system
- 2 GB of memory
- Available disk space as follows:
 - 1 GB under `/opt`
 - 1 GB under `/etc`
 - 1 GB under `/var`
- The database requirements are described in the *Database Requirements* section below

Hardware Requirements, Linux

The Service Activator server system must meet the following minimum requirements:

- x86-64-bit system
- 2 GB of memory
- Available disk space as follows:
 - 1 GB under `/opt`
 - 1 GB under `/etc`
 - 1 GB under `/var`
- The database requirements are described in the *Database Requirements* section below

Hardware Requirements, Windows

The Service Activator server system must meet the following minimum requirements:

- x86-64-bit system
- 1 GB of memory
- 1 GB on the drive where Service Activator is installed
- The database requirements are described in the *Database Requirements* section below

Database Requirements

Service Activator requires the availability of a database before installing Service Activator. The supported databases are:

- Oracle 11g and Oracle 11g RAC
- Postgres Plus Advanced Server 9.2

The database may be installed on the same server as Service Activator or may be accessed remotely (but it must be located in the same subnetwork). You may also use an existing database that is already used by another application. In that case, you need to create a new database user (if Oracle is used) or a new database instance (if Postgres Plus Advanced Server is used) for exclusive use by Service Activator.

Software Requirements

The Service Activator server must have the following software installed and configured. For additional installation and configuration information please refer to the *HP Service Activator Installation Guide*.

- HP-UX 11i v3, Red Hat Enterprise Linux 6.4 (64-bit), or Microsoft Windows Server 2008 R2. Windows Vista and Windows 7 are supported for development purposes, only. In all cases, all the latest OS patches should be installed.
- Microsoft Internet Explorer 9.0, Firefox 24, or Chrome 30 web browser to access the web-based user interface of *HP Service Activator*.
- Java™ Development Kit (JDK) version 6.0.17 for HP-UX, 6.0 update 37 (32-bit) for Windows, and 6.0 update 37 (64-bit) for Linux or a later version (it must be a 6.0-based Java version; 7.0 versions are not supported). See the *HP Service Activator Installation Guide* for the exact Java versions required based on your activation server platform.
- Oracle 11g, Oracle 11g RAC, or Postgres Plus Advanced Server database software. The database server does not need to be installed on the Service Activator server; it can be installed on any server that is accessible to the Service Activator server. Please also refer to the section *Database Requirements* above.

Note: The HP Service Activator installation kit includes the JBoss application server which is needed by Service Activator. The version of JBoss that is needed by Service Activator is included on your installation DVD and will be installed automatically in the appropriate location when Service Activator is installed. You do not need to install JBoss. The use of any other version of JBoss is not supported.

Target System

See the HP Service Activator Installation Guide for information on the various target system requirements.

Changes and Defect Fixes

This section provides a list of changes to the product since HP Service Activator 6.1 (V61-1A) that are visible to end users and/or system integrators. Defect fixes are also listed.

Changes

The following list highlights the new and noteworthy features in HP Service Activator 6.2.

- **Usage Monitoring**
 - Added support for counting the number of processed service requests through a new mandatory Usage Monitoring Module.
 - Support for generation of usage reports containing historical information about the number of processed service requests. The usage reports is intended for customers using HP Service Activator with a Pay-As-You-Grow license.
 - **Licensing**
 - Improved the visibility of the HP Service Activator license key on the web UI.
 - Added license key information to usage report for improved license key tracking.
 - **Workflow Manager**
 - Added new `ExecuteMacro` workflow node. This node is similar to the `StartJobAndWait`; however, instead of running “child workflows” as independent workflow jobs, the `ExecuteMacro` workflow node execute the workflow nodes of “child workflows” within the same workflow job.
 - Added four new end and error handlers: `ComposeMessageHandler`, `MultiAssignHandler`, `SendMessageHandler`, and `VariableMapperHandler`. The functionality of the handlers is identical to the workflow nodes of similar names; the only difference is that they can be used in workflows as end and error handlers.
 - Removed support for the `FileTransactionModule`. Please use the `DBTransactionModule` instead.
 - Added an extra parameter to the `JobRequestDescriptor` constructor. Please read the HP Service Activator Javadocs for more details.
 - Added a new optional parameter called `affected_rows` to the workflow node `ExecSQLStatement`. When set, this parameter returns the number of rows that were affected by the SQL statement executed by the node. In addition, the log level of a log statement (“*N* rows affected...”) has been demoted from `INFORMATIVE` to `DEBUG`.
 - **Inventory Subsystem**
 - Database sequences generated by the Inventory Builder will now always have the `NOCACHE` option set.
 - **Common Network Resource Model**
 - New version of the `CRModel` solution, version 2.2.0. Added support for “Card Type” in the data model.
 - **HP Network Automation (NA) integration**
 - HP Service Activator now supports integration with NA version 9.2. Integration with earlier versions of NA is no longer supported.
 - **GenericCLI plug-in**
 - Added support for specifying the character encoding used when communicating with target equipment. A new optional attribute called `encoding` has been added to the `<CLI>` element; the character encoding can be specified using this attribute. If not
-

