

Installing and Upgrading OpenVMS x86-64

Table of contents

1. Installing and Upgrading OpenVMS x86-64	3
2. Before You Start	4
2.1 Tested Platforms	4
2.2 Recommended Settings for Virtual Machines	4
2.3 Related Documentation	4
2.4 Guest Console	4
3. Installing VSI OpenVMS x86-64 E9.2-4	5
4. Upgrading to VSI OpenVMS x86-64 E9.2-4	15
4.1 Creating a Non-Shadowed Target Disk From a Shadowed Disk	15
4.2 Upgrading a Non-Shadowed System Disk	16
5. Installing From a Web Server	26
5.1 Web Server Preparation	26
5.2 Target Virtual Machine Preparation (VMS_KITBOOT Utility)	26
6. Networking Options	29
6.1 VSI DECnet	29
6.1.1 Setting Up DECnet Phase IV	29
6.1.2 Setting Up DECnet-Plus	30
6.2 Configuring VSI TCP/IP Services	31
6.3 Configuring VSI OpenSSH	31
7. Sample Installation and Upgrade Logs	34
7.1 Sample Installation Log	34
7.2 Sample Upgrade Log	55

1. Installing and Upgrading OpenVMS x86-64

This section contains step-by-step instructions for installing and upgrading VSI OpenVMS x86-64 E9.2-4 on a guest virtual machine, regardless of which hypervisor you are using.

2. Before You Start

2.1 Tested Platforms

For information about the supported virtual environments and tested platforms, see the [VSI Supported Platforms](#) page and [VSI OpenVMS x86-64 E9.2-4 Release Notes](#).

If you need more information on the platforms tested by VSI, refer to the respective documentation websites.

2.2 Recommended Settings for Virtual Machines

VSI OpenVMS x86-64 E9.2-4 can be installed on a KVM or VMware ESXi virtual machine. Depending on the hypervisor you are using, refer to the [OpenVMS on KVM](#) guide or the [OpenVMS on ESXi](#) guide.

2.3 Related Documentation

For additional information about VSI OpenVMS x86-64 E9.2-4, refer to the following documentation:

- [VSI OpenVMS x86-64 E9.2-4 Release Notes](#)
- [VSI OpenVMS x86-64 Boot Manager User Guide](#)
- [OpenVMS on KVM](#)
- [OpenVMS on ESXi](#)
- [VSI TCP/IP Services for OpenVMS V6.0 Installation and Configuration Guide](#)
- [VSI TCP/IP Services for OpenVMS V6.0 User's Guide](#)

2.4 Guest Console

In previous versions of OpenVMS x86-64, all console interactions required a legacy serial port device. Starting with V9.2-3, OpenVMS x86-64 features the Guest Console – an alternative specifically designed for customers who are unable to use serial ports. The Guest Console provides the necessary keyboard driver and terminal emulator functionalities to allow users to interact with the system from the initial boot through the operator login.

Note that the current implementation of the Guest Console provides a minimal terminal that lacks certain important features or supports them with limitations. For more information, refer to [VSI OpenVMS x86-64 E9.2-4 Release Notes](#) and [VSI OpenVMS x86-64 Boot Manager User Guide](#).

3. Installing VSI OpenVMS x86-64 E9.2-4

This section describes how to boot and perform a fresh installation of VSI OpenVMS x86-64 E9.2-4 on a guest virtual machine. If you want to upgrade an existing OpenVMS system, see [Upgrading to VSI OpenVMS x86-64 E9.2-4](#).

Before you install VSI OpenVMS x86-64 E9.2-4 on your virtual machine, ensure it has been created and configured as described in the guide for creating a virtual machine on your hypervisor ([OpenVMS on KVM](#) or [OpenVMS on ESXi](#)).

Once you have created and powered on your VM, follow these steps:

1. Depending on your hypervisor of choice and the boot settings of your VM, you will either see the UEFI Shell> prompt or the VSI Boot Manager screen.

If you see UEFI Shell> prompt ...

```
EFI Shell version 2.70 [1.0]
Current running mode 1.1.2
Device mapping table
fs0      :CDRom - Alias cd21b0a0 blk0
          PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x1,0x0)/Sata(0x1,0x0,0x0)/
          CDROM(0x0,0x1B,0xE800)
.
.
.
Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell>
```

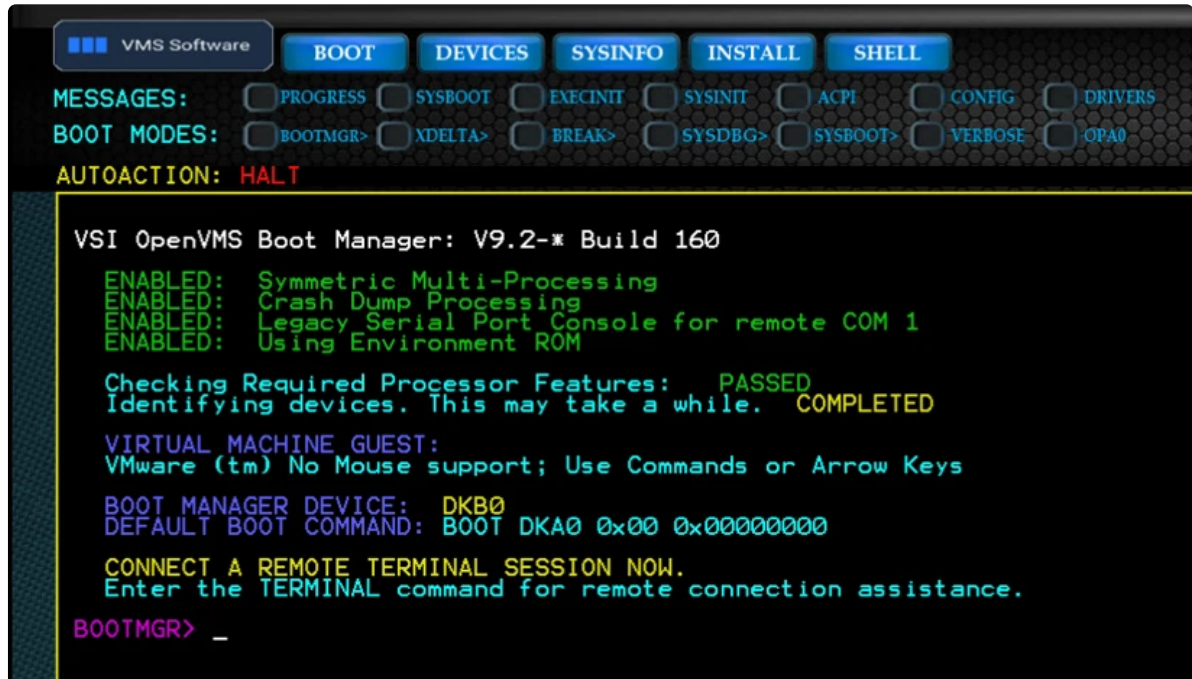
Perform the following steps:

- a. At the Shell> prompt, enter **map fs*** to display all file systems available on your VM.
- b. Locate the file system that maps to the VSI OpenVMS E9.2-4 ISO file. Since that ISO has been set up as a CDROM, the file system that maps to it will be labeled as CDROM as well. As an example, we will assume that the file system we want is FS0.
- c. At the Shell> prompt, enter:

```
fs0:\efi\vm\vm_bootmgr.efi
```

After this, you should see the VSI Boot Manager screen. Proceed to the next step.

If you see VSI Boot Manager screen ...



Proceed to the next step.

- If you plan to use the Guest Console feature instead of a serial port, enter **OPA0** at the **BOOTMGR>** prompt or select the **OPA0** checkbox with the arrow keys and press .

You will see the following message indicating that the Guest Console is enabled:

```
ENABLED: Guest Console OPA0 terminal (use local keyboard & display instead of
serial port).
The Guest Console provides a minimal OPA0 terminal (no resizing or cut-and-
paste).
SET TERM/INQUIRE to set the terminal size.
```

For more information, refer to the [VSI OpenVMS x86-64 Boot Manager User Guide](#).

- At the **BOOTMGR>** prompt, enter **DEVICES** to display the list of available bootable OpenVMS devices.

Note

Boot Manager connects the UEFI drivers for detected controllers to ensure that all available boot devices are discovered. On systems with a large number of controllers or Fibre Channel devices, delays may be encountered during the process. The following informational message is displayed:

```
Identifying devices. This may take a while. COMPLETED
```

- From the list, identify the device that contains the ISO file with the new version of VSI OpenVMS (it will be labeled as a CDROM or DVD). Enter **BOOT device-name**, where **device-name** is the

name of the disk that contains your ISO file (*not* the name of the ISO file itself). As an example, we enter:

```
BOOT DKA100
```

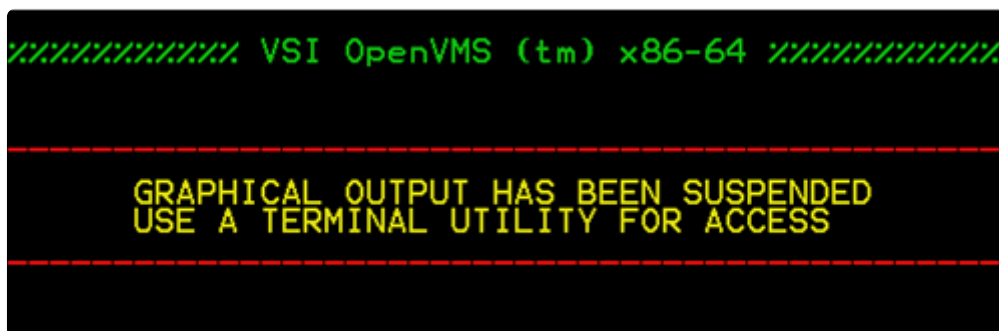
What you see after the progress meter reaches 100% depends on whether you are using the Guest Console or a serial port.

Guest Console

You should see the OpenVMS installation menu. Proceed to the next step.

Serial Port

You should see the following screen:



Establish a remote connection to your VM via a terminal emulator. Depending on your hypervisor of choice, VSI recommends using the following methods:

On VMware

You can choose to connect via Telnet or a named pipe, depending on how you set up your VM (see the serial-port setup step in [OpenVMS on ESXi](#)).

Note

Make sure that the port used by your VM can go through the ESXi firewall. If you are having trouble at this stage, refer to [OpenVMS on ESXi](#).

On KVM

Perform the following procedure:

- Make sure that the serial console is enabled and started on the host server.
- Make sure that virsh is connected to the hypervisor that you are using.
- Start virsh and enter the command **console *vm-name***, where ***vm-name*** is the name of the VM that you want to connect to.

For more details, refer to [OpenVMS on KVM](#).

When the `BOOTMGR>` prompt appears, your terminal emulator should automatically connect to your VM. However, if that does not happen, you can initiate command output to the serial port manually by entering the command:

```
BOOTMGR> COM n
```

where *n* is the serial port number that your VM uses. For more information, refer to [Routing and Logging Boot Manager Output](#).

5. Upon connecting, you should see the VSI OpenVMS installation menu and/or the Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) prompt.

Note

If the prompt does not appear, and the output appears blank or unchanging, press . The prompt should now appear. To see the OpenVMS installation menu, type `?`, then hit two times.

Important

VSI OpenVMS x86-64 E9.2-4 does not support installation menu items number 3, 5, and 7. Also, do not use item number 6 unless directly instructed otherwise.

6. Enter **1** to start the installation process.
7. Since this is a new installation, answer **INITIALIZE** to the Do you want to INITIALIZE or to PRESERVE? question.
8. At the Enter device name for target disk: prompt, enter the name of the disk where you want to install VSI OpenVMS.

To display a list of available devices, enter `?`. To display a list of devices with their volume label and size, enter `??`. As an example, we will enter **DKA0** :.
9. At the Enter volume label for target system disk prompt, enter the label that you want to assign to your system disk. As an example, we will enter **SYSTEMDISK**.

Important

In a cluster, all system disks must have unique labels.

10. You will see the Do you want to enable hard links? question. This choice is up to you and depends on how you are using or plan to use your OpenVMS system. For more information about hard links, see the [VSI OpenVMS System Manager's Manual, Volume 1](#).
11. You will see a summary of your choices and a prompt asking you to confirm them. Enter **YES** if everything is correct or **NO** to re-enter the disk label and your choice for hard links. For brevity and readability, similar prompts will not be mentioned again.
12. After the target disk has been initialized and mounted, you will see the question Do you want to create or validate boot options?. The answer is up to you. As an example, we will answer **YES**.

13. You will be asked to create and confirm the password for your SYSTEM account. The password must be a minimum of 15 characters.

 Warning

If everything is working correctly, you should not see any characters in your output while you enter your password. If you see any output or get an error at this stage, this could indicate an issue with your terminal emulator or Telnet configuration. For the recommended terminal emulator settings, refer to the console connection instructions for your hypervisor:

- [Connecting to KVM](#)
- [Connecting to ESXi](#)

14. At the `Enter SCSNODE:` prompt, enter a name for the system, no longer than 6 characters. If the system will be used in an OpenVMS Cluster, the name must be unique within the cluster. As an example, we will enter **x86**.
15. Next, you will see the `Do you plan to use DECnet?` prompt. DECnet is a family of products that enable OpenVMS systems to communicate with each other (for more information, see the [VSI DECnet-Plus for OpenVMS Introduction and User's Guide](#) and [VSI OpenVMS DECnet Networking Manual](#)). This choice is up to you and depends on how you are planning to use your OpenVMS setup.
- If you answer **NO**, you will be asked to specify a value for the SCSSYSTEMID parameter. This parameter is a number that identifies an OpenVMS system on a network. Make sure that each system on your network is assigned a unique SCSSYSTEMID.
- If you answer **YES**, the value for SCSSYSTEMID will be calculated based on the DECnet address that you enter when prompted.
16. Depending on your response to the previous question, you will be prompted for either the DECnet IV address or the SCSSYSTEMID value. Enter a value that is unique on your network.
17. The next several prompts will ask you to specify the time zone and daylight saving time (DST) information for your system. Enter appropriate values.
18. After setting the time zone information, you will see the `Do you want to automatically configure and start up TCP/IP & SSH?` prompt. The default option is **NO**.

 Important

- If you answer **YES**, and there is a running DHCP server on your network, *all* network adapters assigned to your VM will be configured with dynamic IP addresses provided by that DHCP server.
- If you intend to use your local network on OpenVMS immediately after installation (which is enabled by the [Installation OE](#) license), make sure to manually verify that your network is functioning properly.

