# Service Activator UMB Adapter 1.0.0

## Installation and configuration guide

Version 1.0

Hewlett Packard Enterprise

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# Chapter 1. Notices

Legal Notice



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# Chapter 2. Preface

## Intended audience

This document is aimed at the following personnel:

- Solution Architects
- System Integrators
- Solution Developers
- Software Development Engineers

## Typographical conventions

`Courier` Font:

- Source code and examples of file contents.
- Commands that you enter on the screen.
- Pathnames.
- Keyboard key names.

*Italic* Text:

- Filenames, programs and parameters.
- The names of other documents referenced in this manual.

**Bold** Text:

- To introduce new terms and to emphasize important words.

## Acronyms

The following acronyms are used in this documentation:

| Acronym | Definition |
|---|---|
| JMX | Java Management Extension |
| XML | Extensible Markup Language |
| SOAP | Simple Object Access Protocol |
| TeMIP | Telecommunications Management Information Platform |
| TWS | TeMIP Web Services |
| NMS | Network Management System |

| Acronym | Definition |
|---|---|
| EMS | Element Management System |
| UCA EBC | Unified Correlation Analyzer for Event-Based Correlation |
| VP | UCA EBC Value Pack |
| UMB | Unified Mediation Bus |

## Associated documents

The following documents contains useful reference information:

- UMB Installation and configuration guide
- Service Activator UMB Protocol Reference guide

## Support

Please visit our HPE Software Web site at https://softwaresupport.hpe.com for contact information, and details about HPE Software products, services and support. The Software support area of the Software Web site includes the following:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information

# Chapter 3. Introduction

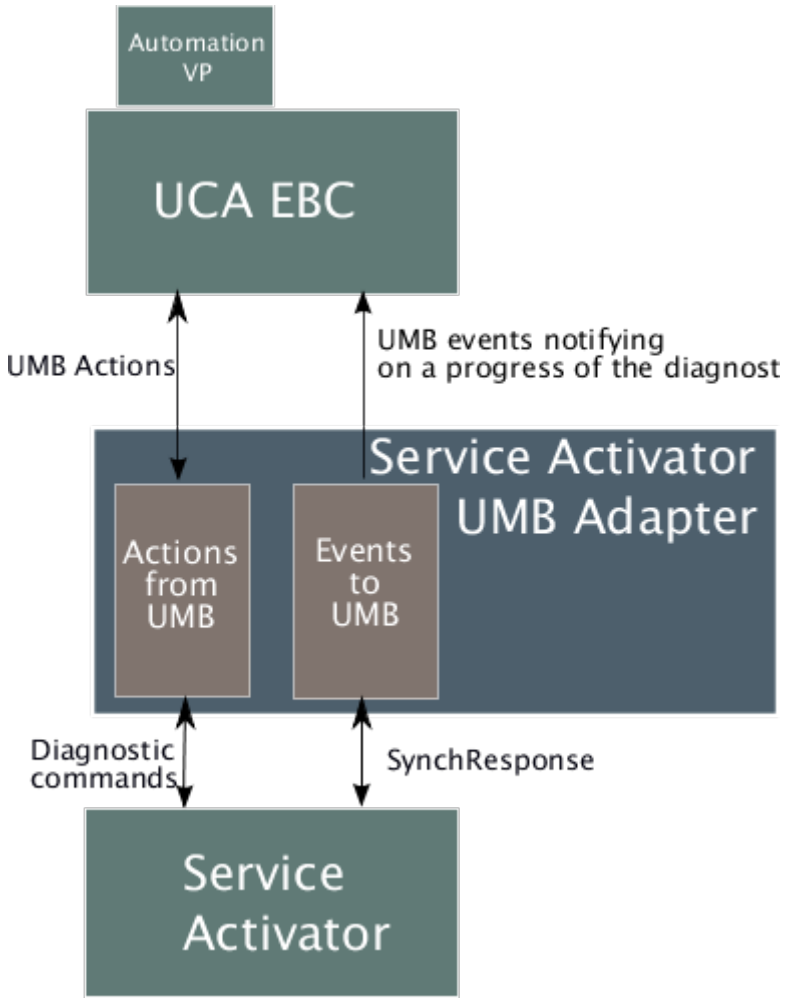
## 3.1. Overview

The Service Activator UMB Adapter is part of UCA Automation product. It handles communication between HPE Service Activator product and UCA Automation Value Pack. All communication between parts of UCA Automation solution is based on UMB Framework which provides capability to call synchronous actions and send asynchronous events.

## 3.2. Architecture

The Service Activator UMB Adapter transforms diagnostic commands from UCA Automation Value Pack coming in form of UMB actions into SOAP calls which are then sent to Web Services provided by HPE Service Activator. The SOAP response is then translated back into UMB Action Reply. This communication is synchronous.