specified, the character encoding defaults to ISO-8859-1 to maintain backward compatibility.

- Added support for connect timeout (for Telnet, SSH, and Raw) to avoid excessive wait times if target equipment is unresponsive. The connect timeout can be specified using a new optional `timeout` attribute that has been added to the `<Connect>` element; the timeout value is specified in seconds. If the attribute is not set the GenericCLI plug-in will behave as it did previously.
 - Added support for passphrase-protected SSH version 1 and 2 private keys by means of a new optional attribute called `ssh.passphrase`; RSA and DSA keys generated using OpenSSH are supported. If an SSH key is passphrase-protected the passphrase can be set using this attribute (clear text).
 - Upgraded to new version of Maverick SSH library (version 1.4.45).
 - Upgraded to new version of Apache Commons Net (version 3.2).
- **Connection Pool**
 - When using dynamic pools the attributes specified in the `<CLI>` element are now written to the dynamic connection pool's `<SessionManagement>` element. This makes it possible to see the attribute values from the Pool Management UI.

Defect Fixes

The following list highlights the defects that have been fixed since HP Service Activator 6.1 (V61-1A):

- **Workflow Manager**
 - Fixed an issue in the `mwfmtool`'s `startjob` command that lead to problems if an initial case-packet variable contained an equals sign (=).
 - Fixed an issue in the `PutMessage` workflow node (and `PutMessageHandler`) that could cause the logs to be flooded with error messages if the database connectivity was lost.
 - Fixed a bug in the activation module (`ActivationModule`) that lead to dynamic task lists to always return OK even in case of a failing task.
 - Fixed a potential deadlock that could happen during workflow load if a cluster contained three or more nodes *and* if they were all started at exactly the same time.
 - Fixed an issue in the `KeepAliveModule` that could result in the “Lock State” displaying a wrong value when using the `mwfmtool getstatus` command when running HP Service Activator in a cluster configuration. The issue happened if a cluster node was locked, then stopped, and finally restarted *before* the takeover process was finished.
- **ActivatorConfig**
 - Fixed an issue in the `ActivatorConfig` startup script on UNIX that caused it to fail if launched from another directory than `$ACTIVATOR_OPT/bin`.
 - Fixed an issue in `ActivatorConfig` when using the `-f` option that caused it to set the database vendor to “Oracle” even though the user had previously selected “EnterpriseDB”. The issue only affected Linux and HP-UX platforms.
- **Business Calendar**
 - Fixed a bug in the Business Calendar UI that made it impossible to create or edit business calendars.
 - Fixed an issue in the Business Calendar UI that lead to various rendering issues in Internet Explorer 9.
 - Fixed a problem in the Business Calendar UI that resulted in the inability to toggle AM/PM radio buttons in the “weekly view”. This issue only occurred when using 12 hour time format.