19. You will see the `Do you want to register any Product Authorization Keys?` prompt. VSI recommends that you answer **NO** and register your Product Authorization Keys (PAKs) after the installation is complete.

i Important

VSI provides PAKs in the form of text files containing DCL code. You *cannot* run that code during the OpenVMS installation. If you choose to register your PAKs now, you must manually type the values for each of the fields exactly as they appear in the PAK for each license that you need to register.

However, once the installation has completed and the system has rebooted twice, you will be able to register your PAKs all at once (see [Licensing on OpenVMS x86-64](#)).

20. You will see the

Do you want to install DECwindows Motif for OpenVMS X86-64 V1.8-2? **prompt**. DECwindows Motif is a graphical user interface for VSI OpenVMS. The answer is up to you, as it depends on how you plan to use your VSI OpenVMS system.

21. You will see the Do you want to install DECnet-Plus for OpenVMS X86-64 V9.2-I? **prompt**¹. If you answer **NO**, you will see the

Do you want to install DECnet Phase IV for OpenVMS X86-64 E9.2-4? **prompt**. Note that you *cannot* install both products. Your choice to install one of them or neither of them depends on how you plan to use your VSI OpenVMS system.

22. You will see the Do you always want detailed descriptions? **prompt**. The answer is up to you. As an example, we will answer **NO**.23. The product kit validation will proceed, and then the configuration phase starts. Then, you will see the Do you want the defaults for all options? **question**. The recommended answer is **YES**.**p Note**

As the configuration phase starts and progresses, some of the products will require the system to be rebooted. If you see the

Can the system be REBOOTED after the installation completes? **question**, always answer **YES**. Answering **NO** will abort the upgrade.

With the default options selected, the following components and procedures will be installed or performed:

- VSI OpenVMS E9.2-4
 - DECdtm Distributed Transaction Manager
 - Support for DECnet-Plus or DECnet (Phase IV) for OpenVMS
 - Programming Support
 - Debugger Utility
 - Image Dump Utility
 - Macro libraries
 - Macro-32 Migration Compiler
 - TLB intermediary form of STARLET

1. As mentioned earlier, DECnet products provide networking capabilities to OpenVMS systems.

- C Header Files
- VMS text libraries of Ada declarations
- RMS Journaling Recovery Utility
- System Programming Support
 - Delta Debugger
 - System Dump Analyzer Utility
 - Miscellaneous Symbol Table Files
- Utilities
 - Phone Utility
 - XPG4 Internationalization Utilities
 - World Wide PostScript Printing Subsystem
- Bliss Require Files
- Example Files
- Message Facility Files (HELP/MESSAGE)
- UETP Files
- DECwindows Server Support
 - DECwindows workstation files
 - Video fonts
 - 100 dots-per-inch video fonts
 - Euro base support
 - Euro 100 dots-per-inch video fonts
- Delete any obsolete OpenVMS files
- Delete files archived by OpenVMS remedial kits
- Availability Manager (base) for OpenVMS x86-64
 - VSI Availability Manager Base OS Drivers
- TCP/IP Services for OpenVMS x86-64
 - VSI TCP/IP Services for OpenVMS V6.0-31
 - VSI SSL3 for OpenVMS x86-64 V3.0-21
- Applications
 - KERBEROS V3.3-5A for OpenVMS X86-64
 - SSL3 V3.0-21 for OpenVMS X86-64
 - VSI OpenSSH V9.9-2C for OpenVMS X86-64
 - VSI OpenLDAP V2.6-6B for OpenVMS X86-64
 - VSI 64-bit PERL V5.42-0 for OpenVMS X86-64
 - DECwindows Motif V1.8-2 for OpenVMS X86-64
 - Install Low Bandwidth X (LBX) Support

- Install the DECwindows Motif Version 1.8-2 client software
 - Install New Desktop
 - Install Manual (reference) pages for the New Desktop
 - Make the New Desktop the default desktop
 - Install traditional DECwindows Desktop
 - Programming Support for the C Language
 - Programming Support for the Pascal Language
 - Programming Support for the FORTRAN Language
 - Programming Support for the New Desktop
 - Programming examples
 - Sound example files
 - Programming examples for DECwindows
 - Programming examples for the New Desktop
- VSI DECnet-Plus V9.2-I for OpenVMS X86-64
 - DECdns Server software
 - DECdts Server software
- DECnet Phase IV for OpenVMS X86-64

If you prefer *not* to install some of these components, answer **NO**, and the system will prompt you about installing each component individually. If any subcomponent is not desired, you must first choose to install the main component, and then you will be asked about each subcomponent. In most cases, this level of customization is not necessary and may corrupt important system components. It is recommended to avoid this unless absolutely required.

24. At this stage, if you previously answered **NO** to the
Do you want the defaults for all options? question (in [this step](#)), you will see additional prompts asking you to confirm or reject the installation of subcomponents of some of the layered products.
25. Once the installation procedure has configured the layered products, you will see the
Do you want to review the options? prompt. The answer is up to you. As an example, we will answer **NO**.
26. After the Portion done: meter reaches 100%, a list of installed products will be displayed, followed by post-installation information for some of the products. Once the system updates the Memory Disk (which may take several seconds), the installation procedure is complete. You will see the Press Return to continue... prompt. Press .
27. You will see the VSI OpenVMS installation menu and the
Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) prompt. Enter **9** to shut down the system.
28. The system will shut down and display the **** Hit any key to reboot system **** prompt. Press any key to reboot the system.

29. Depending on your hypervisor of choice, you will either see the VSI Boot Manager screen or the UEFI screen.

If you see UEFI Shell> prompt ...

Perform the following steps:

- a. At the Shell> prompt, enter **map fs*** to display all file systems available on your VM.
- b. Find the file system for the newly installed system disk. If the correct file system is not readily apparent, use the file system for the CD-ROM device which had the installation ISO mapped to it.
- c. At the Shell> prompt, enter:

```
fs1:\efi\vm\vm_bootmgr.efi
```

You should see the VSI Boot Manager screen. Proceed to the next step.

If you see VSI Boot Manager screen ...

Proceed to the next step.

30. At the BOOTMGR> prompt, enter **DEVICES** to display the list of available bootable OpenVMS devices.
31. At the BOOTMGR> prompt, enter **BOOT *system-disk-name***, where *system-disk-name* is the disk that you specified as the target disk for the OpenVMS installation (in [this step](#)). The OpenVMS volume label for the device should be identified as the one you used for your target device, not for the CD-ROM/DVD-ROM device. In this example, we will enter **BOOT DKA0**. The system will boot, run the AUTOGEN command procedure, and reboot. Depending on the configuration, this operation may take several minutes. Please take note of and investigate any warnings that AUTOGEN may display.
32. When you see the BOOTMGR> prompt again, enter **DEVICES** to display the list of available bootable devices. Then, type **BOOT *system-disk-name*** one more time and wait for the system to boot. Press when you see an output similar to this:

```
Accounting information:
Buffered I/O count:      5631      Peak working set size:      19184
Direct I/O count:       15627     Peak virtual size:         258032
Page faults:            9900      Mounted volumes:           0
Charged CPU time:       0 00:00:10.59  Elapsed time:              0 00:01:31.14
```

This output indicates that the OpenVMS boot process has completed.

33. At the Username: prompt, type in **SYSTEM**.
34. At the Password: prompt, enter the password that you had previously set for the SYSTEM account (in [this step](#)).
35. You have successfully installed OpenVMS. If you did not register any of your licenses during installation (which is recommended), you should do so now. Refer to [Licensing on OpenVMS x86-64](#).

 Note

After installing the licenses, if you chose not to configure OpenSSH and TCP/IP services automatically during installation, you should manually configure these products or verify their configuration now. For instructions, see [Networking Options](#).

4. Upgrading to VSI OpenVMS x86-64 E9.2-4

This section describes how to upgrade to OpenVMS E9.2-4 from OpenVMS V9.2-2 or V9.2-3. Upgrading to E9.2-4 from earlier versions of OpenVMS is not possible. If you want to perform a fresh installation, see [Installing VSI OpenVMS x86-64 E9.2-4](#).

Before upgrading from one of the supported versions, make sure to install the following patches:

OpenVMS version	Required patches
OpenVMS x86-64 V9.2-2	Update V2 and BOOTMGR V1
OpenVMS x86-64 V9.2-3	PCSI V1 and BOOTMGR V1

4.1 Creating a Non-Shadowed Target Disk From a Shadowed Disk

It is not possible to upgrade VSI OpenVMS on a shadowed system disk; the procedure will always fail. You will need to disable system disk shadowing *before* you can upgrade the operating system. If you are using a non-shadowed system disk, skip this section and proceed to [Upgrading a Non-Shadowed System Disk](#).

To disable shadowing on a system disk, follow these steps:

1. Make a backup copy of the system disk. For details, refer to the [System Management Utilities Reference Manual, Volume I](#).
2. Execute the VSI\$SUPPORT command procedure¹ to create a report containing a snapshot of the system configuration:

```
$ @SYS$MANAGER:VSI$SUPPORT
```

Once the report is created, copy it to another system.

3. Enter the command **@SYS\$SYSTEM: SHUTDOWN.COM** to shut down the system booted from the shadowed system disk that you want to upgrade.
4. The procedure will ask you several questions. Give appropriate answers but make sure to answer **NO** when asked for permission to perform an automatic reboot or power off.
5. Once you have shut down the system, you will need to perform a conversational (interactive) boot from the system disk that you want to upgrade. To begin, enter the following command at the UEFI Shell prompt:

```
Shell> fsn:\efi\vms\vms_bootmgr.efi
```

1. The latest version of VSI\$SUPPORT is available at products.vmssoftware.com/vsisupport.

where `fsn` is the file system associated with the shadowed system disk device that you want to upgrade. If you do not know which file system you need, enter the command **map fs*** to display all file systems available on your VM and look for the one associated with the shadowed system disk that you want to upgrade.

6. Once you have selected the file system that you want to work with (for example, `fs1`) and entered the command mentioned in the previous step, you will see the `BOOTMGR>` prompt.
7. On the boot manager startup screen, you will see the default boot command template, similar to the following:

```
DEFAULT BOOT COMMAND: BOOT your-device 0xnn 0Xnnnnnnnnn
```

where `0xnn` stands for the system root and `0Xnnnnnnnnn` stands for the flags that you can specify.

To perform a conversational boot, you must boot from your system disk with the system root that you normally use (0 by default) and the boot flag set to 1. To do so, enter the following command, which is based on the template that you saw on your Boot Manager screen (bear in mind that yours might be slightly different):

```
BOOTMGR> BOOT your-device 0 1
```

You will see the `SYSBOOT>` prompt.

8. At the `SYSBOOT>` prompt, enter the following command to disable volume shadowing on your system disk:

```
SYSBOOT> SET SHADOW_SYS_DISK 0
```

9. At the `SYSBOOT>` prompt, enter **CONTINUE** to resume the boot procedure.
10. After the boot completes, log in to the `SYSTEM` account.
11. Shut down the system by entering the command:

```
$ @SYS$SYSTEM:SHUTDOWN.COM
```

12. When asked whether an automatic system reboot or power off should be performed, answer **NO**.

You now have a non-shadowed system disk that you can use for the upgrade. Go to [Upgrading a Non-Shadowed System Disk](#) to begin the upgrade procedure. For more information on volume shadowing, refer to the *VSI OpenVMS Volume Shadowing Guide*.

4.2 Upgrading a Non-Shadowed System Disk

Dismount system disk

Before performing the upgrade, ensure that the system disk is properly dismounted from all other nodes in the cluster. Failure to follow this precaution may result in getting the following error messages on reboot after the installation:

```
%SYSINIT-E- unable to mount the system disk
%SYSINIT-E- error mounting system device
               status = 0072832C

.
.
.

** Bugcheck code = 0000036C: PROCGONE, Process not in system
```

If this happens, issue the command **DISMOUNT/CLUSTER *system-disk-name*** on a node that has this disk mounted. Then, repeat the boot attempt.

To upgrade to VSI OpenVMS x86-64 E9.2-4 from a supported earlier version, follow these steps:

1. Download and unzip the [VSI OpenVMS x86-64 E9.2-4 kit](#), then copy the ISO file to an area that is locally accessible to your hypervisor.

Note

VSI recommends that you make a backup copy of the system disk before starting the upgrade procedure.

2. Power off the virtual machine that you want to upgrade to VSI OpenVMS x86-64 E9.2-4. You can do this either from your virtual machine management application or by using the `POWER_OFF` option in `SYSS$SYSTEM:SHUTDOWN.COM`.
3. Bring up the screen to edit its settings. Find the CD-ROM/DVD-ROM device that your virtual machine is using and change the ISO file associated with the optical device to the E9.2-4 ISO file.
4. Save the changes and close the settings window.
5. Power on your VM. Depending on your hypervisor of choice and the boot settings of your VM, you will either see the `UEFI Shell>` prompt or the VSI Boot Manager screen.

If you see **UEFI Shell>** prompt ...

```
EFI Shell version 2.70 [1.0]
Current running mode 1.1.2
Device mapping table
fs0      :CDRom - Alias cd21b0a0 blk0
           PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x1,0x0)/Sata(0x1,0x0,0x0)/
           CDROM(0x0,0x1B,0xE800)
.
.
.
Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell>
```

Perform the following steps:

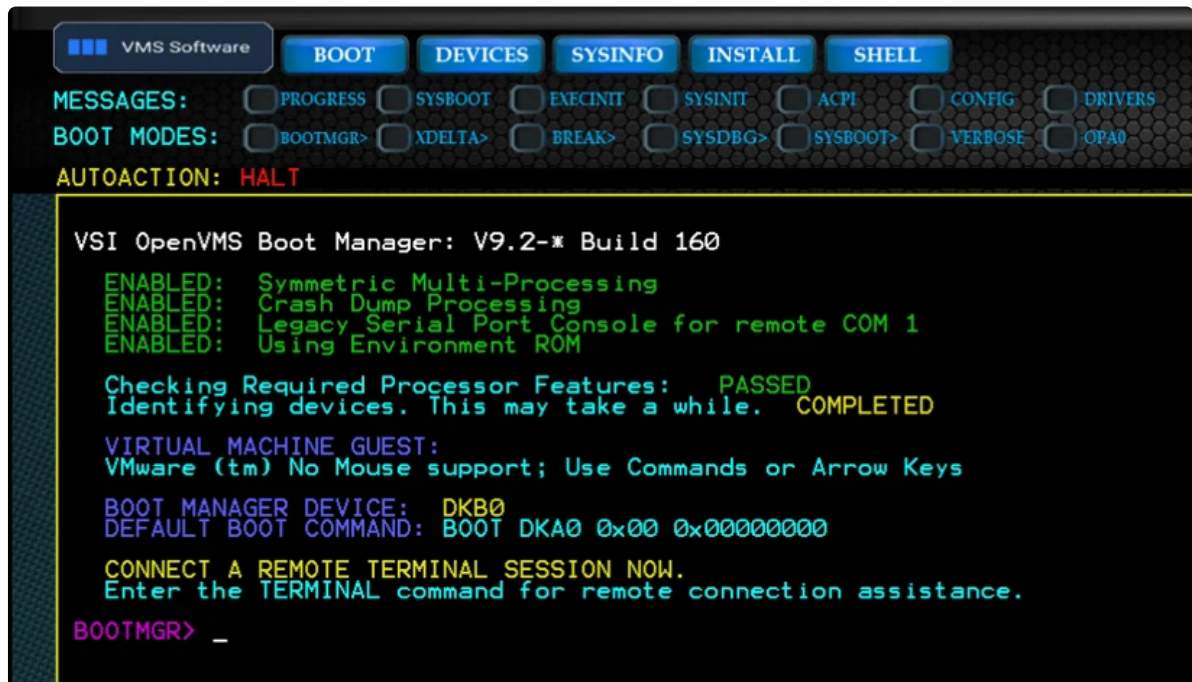
- a. At the `Shell>` prompt, enter **map fs*** to display all file systems available on your VM.