HPE Service Activator sends notifications for started tasks in form of SOAP calls. Service Activator UMB Adapter transforms those requests to UMB events and returns default SOAP response to HPE Service Activator.



# Chapter 4. Installation and Setup

## 4.1. Prerequisites

Before performing installation of Service Activator UMB Adapter, verify that the following prerequisites are met.

### 4.1.1. Hardware

| CPU Architecture | Number of CPUs | Number of CPU Cores | Memory |
|---|---|---|---|
| X86-64 | 1 | Minimum: 4<br>Recommended: 8 | Minimum: 8 GB<br>Recommended: 16 GB |

### 4.1.2. Software

| Name | Version |
|---|---|
| Red Hat Enterprise Linux Server | 6.4 |
| Oracle Java SE Development Kit | 8u45 |

**NOTE**

To check version of Red Hat Enterprise Linux, the following command can be used:

```
cat /etc/redhat-release
```

### 4.1.3. Disk space

| Location | Minimum free space |
|---|---|
| RPM database path | 10 MB |
| Installation directory | 100 MB |
| Data directory | 700 MB |

## 4.2. Signature verification

The product is digitally signed and accompanied by a set of GNU Privacy Guard (GnuPG) keys.

**NOTE**

HPE 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

To assess the integrity of the delivered product before installing it, pick the signature (.sig) file shipped along with the product and use following GPG command:

```
gpg --verify hpe-service-activator-umb-adapter-1.0.0.sig hpeservice-
activator-umb-adapter-1.0.0.rpm
```

**NOTE**

If you are not familiar with signature verification by GPG tool, follow the link below for detailed instructions:
https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning

## 4.3. Installation

To install Service Activator UMB Adapter perform the following steps:

1. Login with user account that will be used for administration.
2. Copy the delivery kit tar file (`hpe-service-activator-umb-adapter-1.0.0.tar`) to `/tmp` directory:

   ```
   #>cp -p <the tar file path> /tmp/
   ```

3. Change the current directory to `/tmp` directory:

   ```
   #>cd /tmp
   ```

4. Unpack the tar file:

   ```
   #>tar -xvf hpe-service-activator-umb-adapter-1.0.0.tar
   ```

5. Invoke the install script: `service-activator-umb-adapter-install` while specifying RPM database path with option `-p`, installation directory with option `-r` and data directory with option `-d`.

   **NOTE**

   RPM database path, installation directory and data directory must be readable and writable by user performing installation.

**NOTE**

*Defaults*

When any of `-p`, `-r`, `-d` options is not specified then its default value will be used.

- System default value for RPM database path is `/var/lib/rpm` but it usually requires usage of `root` account to perform modifications to this directory. As a result, when this option is not specified or default value is used then both installation must be performed by `root` user and permissions later reset to user that will perform administration of Service Activator UMB Adapter.
- Default value of installation directory is `/opt/service-activator-umb-adapter`.
- Default value of data directory is `/var/opt/service-activator-umb-adapter`.

```
#>./service-activator-umb-adapter-install -p <RPM database path>
-r <installation directory> -d <data directory>
```

The following example illustrates how to install Service Activator UMB Adapter in directory `/home/hpossadmin/opt/service-activator-umb-adapter` while storing configuration and log files in `/home/hpossadmin/var/service-activator-umb-adapter` and recording package installation data in `/home/hpossadmin/.rpmdb`:

```
#>./service-activator-umb-adapter-install -p
"/home/hpossadmin/.rpmdb" \
-r "/home/hpossadmin/opt/service-activator-umb-adapter" \
-d "/home/hpossadmin/var/service-activator-umb-adapter"
```

6. Check installed packages and their versions

```
#> rpm -qa --dbpath /path/to/rpmdb | grep service-activator-umb-
adapter
...
hpe-service-activator-umb-adapter-1.0.0-RHEL5
...
```

# Chapter 5. Administration and management

Administration of Service Activator UMB Adapter is performed using the command line interface via the `service-activator-umb-adapter-admin` tool that can be found in directory `<Install directory>/bin/`.

**WARNING** The tool should be run by using the same user account that was used during installation of Service Activator UMB Adapter.

## 5.1. Starting

To start Service Activator UMB Adapter, run the following command:

```
#><Install directory>/bin/service-activator-umb-adapter-admin
--start
```

Starting process takes time (usually several seconds) and `service-activator-umb-adapter-admin` returns control right after Service Activator UMB Adapter has started and is ready to be used or failed to start due to timeout.