- Fixed a problem in the Business Calendar UI that could result in the “weekly view” being inadvertently changed when adding a new holiday.
- **Web Service Designer**
 - Fixed an issue in the Web Service Designer’s startup script on UNIX that lead to environment variables being wrongly initialized. The problem was that Windows syntax had mistakenly been used instead of UNIX syntax.
- **Workflow Designer**
 - Fixed an issue in the Workflow Designer that resulted in workflow contracts not being deleted in certain situations.
 - Fixed an issue in the Workflow Designer that could cause it to delete the state view layout. The issue did not affect the functionality of the workflow.
- **Inventory Subsystem**
 - Fixed an issue that caused search and filter operations to fail in certain situations. The issue occurred if the inventory UI branch used the `<Scroll>` functionality *and* the user tried to apply a search or filter operation *and* the bean field referenced by the label did not match the SQL column name defined for that field.
 - Fixed an issue in the Inventory UI that could cause context menu operations to fail. The issue could occur if one or more menu items were only displayed when a certain condition was met. When this happened, the internal data structure in the Inventory UI that kept track of menu items could be wrongly indexed, and this – in turn – could cause the menu operation to fail.
 - Fixed an issue in the Inventory Tree Designer that could lead to valid values not being accepted for `FindBy` keys. The problem was caused by a wrong prefix for referencing variables. Instead of prefixing with `variable:` the prefix `variable.` must be used. Also fixed an issue related to the checks for validating key values.
 - Fixed an issue that resulted in errors when writing large CLOBs to the Inventory database. This issue only occurred if an Oracle database was used.
 - Fixed an issue that could result in a wrong branch being displayed on the Inventory UI. The issue could happen for `<Scroll>` branches if they contained more than one label *and* if the `branch_name.field_name` notation was used in any of the labels.
 - Fixed an issue in the Inventory UI related to the use of roles. The problem was that if a condition had a reference to a role, only the role permissions were checked.
 - Fixed an issue in the Inventory UI that caused all branches inside a “scroll” element to be collapsed in certain cases. The issue could, for instance, happen if the inventory tree was refreshed *while* the currently displayed elements inside the “scroll” element were not the *first* page.
 - Fixed an issue that lead to the `update` attribute being ignored for primary key fields that defined a `ListOfValues`.
 - Fixed a `NullPointerException` in the Inventory Tree Designer that made it impossible to add operations to a branch.
 - Fixed a bug in the Inventory Tree Designer that resulted in the inability to modify fields of a copied branch. When trying to modify field of a copied branch, the modifications were mistakenly applied to the original branch and not to the copied branch.
- **Connection Pool**
 - Fixed an issue related to nested connection pool redirection that could happen in rare cases.

- Fixed a bug in the way timeout works for dynamic pools. Instead of basing the timeout on the last time the pool was used, the timeout was mistakenly based on the time of the pool creation.
 - Fixed an issue in the connection pool UI that made it impossible to unregister pools with a limited number of connections *if* Service Activator was running in a clustered environment. The UI mistakenly displayed a disabled list with the value `NONE` selected; the list should have shown the actual node where the pool was running.
 - Fixed an issue related to dynamic connection pools that caused attribute values from `<CLI>` element to be discarded. Attributes from the `<CLI>` element are now passed to the `<SessionManagement>` element for dynamic pools.
 - Fixed an issue in the Connection Pool could lead to incorrect rollback of compound tasks. The issue happened if the connection pool resided on a cluster node that was different from the cluster node running the workflow.
- **UI**
 - Fixed an issue in the Log Search UI that caused it to look wrong in Internet Explorer 9.
 - Increased the sizes of the “Clean Up” UI windows for cleaning up “Statistics Information” and “Database Messages”. The increased size was necessary to ensure that the action buttons are visible when the HP Service Activator UI is localized to another language than English.
- **GenericCLI plug-in**
 - Fixed an issue that caused transmission of control characters in `<Confirm>` patterns to malfunction.
 - Fixed a race condition that could lead to undesirable (but harmless) stack traces in the `server.log` and in the Service Activator logs when disconnecting from a target system *or* in case of timeouts.
 - Fixed an issue that in rare cases could mistakenly cause the GenericCLI plug-in to add the string "null" to the response string. When this happened, the result could be that the activation was perceived by HP Service Activator as a failed activation even though the activation command was successfully executed.
 - Replaced Maverick SSH library with a new version that does not contain Apache ORO classes. The functionality has *not* been changed.
 - Upgraded to a new version of the SSH library used by the GenericCLI plug-in. The library upgrade makes the GenericCLI plug-in more resilient to SSH protocol violations (in particular, issues with target equipment sending zero length packets – such as Huawei equipment – is now handled better).
- **Miscellaneous**
 - Updated the Postgres Plus Advanced Server (PPAS) JDBC driver to version 9.2.1.4. This update was necessary because the previous JDBC driver lacked some JDBC 4.0 features.
 - Fixed an issue that could lead to errors when randomly getting new database connections. The issue was a result of Oracle’s JDBC driver requiring the system parameter `java.security.egd` to be set for certain functionality. This issue only affected Linux platforms.
 - Replaced Maverick SSH library with a new version that does not contain Apache ORO classes. The Apache ORO classes in the SSH library could lead to collisions if the solution included a different version of Apache ORO which, in turn, could cause serialization problems.