- b. Locate the file system that maps to the VSI OpenVMS E9.2-4 ISO file. Since that ISO has been set up as a CDROM, the file system that maps to it will be labeled as CDROM as well. As an example, we will assume that the file system we want is FS0.
- c. At the Shell> prompt, enter:

```
fs0:\efi\vms\vms_bootmgr.efi
```

After this, you should see the VSI Boot Manager screen. Proceed to the next step.

If you see VSI Boot Manager screen ...



Proceed to the next step.

6. If you plan to use the Guest Console feature instead of a serial port, enter **OPA0** at the BOOTMGR> prompt or select the **OPA0** checkbox with the arrow keys and press .

You will see the following message indicating that the Guest Console is enabled:

```
ENABLED: Guest Console OPA0 terminal (use local keyboard & display instead of
serial port).
The Guest Console provides a minimal OPA0 terminal (no resizing or cut-and-
paste).
SET TERM/INQUIRE to set the terminal size.
```

For more information, refer to the [VSI OpenVMS x86-64 Boot Manager User Guide](#).

7. At the BOOTMGR> prompt, enter **DEVICES** to display the list of available bootable OpenVMS devices.

Note

Boot Manager connects the UEFI drivers for detected controllers to ensure that all available boot devices are discovered. On systems with a large number of controllers or Fibre Channel devices, delays may be encountered during the process. The following informational message is displayed:

```
Identifying devices. This may take a while. COMPLETED
```

8. From the list, identify the device that contains the ISO file with the new version of VSI OpenVMS (it will be labeled as a CDROM or DVD). Enter **BOOT device-name**, where **device-name** is the name of the disk that contains your ISO file (*not* the name of the ISO file itself). As an example, we enter:

```
BOOT DKA100
```

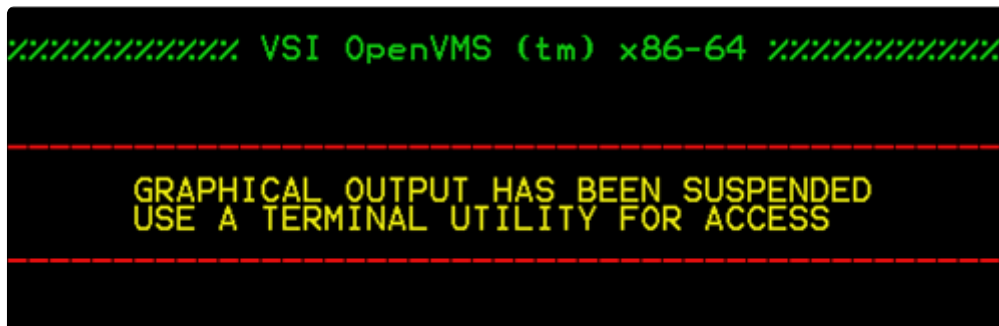
What you see after the progress meter reaches 100% depends on whether you are using the Guest Console or a serial port.

Guest Console

You should see the OpenVMS installation menu. Proceed to the next step.

Serial Port

You should see the following screen:



Establish a remote connection to your VM via a terminal emulator. Depending on your hypervisor of choice, VSI recommends using the following methods:

On VMware

You can choose to connect via Telnet or a named pipe, depending on how you set up your VM (see the serial-port setup step in [OpenVMS on ESXi](#)).

Note

Make sure that the port used by your VM can go through the ESXi firewall. If you are having trouble at this stage, refer to [OpenVMS on ESXi](#).

On KVM

Perform the following procedure:

- a. Make sure that the serial console is enabled and started on the host server.
- b. Make sure that virsh is connected to the hypervisor that you are using.
- c. Start virsh and enter the command **console vm-name**, where **vm-name** is the name of the VM that you want to connect to.

For more details, refer to [OpenVMS on KVM](#).

When the `BOOTMGR>` prompt appears, your terminal emulator should automatically connect to your VM. However, if that does not happen, you can initiate command output to the serial port manually by entering the command:

```
BOOTMGR> COM n
```

where *n* is the serial port number that your VM uses. For more information, refer to [Routing and Logging Boot Manager Output](#).

9. Upon connecting, you should see the VSI OpenVMS installation menu and/or the Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) prompt.

Note

If the prompt does not appear, and the output appears blank or unchanging, press . The prompt should now appear. To see the OpenVMS installation menu, type `?`, then hit two times.

Important

VSI OpenVMS x86-64 E9.2-4 does not support installation menu items number 3, 5, and 7. Also, do not use item number 6 unless directly instructed otherwise.

10. Read this step only if you have VSI OpenSSH V8.9-1H01 or earlier installed on your system. If you do not, skip to the next step.

VSI OpenSSH V8.9-1H01

If you have this version of VSI OpenSSH installed, you will see a message similar to the following during the upgrade:

```
%PCSI-E-EXERMVFAIL, product supplied EXECUTE REMOVE procedure failed
-CREATE-E-DIRNOTCRE, !AS directory file not created
%PCSI-E-OPFAILED, operation failed
Terminating is strongly recommended. Do you want to terminate? [YES]
```

Ignore this message. Answer **NO** and continue the upgrade procedure as normal.

VSI OpenSSH V8.9-1G or earlier

If you have VSI OpenSSH V8.9-1G or earlier installed on your system, you must uninstall it now, otherwise the upgrade procedure will abort.

To proceed, you must know the name of the system disk you will be upgrading. If you do not know the name, follow these steps to find the disk:

- a. In the VSI OpenVMS installation menu, select
8 - Execute DCL commands and procedures.
- b. At the \$\$\$ prompt, enter **SHOW DEVICES DK** to display the list of available disks.
- c. If you are unsure which system disk to upgrade, you may need to mount each of the local disks individually until you find the desired one.
- d. Type **LOGOUT** to return to the VSI OpenVMS installation menu.

To uninstall VSI OpenSSH, perform the following procedure:

- a. In the VSI OpenVMS installation menu, enter 6 - Remove installed products.
- b. At the prompt for the target disk, enter the name of the system disk that you will be upgrading.
- c. Accept the default answer for the detailed description prompt.
- d. You will see a list of installed products. Enter the item number that represents VSI OpenSSH.
- e. Answer **YES** to the Do you want to continue? question.
- f. Answer **NO** to each of the Do you want to terminate? questions.
- g. When the product is removed, you will see the Press Return to continue... prompt.
Press .
- h. You will see the VSI OpenVMS installation menu.

11. Enter **1** to start the upgrade procedure.
12. You will see the Do you want to INITIALIZE or to PRESERVE? question. Enter **PRESERVE**.
13. At the Enter device name for target disk: prompt, enter the name of the disk where your current version of VSI OpenVMS is installed. If you are not sure which disk that is, enter **??** to display a list of available disks with volume names.
14. You will see a message stating the current label of the selected disk. Specify whether you want to keep the label or change it.
15. After confirming or changing the disk label, you will see the
Do you want to create or validate boot options? question. The answer is up to you.
As an example, we will answer **YES**.

Note

Unlike a fresh installation, the existing SYSTEM account password remains unchanged during an upgrade.

16. If you have any installed patches with recovery data, they will be displayed followed by the
Do you want to continue? prompt. Enter **YES**.
17. You will see a list of installed products and information on how the upgrade procedure will handle each one.

If DECnet-Plus is not installed on your system, you will see a prompt to install it. The answer is up to you. If you choose to install DECnet-Plus, and DECnet Phase IV is already installed on your system, you will be prompted to remove it.

18. You will see the `Do you always want detailed descriptions?` question. The answer is up to you. As an example, we will answer **NO**.
19. The product kit validation will proceed, and then the configuration phase will start. You will then see the `Do you want the defaults for all options?` question. The recommended answer is **YES**.

 Note

As the configuration phase starts and progresses, some of the products will require the system to be rebooted. If you see the `Can the system be REBOOTED after the installation completes?` question, always answer **YES**. Answering **NO** will abort the upgrade.

With the default options selected, the following components and procedures will be installed or performed:

- VSI OpenVMS E9.2-4
 - DECdtm Distributed Transaction Manager
 - Support for DECnet-Plus or DECnet (Phase IV) for OpenVMS
 - Programming Support
 - Debugger Utility
 - Image Dump Utility
 - Macro libraries
 - Macro-32 Migration Compiler
 - TLB intermediary form of STARLET
 - C Header Files
 - VMS text libraries of Ada declarations
 - RMS Journaling Recovery Utility
 - System Programming Support
 - Delta Debugger
 - System Dump Analyzer Utility
 - Miscellaneous Symbol Table Files
 - Utilities
 - Phone Utility
 - XPG4 Internationalization Utilities
 - World Wide PostScript Printing Subsystem
 - Bliss Require Files
 - Example Files

- Message Facility Files (HELP/MESSAGE)
- UETP Files
- DECwindows Server Support
 - DECwindows workstation files
 - Video fonts
 - 100 dots-per-inch video fonts
 - Euro base support
 - Euro 100 dots-per-inch video fonts
- Delete any obsolete OpenVMS files
- Delete files archived by OpenVMS remedial kits
- Availability Manager (base) for OpenVMS x86-64
 - VSI Availability Manager Base OS Drivers
- TCP/IP Services for OpenVMS x86-64
 - VSI TCP/IP Services for OpenVMS V6.0-31
 - VSI SSL3 for OpenVMS x86-64 V3.0-21
- Applications
 - KERBEROS V3.3-5A for OpenVMS X86-64
 - SSL3 V3.0-21 for OpenVMS X86-64
 - VSI OpenSSH V9.9-2C for OpenVMS X86-64
 - VSI OpenLDAP V2.6-6B for OpenVMS X86-64
 - VSI 64-bit PERL V5.42-0 for OpenVMS X86-64

- DECwindows Motif V1.8-2 for OpenVMS X86-64
 - Install Low Bandwidth X (LBX) Support
 - Install the DECwindows Motif Version 1.8-2 client software
 - Install New Desktop
 - Install Manual (reference) pages for the New Desktop
 - Make the New Desktop the default desktop
 - Install traditional DECwindows Desktop
 - Programming Support for the C Language
 - Programming Support for the Pascal Language
 - Programming Support for the FORTRAN Language
 - Programming Support for the New Desktop
 - Programming examples
 - Sound example files
 - Programming examples for DECwindows
 - Programming examples for the New Desktop
- VSI DECnet-Plus V9.2-I for OpenVMS X86-64
 - DECDns Server software
 - DECdts Server software
- DECnet Phase IV for OpenVMS X86-64

If you prefer *not* to install some of these components, answer **NO**, and the system will prompt you about installing each component individually. If any subcomponent is not desired, you must first choose to install the main component, and then you will be asked about each subcomponent. In most cases, this level of customization is not necessary and may corrupt important system components. It is recommended to avoid this unless absolutely required.

Depending on what other components are currently installed or not installed on your system, you might get additional prompts asking for your consent to install them.

20. Once the upgrade procedure has configured the layered products, you will see the `Do you want to review the options?` prompt. The answer is up to you. As an example, we will answer **NO**.
21. As the execution phase starts and progresses, you will see several PCSI messages along with the `Do you want to continue?` prompt for one or more of the products that will be installed. Answer **YES** to all such prompts.
22. After the `Portion done: meter` reaches 100%, you will see the list of installed and uninstalled products followed by post-installation information for some of them. Once the system updates the Memory Disk (which may take several seconds), the upgrade procedure is complete. You will see the `Press Return to continue...` prompt. Press .
23. You will see the VSI OpenVMS installation menu and the `Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?)` prompt. Enter **9** to shut down the system.

24. The system will shut down and display the `**** Hit any key to reboot system ****` prompt. Press any key to reboot the system.
25. Depending on your hypervisor of choice, you will either see the VSI Boot Manager screen or the UEFI screen.

If you see UEFI Shell> prompt ...

Perform the following steps:

- a. At the Shell> prompt, enter `map fs*` to display all file systems available on your VM.
- b. Find the file system for the newly upgraded system disk. If the correct file system is not readily apparent, use the file system for the CD-ROM device which had the installation ISO mapped to it.
- c. At the Shell> prompt, enter:

```
fs1:\efi\vms\vms_bootmgr.efi
```

You should see the VSI Boot Manager screen. Proceed to the next step.

If you see VSI Boot Manager screen ...

Proceed to the next step.

26. At the BOOTMGR> prompt, enter **DEVICES** to display the list of available bootable OpenVMS devices.
27. At the BOOTMGR> prompt, enter **BOOT *system-disk-name***, where *system-disk-name* is the disk that you specified as the target disk for the OpenVMS upgrade (in [this step](#)). The OpenVMS volume label for the device should be identified as the one you used for your target device, not for the CD-ROM/DVD-ROM device. In this example, we will enter **BOOT DKA0**. The system will boot, run the AUTOGEN command procedure, and reboot. Depending on the configuration, this operation may take several minutes. Please take note of and investigate any warnings that AUTOGEN may display.
28. When you see the BOOTMGR> prompt again, enter **DEVICES** to display the list of available bootable devices. Then, enter **BOOT *system-disk-name*** one more time and wait for the system to boot. Press when you see an output similar to this:

```
Accounting information:
Buffered I/O count:      5631      Peak working set size:      19184
Direct I/O count:       15627     Peak virtual size:         258032
Page faults:            9900      Mounted volumes:            0
Charged CPU time:       0 00:00:10.59  Elapsed time:              0 00:01:31.14
```

This output indicates that the OpenVMS boot process has completed.

