



VMS Software

VSI VMS/XDE Beta

Installation and Configuration Guide

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1. Introduction

VMS Cross-Development Environment (VMS/XDE) is a set of tools for developing OpenVMS x86-64 applications on GNU/Linux operating systems. For a large part based on OpenVMS itself, it offers an accurate OpenVMS-like user environment suitable for OpenVMS development and debugging, using the exact same toolchain (compiler, librarian, linker, debugger) that is available on OpenVMS x86-64. Running on Linux, it also provides access to Linux-based tools like editors and source-control.

2. System Requirements

- **Host operating system:** An x86-64 GNU/Linux distribution with the minimum kernel version 5.9
- **CPU:** Intel Skylake-based (6xxx) or AMD 1st generation Zen-based (Ryzen-1xxx)
- **RAM:** 8 GB
- **Libraries:** GLIBC 2.38 and GLIBCXX 3.4.32
- **File system:** A file system that supports extended attributes (such as ext3 or ext4)

3. Using VMS/XDE

This sections provides the information that you need to get started with VMS/XDE.

3.1. Installing VMS/XDE

VMS/XDE is provided to users in the form of a self-extracting archive. Use the following commands to unpack the archive:

```
$ chmod +x ./VMS-XDE-2025.10.tar.gz.run
$ ./VMS-XDE-2025.10.tar.gz.run
```

The archive will be extracted into the directory VMS-XDE in the current directory of your host operating system.

3.2. Starting VMS/XDE

To run VMS/XDE, enter the following commands in this order:

```
$ cd VMS-XDE
$ ./run.sh
```

The command `./run.sh` accepts the following optional parameters:

Optional Parameter	Description
<code>--version</code> <code>-v</code>	Show current version.
<code>--help</code> <code>-h</code>	Show help.

Optional Parameter	Description
--shutdown -s	Gracefully shut down VMS/XDE and all OpenVMS processes.
--input= <i>file-name</i>	Full path to the DCL script that will be executed when VMS/XDE starts, for example --input=DKC0:[MY-DISK]INPUT.COM.
--output= <i>file-name</i>	Full path to the file where you want to write the VMS/XDE output, for example --output=DKC0:[MY-DISK]OUTPUT.LIS.
--error= <i>file-name</i>	Full path to the file where you want to write the error log, for example --error=DKC0:[MY-DISK]ERROR.LIS.
--fgsync	Run in non-interactive mode and wait until finished. This parameter can be used only if the --input and --output parameters are set.

On first start-up, an OpenVMS user will be created automatically within VMS/XDE. The name of that user will be the same as that of the current host system user. When starting VMS/XDE, enter that user name when prompted. Password is not required.

3.3. Storage Emulation Directories In This Package

The following storage emulation directories¹ are included in this package and guarantee that VMS/XDE functions correctly:

Directory	Purpose
vms_os/V9.2/DKA0	Emulates the system storage device.
vms_os/V9.2/DKA1	Emulates a device that contains the OpenVMS user home directory.
vms_os/V9.2/DKC0	Both of these directories emulate storage devices for storing the files that are shared between VMS/XDE and the host operating system.
vms_os/V9.2/DKC1	
vms_os/V9.2/LDM1	Emulates an OpenVMS memory disk. Do <i>not</i> change anything about this directory, otherwise VMS/XDE may not function correctly.

Important

Any additional storage emulation directories must be created in the same location, "vms_os/V9.2".

A. Optional Configuration Steps and Reference Information

A.1. Understanding Storage Emulation Directories

All data within VMS/XDE is stored in storage emulation directories on the host system. Storage emulation directories are regular host system directories that VMS/XDE uses to emulate OpenVMS storage devices. Currently, VMS/XDE supports two types of devices:

¹For more information on storage emulation directories, see Section A.1, "Understanding Storage Emulation Directories".

DKAn

These devices support the OpenVMS file versioning feature and are intended for storing OpenVMS files.

The directories used for emulating DKA devices, as well as all subdirectories and files stored in them, must follow OpenVMS naming conventions, i.e. include the version number suffix ;**n**. For example, EXAMPLE-FILE.TXT;**1**, EXAMPLE-FILE.TXT;**2**, etc. For more information on OpenVMS file versions, refer to *VSI OpenVMS User's Manual* [<https://docs.vmssoftware.com/vsi-openvms-user-s-manual/#FILES7>].