Code Signing

This Software Product from HP is digitally signed and accompanied by Gnu Privacy Guard (GnuPG) signatures. HP strongly recommends using signature verification on its products, but there is no obligation. Customers will have the choice of running this verification or not as per their IT Policies.

Installing and Configuring Gnu Privacy Guard (GnuGP)

If you do not already have GnuGP installed, you will first need to download and install it. For information about obtaining and installing GnuGP, see <http://www.gnupg.org>

Before verifying the signatures delivered on the HP Service Activator DVD, you need to configure GnuGP for accepting the HP signature. To do this, follow these steps:

1. Log on your system
2. Get the HP public key from following location:

```
https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning
```

Save the key as `hpPublicKey.pub`.
3. Import the key into GnuPG by running this command:

```
gpg --import hpPublicKey.pub
```

Verifying the Authenticity and Integrity of the Software

The procedures listed below allow you to assess the integrity of the software before installing it, by verifying the signatures of the software packages.

HP-UX 11i v3

From a command prompt, go to the `/Binaries/Unix` directory on the DVD and run the following commands:

```
gpg --verify hpsa.depot.sig hpsa.depot
gpg --verify jboss.depot.sig jboss.depot
```

Look for the following output from the two `gpg` commands:

```
gpg: Good signature from "Hewlett-Packard Company (HP Codesigning Service)"
```

Red Hat Enterprise Linux 6.4

From a command prompt, go to the `/Binaries/Unix` directory on the DVD and run the following command:

```
gpg --verify HPSA-V62-1A.x86_64.rpm.sig HPSA-V62-2A.x86_64.rpm
```

Look for the following output from the `gpg` command:

```
gpg: Good signature from "Hewlett-Packard Company (HP Codesigning Service)"
```

Microsoft Windows Server 2008 R2

From a command prompt, go to the `/Binaries/Windows` directory on the DVD and run the following command:

```
gpg --verify ServiceActivator.exe.sig ServiceActivator.exe
```

Look for the following output from the `gpg` command:

```
gpg: Good signature from "Hewlett-Packard Company (HP Codesigning Service)"
```

Known Issues and Defects

This section presents issues you may encounter when using the *HP Service Activator* product.

General

Running Service Activator under a non-English locale

- On Windows Server 2008 R2 Multi-Language Version, Service Activator always starts in an English locale after reboot, even when English is not the system default locale. Service Activator must be restarted after boot-up in order to have it running under a non-English locale. This issue can manifest itself in a variety of ways. The Operator UI might incorrectly display non-ASCII characters or an atomic task may fail to interpret non-ASCII data correctly. This issue will sometimes occur on an HP-UX system as well. Stop and start Service Activator to avoid the problem.
- The License handling tool AutoPass only accepts 7-bit ASCII characters.

HP-UX Asian Locales

Java applications, in general, may fail on HP-UX if run in the `ja_JP.utf8` locale.

HP Network Automation (NA) integration

The HP NA integration comes with a set of workflow nodes. A known issue exists in the workflow node `NAAddConfigurationPolicy`. If the `event_rule` parameter is specified the workflow node will fail.

Log Search UI

The log search functionality that was added in HP Service Activator 6.1 is based on software from the Apache Lucene project. Log messages are passed through the Lucene “standard analyzer” which, in turn, implements Unicode text segmentation. Unicode text segmentation works well for many languages, but for languages such as Chinese, Japanese, and Thai the segmentation works less reliable. (Reliable detection of word boundaries will require dictionary lookup which will not be feasible due to performance reasons.)

As a consequence, searching for Chinese, Japanese, or Thai words using the Log Search UI may result in false negatives.

For more information, please read <http://unicode.org/reports/tr29/>

Localization (L10N)

If you want to localize the Jobs View, the Messages View, the Audit Messages view, the Track Activations view, and the Logs view, you also need to localize the parameters `job_field_order`, `messages_field_order`, `audit_field_order`, `active_transactions_field_order`, and `log_field_order` in the `web.xml` file (located in `$JBOSS_HOME/standalone/deployments/hpsa.ear/activator.war/WEB-INF`). Make sure that you use a UTF-8 aware editor.