29. Log in to the system.
30. Now you should register your new licenses, if necessary. Refer to [Licensing on OpenVMS x86-64](#).

You have successfully upgraded to VSI OpenVMS x86-64 E9.2-4.

5. Installing From a Web Server

Starting with OpenVMS V9.2-2, VSI OpenVMS can be installed from a web server, which provides an attractive option for many customers who may already be familiar with the procedures. Note, however, that this type of installation is not recommended by VSI.

Warning

The method described below relies on the utility called VMS_KITBOOT. This utility requires that the target system/VM be located on a network segment which has a DHCP server. If DHCP is not available, you cannot use this method.

5.1 Web Server Preparation

Your internal company web server can be used to serve installations. Due to the variety of available web servers, this section focuses on general setup steps only. It is assumed that the web server is reachable for your VM host and that the guest VM is reachable from the web server's network.

The first two files listed below can be found in the EFI partition of any installed VSI OpenVMS V9.2-2 (or higher) system disk at `fsx:\EFI\VMS\` or copied from the Operating Environment ISO image.

1. Create a `/netboot/` directory on your web server.
2. Copy the following files to the `/netboot/` directory:
 - a. VMS_BOOTMGR.EFI – the Boot Manager
 - b. VMS_IMG.BMP – the Boot Manager background image (optional)
 - c. *installation-kit*.ISO – the VSI OpenVMS Installation Kit

Note

If the host operating system does not recognize VSI OpenVMS file versions, you will need to rename the files to remove the semicolon and version numbers after copying them to your web server. Note also that some web servers are case-sensitive.

5.2 Target Virtual Machine Preparation (VMS_KITBOOT Utility)

Note

The VMS_KITBOOT utility is an optional feature. This utility can be copied from an installed system. The utility is loosely coupled to the Boot Manager's install button and command, primarily intended to support future update procedures. If such web server access is unwanted, instances of the file (VMS_KITBOOT.EFI)

can be deleted from the EFI partition of bootable VSI OpenVMS disks. If the file is deleted, the Boot Manager install button and command will simply be non-functional.

UEFI firmware provides HTTP(S) protocols to support connection to web servers. The most popular of these protocols is known as iPXE. For more information, refer to <http://www.ipxe.org>.

VMS_KITBOOT.EFI automates most of the web server boot process. When launched from the UEFI Shell of your VM guest, the VMS_KITBOOT utility will identify your system hardware, configure a suitable network device, prompt for the IP address of your web server, and handle the connection and download protocol for the Installation Kit. When VMS_KITBOOT has finished downloading the kit, it will launch the VSI OpenVMS Boot Manager that is able to boot to the installation media and initiate the installation procedure.

Note

If you have security concerns about these procedures or your firewall configuration, you can install OpenVMS from an ISO image instead of a web server.

VMS_KITBOOT.EFI can be executed from any UEFI file system disk (for example, fs0:). A simple way to do this is to copy the file onto a FAT-formatted USB stick assigned to your target system/VM. VM users can also use a pre-packaged virtual disk containing this file in these common virtual disk formats:

VMS_KITBOOT.VMDK

A VMware ESXi disk image containing the utility.

VMS_KITBOOT.QCOW2

A KVM disk image containing the utility.

VMS_KITBOOT.EFI

The executable file of the utility. Copy to a UEFI fsx: device or USB stick.

Note

If you choose to use the .EFI version, as opposed to a pre-packaged virtual disk, you must create a USB stick containing VMS_KITBOOT.EFI on a system that supports the FAT32 file system (such as a Windows PC), as this is the file system expected by UEFI. Or, if your guest already has access to another EFI partition, you can put this file in that partition. If you already have another disk with VSI OpenVMS installed on it, you can execute VMS_KITBOOT directly from the UEFI Shell prompt.

To install OpenVMS from a web server, follow these steps:

1. FTP (in binary mode) the appropriate version of VMS_KITBOOT.EFI to your guest folder directory on the VM host. Each guest will require its own copy of VMS_KITBOOT, or you can share a hard drive containing the utility among multiple guests if they have a common host.

2. When you start your guest VM and reach the UEFI Shell, navigate to the directory containing VMS_KITBOOT.EFI:

```
Shell> cd efi\vms
```

Then launch VMS_KITBOOT using the following command:

```
Shell> vms_kitboot.efi
```

3. VMS_KITBOOT will prompt you for the IPv4 address (*xxx.xxx.xxx.xxx*) of your web server and the full file path to the Installation Kit (*/netboot/kitfile.ISO*). You can also use an FQDN address (*mywebserver.mycompany.com*), but using an IPv4 address will avoid a DNS lookup. The web server should respond by downloading the required installation images.

For an initial web-server-based installation, one of the downloaded files is the full Installation Kit (the .ISO file). This large file can take several minutes to download. Once the file has downloaded, the installation proceeds much faster than it would if each file was read individually.

 Note

Installation, and particularly installation over a network, requires sufficient physical memory to support UEFI firmware, the VMS_KITBOOT utility, the OpenVMS installation kit, the OpenVMS Boot Manager, and the installed operating system. Currently, at least 6 GB RAM is recommended.

If the download fails due to lack of memory, return to your guest setup and increase the amount of RAM allocated to the guest. If needed, you can reduce the amount of memory allocated to the VM once the installation completes.

4. When the download completes, the Boot Manager should appear and automatically initiate a boot of the Installation Kit. Note that the memory-resident Installation Kit image will appear as DMM1 : to VSI OpenVMS during the installation.
5. You should see the VSI OpenVMS installation menu. Proceed with the installation as described in [Installing VSI OpenVMS x86-64 E9.2-4](#).

6. Networking Options

This section provides information about networking options and basic instructions for configuring DECnet Phase IV, DECnet-Plus, VSI TCP/IP Services, and VSI OpenSSH on OpenVMS x86-64 E9.2-4.

6.1 VSI DECnet

If DECnet Phase IV or DECnet-Plus is already installed on your system and you want to switch to the other DECnet product, you must remove the currently installed product before installing and configuring the other one.

Warning

If your DECnet installation was *not* part of the main OpenVMS installation procedure, you *must* update the Memory Disk after you install DECnet. The Memory Disk update ensures that SYSS\$LOADABLE_IMAGES:SYSS\$NETWORK_SERVICES.EXE is loaded on boot. Use the following command:

```
$ @SYSS$UPDATE:SYSS$MD.COM
```

After the next system reboot, you may want to purge the Memory Disk by using the following command:

```
$ PURGE SYSS$LOADABLE_IMAGES:SYSS$MD.DSK
```

If you install DECnet as part of the main OpenVMS x86-64 installation procedure, you do *not* need to update the Memory Disk. The Memory Disk is updated at the end of the OpenVMS x86-64 installation.

After DECnet has been installed and configured, you can set host and copy files to/from other systems running DECnet.

6.1.1 Setting Up DECnet Phase IV

To configure DECnet Phase IV, execute SYSS\$MANAGER:NETCONFIG.COM and follow the configuration procedure. For more information, refer to [DECnet for OpenVMS Guide to Networking](#).

Once DECnet Phase IV is configured, edit SYSS\$MANAGER:SYSTARTUP_VMS.COM so that the software starts when the system reboots. You can have the software start interactively or in batch mode by making one of the following changes:

- Locate and uncomment the line:

```
$!$ START/NETWORK DECNET
```

So it now appears as:

```
$ START/NETWORK DECNET
```

- To start the network in a batch job (which speeds up startup), locate and uncomment the line:

```
$!$ SUBMIT SYS$MANAGER:STARTNET.COM
```

So it now appears as:

```
$ SUBMIT SYS$MANAGER:STARTNET.COM
```

For more DECnet Phase IV documentation, see the [VSI OpenVMS DECnet Networking Manual](#).

6.1.2 Setting Up DECnet-Plus

Important

VSI DECnet-Plus OSAK will not be installed with VSI OpenVMS x86-64 E9.2-4 and must be installed manually, if necessary. The installation kit is provided on the distribution media in the directory *device-name*: [KITS.DECNET_PLUS].

To configure DECnet-Plus, execute SYS\$MANAGER:NET\$CONFIGURE.COM and follow the configuration procedure. For more information, refer to [VSI DECnet-Plus for OpenVMS Installation and Configuration](#).

Once the software is configured, test the connectivity via the following command:

```
$ SET HOST 0
```

You should see the OpenVMS welcome message and the prompt to log in to your system.

Next, disable the OpenVMS Distributed Time Synchronization Service (DTSS) for the current session via these commands:

```
$ MCR NCL DISABLE DTSS
$ MCR NCL DELETE DTSS
```

To disable DTSS for all subsequent sessions, add the following command to SYS\$MANAGER:SYLOGICALS.COM:

```
$ DEFINE/SYSTEM/EXECUTIVE_MODE NET$DISABLE_DTSS TRUE
```

6.2 Configuring VSI TCP/IP Services

This section provides information on configuring VSI TCP/IP Services V6.0-31 with a dynamic IP address provided by a DHCP server. This setup is only necessary if the automatic configuration option was *not* selected during installation, and you are now planning to configure the system to use a DHCP address.

Important

The procedure below assumes you already have a network with a running DHCP server. It also assumes that your virtual machine is running and that you have established a connection to the VM's OPA0: terminal using a terminal emulator.

To configure VSI TCP/IP Services and DHCP, follow these steps:

1. At the \$ prompt, enter:

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

2. If TCP/IP Services has not yet been configured, the following prompt is displayed:

```
%TCPIP-I-NOCONFIG, TCP/IP Services is not configured
Autoconfigure TCP/IP Services using DHCP client [YES]:
```

Press to accept the default **YES**.

TCP/IP Services automatically configure the DHCP client and start TCP/IP Services.

3. When the configuration and startup are complete, the following message is displayed:

```
%TCPIP-S-STARTDONE, TCP/IP Services startup completed
```

4. **Optional:** From the DCL prompt, issue **TCPIP PING *ip-address*** to verify that the configuration is working correctly. Do not close your terminal emulator window.
5. **Optional:** To enable automatic startup of TCP/IP Services, uncomment the appropriate line in the `SY$MANAGER:SYSTARTUP_VMS.COM` command procedure.

6.3 Configuring VSI OpenSSH

Warning

If you are upgrading to VSI OpenVMS x86-64 E9.2-4 and you have OpenSSH V8.9-1G or earlier installed, make sure to uninstall VSI OpenSSH from your system before you start the upgrade procedure.

After the installation has successfully completed, follow these steps:

1. Start the OpenSSH SSH server by executing the following command:

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

If OpenSSH is not yet configured, the startup procedure automatically starts the configuration process. OpenSSH creates the SSH\$SSH and SSH\$SSHD accounts and prompts you to specify the default UIC group number for these accounts.

If the accounts are being created for the first time, the default is the first unused UIC group number, starting with 3655. If either account already exists, its existing UIC is not changed. If old TCPIP\$SSH account exists, its UIC group number is used for the new TCPIP\$SSH account.

The name of the TCP/IP service for the OpenSSH SSH server is SSHD_{port}, where *port* is the TCP port number that the server is configured to listen on. For example, if the server is configured to listen on TCP port 222, the service name is SSHD222.

2. At the following prompt, enter the required UIC group number or accept the default:

```
Group: [3656]
```

You can specify any other non-existing UIC group number. Avoid specifying a group number that already exists.

3. To ensure that OpenSSH starts automatically when OpenVMS is booted, add the command above to SY\$MANAGER:SY\$STARTUP_VMS.COM after the TCP/IP startup command procedure.
4. To have all necessary symbols defined by the time of login, add the following command to the system-wide login procedure (SY\$MANAGER:SY\$LOGIN.COM):

```
$ @SSH$ROOT:[BIN]SSH$DEFINE_COMMANDS.COM
```

Notes

- If you plan to allow users with SSH-connected sessions to shut down the system, do not invoke SY\$STARTUP:SSH\$SHUTDOWN.COM from within the site-specific SY\$MANAGER:SY\$SHUTDWN.COM procedure. The SSH shutdown will delete the process executing the shutdown, which will prevent the system from shutting down.
- The command procedure SSH\$ROOT:[BIN]SSH\$DEASSIGN_COMMANDS.COM can be used to undefine these command symbols.

If SSH\$DEFINE_COMMANDS.COM is run with the parameter ALL, the following additional commands will be defined. These commands are intended primarily for administrative purposes:

• SSHSTART

Starts and creates (if necessary) OpenSSH services. Before running this command, check the file SSH\$ROOT:[ETC]SSHD_CONFIG. to ensure that the SSH server configuration details are correct. Modify if needed.

- **SSHSTOP**

Stops OpenSSH services. If the parameter ALL is specified, service definitions will also be deleted from the TCP/IP configuration.

- **SSHSHOW**

Shows details of running OpenSSH processes, including SSH connections, number of connected clients, etc. Note that each client connection consists of two processes:

- A process named SSHD_BGxxxxx (where xxxxx is the number of the associated BG device)
- A user process with a name that either matches the username or begins with the string FTAxxx_ followed by the username (for example, FTA110_SMITH). The name of the user process may of course be changed by the user.

- **SSHVERSION**

Displays information about OpenSSH programs, including version details and other related data.

 Note

When the TCP/IP services are restarted, the OpenSSH server may become unresponsive and stop accepting new connections. To restore the OpenSSH server after a TCP/IP restart, first shut down OpenSSH by executing the following command:

```
$ @SYS$STARTUP:SSH$SHUTDOWN.COM
```

Then restart OpenSSH by executing the following command:

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

7. Sample Installation and Upgrade Logs

Note

Depending on the choices that you make during the installation, as well as your hypervisor of choice, certain parts of your log might look different.

