Scala for OpenVMS I64

May 2017

1.   Introduction

Thank your for your interest in this port of Scala to OpenVMS. The current release of Scala for OpenVMS is based on the Scala 2.11.8 distribution.

Scala (https://www.scala-lang.org/) is a general-purpose programming language providing support for functional programming and a strong static type system. Scala source code is compiled to Java bytecode that runs on a Java virtual machine. Accordingly, Scala provides language interoperability with Java such that libraries written in both languages may be referenced directly in Scala or Java code. The functional nature of the Scala language coupled with the careful integration of object-oriented and functional language concepts make it well-suited to the implementation of highly scalable and distributed applications as well as for more routine programming tasks.

This OpenVMS port of the Scala includes all functionality provided by the Open Source 2.11.8 release.

2.   Acknowledgements

VMS Software Inc. would like to acknowledge the work of the Scala development team for their ongoing efforts in developing and supporting the language.

3.   What's new in this release

For a detailed description of the new features and bug fixes included in this release, please read https://www.scala-lang.org/news/2.11.8.

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 8.4-1H1 I64

- HP TCP/IP Services V5.7

  TCP/IP is required if you intend to develop network applications using Scala. 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 1.8 for OpenVMS Integrity servers

- An ODS-5-enabled disk with at least 128,000 blocks of free disk space

  As with most Java-based applications on OpenVMS, Scala 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 using Java-based technologies in the OpenVMS environment.

5. Recommended reading

It is recommended that users unfamiliar with the Scala programming review the excellent documentation available at https://www.scala-lang.org/documentation/.

6. Installing the kit

The kit is provided as an OpenVMS PCSI kit (`VSI-I64VMS-SCALA-V0211-8-1.PCSI`) that can be installed by a suitably privileged user using the following command:

```
$ PRODUCT INSTALL SCALA

Performing product kit validation of signed kits ...

The following product has been selected:
    VSI I64VMS SCALA V2.11-8              Layered Product [Installed]

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 SCALA V2.11-8: Scala for OpenVMS is based on Scala
Version 2.11.8

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* This product does not have any configuration options.

Execution phase starting ...

The following product will be installed to destination:
    VSI I64VMS SCALA V2.11-8              DISK$I64SYS:[VMS$COMMON.]

Portion done: 0%...10%...50%...60%...70%...90%...100%

The following product has been installed:
    VSI I64VMS SCALA V2.11-8              Layered Product

VSI I64VMS SCALA V2.11-8: Scala for OpenVMS is based on Scala Version 2.11.8

    Post-installation tasks are required.

    To define logical names for Scala at system boot time, add the following
    lines to SYS$MANAGER:SYSTARTUP_VMS.COM:

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

    To deassign logical names for Scala at system shutdown time, add the
    following lines to SYS$MANAGER:SYSHUTDWN.COM:

        $ file := SYS$STARTUP:SCALA$SHUTDOWN.COM
```

```
$ if f$search("''file'") .nes. "" then @'file'
```

To start using Scala, run the following command to define the necessary symbols:

```
$ @SCALA$ROOT:[bin]SCALA-SETUP.COM
```

6.1.   Post-installation steps

After the installation has successfully completed, follow the instructions displayed at the end of the installation procedure to start using Scala and to ensure that the necessary logical names required in order for users to use the software are defined system-wide at start-up.

The command procedure SCALA$ROOT:[bin]SCALA-SETUP.COM defines foreign commands for scala and associated utilities. For example:

```
$ @SCALA$ROOT:[bin]SCALA-SETUP.COM
$ create HelloWorld.scala
     object HelloWorld {
        def main(args: Array[String]): Unit = {
          println("Hello, world!")
        }
     }
^Z
$ scalac HelloWorld.scala
$ scala HelloWorld
Hello, World!
$
```

6.2.   Privileges and quotas

Scala is a large and complex Java-based product and can accordingly 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  Bytlm:        800000
Maxacctjobs:      0  Shrfillm:      0  Pbytlm:            0
Maxdetach:        0  BIOlm:       150  JTquota:        4096
Prclm:          100  DIOlm:       150  WSdef:          4096
Prio:             4  ASTlm:       300  WSquo:          8192
Queprio:          4  TQElm:       100  WSextent:      16384
CPU:         (none)  Enqlm:      8000  Pgflquo:     3000000
```

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 (SCALA$STARTUP.COM and SCALA$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 Open Source Scala 2.11.8 release.