**IMPORTANT** To avoid corruption of process tracking data do not interrupt Service Activator UMB Adapter start process.

To change Service Activator UMB Adapter start timeout use the following steps:

1. Open `startup.properties` file
2. Set desired number of seconds to wait for adapter to start as value of `start_timeout` parameter

```
#Max number of seconds to freeze and wait for application started
before return control by admin tool
start_timeout=30
```

## 5.2. Stopping

To stop Service Activator UMB Adapter, run the following command:

```
#><Install directory>/bin/service-activator-umb-adapter-admin --stop
```

## 5.3. Checking status

To see if Service Activator UMB Adapter is currently started or stopped, run the following command:

```
#><Install directory>/bin/service-activator-umb-adapter-admin
--status
```

# Chapter 6. Configuration

## 6.1. Configuration files

Service Activator UMB Adapter is configured via the files in directory `<Data directory>/conf` (where `<Data directory>` is the directory specified used option `-d` during installation).

| File | Description |
|---|---|
| AdapterConfiguration.xml | Parameters of action and flow services of UMB adapter. |
| adapter.properties | UMB connectivity parameters. |
| application.xml | Advanced Spring Framework and Camel configuration. |
| connection.properties | Connectivity parameters. |
| hazelcast.xml | Parameters of UMB action framework. |
| startup.properties | Parameters of Java machine used to run Service Activator UMB Adapter. |
| log4j.xml | Journaling configuration. |

Reference copies of these files with default parameters can be found in directory `<Installation directory>/conf`.

**NOTE**

If you accidentally have corrupted any configuration file, you can revert it back to factory settings by copying this file from `<Installation directory>/conf` to `<Data directory>/conf`.

**IMPORTANT**

*Applying configuration*

After configuration files has been changed, Service Activator UMB Adapter needs to be restarted for the changes to take effect. To perform the restart, Service Activator UMB Adapter needs to be stopped and then started again. See section Administration and management, for details about how to stop and start Service Activator UMB Adapter.

## 6.2. Journaling configuration

To change the amount of logged information (increase or decrease log level), perform the following steps:

1. Open file `log4j.xml`

2. Locate line containing `root` element:

```
<root><level value="INFO"/>
```

3. Change attribute `value` on element `level` inside `root` element to the desired log level:

*Table 1. Supported logging levels*

| Value | Description |
|---|---|
| ERROR | Print only error messages |
| WARN | Print error and warning message |
| INFO | The standard recommended level that prints basic operational information as well as any error and warning messages |
| DEBUG | Not recommended for production as causes severe performance impact. Should be used only during troubleshooting. Additionally print debug messages |
| TRACE | Not recommended for production as causes dramatic performance impact. Should be used only during troubleshooting. Print all available diagnostic information |

The following example illustrates journaling configuration for troubleshooting:

```
<root><level value="TRACE"/>
```

**NOTE** It is not necessary to restart the Service Activator UMB Adapter for the changes in journaling configuration to take effect. However, it takes several seconds for the configuration to be reloaded.

**WARNING** Ensure that default `INFO` level is used during normal operation. Otherwise, either performance will be impacted or it will be hard to monitor Service Activator UMB Adapter status.

### 6.2.1. Configuring journaling configuration reloading

To configure period of journaling configuration reloading:

1. Open `advanced-configuration.properties` file
2. Modify `log4j.reloadPeriod` parameter

```
# Reload period for Log4j configuration in seconds
log4j.reloadPeriod=10
```

3. Restart Service Activator UMB Adapter. See section Administration and management for details about how to stop and start Service Activator UMB Adapter.

### 6.2.2. Configuring console output redirection

All console output of Service Activator UMB Adapter is redirected to log file. This option could be disabled by performing the following steps:

1. Open `advanced-configuration.properties` file
2. Modify the following property:

```
# Redirection console to logging API
console.redirect=true
```

3. Restart Service Activator UMB Adapter. See section Administration and management for details about how to stop and start Service Activator UMB Adapter.

### 6.2.3. Configuring garbage collection journaling

Garbage collection journaling is a feature which allows to trace memory management (allocation, consumption and collection) of Service Activator UMB Adapter. Trace files are very useful to detect and analyze most of performance issues and memory leaks. For more information about Java Platform garbage collection, see http://www.oracle.com/webfolder/technetwork/tutorials/obe/java/gc01/index.html.

| | |
|---|---|
| **IMPORTANT** | carbage collection trace files are saved with the next name `gc_pid<PID>.log[.<number of file>]`. Presence of suffix `<number of file>` depends on configured number of rotated files. See section Modify garbage collection journaling files number and size limits |

#### Disable garbage collection journaling

Garbage collection journaling is enabled by default. To disable it (not recommended), perform the following steps:

1. Open `startup.properties` file
2. Modify the following property:

```
#Enables garbage collection logging. Set true/false to
enable/disable it.
gc_log_enabled=true
```

3. Restart Service Activator UMB Adapter. See section Administration and management for details about how to stop and start Service Activator UMB Adapter.