7.1 Sample Installation Log

```

THE GUEST CONSOLE HAS BEEN SUSPENDED

USE A TERMINAL UTILITY FOR OPA0 ACCESS

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4
Copyright 2026 VMS Software, Inc.

MDS Mitigation active, variant verw(MD_CLEAR)

%SMP-I-CPUTRN, CPU #2 has joined the active set.
%SMP-I-CPUTRN, CPU #3 has joined the active set.
%SMP-I-CPUTRN, CPU #7 has joined the active set.
%SMP-I-CPUTRN, CPU #1 has joined the active set.
%SMP-I-CPUTRN, CPU #6 has joined the active set.
%SMP-I-CPUTRN, CPU #5 has joined the active set.
%SMP-I-CPUTRN, CPU #4 has joined the active set.

Installing required known files...

Configuring devices...

%EIA0, Link up: 1000 mbit, shared interrupts, 00-50-56-AC-EF-35

*****

You can install or upgrade the OpenVMS X86-64 operating system
or you can install or upgrade layered products that are included
on the OpenVMS X86-64 distribution media.
```

You can also execute DCL commands and procedures to perform "standalone" tasks, such as backing up the system disk.

Please choose one of the following:

- 1) Upgrade, install or reconfigure OpenVMS X86-64 Version E9.2-4
- 2) Display layered products that this procedure can install
- 3) Install or upgrade layered products
- 4) Show installed products
- 5) Reconfigure installed products
- 6) Remove installed products
- 7) Find, Install or Undo patches; Show or Delete Recovery Data
- 8) Execute DCL commands and procedures
- 9) Shut down this system

Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) **1**

This procedure will ask a series of questions.

- () - encloses acceptable answers
- [] - encloses default answers

Type your response and press the <Return> key. Type:

- ? - to repeat an explanation
- ^ - to change prior input (not always possible)
- Ctrl/Y - to exit the installation procedure

There are two choices for installation/upgrade:

Initialize - Removes all software and data files that were previously on the target disk and installs OpenVMS X86-64.

Preserve -- Installs or Upgrades OpenVMS X86-64 on the target disk and retains all other contents of the target disk.

* Note: You cannot use preserve to install OpenVMS X86-64 on a disk on which any other operating system is installed. This includes implementations of OpenVMS for other architectures.

Do you want to INITIALIZE or to PRESERVE? [PRESERVE] **INITIALIZE**

You must enter the device name for the target disk on which OpenVMS X86-64 will be installed.

Enter device name for target disk: (? for choices) **?**

Device Name	Device Type Name	Volume Label	Size (blocks/xB)
-----	-----	-----	-----
DKA500:	VMware Virtual disk		
DKD2:	VMware Virtual disk		

For volume label and device size enter ??

Enter device name for target disk: (? for choices) **DKA500**

Enter volume label for target system disk: [X86SYS] **X86SYS**

OpenVMS V9.0 and later requires that the target system disk be initialized with On-Disk Structure Level 5 (ODS-5).

Hard links can be enabled on ODS-5 disks. WBEM Services for OpenVMS does not require hard links. (? for more information)

Do you want to enable hard links? (Yes/No/?) **YES**

You have chosen to install OpenVMS X86-64 on a new disk.

The target system disk, DKA500:, will be initialized with structure level 5 (ODS-5).

Hard links WILL be enabled.

The disk will be labeled X86SYS.

Any data currently on the target system disk will be lost.

Is this OK? (Yes/No) **YES**

Initializing and mounting target....

Creating page file....

Boot options in the EFI Boot Manager boot option menu can provide a convenient way to boot your system. The installation procedure can automatically create a new boot option (if none exists) or validate existing boot options.

Do you want to create or validate boot options? (Yes/No) [Yes] **YES**

You must enter a password for the SYSTEM account.

The password must be a minimum of 15 characters in length, and may not exceed 31 characters. It will be checked and verified. The system will not accept passwords that can be guessed easily.

The password will not be displayed as you enter it.

Password for SYSTEM account:

Re-enter SYSTEM password for verification:

For your system to operate properly, you must set two parameters: SCSNODE and SCSSYSTEMID.

SCSNODE can be from 1 to 6 letters or numbers. It must contain at least one letter.

If you plan to use DECnet, SCSNODE must be the DECnet Phase IV

node name, or the DECnet-Plus (Phase V) node synonym.

If you have multiple OpenVMS systems, the SCSNODE on each system must be unique.

Enter SCSNODE: **VS6613**

If you plan to use DECnet, SCSSYSTEMID must be set based on the DECnet Phase IV address.

Do you plan to use DECnet? (Yes/No) [Yes] **YES**

DECnet Phase IV addresses are in the format

DECnet_area_number.DECnet_node_number

DECnet_area_number is a number between 1 and 63.

DECnet_node_number is a number between 1 and 1023.

If you plan to use DECnet WITHOUT Phase IV compatible addresses, enter 0.0.

Enter DECnet (Phase IV) Address: [1.1] **1.482**

SCSSYSTEMID will be set to 1506.

This was calculated as follows:

$(\text{DECnet_area_number} * 1024) + \text{DECnet_node_number}$

Configuring the Local Time Zone

TIME ZONE SPECIFICATION -- MAIN Time Zone Menu

"*" indicates a menu

0* GMT			
1* AFRICA	17) EST	33) IRAN	49) PORTUGAL
2* AMERICA	18) EST5EDT	34) ISRAEL	50) PRC
3* ANTARCTICA	19* ETC	35) JAMAICA	51) PST8PDT
4* ARCTIC	20* EUROPE	36) JAPAN	52) ROC
5* ASIA	21) FACTORY	37) KWAJALEIN	53) ROK
6* ATLANTIC	22) GB-EIRE	38) LIBYA	54) SINGAPORE
7* AUSTRALIA	23) GB	39) MET	55) TURKEY
8* BRAZIL	24) GMT-0	40* MEXICO	56) UCT
9* CANADA	25) GMT	41* MIDEAST	57) UNIVERSAL
10) CET	26) GMT0	42) MST	58* US
11* CHILE	27) GMTPLUS0	43) MST7MDT	59) UTC
12) CST6CDT	28) GREENWICH	44) NAVAJO	60) W-SU
13) CUBA	29) HONGKONG	45) NZ-CHAT	61) WET
14) EET	30) HST	46) NZ	62) ZULU
15) EGYPT	31) ICELAND	47* PACIFIC	
16) EIRE	32* INDIAN	48) POLAND	

Press "Return" to redisplay, enter "=" to search or "?" for help, or
Select the number above that best represents the desired time zone: **20**

EUROPE Time Zone Menu

"*" indicates a menu

0* RETURN TO MAIN TIME ZONE MENU

1) AMSTERDAM	18) HELSINKI	35) MOSCOW	52) STOCKHOLM
2) ANDORRA	19) ISLE_OF_MAN	36) NICOSIA	53) TALLINN
3) ASTRAKHAN	20) ISTANBUL	37) OSLO	54) TIRANE
4) ATHENS	21) JERSEY	38) PARIS	55) TIRASPOL
5) BELFAST	22) KALININGRAD	39) PODGORICA	56) ULYANOVSK
6) BELGRADE	23) KIEV	40) POLAND	57) UZHGOROD
7) BERLIN	24) KIROV	41) PORTUGAL	58) VADUZ
8) BRATISLAVA	25) KYIV	42) PRAGUE	59) VATICAN
9) BRUSSELS	26) LISBON	43) RIGA	60) VIENNA
10) BUCHAREST	27) LJUBLJANA	44) ROME	61) VILNIUS
11) BUDAPEST	28) LONDON	45) SAMARA	62) VOLGOGRAD
12) BUSINGEN	29) LUXEMBOURG	46) SAN_MARINO	63) WARSAW
13) CHISINAU	30) MADRID	47) SARAJEVO	64) ZAGREB
14) COPENHAGEN	31) MALTA	48) SARATOV	65) ZAPOROZHYE
15) DUBLIN	32) MARIEHAMN	49) SIMFEROPOL	66) ZURICH
16) GIBRALTAR	33) MINSK	50) SKOPJE	
17) GUERNSEY	34) MONACO	51) SOFIA	

Press "Return" to redisplay, enter "=" to search or "?" for help, or
 Select the number above that best represents the desired time zone: **14**

You selected EUROPE / COPENHAGEN as your time zone.

Is this correct? (Yes/No) [YES]: **YES**

Configuring the Time Differential Factor (TDF)

Default Time Differential Factor for standard time is 1:00.

Default Time Differential Factor for daylight saving time is 2:00.

The Time Differential Factor (TDF) is the difference between your system time and Coordinated Universal Time (UTC). UTC is similar in most respects to Greenwich Mean Time (GMT).

The TDF is expressed as hours and minutes, and should be entered in the hh:mm format. TDFs for the Americas will be negative (-3:00, -4:00, etc.); TDFs for Europe, Africa, Asia and Australia will be positive (1:00, 2:00, etc.).

This time zone supports daylight saving time.

Is this time zone currently on daylight saving time? (Yes/No): **NO**

Enter the Time Differential Factor [1:00]: **1:00**

NEW SYSTEM TIME DIFFERENTIAL FACTOR = 1:00

Is this correct? [Y]: **Y**

The target disk of this installation may be set up to automatically configure the TCP/IP network stack as a DHCP client, and to start up TCP/IP and SSH when the system is booted.

If this option is chosen: The TCP/IP and SSH start up

procedures will be run by the operating system provided start up command procedure that runs SYSTARTUP_VMS.COM. The TCP/IP and SSH start up procedures will be executed before SYSTARTUP_VMS.COM is executed.

A DHCP server is required.

Do you want to automatically configure and start up TCP/IP & SSH? (Yes/No) [No] **NO**

If you have Product Authorization Keys (PAKs) to register, you can register them now.

Do you want to register any Product Authorization Keys? (Yes/No) [Yes] **NO**

The following products are part of the OpenVMS installation; they will be installed along with the OpenVMS operating system:

- o Availability Manager (base) for OpenVMS X86-64
- o TCP/IP Services for OpenVMS X86-64
- o KERBEROS for OpenVMS X86-64
- o SSL3 V3.0-21 for OpenVMS X86-64 (based on OpenSSL V3.0.21)
- o OpenSSH for OpenVMS X86-64
- o OpenLDAP for OpenVMS X86-64
- o 64-bit PERL for OpenVMS X86-64

You can also install the following optional products along with the OpenVMS operating system:

- o DECwindows Motif for OpenVMS X86-64
- o DECnet-Plus for OpenVMS X86-64
- o DECnet Phase IV for OpenVMS X86-64

If you want to change your selections, you can do so later in the installation by answering "NO" to the following question:

"Do you want the defaults for all options?"

Do you want to install DECwindows Motif for OpenVMS X86-64 V1.8-2? (Yes/No) [Yes] **YES**

The DECnet-Plus kit is provided with the OpenVMS operating system kit. DECnet Phase IV applications are supported by DECnet-Plus.

DECnet Phase IV is also provided as an option.

If you install DECnet-Plus and TCP/IP you can run DECnet applications over a TCP/IP network. Please refer to the VSI DECnet-Plus for OpenVMS Planning Guide for information on running DECnet over TCP/IP.

Do you want to install DECnet-Plus for OpenVMS X86-64 V9.2-I? (Yes/No) [Yes] **YES**

The installation operation can provide brief or detailed descriptions.
In either case, you can request the detailed descriptions by typing ?.

Do you always want detailed descriptions? (Yes/No) [No] **NO**

Performing product kit validation of signed kits ...

%PCSI-I-VSIVALPASSED, validation of DMM1:[VMS\$COMMON]VSI-X86VMS-VMS-E0902-4-2.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DWMOTIF_SUPPORT_X860924_KIT]VSI-X86VMS-DWMOTIF_SUPPORT-E0902-4-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.AVAIL_MAN_BASE_KIT]VSI-X86VMS-AVAIL_MAN_BASE-E0902-4-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.TCPIP]VSI-X86VMS-TCPIP-V0600-31-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.SSL3]VSI-X86VMS-SSL3-V0300-21-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.KERBEROS]VSI-X86VMS-KERBEROS-V0303-5A-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.OPENSSSH]VSI-X86VMS-OPENSSSH-V0909-2C-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.OPENLDAP]VSI-X86VMS-OPENLDAP-V0206-6B-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.PERL542]VSI-X86VMS-PERL542-V0542-0-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DWMOTIF]VSI-X86VMS-DWMOTIF-V0108-2-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DECNET_PLUS]VSI-X86VMS-DECNET_PLUS-V0902-I-1.PCSI\$COMPRESSED;1 succeeded

%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DECNET_PHASE_IV_X860924_KIT]VSI-X86VMS-DECNET_PHASE_IV-E0902-4-1.PCSI\$COMPRESSED;1 succeeded

The following product has been selected:

VSI X86VMS OPENVMS E9.2-4 Platform (product suite)

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 X86VMS OPENVMS E9.2-4: OPENVMS and related products Platform

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Do you want the defaults for all options? [YES] **YES**

Availability Manager (base) for OpenVMS X86-64

TCP/IP Services for OpenVMS X86-64

* Product VSI X86VMS TCPIP V6.0-31 requires a system reboot.

* Product VSI X86VMS AVAIL_MAN_BASE E9.2-4 recommends a system reboot.

Can the system be REBOOTED after the installation completes? [YES] **YES**

KERBEROS for OpenVMS X86-64
 SSL3 V3.0-21 for OpenVMS X86-64 (based on OpenSSL V3.0.21)
 OpenSSH for OpenVMS X86-64

OpenLDAP for OpenVMS X86-64

64-bit PERL for OpenVMS X86-64

Do you want to review the options? [NO] **NO**

Execution phase starting ...

The following products will be installed to destinations:

VSI X86VMS AVAIL_MAN_BASE E9.2-4	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS DECNET_PLUS V9.2-I	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS DWMOTIF V1.8-2	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS DWMOTIF_SUPPORT E9.2-4	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS KERBEROS V3.3-5A	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS OPENLDAP V2.6-6B	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS OPENSSH V9.9-2C	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS OPENVMS E9.2-4	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS PERL542 V5.42-0	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS SSL3 V3.0-21	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS TCPIP V6.0-31	DISK\$X86SYS:[VMS\$COMMON.]
VSI X86VMS VMS E9.2-4	DISK\$X86SYS:[VMS\$COMMON.]

Portion done: 0%...10%...20%...30%...40%...50%...60%

Restoring STARTUP.NSH file(s)...

No files restored

...70%...80%...90%

%PCSI-I-PRCOUTPUT, output from subprocess follows ...

% - Execute SYS\$MANAGER:TCPIP\$CONFIG.COM to proceed with configuration of

% VSI TCP/IP Services for OpenVMS.