Workflow Manager and Workflows

Workflow Debugger

If you use the Workflow Debugger, you should set the value of the parameter `<Max-Nodes-Per-Thread>` to 1. Otherwise you will not be able to set breakpoints in all workflow nodes.

Workflow Manager Node QueryInventory

The documentation of the `timeout` parameter for the `QueryInventory` node that is displayed in the Workflow Designer is wrong. The documentation states that the value `timeout = 0` means “no expiry”. However, the behavior if the `timeout` parameter is 0 is that the information is not cached. As a work-around, set `timeout` to a very high value.

NullPointerException in a Workflow

Some workflow nodes do not properly handle a condition in which a case packet variable exists but does not have a value. This will show up as a `NullPointerException` during workflow execution. The workaround is to give the problematic variable an initial case packet value.

Workflow Hang (HP-UX only)

Spawning many dynamic worker threads, within the Workflow Manager (i.e., by simultaneously starting many workflows) may lead to some of the worker threads hanging during execution.

To work-around this issue, you should run the `hpjconfig` program referred to in the *Installation Guide* and modify your kernel configuration per its recommendations.

Unable to stop or modify scheduled job

You should not create a scheduled job with a recurrence interval less than 10 seconds unless you are very sure that you do not need to stop this job again. It can be very difficult to stop a recurring scheduled job with a very short recurrence interval because the job id for the scheduled job changes.

Timeouts for Sleep, AskFor, and GenericUIDialog nodes

Timeout periods are reset if a cluster node crashes and a workflow job is taken over by another node in the cluster.

InvokeInventoryMethod node

The documentation describing the `InvokeInventoryMethod` workflow node is incomplete and misleading. For a more precise description of the node and its parameters, please see the file “`InvokeInventoryMethod.xml`” located in the `$ACTIVATOR_ETC/designer/nodes/builtin` directory.

Resource Manager

According to the description in the file `$ACTIVATOR_ETC/config/resmgr.xml` the parameters `RedirectionRetrySleep`, `DefaultSubPoolInitTimeout`, `DefaultSubPoolCreationTimeout`, `DefaultSubPoolVerificationTimeout`, `DefaultSubPoolCleanDestructionTimeout`, `DefaultSubPoolForcedDestructionTimeout`, and `DefaultSubPoolCleanupDelay` need to be specified in milliseconds. This is not correct; they must be specified in seconds.

Inventory Subsystem

The element `<Field>/<Name>` in the resource definition files of inventory beans may neither have the values `target` nor `action`. Using these values may lead to issues with the Inventory UI.

In rare situations, modifications of a copied branch may mistakenly be applied to the original branch and not to the copied branch. HP Service Activator V62-1A has significantly reduced the likelihood of encountering this issue.

User Interface

Node Information View displays wrong status if the database runs full

When using Postgres Plus Advanced Server as HP Service Activator’s system database, the Node Information view displays a wrong status if the database has run full. However, the system status icon (in the lower-left corner of the web UI) displays the *correct* status; hence, the operator will receive a notification that something is wrong.

NOTE: This issue *may* also exist when using Oracle 11g as the system database.

Issue with AskFor JSP

If a workflow requests for user interaction (using the `ASKFOR` node) and the name of the case-packet variable is `id`, then the value cannot be set using HP Service Activator's `ASKFOR` JSP. The problem is that the use of the case-packet variable name `id` leads to conflicts with another use of `id` in the DOM (Document Object Model).

Plug-Ins

GenericCLI on windows

When running with the GenericCLI on windows you must be sure to that you have a Disconnect section in your XML description. The disconnect section must as the last action perform the call “exit”. This is because of the way the Cygwin Bash shell is working; it is not closing correctly upon an EOF. If the “exit” is not inserted, the GenericCLI will block until the Bash process spawned by the `sshd` on Windows has stopped, typically after a `kill`.

GenericCLI

When running with GenericCLI the use of the connect section cannot be overemphasized. If the Connect section is left out, the performance will be dramatically decreased due to the fact that a delay is automatically inserted. This is needed in order to ensure correct synchronization with the server. When connecting to an unauthenticated server or a SSH based server authenticated using key pairs the connect section can be setup using a do-nothing command. To issue a do-nothing command write `<Command send_newline="NO"/>` which will do absolutely nothing. Hereafter wait for the prompt to appear. When the prompt has been found the synchronization is OK and the command execution can begin.