### Modify garbage collection journaling files number and size limits

Garbage collection files, are rotated when their size are reached configured limit. This limit and maximum number of files could be configured by following steps:

1. Open `startup.properties` file
2. Modify the following property:

```
#Number of rotated log files
gc_log_file_number=10

#Size of rotated log files n[K-kilobytes, M-megabytes, G-
gigabytes]
gc_log_file_size=5M
```

3. Restart Service Activator UMB Adapter. See section Administration and management for details about how to stop and start Service Activator UMB Adapter.

| | |
|---|---|
| **IMPORTANT** | `gc_log_file_number` property affects number of log files for current running process and previously running processes independently, so the total number of log files could reach 2 * `gc_log_file_number` |
| **IMPORTANT** | These parameters affect the disk space usage of Data directory. See section Prerequisites for more details. |

### Garbage collection journaling additional options

There are cases, when additional options should be used. For information on all available options, see http://docs.oracle.com/javase/8/docs/technotes/tools/windows/java.html. To add additional options, perform the following steps:

1. Open `startup.properties` file
2. Modify the following property:

```
#Additional GC options
gc_log_opts="-XX:+PrintGCDetails -XX:+PrintGCDateStamps"
```

3. Restart Service Activator UMB Adapter. See section Administration and management for details about how to stop and start Service Activator UMB Adapter.

# Chapter 7. Removal

To remove Service Activator UMB Adapter from the system perform the following steps:

1. Login with the same user account that was used during installation of Service Activator UMB Adapter.
2. Invoke removal script `service-activator-umb-adapter-uninstall`:

```
#> <Installation directory>/service-activator-umb-
adapter/bin/service-activator-umb-adapter-uninstall
```

# Appendix A: Command-line tools

The Service Activator UMB Adapter is supplied with several command line tools, which should be used for installing, uninstalling and managing the product. This section provides complete reference for all of these tools and their options.

## A.1. service-activator-umb-adapter-admin

### Description

`service-activator-umb-adapter-admin` is an administration command to start, shutdown and check status of Service Activator UMB Adapter instance. It is located in `<installation directory>/bin` directory.

### Usage

```
#> service-activator-umb-adapter-admin OPTION
```

### Options

--help

Print a usage message briefly summarizing these command-line options, then exit.

--start

Start instance of Service Activator UMB Adapter. Exits with status 0 if the instance was started successfully. Prints an error message and exits with status 1 if the instance is already running or command failed.

--status

Print information about current status of Service Activator UMB Adapter instance. Exits with status 0 if the instance is running, otherwise exits with status 1.

--stop

Stop instance of Service Activator UMB Adapter. Exits with status 0 if the instance was not running or was successfully stopped. Otherwise, exits with status 1.

### Environment

UMB_RUNTIME_HOME

This variable should be present and point to a valid location of installed UMB Runtime

package.

### Exit status

Exits with status 0 if a command executed successfully, greater than 0 if errors occur.

## A.2. service-activator-umb-adapter-install

### Description

`service-activator-umb-adapter-install` is a command for installing Service Activator UMB Adapter. It is located inside kit tar file.

### Usage

```
#> service-activator-umb-adapter-install [OPTION...]
```

### Options

-r `DIRECTORY`

Specifies a directory where Service Activator UMB Adapter will be installed. Default value is `/opt/service-activator-umb-adapter/`. The directory must be readable and writable by user executing the command.

-d `DIRECTORY`

Specifies a data directory where configuration and log files will be stored. Default value is `/var/opt/service-activator-umb-adapter/`. The directory must be readable and writable by user executing the command.

-p `DIRECTORY`

Specifies the RPM database directory rather than the default path `/var/lib/rpm`. The directory must be readable and writable by user executing the command.

-z

Remove configuration and log files from the previous installation in the specified data directory. If this option is not specified and the data directory already exists, installation process will terminate with error without any modification of the file system.

--help

Print a usage message briefly summarizing these command-line options, then exit.

### Exit status

Exits with status 0 if a command executed successfully, greater than 0 if errors occur.

## A.3. service-activator-umb-adapter-uninstall

### Description

`service-activator-umb-adapter-uninstall` is a command for uninstalling Service Activator UMB Adapter. It is located in `<installation directory>/bin` directory. The instance of Service Activator UMB Adapter should be stopped before executing this command, otherwise the command will exit immediately with status 1.

### Usage

```
#> service-activator-umb-adapter-uninstall [OPTION]
```

### Options

--help

Print a usage message briefly summarizing these command-line options, then exit.

### Exit status

Exits with status 0 if a command executed successfully, greater than 0 if errors occur.