%

Portion done: 100%

The following products have been installed:

VSI X86VMS AVAIL_MAN_BASE E9.2-4	Layered Product
VSI X86VMS DECNET_PLUS V9.2-I	Layered Product
VSI X86VMS DWMOTIF V1.8-2	Layered Product
VSI X86VMS DWMOTIF_SUPPORT E9.2-4	Layered Product
VSI X86VMS KERBEROS V3.3-5A	Layered Product
VSI X86VMS OPENLDAP V2.6-6B	Layered Product
VSI X86VMS OPENSSH V9.9-2C	Layered Product
VSI X86VMS OPENVMS E9.2-4	Platform (product suite)
VSI X86VMS PERL542 V5.42-0	Layered Product
VSI X86VMS SSL3 V3.0-21	Layered Product
VSI X86VMS TCPIP V6.0-31	Layered Product
VSI X86VMS VMS E9.2-4	Operating System

VSI X86VMS OPENVMS E9.2-4: OPENVMS and related products Platform

VSI X86VMS TCPIP V6.0-31: VSI TCP/IP Services for OpenVMS.

VSI X86VMS SSL3 V3.0-21: SSL3 for OpenVMS X86-64 V3.0-21 (Based on OpenSSL 3.0.21)

Insert the following lines in SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
@SYS$STARTUP:SSL3$STARTUP.COM
```

Insert the following lines in SYS\$MANAGER:SYSHUTDWN.COM:

```
@SYS$STARTUP:SSL3$SHUTDOWN.COM
```

Review the Installation Guide and Release Notes for post install directions.

Review the Installation Guide and Release Notes for post upgrade verification suggestions.

Refer to SYS\$HELP:SSL30-21-X86.RELEASE_NOTES for more information.

Check the release notes for current status of the product.

VSI X86VMS KERBEROS V3.3-5A

Configure and set up Kerberos

If Kerberos will be run on this system, but has not been used previously, you need to perform the following steps.

- o Run the Kerberos configuration procedure:

```
@SYS$STARTUP:KRB$CONFIGURE.COM
```

- o Add the following line to SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
$ @SYS$STARTUP:KRB$STARTUP
```

- o Add the following line to SYS\$MANAGER:SYLOGIN.COM:

```
$ @SYS$MANAGER:KRB$SYMBOLS
```

VSI X86VMS SSL3 V3.0-21: SSL3 for OpenVMS X86-64 V3.0-21 (Based on OpenSSL 3.0.21)

Insert the following lines in SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
@SYS$STARTUP:SSL3$STARTUP.COM
```

Insert the following lines in SYS\$MANAGER:SYSHUTDWN.COM:

```
@SYS$STARTUP:SSL3$SHUTDOWN.COM
```

Review the Installation Guide and Release Notes for post install directions.

Review the Installation Guide and Release Notes for post upgrade verification suggestions.

Refer to SYS\$HELP:SSL30-21-X86.RELEASE_NOTES for more information.

VSI X86VMS OPENLDAP V2.6-6B: OpenLDAP for OpenVMS X86 V2.6-6B (Based on OpenLDAP 2.6.6)

Insert the following lines in SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
@SYS$STARTUP:LDAP$DEFINE_LOGICALS.COM
```

Insert the following lines in SYS\$MANAGER:SYSHUTDOWN.COM:

```
@SYS$STARTUP:LDAP$DEASSIGN_LOGICALS.COM
```

Verify the OpenLDAP configuration template files.

Refer to SYS\$HELP:OPENLDAP0206-6B-X86.RELEASE_NOTES for more information.

Following installation, before the new ACME LDAP agent can be

deployed, the OpenLDAP persona extension must be installed and then the system must be rebooted (it is not sufficient to simply restart the ACME server). Follow the post installation instructions provided in the release notes to complete configuration of the software.

VSI X86VMS PERL542 V5.42-0

Post-installation tasks are required for Perl for OpenVMS.

To use the Perl provided with this kit, run the following set-up command procedure, assuming you installed in SYS\$COMMON.

```
$ @sys$common:[perl-5_42]perl_setup.com
```

You may wish to put that command in SYS\$MANAGER:SYLOGIN.COM to make Perl available to all users on the system.

Perl includes its own help system called perldoc. Type

```
$ perldoc perldoc
```

for the documentation to perldoc itself. Type

```
$ perldoc perldelta
```

for the changes that are new in version V5.42-0 of Perl.

There are many Perl-related resources on the web; point your browser at:

```
http://www.perl.org
```

to get started, and thank you for using Perl for OpenVMS.

VSI X86VMS DECNET_PLUS V9.2-I: DECnet-Plus V9.2-I for OpenVMS X86

Release notes are available in SYS\$HELP:HPE_DECNET-Plus-V84.RELEASE_NOTES and SYS\$HELP:VSI_DECNET_OSI.RELEASE_NOTES

```
%PCSI-I-SYSTEM_REBOOT, executing reboot procedure ...
```

```
Shutdown/reboot deferred when this product is
installed as part of the O/S installation/upgrade
```

```
%PCSI-I-SYSTEM_REBOOT, executing reboot procedure ...
```

```
Running SYS$UPDATE:SYS$MD.COM to update the memory disk...
```

```
Updating the system memory disk. Please do not interrupt this procedure...
```

```
Created memory disk DKA500:[VMS$COMMON.SYS$LDR]SYS$MD.DSK;1
- using 171088 blocks in 1 extent with 18975 spare blocks
- mounted on LDM3034: with volume label MD2623833E6A
- contains OpenVMS E9.2-4
```

```
%LD-I-UNIT, Allocated device is LDM3035:
```

```
%LMFINSTALL-I-SUCCESS, License installed with 8 units, Termination: 31-AUG-2026
```

```
BootOrder Entries: 6, Timeout: Has not been set
```

```
[01] Boot0006 <- Current
[02] Boot0001 [03] Boot0002 [04] Boot0003 [05] Boot0004
[06] Boot0000
```

```
Validate Boot Options list: Timeout: 0 secs.
```

```
6 EFI Virtual disk (5.0)
DevPath: DKA500 PCI(0x0,0x0,0x10,0x0)/Scsi(5,0)
Options: None
```

```
WARNING - Entry 6 validation failed. Repairing...
```

```
SUCCESS - Entry in position 6 (Boot0000) was removed.
```

```
SUCCESS - Added: DKA500 PCI(0x0,0x0,0x10,0x0)/Scsi(5,0) (Boot0005)
```

```
Validated 6 entries.
```

```
The installation is now complete.
```

```
When the newly installed system is first booted, a special
startup procedure will be run. This procedure will:
```

- o Configure the system for standalone or OpenVMS Cluster operation.
- o Run AUTOGEN to set system parameters.
- o Reboot the system with the newly set parameters.

```
You may shut down now or continue with other operations.
```

Process X86VMS_INSTALL logged out at 26-AUG-2026 21:53:54.64

Press Return to continue...

You can install or upgrade the OpenVMS X86-64 operating system
or you can install or upgrade layered products that are included
on the OpenVMS X86-64 distribution media.

You can also execute DCL commands and procedures to perform
"standalone" tasks, such as backing up the system disk.

Please choose one of the following:

- 1) Upgrade, install or reconfigure OpenVMS X86-64 Version E9.2-4
- 2) Display layered products that this procedure can install
- 3) Install or upgrade layered products
- 4) Show installed products
- 5) Reconfigure installed products
- 6) Remove installed products
- 7) Find, Install or Undo patches; Show or Delete Recovery Data
- 8) Execute DCL commands and procedures
- 9) Shut down this system

Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) **9**

Shutting down the system

VSI Dump Kernel - Handles Shutdown/Reboot/Crash Dumps

** Error logs not dumped, system disk is write locked.

SYSTEM SHUTDOWN COMPLETE

**** Hit any key to reboot system ****

Restarting the system...

Attempting to start up from:

- > EFI Virtual disk (0.0)... unsuccessful.
- > EFI VMware Virtual SATA CDROM Drive (0.0)...

Scanning devices and preparing the OpenVMS Boot Manager Build 160...

%VMS_BOOTMGR-I-GRAPHICS, Using Rendered Text Console (1600 x 1200)

VSI OpenVMS Boot Manager: V9.2-* Build 160

ENABLED: Symmetric Multi-Processing
ENABLED: Crash Dump Processing
ENABLED: Legacy Serial Port Console for remote COM 1

ENABLED: Using Environment ROM

Checking Required Processor Features: PASSED

Identifying devices. This may take a while. COMPLETED

VIRTUAL MACHINE GUEST:

VMware (tm) No Mouse support; Use Commands or Arrow Keys

BOOT MANAGER DEVICE: DKB0

DEFAULT BOOT COMMAND: BOOT DKA500 0x00 0x00000000

AUTOACTION: HALT

CONNECT A REMOTE TERMINAL SESSION NOW.

Enter the TERMINAL command for remote connection assistance.

BOOTMGR> **DEVICES**

BOOTABLE DEVICES:

B = BootMgr Device, V = Default VMS Boot Device. Set BOOTMGR flag for path info.

V DKA500	(HD) = FS0	UEFI: E9_2_4	VMS: X86SYS	21504 MB	SCSI
Disk					
B DKB0	(DVD) = FS1	UEFI: E9_2_4	VMS: None	1295 MB	SATA
DVD					

BOOTMGR> **BOOT DKA500**

Booting...

%VMS_BOOTMGR-I-SECBOOT, SYSBOOT signature validated.

%%%%%%%%%% VSI OpenVMS (tm) x86-64 Console %%%%%%%%%%

THE GUEST CONSOLE HAS BEEN SUSPENDED
USE A TERMINAL UTILITY FOR OPA0 ACCESS

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4

Copyright 2026 VMS Software, Inc.

MDS Mitigation active, variant verw(MD_CLEAR)

```

%DECnet-I-LOADED, network base image loaded, version = 05.92.09

%DECnet-W-ZEROLEN, length of file is zero -- SYS$SYSROOT:[SYSEXE]NET$CONFIG.DAT

%SMP-I-CPUTRN, CPU #7 has joined the active set.
%SMP-I-CPUTRN, CPU #6 has joined the active set.
%SMP-I-CPUTRN, CPU #3 has joined the active set.
%SMP-I-CPUTRN, CPU #5 has joined the active set.
%SMP-I-CPUTRN, CPU #4 has joined the active set.
%SMP-I-CPUTRN, CPU #2 has joined the active set.
%SMP-I-CPUTRN, CPU #1 has joined the active set.

    Installing required known files...

    Configuring devices...

%RUN-S-PROC_ID, identification of created process is 00000024
%STARTUP-E-NOPAGFIL, No page files have been successfully installed.
    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.08 %%%%%%%%%
Operator _VS6613$OPA0: has been enabled, username SYSTEM

    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.08 %%%%%%%%%
Operator status for operator _VS6613$OPA0:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.09 %%%%%%%%%
Logfile has been initialized by operator _VS6613$OPA0:
Logfile is VS6613::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;1

    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.09 %%%%%%%%%
Operator status for operator VS6613::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;1
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%SYSTEM-I-BOOTUPGRADE, security auditing disabled
    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.18 %%%%%%%%%
Message from user SYSTEM on VS6613
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;

    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.19 %%%%%%%%%
Message from user SYSTEM on VS6613
-RMS-E-FNF, file not found

%SYSTEM-I-BOOTUPGRADE, security server not started
%SYSTEM-I-BOOTUPGRADE, ACME server not started
    %%%%%%%%% OPCOM 27-AUG-2026 11:56:09.31 %%%%%%%%%
Message from user SYSTEM on VS6613
TDF-I-SETTDF TDF set new timezone differential

NET$STARTUP, Network not started due to UPGRADE boot
%SYSTEM-I-BOOTUPGRADE, Coordinated Startup not performed

```

```
%EIA0, Link up: 1000 mbit, shared interrupts, 00-50-56-AC-EF-35
```

AUTOGEN will now be run to compute the new system parameters. The system will then shut down and reboot, and the installation or upgrade will be complete.

After rebooting you can continue with such system management tasks as:

```
Configuring networking software (TCP/IP Services, DECnet, other)
Using SYS$MANAGER:CLUSTER_CONFIG.COM to create an OpenVMS Cluster
Creating FIELD, SYSTEST and SYSTEST_CLIG accounts if needed
```

```
%AUTOGEN-I-BEGIN, GETDATA phase is beginning.
```

```
%AUTOGEN-I-NEWFILE, Previous contents of SYS$SYSTEM:CLU$PARAMS.DAT have
been copied to SYS$SYSTEM:CLU$PARAMS.OLD. You may wish to purge
SYS$SYSTEM:CLU$PARAMS.OLD.
```

```
%AUTOGEN-I-NEWFILE, Previous contents of SYS$SYSTEM:CLU$PARAMS.DAT have
been copied to SYS$SYSTEM:CLU$PARAMS.OLD. You may wish to purge
SYS$SYSTEM:CLU$PARAMS.OLD.
```

```
%AUTOGEN-I-NEWFILE, Previous contents of SYS$SYSTEM:CLU$PARAMS.DAT have
been copied to SYS$SYSTEM:CLU$PARAMS.OLD. You may wish to purge
SYS$SYSTEM:CLU$PARAMS.OLD.
```

```
%AUTOGEN-I-NEWFILE, Created a new version of SYS$SYSTEM:PARAMS.DAT
You may wish to PURGE SYS$SYSTEM:PARAMS.DAT
```

```
%AUTOGEN-S-END, GETDATA phase has successfully completed.
```

```
%AUTOGEN-I-BEGIN, GENPARAMS phase is beginning.
```

```
%AUTOGEN-I-NEWFILE, Created a new version of SYS$MANAGER:VMSIMAGES.DAT
You may wish to PURGE SYS$MANAGER:VMSIMAGES.DAT
```

```
%AUTOGEN-I-NEWFILE, Created a new version of SYS$SYSTEM:SETPARAMS.DAT
You may wish to PURGE SYS$SYSTEM:SETPARAMS.DAT
```

```
%AUTOGEN-S-END, GENPARAMS phase has successfully completed.
```

```
%AUTOGEN-I-BEGIN, GENFILES phase is beginning.
```

```
Calculations for dump and page files.
```

```
-----
```

Errorlog dump file calculations:

A 154 block Errorlog dump file will be created.

```
%SYSGEN-I-CREATED, SYS$SYSROOT:[SYSEXE]SYS$ERRLOG.DMP;2 created
```

```
** WARNING ** - No page files are currently installed.
This may eventually cause a system hang or failure.
```

Dump file calculations:

```
Current file is DKA500:[SYS0.SYSEXE]SYSDUMP.DMP
This file does not yet exist and should be created.
Proposed file size is: 78559601 blocks.
```

Page file calculations:

