

# ActiveMQ for OpenVMS I64

October 2015

## 1. Introduction

Thank you for your interest in this port of Apache ActiveMQ to OpenVMS. The current release of ActiveMQ for OpenVMS is based on the ActiveMQ 5.10.0 distribution.

The Apache ActiveMQ message broker is an Open Source implementation of the Java Message Service specification. It provides a reliable hub in any message-oriented enterprise application and integrates well with Java EE containers, ESBs, and other JMS providers. In addition to JMS, this release of ActiveMQ provides support for various other messaging protocols, including AMQP 1.0, MQTT, and STOMP, as well as its native OpenWire protocol.

This OpenVMS port of the Apache ActiveMQ includes all functionality provided by the Open Source 5.10.0 release.

## 2. Acknowledgements

VMS Software Inc. would like to acknowledge the pioneering work of Thierry Uso in initially making ActiveMQ available on OpenVMS with his 2008 and 2009 releases of versions 5.1.0 and 5.2.0, respectively.

## 3. What's new in this release

For a detailed description of the features and bug fixes included in this release, please read <http://activemq.apache.org/activemq-5100-release.html>.

## 4. Requirements

The kit you are receiving has been tested using the operating system, Java, and TCP/IP versions listed below. While it is highly likely that you will have no problems installing and using the kit on systems running higher versions of the products listed, we cannot say for sure that you will be so lucky if your system is running older versions.

- OpenVMS 8.4 I64
- HP TCP/IP Services V5.7

It has not been verified whether the kit works with the MultiNet TCP/IP stack, but there is a good chance that it will.

- Java JDK and JRE 6.0-6 for OpenVMS Integrity servers
- An ODS-5-enabled disk with at least 120,000 blocks of free disk space

As with most Java-based applications on OpenVMS, ActiveMQ must be installed on an ODS-5-enabled disk.

In addition to the above requirements, it is assumed that the reader has a good knowledge of OpenVMS and of software development in the OpenVMS environment.

## 5. Recommended reading

It is recommended that users unfamiliar with ActiveMQ and its operation review the various documents available at <http://activemq.apache.org/activemq-5100-release.html>.

## 6. Installing the kit

The kit is provided as an OpenVMS PCSI kit (VSI-I64VMS-ACTIVEMQ-V0510-0-1.PCSI) that can be installed by a suitably privileged user using the following command:

```
$ PRODUCT INSTALL ACTIVEMQ
```

The installation will then proceed as follows (output may differ slightly from that shown):

```
Performing product kit validation of signed kits ...
```

```
The following product has been selected:
```

```
VSI I64VMS ACTIVEMQ V5.10-0          Layered Product
```

```
Do you want to continue? [YES]
```

```
Configuration phase starting ...
```

```
You will be asked to choose options, if any, for each selected
product and for
any products that may be installed to satisfy software dependency
requirements.
```

```
Configuring VSI I64VMS ACTIVEMQ V5.10-0: ActiveMQ for OpenVMS is
based on Apache ActiveMQ Version 5.10.0
```

```
© Copyright 2015 VMS Software Inc.
```

```
VSI Software Inc.
```

```
* This product does not have any configuration options.
```

```
Execution phase starting ...
```

```
The following product will be installed to destination:
```

```
VSI I64VMS ACTIVEMQ V5.10-0          DISK$I64SYS:[VMS$COMMON.]
```

```
Portion done:
```

```
0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%
```

```
The following product has been installed:
```

```
VSI I64VMS ACTIVEMQ V5.10-0          Layered Product
```

```
VSI I64VMS ACTIVEMQ V5.10-0: ActiveMQ for OpenVMS is based on Apache
ActiveMQ Version 5.10.0
```

```
Post-installation tasks are required.
```

```
To start the ActiveMQ at system boot time, add the following
lines to SYS$MANAGER:SYSTARTUP_VMS.COM:
```

```
$ file := SYS$STARTUP:ACTIVEMQ$STARTUP.COM
$ if f$search("''file'") .nes. "" then @'file'
```

```
To shutdown ActiveMQ at system shutdown time, add the following
```

```
lines to SYS$MANAGER:SYSHUTDOWN.COM:

$ file := SYS$STARTUP:ACTIVEMQ$SHUTDOWN.COM
$ if f$search("'"file'") .nes. "" then @'file'
```

## 6.1. Post-installation steps

After the installation has successfully completed, include the commands displayed at the end of the installation procedure into `SYSTARTUP_VMS.COM` and `SYSHUTDOWN.COM` to ensure that the ActiveMQ broker is started and stopped when OpenVMS is booted and shutdown.

