

MariaDB for OpenVMS I64

June 2019

1. Introduction

Thank you for your interest in this port of the MariaDB to OpenVMS. The current release of MariaDB for OpenVMS is based on the MariaDB 5.5.63 distribution.

MariaDB is a community-developed, commercially supported fork of the MySQL relational database management system provided under the GNU General Public License and is today one of the most popular and widely used databases in the world. MariaDB maintains high compatibility with MySQL, with matching APIs, commands, and wire protocol.

This OpenVMS port of MariaDB includes all core functionality supported by the 5.5.63 open source release and leverages OpenSSL 10.2.r for encrypted communications.

2. Acknowledgements

VMS Software Inc. would like to acknowledge the work of the MariaDB development team for their on-going efforts in developing and supporting this product. VMS Software Inc. would also like to acknowledge Mark Berryman for his pioneering work in porting MariaDB to OpenVMS.

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://mariadb.com/kb/en/library/mariadb-5563-release-notes/>.

4. Requirements

The kit you are receiving has been compiled and built using the operating system and compiler 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
- The software must be installed on an ODS-5 enabled disk (the installation will fail if this requirement is not met)
- HP TCP/IP Services V5.7 ECO 2 or VSI TCP/IP

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

- C or C++ compiler

If you intend to develop MariaDB database applications on OpenVMS using C or C++ then a C or C++ compiler will be required.

In addition to the above requirements, it is assumed that the reader has a good knowledge of OpenVMS and of MariaDB, and of software development in the OpenVMS environment (if database applications are to be developed on OpenVMS).

5. Recommended reading

It is recommended that administrators and software developers read the comprehensive documentation on the MariaDB web site (<https://downloads.mariadb.org/>) before using the software.

6. Installing the kit

The kit is provided as an OpenVMS PCSI kit (VSI-I64VMS-MARIADB-V0505-63-1.PCSI) that can be installed by a suitably privileged user using the following command:

```
$ PRODUCT INSTALL MARIADB
```

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 MARIADB V5.5-63          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 MARIADB V5.5-63: MariaDB for OpenVMS is based on  
MariaDB Version 5.5.63
```

```
© Copyright 2019 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 MARIADB V5.5-63          DISK$I64SYS:[VMS$COMMON.]
```

```
Portion done: 0%...10%...20%...30%...50%...60%...70%...90%...100%
```

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

```
VSI I64VMS MARIADB V5.5-63          Layered Product
```

```
VSI I64VMS MARIADB V5.5-63: MariaDB for OpenVMS is based on MariaDB  
Version 5.5.63
```

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

Configure MariaDB as follows (see release notes for additional details):

```
$ @SYS$STARTUP:MARIADB$CONFIG.COM
```

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

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

To shutdown MariaDB at system shutdown, add the following lines to SYS\$MANAGER:SYSHUTDOWN.COM:

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

6.1. **Post-installation steps**

After the installation has successfully completed, you must run the configuration script (SYS\$STARTUP:MARIADB\$CONFIG.COM) and include the commands displayed at the end of the installation procedure into SYSTARTUP_VMS.COM to ensure that the database server will be started on system start-up.

The configuration script creates the MARIADB user if it does not already exist, configures the MariaDB software environment, creates an initial empty database, generates self-signed certificates for clients to communicate with the database server via SSL/TLS, sets ownership on all files to the MARIADB user, and starts the database server.

To configure MariaDB, proceed as follows, answering the questions as appropriate (in most cases the defaults will be acceptable):

```
$ @SYS$STARTUP:MARIADB$CONFIG.COM
```

Upon successful completion of the configuration procedure you can start the database server as follows:

```
$ @SYS$STARTUP:MARIADB$STARTUP.COM
```

You should see running a process with the name "MARIADB SERVER". If you cannot see this process check for any errors logged in MARIADB\$ROOT:[LOG]MARIADB.LOG. If for any reason you need to re-run the configuration procedure, be sure to delete everything in the MARIADB\$ROOT:[log] and MARIADB\$ROOT:[DATA] directories before doing so.

6.2. **Application development**

In addition to the logical name MARIADB\$ROOT (which points to the root of the MariaDB installation tree), the logical name MARIADB\$CLIENT_SHR is also defined. This logical name points to a shareable image that can be linked with C or C++ application code to create client applications using the MariaDB C API (see <https://mariadb.com/kb/en/library/mariadb-connector-c/>).

From an application development perspective, it should be noted that symbols in MARIADB\$CLIENT_SHR are mixed-case, and application developers must therefore use the C/C++ compiler option /NAMES=(AS_IS, SHORTENED) or include in their code appropriate #pragma directives to ensure that symbols are correctly resolved when linking. Developers

will also need to include in their code one or more of the header files found in `MARIADB$ROOT:[INCLUDE]`.

Alternatively, client applications may be developed using LibMariaDB for OpenVMS. This is a standalone MariaDB client kit that provides facilities to develop MariaDB applications on OpenVMS using C/C++, or other languages such as COBOL, FORTRAN, Pascal and BASIC using a language-agnostic API implementation.

6.3. *Privileges and quotas*

The configuration script creates the `MARIADB` user with `NETMBX` and `TMPMBX` privileges and appropriate quota values as shown below:

Maxjobs:	0	Fillm:	32767	Byt1m:	3000000
Maxacctjobs:	0	Shrfillm:	0	Pbyt1m:	0
Maxdetach:	0	BIOLm:	1024	JTquota:	4096
Prclm:	100	DIOLm:	1024	WSdef:	100000
Prio:	4	AST1m:	300	WSquo:	200000
Queprio:	4	TQELm:	400	WSextent:	800000
CPU:	(none)	Enqlm:	32767	Pgflquo:	10000000

The above quota values should be more than adequate for most purposes; however for very heavily used databases with large numbers of client connections additional tuning may be required.

6.4. *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 (`LIBMARIADB$STARTUP.COM` and `LIBMARIADB$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. **Sample database**

The directory `MARIADB$ROOT:[EXAMPLE]` contains scripts to create a trivial sample database called "VPM" that might hypothetically be used to store metrics collected by TDC. The command procedure `create-database.com` can be used to create the database and to define a user that can access the database. Note that it may take a few minutes for the creation of the database to complete. The command procedure `drop-database.com` can be used to remove the database.

Note that several of the example programs provided with LibMariaDB for OpenVMS utilize this database.

8. What's missing?

As this is a new product provided by VMS Software Inc. there are currently no tools provided to upgrade from previous database versions. Such tools will be provided in future releases if they are required.