A PAGEFILE does not currently exist and will not be created.

```

** WARNING ** - The system disk would have only free
blocks if the dump file were created with 000078559601 blocks.

No dump file modifications were made on device DKA500:.
Dumpfile on device DKA500: will remain at 0 blocks.

Disk Block Utilization: _DKA500: ~5%

Total: 000044040192
Used: 000002524768
Free: 000041525424

*****
%AUTOGEN-W-REPORT, Warnings were detected by AUTOGEN.
Please review the information in: SYS$SYSTEM:AGEN$PARAMS.REPORT
*****

%AUTOGEN-S-END, GENFILES phase has successfully completed.
%AUTOGEN-I-BEGIN, SETPARAMS phase is beginning.
%SYSGEN-W-SETMAX, value set to maximum for parameter GH_EXEC_CODE
%%%%%%%% OPCOM 27-AUG-2026 11:56:24.92 %%%%%%%%%
Message from user SYSTEM on VS6613
%SYSGEN-I-WRITECUR, CURRENT system parameters modified by process ID 00000023 in
to file SYS$SYSROOT_MD:[SYSEXE]X86_64VMSSYS.PAR;2

%AUTOGEN-I-SYSGEN, parameters modified
%AUTOGEN-S-END, SETPARAMS phase has successfully completed.
%AUTOGEN-I-BEGIN, REBOOT phase is beginning.

The system is shutting down to allow the system to boot with the
generated site-specific parameters and installed images.

The system will automatically reboot after the shutdown and the
upgrade will be complete.

SHUTDOWN -- Perform an Orderly System Shutdown
on node VS6613

%SHUTDOWN-I-BOOTCHECK, performing reboot consistency check...
%SHUTDOWN-I-CHECKOK, basic reboot consistency check completed

%SHUTDOWN-I-OPERATOR, this terminal is now an operator's console
%SHUTDOWN-I-DISLOGINS, interactive logins will now be disabled
%SET-I-INTSET, login interactive limit = 0, current interactive value = 0
%SHUTDOWN-I-STOPQUEUES, the queues on this node will now be stopped
%%%%%%%% OPCOM 27-AUG-2026 11:56:25.32 %%%%%%%%%
Message from user SYSTEM on VS6613
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;

%%%%%%%% OPCOM 27-AUG-2026 11:56:25.32 %%%%%%%%%
Message from user SYSTEM on VS6613
-RMS-E-FNF, file not found

```

SHUTDOWN message on VS6613 from user SYSTEM at VS6613 Batch 11:56:25
 VS6613 will shut down in 0 minutes; back up soon. Please log off node VS6613.
 Reboot system with AUTOGENErated parameters

```
%SHUTDOWN-I-STOPUSER, all user processes will now be stopped
%SHUTDOWN-I-STOPCPU, the secondary processors will now be stopped
%SMP-I-CPUTRN, CPU #1 was removed from the active set.
%SMP-I-CPUTRN, CPU #2 was removed from the active set.
%SMP-I-CPUTRN, CPU #3 was removed from the active set.
%SMP-I-CPUTRN, CPU #4 was removed from the active set.
%SMP-I-CPUTRN, CPU #5 was removed from the active set.
%SMP-I-CPUTRN, CPU #6 was removed from the active set.
%SMP-I-CPUTRN, CPU #7 was removed from the active set.
%SHUTDOWN-I-REMOVE, all installed images will now be removed
%SET-I-PSXROOSET, system POSIX root set to SYS$SYSDEVICE:[000000]
%SHUTDOWN-I-DISMOUNT, all volumes will now be dismounted
  %%%%%%%%% OPCOM 27-AUG-2026 11:56:25.69 %%%%%%%%%
Message from user SYSTEM on VS6613
STARTUP, VS6613 shutdown was requested by the operator.
```

VSI Dump Kernel - Handles Shutdown/Reboot/Crash Dumps

```
** Dumping error logs to the system disk (VS6613$DKA500:)

** Error logs dumped to VS6613$DKA500:[SYS0.SYSEXE]SYS$ERRLOG.DMP

** (used 36 out of 160 available blocks)
```

Restarting the system...

```
Attempting to start up from:
> EFI Virtual disk (0.0)... unsuccessful.
> EFI VMware Virtual SATA CDRom Drive (0.0)...
```

Scanning devices and preparing the OpenVMS Boot Manager Build 160...

VSI OpenVMS Boot Manager: V9.2-* Build 160

```
ENABLED: Symmetric Multi-Processing
ENABLED: Crash Dump Processing
ENABLED: Legacy Serial Port Console for remote COM 1
ENABLED: Using Environment ROM
```

```
Checking Required Processor Features: PASSED
Identifying devices. This may take a while. COMPLETED
```

```
VIRTUAL MACHINE GUEST:
VMware (tm) No Mouse support; Use Commands or Arrow Keys
```

```
BOOT MANAGER DEVICE: DKBO
DEFAULT BOOT COMMAND: BOOT DKA500 0x00 0x00000000
```

CONNECT A REMOTE TERMINAL SESSION NOW.
Enter the `TERMINAL` command for remote connection assistance.

BOOTMGR> **DEVICES**

BOOTABLE DEVICES:

B = BootMgr Device, V = Default VMS Boot Device. Set BOOTMGR flag for path info.

V DKA500	(HD) = FS0	UEFI: E9_2_4	VMS: X86SYS	21504 MB	SCSI
Disk					
B DKB0	(DVD) = FS1	UEFI: E9_2_4	VMS: None	1295 MB	SATA
DVD					

BOOTMGR> **BOOT**

Booting...

%VMS_BOOTMGR-I-SECBOOT, SYSBOOT signature validated.

%%%%%%%%%% VSI OpenVMS (tm) x86-64 Console %%%%%%%%%%

THE GUEST CONSOLE HAS BEEN SUSPENDED
USE A TERMINAL UTILITY FOR OPA0 ACCESS

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4

Copyright 2026 VMS Software, Inc.

MDS Mitigation active, variant verw(MD_CLEAR)

%DECnet-I-LOADED, network base image loaded, version = 05.92.09

%DECnet-W-ZEROLEN, length of file is zero -- SYS\$SYSROOT:[SYSEXEC]NET\$CONFIG.DAT

%SMP-I-CPUTRN, CPU #3 has joined the active set.
%SMP-I-CPUTRN, CPU #6 has joined the active set.
%SMP-I-CPUTRN, CPU #7 has joined the active set.
%SMP-I-CPUTRN, CPU #4 has joined the active set.
%SMP-I-CPUTRN, CPU #2 has joined the active set.

```

%SMP-I-CPUTRN, CPU #5 has joined the active set.
%SMP-I-CPUTRN, CPU #1 has joined the active set.
%STDRV-I-STARTUP, OpenVMS startup begun at 27-AUG-2026 12:57:09.07

%EIA0, Link up: 1000 mbit, shared interrupts, 00-50-56-AC-EF-35
%RUN-S-PROC_ID, identification of created process is 00000804
%RUN-S-PROC_ID, identification of created process is 00000805
      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.51 %%%%%%%%%
Operator _VS6613$OPA0: has been enabled, username SYSTEM

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.51 %%%%%%%%%
Operator status for operator _VS6613$OPA0:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.53 %%%%%%%%%
Logfile has been initialized by operator _VS6613$OPA0:
Logfile is VS6613::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;2

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.53 %%%%%%%%%
Operator status for operator VS6613::SYS$SYSROOT:[SYSMGR]OPERATOR.LOG;2
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%SET-I-NEWAUDSRV, identification of new audit server process is 0000080B
      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.57 %%%%%%%%%
Message from user AUDIT$SERVER on VS6613
%AUDSRV-I-NEWSERVERDB, new audit server database created ( PC 00000000.8000C7A9)

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.58 %%%%%%%%%
Message from user SYSTEM on VS6613
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.58 %%%%%%%%%
Message from user SYSTEM on VS6613
-RMS-E-FNF, file not found

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.59 %%%%%%%%%
Message from user AUDIT$SERVER on VS6613
%AUDSRV-I-REMENABLED, resource monitoring enabled for journal SECURITY

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.60 %%%%%%%%%
Message from user AUDIT$SERVER on VS6613
%AUDSRV-I-NEWOBJECTDB, new object database created ( PC 00000000.8000F4CD)

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.66 %%%%%%%%%
Message from user SYSTEM on VS6613
%SECSRV-I-SERVERSTARTINGU, security server starting up

      %%%%%%%%% OPCOM 27-AUG-2026 12:57:16.66 %%%%%%%%%
Message from user SYSTEM on VS6613
%SECSRV-I-CIACRECLUDB, security server created cluster intrusion database

```

```

%%%%%%%%%% OPCOM 27-AUG-2026 12:57:16.67 %%%%%%%%%%
Message from user SYSTEM on VS6613
%SECSRV-I-CIASTARTINGUP, breakin detection and evasion processing now starting u
p

```

```

%%%%%%%%%% OPCOM 27-AUG-2026 12:57:16.68 %%%%%%%%%%
Message from user SYSTEM on VS6613
%ACME-I-SERVERSTART, ACME_SERVER starting

```

```

%%%%%%%%%% OPCOM 27-AUG-2026 12:57:19.67 %%%%%%%%%%
Message from user SYSTEM on VS6613
%SECSRV-I-PROXYSTARTINGUP, proxy processing now starting up

```

```

%%%%%%%%%% OPCOM 27-AUG-2026 12:57:19.68 %%%%%%%%%%
Message from user SYSTEM on VS6613
%SECSRV-E-NOPROXYDB, cannot find proxy database file NET$PROXY.DAT
%RMS-E-FNF, file not found

```

```

%%%%%%%%%% OPCOM 27-AUG-2026 12:57:24.77 %%%%%%%%%%
Message from user SYSTEM on VS6613
TDF-I-SETTDF TDF set new timezone differential

```

```

Copyright 2026 VMS Software, Inc.
%NET$STARTUP-W-NONETCONFIG, this node has not been configured to run DECnet-Plus
for OpenVMS
    use SYS$MANAGER:NET$CONFIGURE.COM if you wish to configure DECnet
%NET$STARTUP-I-OPERSTATUS, DECnet-Plus for OpenVMS operational status is OFF
%DECdtm-F-NODECnet, the TP_SERVER process was not started because either:

```

- o DECnet-Plus is not started or is not configured, or
- o The SYS\$NODE_FULLNAME logical name is not defined

This could be because when you installed DECnet-Plus and were prompted for the system's full name, you specified a local name instead of a DECdns or Domain name.

If you want to use DECdtm services, make sure that DECnet-Plus is started and configured and that SYS\$NODE_FULLNAME is defined, then use the following command to start the TP_SERVER process:

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

```

%STARTUP-I-AUDITCONTINUE, audit server initialization complete
%%%%%%%%%% OPCOM 27-AUG-2026 12:57:25.65 %%%%%%%%%%
Message from user AUDIT$SERVER on VS6613
Security alarm (SECURITY) and security audit (SECURITY) on VS6613, system id: 15
06
Auditable event:      Audit server starting up
Event time:           27-AUG-2026 12:57:25.64
PID:                  00000803
Username:             SYSTEM

```

The OpenVMS system is now executing the site-specific startup commands.

%UAF-I-RDBADDMMSG, identifier SYS\$NODE_VS6613 value %X80010000 added to rights database

%%%%%%%% OPCOM 27-AUG-2026 12:57:25.97 %%%%%%%%%

Message from user AUDIT\$SERVER on VS6613

Security alarm (SECURITY) and security audit (SECURITY) on VS6613, system id: 1506

```
Auditable event:      Identifier added
Event time:           27-AUG-2026 12:57:25.96
PID:                  00000803
Process name:         STARTUP
Username:             SYSTEM
Process owner:        [SYSTEM]
Image name:           VS6613$DKA500:[SYS0.SYSCOMMON.][SYSEXE]AUTHORIZE.EXE
Identifier name:      SYS$NODE_VS6613
Identifier value:     %X80010000
Attributes:           none
Posix UID:            -2
Posix GID:            -2 (%FFFFFFFFE)
```

%DECW\$DEVICE-I-NODEVICE, no graphics devices found.

%%%%%%%% OPCOM 27-AUG-2026 12:57:26.04 %%%%%%%%%

Message from user AUDIT\$SERVER on VS6613

Security alarm (SECURITY) and security audit (SECURITY) on VS6613, system id: 1506

```
Auditable event:      Identifier added
Event time:           27-AUG-2026 12:57:26.04
PID:                  00000803
Process name:         STARTUP
Username:             SYSTEM
Process owner:        [SYSTEM]
Image name:           VS6613$DKA500:[SYS0.SYSCOMMON.][SYSEXE]AUTHORIZE.EXE
Identifier name:      DECW$WS_QUOTA
Identifier value:     %X80010001
Attributes:           none
Posix UID:            -2
Posix GID:            -2 (%FFFFFFFFE)
```

%UAF-I-RDBADDMMSG, identifier DECW\$WS_QUOTA value %X80010001 added to rights database

%%%%%%%% OPCOM 27-AUG-2026 12:57:26.07 %%%%%%%%%

Message from user AUDIT\$SERVER on VS6613

Security alarm (SECURITY) and security audit (SECURITY) on VS6613, system id: 1506

```
Auditable event:      Identifier added
Event time:           27-AUG-2026 12:57:26.07
PID:                  00000803
Process name:         STARTUP
Username:             SYSTEM
Process owner:        [SYSTEM]
Image name:           VS6613$DKA500:[SYS0.SYSCOMMON.][SYSEXE]IMGDMP_RIGHTS.EXE;1
Identifier name:      IMGDMP$READALL
Identifier value:     %X90390001
Attributes:           none
Posix UID:            -2
```

```

Posix GID:                -2 (%FFFFFFFFE)

%PROCDUMP-I-CREATED, rights identifier IMGDMPS$READALL successfully created
%PROCDUMP-I-CREATED, rights identifier IMGDMPS$PROTECT successfully created
%%%%%%%%%% OPCOM  27-AUG-2026 12:57:26.09  %%%%%%%%%%%
Message from user AUDIT$SERVER on VS6613
Security alarm (SECURITY) and security audit (SECURITY) on VS6613, system id: 15
06
Auditable event:          Identifier added
Event time:               27-AUG-2026 12:57:26.09
PID:                     00000803
Process name:             STARTUP
Username:                 SYSTEM
Process owner:            [SYSTEM]
Image name:               VS6613$DKA500:[SYS0.SYSCOMMON.] [SYSEXEC] IMGDMPS_RIGHTS.E
XE;1
Identifier name:          IMGDMPS$PROTECT
Identifier value:         %X90390002
Attributes:               RESOURCE
Posix UID:                -2
Posix GID:                -2 (%FFFFFFFFE)

%SET-I-INTSET, login interactive limit = 64, current interactive value = 0
%RUN-S-PROC_ID, identification of created process is 00000812
%%%%%%%%%% OPCOM  27-AUG-2026 12:57:26.25  %%%%%%%%%%%
Message from user SYSTEM on VS6613
%SMHANDLER-S-STARTUP, server management event handler startup

SYSTEM          job terminated at 27-AUG-2026 12:57:28.24

Accounting information:
Buffered I/O count:      3093          Peak working set size:      13616
Direct I/O count:        4594          Peak virtual size:        258032
Page faults:             3778          Mounted volumes:          0
Charged CPU time:        0 00:00:03.84  Elapsed time:            0 00:00:19.40

Welcome to OpenVMS (TM) x86_64 Operating System, Version E9.2-4

```

7.2 Sample Upgrade Log

```

VSI OpenVMS Boot Manager: V9.2-* Build 160

ENABLED:  Symmetric Multi-Processing
ENABLED:  Crash Dump Processing
ENABLED:  Legacy Serial Port Console for remote COM 1
ENABLED:  Using Environment ROM

Checking Required Processor Features:  PASSED
Identifying devices. This may take a while.  COMPLETED

VIRTUAL MACHINE GUEST:
VMware (tm) No Mouse support; Use Commands or Arrow Keys

BOOT MANAGER DEVICE:  DKB0

```

DEFAULT BOOT COMMAND: BOOT DKB100 0x00 0x00000001

CONNECT A REMOTE TERMINAL SESSION NOW.