Connection Pool

In the Pool Management UI, if a user disables and then unregisters a dynamically created connection pool, then it cannot be enabled again. This will also cause subsequent activations to fail if they rely on that pool.

The workaround (if someone has accidentally unregistered a dynamically created connection pool) is to manually delete the row in the `POOLSTATE` system database table that corresponds to the unregistered pool. HP Service Activator does *not* need to be restarted.

Workflow Designer

Multi-byte Character Issues

Workflow files that are present in directories with non-ASCII names may not load properly (XML parser may not recognize the non-ASCII characters). By default, all workflows reside in a directory called "workflows" which has no non-ASCII characters. Use that directory to avoid the problem.

Note that workflows created in Designer with non-ASCII names will be "encoded" into ASCII-only filenames. This encoding will replace non-ASCII characters with "`__`" and the integer code value for the character.

Deployment Manager

An issue related to `scp` (secure copy) prevents the Deployment Manager from being able to copy a solution from one server to another. The work-around is to locally import the solution on all servers as required.

Service Builder

Unable to view documentation on UNIX

If you use Service Builder on UNIX and view documentation with the default browser there are currently some issues to be aware of:

- The Default Browser setting assumes Netscape as the browser.
- When viewing documentation from Service Builder it will first attempt to reuse any existing Netscape window. If one is not available, a new browser will be launched. If Netscape gives an error when opening the documentation (and you are sure you have generated documentation for the plug-in or compound task), you should manually launch a new Netscape browser, from the command line, prior to viewing the documentation.

Additionally, documentation can be viewed with a browser of your choice. Browse to the directory you chose for "Home for Projects" in Service Builder and locate the html documentation for the desired plug-in or compound task. These html files can be directly opened with your favourite browser.

Service Builder Files, Pre-Provisioning, and Scripts Elements

When selecting elements from Files, Pre-Provisioning or Scripts in a project archive, Service Builder may display an error dialog reporting "Error opening <filename>". This can happen if Service Builder attempts to display a binary file or a file in a non-UTF8 multi-byte encoding such as SJIS or EUC. Note that the file is actually in the project archive; however, the file contents cannot be displayed from within Service Builder.

If the element file is a non-UTF8 file containing multi byte data, you can use the editor with which you originally created the file to view its contents.

For example, if you add a SJIS-encoded Scripts element "SJISscript.perl" to a plug-in "PI1" in a project "Proj1", you can view this file on a Japanese Windows system using Notepad or the DOS command `more`, for example:

```
more < /HP/OpenView/ServiceActivator/var/projects/Proj1/PI1/scripts/SJISscript.perl
```

Project Documentation Containing Multi-Byte Characters

Project documentation created in Service Builder under one character encoding may not be viewable on a system with a different default encoding. For example, Service Builder project documentation created on a Japanese Windows system and containing Japanese characters will not appear correctly in an HP-UX Service Builder running under the `ja_JP.eucJP` locale.

Plug-in Java Source Code Containing Multi-Byte Characters

If you add Java source code created outside of Service Builder to a Service Builder project and that source code contains un-encoded characters outside of the ASCII range `\u0000` to `\u007F`, then the source code must be in UTF-8 encoding. For example, if your source code contains an un-encoded character with an umlaut (such as "ä") or an un-encoded Asian character, the source code must be in UTF-8 encoding. This is needed only if these characters are un-encoded. That is, if "ä" is represented in the source code as the string `\u00E4` (rather than the character itself) and all other similar characters are encoded in this way, then the source code need not be in UTF-8 encoding.

VPN Example

The script `runDemoRouter`

The script `runDemoRouter` does not have execution permission when the example is installed. Change the permission by running the command: `chmod 755 runDemoRouter`

Documentation

Migration Guide

Page 9 in the *HP Service Activator 6.2 Migration Guide* states HP Service Activator comes with three migration SQL scripts. This is not correct. The correct total number of SQL migration scripts is five; three to migrate from HP Service Activator 6.0 to 6.1 and two scripts for migrating from HP Service Activator 6.1 to 6.2 (one script for PPAS and one script for Oracle).