Other steps that should be performed once the installation has completed are as follows:

- Attempt to start the broker

Attempt to start the ActiveMQ message broker by running the start-up procedure `SYS$STARTUP:ACTIVEMQ$STARTUP.COM`.

After running the start-up procedure, perform the following tasks:

- Verify that the logical name `ACTIVEMQ$ROOT` is correctly defined. This system-level logical name points to the root of the ActiveMQ installation tree.
- Verify that the broker is running by issuing a “`SHOW SYSTEM`” command and checking the displayed output for the existence of the process name “`ActiveMQ`”. Note that if there was already another process running on your system with this process name, the ActiveMQ broker will fail to start.
- Examine the log file `ACTIVEMQ$ROOT:[LOGS]ACTIVEMQ.LOG` and verify that there are no fatal errors being reported. Note that a new version of this log file will be created whenever ActiveMQ is restarted, and it is recommended that appropriate processes are put in place to backup and purge old log files.

- Attempt to access the web console

After verifying that the ActiveMQ broker has successfully started, attempt to access the web console on port 8161. Assuming that all is well, the “*Welcome to the Apache ActiveMQ!*” will be displayed. Click on the “*Manage ActiveMQ broker*” link and log in using the default username and password (admin, admin). There will not be much to see at the moment; however you should be able to navigate around the console without any problems.

Once you have verified the operation of the console, be sure to secure the web console (by changing the default admin password or otherwise). Instructions for securing the web console can be found at <http://activemq.apache.org/web-console.html>.

- Run some test programs

Test the operation of the broker for one or more protocols. For example, verify that you can publish and consume messages using the STOMP or MQTT protocols.

- Specify an alternative location for log files (optional)

By default log files named `activemq.log` will be created in `activemq$root:[logs]` (a new version of `activemq.log` will be created each time the broker is started). If you would prefer log files to be written to another location, modify the value of the `/output` qualifier for the `run/detach` command in `activemq$startup.com` as appropriate.

## 6.2. Privileges and quotas

The privileges `TMPMBX`, `NETMBX`, `BYPASS`, `SYSPRV`, and `DETACH` are required in order to run the ActiveMQ start-up and shutdown scripts, and the ActiveMQ process (run as a detached process) will inherit the default privileges for the username under which it is started.

Apache ActiveMQ is a large Java-based application that can require considerable resources in order to operate efficiently, depending on workload requirements. The following quotas should be adequate for most purposes; however resource usage should be carefully monitored, and quotas adjusted as necessary.

Maxjobs:	0	Fillm:	2048	Byt1m:	800000
Maxacctjobs:	0	Shrfillm:	0	Pbyt1m:	0
Maxdetach:	0	BI01m:	150	JTquota:	4096
Prclm:	100	DI01m:	150	WSdef:	4096
Prio:	4	AST1m:	300	WSquo:	8192
Queprio:	4	TQElm:	100	WSextent:	16384
CPU:	(none)	Enqlm:	8000	Pgflquo:	3000000

If the broker is expected to support large numbers of connections then it may also be necessary to increase the `CHANNELCNT` system parameter (this parameter can usually be safely set to its maximum value of 65535).

## 6.3. Installing in an alternative location

By default the software will be installed in `SYS$SYSDEVICE:[VMS$COMMON]`. If you wish to install the software in an alternative location this can be achieved using the `/DESTINATION` qualifier with the `PRODUCT INSTALL` command to specify the desired location; however it is important to note that an additional manual step will then be required to complete the installation. Specifically, when an alternative destination is specified, the start-up and shutdown procedures (`ACTIVEMQ$STARTUP.COM` and `ACTIVEMQ$SHUTDOWN.COM`) will be placed into a subdirectory `[.SYS$STARTUP]` residing under the specified destination directory. If you wish to run these files from your standard `SYS$STARTUP` directory they will need to be copied from the destination subdirectory into your systems `SYS$STARTUP` directory.

## 7. What's missing?

The supplied kit for OpenVMS includes all functionality supported by the 5.10.0 ActiveMQ release.

Support for later versions of ActiveMQ on OpenVMS is currently limited by the versions of Java that are available for the OpenVMS platform. Once Java is updated it is anticipated that newer versions of ActiveMQ will be made available.