DKCn

These devices do *not* support the OpenVMS file versioning feature and are intended for storing the files that are shared between VMS/XDE and the host operating system.

The directories used for emulating DKC devices, as well as all subdirectories and files stored in them, must follow the host operating system naming conventions.

Note

The names of *all* storage emulation directories, as well as all subdirectories and files stored in them, must use *only* the OpenVMS-supported symbols (ASCII, national code-pages are not currently supported). VSI recommends naming all storage emulation directories DKAn or DKCn.

A.2. Defining VMS/XDE Logical Names

Certain VMS/XDE components require certain commands to be executed to function properly. If you plan to use any of the components listed in the table below, enter the corresponding commands or add them to your LOGIN.COM file.

Component	Command(s)
CURL	\$ @SYS\$STARTUP:CURL\$DEFINE_LOGICALS
GIT	\$ @SYS\$STARTUP:GIT\$STARTUP.COM \$ @GIT\$ROOT:[GIT_CORE]GIT\$DEFINE_COMMANDS.COM
LDAP	\$ @SYS\$STARTUP:LDAP\$DEFINE_LOGICALS
LUA	\$ @SYS\$STARTUP:LUA\$DEFINE_LOGICALS
OPENSSH	\$ @SYS\$COMMON:[SYS\$STARTUP]SSH\$DEFINE_ROOT.COM \$ @SSH\$ROOT:[BIN]SSH\$DEFINE_COMMANDS.COM
OSS	\$ DEFINE/TRANS=CONCEALED OSS\$ROOT DKA0:[OSS.]
PERL	\$ @SYS\$COMMON:[PERL-5_34]PERL_SETUP
SSL111	\$ @SYS\$STARTUP:SSL111\$STARTUP
SSL3	\$ @SYS\$STARTUP:SSL3\$STARTUP
DECWINDOWS	\$ SET PROC/PRIV=CMEXEC \$ SET DISPLAY/CREATE/TRANSPORT=TCPIP/NODE=127.0.0.1 /SERVER=0 \$ DEFINE DECW\$IGNORE_WORKSTATION "TRUE" \$ @SYS\$STARTUP:DECW\$STARTUP.COM

Note

Some of the commands above require elevated user permissions. For details, refer to the corresponding product documentation.

A.3. Applications Included In the Current Release

The current version of VMS/XDE includes the following OpenVMS applications:

- Base VSI OpenVMS operating system environment
- The following compilers:
 - BASIC
 - BLISS
 - C
 - COBOL
 - C++
 - FORTRAN
 - MACRO32
 - PASCAL
 - X86ASM
- Linker utility
- Librarian utility
- SDL translator utility
- System Analyzer utility
- Run-time libraries for included compilers and other system libraries, such as C RTL, LIB\$RTL, etc.
- The following layered products:
 - DECSET
 - DECFORMS
 - DECwindows
 - CURL
 - LDAP
 - SSL111

- SSL3
- GIT
- GNV utilities set
- VMSI18N
- OPENSSH

A.4. Known Issues and Limitations

The following facilities and subsystems are either not supported or not fully supported in the current version of VMS/XDE:

- None of the TCP/IP utilities are expected to work.
- Symbolic links are not supported.
- The BACKUP.EXE utility cannot create physical backups.
- The SYS\$IPC system service does not work with user buffers in the P2 address space.
- The PTHREAD\$RTL and TCPIP\$IPC_SHR libraries are not fully supported.
- DECwindows subsystem is supported with limitations.
- Stack size is limited to 2048 KB for the main thread and 1024 KB for pthreads.
- SDA and DEBUGGER utilities are supported with limitations.
- DELTA and XDELTA debuggers are not supported.
- Process and system quotas are supported with limitations.
- The **LIBRARIAN/DATA=EXPAND/OBJ** command is not supported on DKC_x storage devices.
- OpenSSH only supports client applications.

Trial Period Limitations

The trial period for the current demo version of VMS/XDE will end on January 31, 2026. For more information, refer to [VMS Software EULA \[https://docs.vmssoftware.com/docs/vsi-eula.pdf\]](https://docs.vmssoftware.com/docs/vsi-eula.pdf).