Enter the TERMINAL command for remote connection assistance.

BOOTMGR> **DEVICES**

BOOTABLE DEVICES:

B = BootMgr Device, V = Default VMS Boot Device. Set BOOTMGR flag for path info.

V DKB100	(HD) = FS0	UEFI: V9_2_3	VMS: X86SYS1	18432 MB	SATA
Disk					
B DKB0	(DVD) = FS1	UEFI: E9_2_4	VMS: None	1295 MB	SATA
DVD					

BOOTMGR> **BOOT DKB0**

Booting...

%VMS_BOOTMGR-I-INSTALL, Booting an OpenVMS Installation Kit...

%VMS_BOOTMGR-I-INSTALL, Extracting ISO file size from Primary Volume Descriptor...

100%

%VMS_BOOTMGR-I-SECBOOT, SYSBOOT signature validated.

%%%%%%%%%% VSI OpenVMS (tm) x86-64 Console %%%%%%%%%%%

THE GUEST CONSOLE HAS BEEN SUSPENDED
USE A TERMINAL UTILITY FOR OPA0 ACCESS

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

SYSBOOT> **CONTINUE**

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4
Copyright 2026 VMS Software, Inc.

MDS Mitigation active, variant verw(MD_CLEAR)

%SMP-I-CPUTRN, CPU #4 has joined the active set.

%SMP-I-CPUTRN, CPU #2 has joined the active set.

%SMP-I-CPUTRN, CPU #5 has joined the active set.

%SMP-I-CPUTRN, CPU #3 has joined the active set.

%SMP-I-CPUTRN, CPU #1 has joined the active set.

Installing required known files...

Configuring devices...

```
%EIA0, Link up: 10 gbit, 00-50-56-AC-3D-77
```

```
*****
```

You can install or upgrade the OpenVMS X86-64 operating system
or you can install or upgrade layered products that are included
on the OpenVMS X86-64 distribution media.

You can also execute DCL commands and procedures to perform
"standalone" tasks, such as backing up the system disk.

Please choose one of the following:

- 1) Upgrade, install or reconfigure OpenVMS X86-64 Version E9.2-4
- 2) Display layered products that this procedure can install
- 3) Install or upgrade layered products
- 4) Show installed products
- 5) Reconfigure installed products
- 6) Remove installed products
- 7) Find, Install or Undo patches; Show or Delete Recovery Data
- 8) Execute DCL commands and procedures
- 9) Shut down this system

```
Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) 1
```

```
*****
```

This procedure will ask a series of questions.

- () - encloses acceptable answers
- [] - encloses default answers

Type your response and press the <Return> key. Type:

- ? - to repeat an explanation
- ^ - to change prior input (not always possible)
- Ctrl/Y - to exit the installation procedure

There are two choices for installation/upgrade:

Initialize - Removes all software and data files that were
previously on the target disk and installs OpenVMS X86-64.

Preserve -- Installs or Upgrades OpenVMS X86-64 on the target disk
and retains all other contents of the target disk.

* Note: You cannot use preserve to install OpenVMS X86-64 on a disk on
which any other operating system is installed. This includes
implementations of OpenVMS for other architectures.

```
Do you want to INITIALIZE or to PRESERVE? [PRESERVE] PRESERVE
```

You must enter the device name for the target disk on which
OpenVMS X86-64 will be installed.

```
Enter device name for target disk: (? for choices) ?
```

Device Name	Device Type Name	Volume Label	Size (blocks/xB)
DKB100:	ATA VMware Virtual		
DKB200:	ATA VMware Virtual		

For volume label and device size enter ??

Enter device name for target disk: (? for choices) **DKB100**

The target system has recovery data from PRODUCT INSTALL operations which used the /SAVE_RECOVERY_DATA qualifier. This data must be deleted to continue the OpenVMS upgrade.

Please examine the following display.

If you want to delete this data and continue the OpenVMS upgrade, answer YES to the question "Do you want to continue?"

If you do not want to delete this data, answer NO. A NO answer will preserve the recovery data and abort the OpenVMS upgrade.

The following patch recovery data has been selected:

RECOVERY DATA SET 001 created 19-AUG-2026 16:31:17.95

PATCH	APPLIED TO
VSI X86VMS VMS923X_BOOTMGR V1.0	VSI X86VMS VMS V9.2-3

RECOVERY DATA SET 002 created 19-AUG-2026 16:30:52.59

PATCH	APPLIED TO
VSI X86VMS VMS923X_PCSI V1.0	VSI X86VMS VMS V9.2-3

- * If you continue, recovery data for the patches listed above will be deleted.
- * The deletion of recovery data does not affect the installation status of
- * patches applied to products that are not participating in this operation.
- * However, continuing with this operation will prevent you from uninstalling
- * these patches at a future time by use of the PRODUCT UNDO PATCH command.

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

Deleting RECOVERY DATA SET 002 ...

Deleting RECOVERY DATA SET 001 ...

DKB100: is now labeled X86SYS1.

Do you want to keep this label? (Yes/No) [Yes] **YES**

OpenVMS X86-64 will be upgraded on DKB100:.

Boot options in the EFI Boot Manager boot option menu can provide a convenient way to boot your system. The installation procedure can automatically create a new boot option (if none exists) or validate existing boot options.

Do you want to create or validate boot options? (Yes/No) [Yes] **NO**

The following products are part of the OpenVMS installation; if necessary they will be installed or upgraded along with the OpenVMS operating system.

- o Availability Manager (base) for OpenVMS X86-64
- o TCP/IP Services for OpenVMS X86-64
- o KERBEROS for OpenVMS X86-64
- o SSL3 V3.0-21 for OpenVMS X86-64 (based on OpenSSL V3.0.21)
- o OpenSSH for OpenVMS X86-64
- o OpenLDAP for OpenVMS X86-64
- o 64-bit PERL for OpenVMS X86-64

If necessary, the following optional products will also be upgraded along with the OpenVMS operating system.

- o DECwindows Motif for OpenVMS X86-64
- o DECnet-Plus for OpenVMS X86-64
- o DECnet Phase IV for OpenVMS X86-64

If you want to add or delete optional products, you can do so later in the upgrade by answering "NO" to the following question:

"Do you want the defaults for all options?"

Availability Manager (base) for OpenVMS X86-64
is installed on your system. It will be upgraded.

TCP/IP Services for OpenVMS X86-64
is installed on your system. It will be upgraded.

KERBEROS for OpenVMS X86-64
is installed on your system. It will be upgraded.

SSL3 V3.0-21 for OpenVMS X86-64 (based on OpenSSL V3.0.21)
is installed on your system. It will be upgraded.

OpenSSH for OpenVMS X86-64
is installed on your system. It will be upgraded.

OpenLDAP for OpenVMS X86-64 is required.
It will be installed.

64-bit PERL for OpenVMS X86-64 is required.
It will be installed.

DECwindows Motif for OpenVMS X86-64 V1.8-2
is already installed on your system. An upgrade is not required.

DECnet-Plus for OpenVMS X86-64
is installed on your system. It will be upgraded.

DECnet Phase IV for OpenVMS X86-64 is not installed on your system.
It will not be installed.

The installation operation can provide brief or detailed descriptions.
In either case, you can request the detailed descriptions by typing ?.

Do you always want detailed descriptions? (Yes/No) [No] **NO**

Preserving existing copies of STARTUP.NSH if found...

No STARTUP.NSH files were found in the EFI system partition file

Performing product kit validation of signed kits ...

```
%PCSI-I-VSIVALPASSED, validation of DMM1:[VMS$COMMON]VSI-X86VMS-VMS-
E0902-4-2.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DWMOTIF_SUPPORT_X860924_KIT]VSI-
X86VMS-DWMOTIF_SUPPORT-E0902-4-1.PCSI$COMPRESSED;1 su
cceded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.AVAIL_MAN_BASE_KIT]VSI-X86VMS-
AVAIL_MAN_BASE-E0902-4-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.TCPIP]VSI-X86VMS-TCPIP-
V0600-31-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.SSL3]VSI-X86VMS-SSL3-
V0300-21-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.KERBEROS]VSI-X86VMS-KERBEROS-
V0303-5A-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.OPENSSSH]VSI-X86VMS-OPENSSSH-
V0909-2C-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.OPENLDAP]VSI-X86VMS-OPENLDAP-
V0206-6B-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.PERL542]VSI-X86VMS-PERL542-
V0542-0-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DWMOTIF]VSI-X86VMS-DWMOTIF-
V0108-2-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DECNET_PLUS]VSI-X86VMS-
DECNET_PLUS-V0902-I-1.PCSI$COMPRESSED;1 succeeded
%PCSI-I-VSIVALPASSED, validation of DMM1:[KITS.DECNET_PHASE_IV_X860924_KIT]VSI-
X86VMS-DECNET_PHASE_IV-E0902-4-1.PCSI$COMPRESSED;1 su
cceded
```

The following product has been selected:

VSI X86VMS OPENVMS E9.2-4	Platform (product suite)
---------------------------	--------------------------

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 X86VMS OPENVMS E9.2-4: OPENVMS and related products Platform

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Do you want the defaults for all options? [YES] **YES**

Availability Manager (base) for OpenVMS X86-64

TCP/IP Services for OpenVMS X86-64

* Product VSI X86VMS TCPIP V6.0-31 requires a system reboot.

* Product VSI X86VMS AVAIL_MAN_BASE E9.2-4 recommends a system reboot.

Can the system be REBOOTED after the installation completes? [YES] **YES**

KERBEROS for OpenVMS X86-64

SSL3 V3.0-21 for OpenVMS X86-64 (based on OpenSSL V3.0.21)

OpenSSH for OpenVMS X86-64

OpenLDAP for OpenVMS X86-64

64-bit PERL for OpenVMS X86-64

Do you want to review the options? [NO] **NO**

Execution phase starting ...

The following products will be installed to destinations:

VSI X86VMS AVAIL_MAN_BASE E9.2-4	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS DECNET_PLUS V9.2-I	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS DWMOTIF_SUPPORT E9.2-4	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS KERBEROS V3.3-5A	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS OPENLDAP V2.6-6B	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS OPENSSH V9.9-2C	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS OPENVMS E9.2-4	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS PERL542 V5.42-0	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS SSL3 V3.0-21	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS TCPIP V6.0-31	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS VMS E9.2-4	DISK\$X86SYS1:[VMS\$COMMON.]

The following products will be removed from destinations:

VSI X86VMS AVAIL_MAN_BASE V9.2-3	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS DECNET_PLUS V9.2-G	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS DWMOTIF_SUPPORT V9.2-3	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS KERBEROS V3.3-3	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS OPENSSH V8.9-1J	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS OPENVMS V9.2-3	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS PERL540 V5.40-0	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS SSL111 V1.1-1W	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS SSL3 V3.0-15	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS TCPIP V6.0-26	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS VMS V9.2-3	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS VMS923X_BOOTMGR V1.0	DISK\$X86SYS1:[VMS\$COMMON.]
VSI X86VMS VMS923X_PCSI V1.0	DISK\$X86SYS1:[VMS\$COMMON.]

Portion done: 0%

Backup OpenSSH configuration files? [y/n]: [y] **YES**

```
...The configuration files were backed up
in pcsi$destination:[sys0.syscommon.ssh$safety]*.*;
```

```
SSH$ROOT: directory tree successfully removed
from AG4002$DKB100:[SYS0.SYSCOMMON.OPENSSSH]
```

```
...10%...20%...30%...40%...50%...60%...70%...80%
```

```
Restoring STARTUP.NSH file(s)...
```

```
No files restored
```

```
...90%...100%
```

```
The following products have been installed:
```

VSI X86VMS AVAIL_MAN_BASE E9.2-4	Layered Product
VSI X86VMS DECNET_PLUS V9.2-I	Layered Product
VSI X86VMS DWMOTIF_SUPPORT E9.2-4	Layered Product
VSI X86VMS KERBEROS V3.3-5A	Layered Product
VSI X86VMS OPENLDAP V2.6-6B	Layered Product
VSI X86VMS OPENSSSH V9.9-2C	Layered Product
VSI X86VMS OPENVMS E9.2-4	Platform (product suite)
VSI X86VMS PERL542 V5.42-0	Layered Product
VSI X86VMS SSL3 V3.0-21	Layered Product
VSI X86VMS TCPIP V6.0-31	Layered Product
VSI X86VMS VMS E9.2-4	Operating System

```
The following products have been removed:
```

VSI X86VMS AVAIL_MAN_BASE V9.2-3	Layered Product
VSI X86VMS DECNET_PLUS V9.2-G	Layered Product
VSI X86VMS DWMOTIF_SUPPORT V9.2-3	Layered Product
VSI X86VMS KERBEROS V3.3-3	Layered Product
VSI X86VMS OPENSSSH V8.9-1J	Layered Product
VSI X86VMS OPENVMS V9.2-3	Platform (product suite)
VSI X86VMS PERL540 V5.40-0	Layered Product
VSI X86VMS SSL111 V1.1-1W	Layered Product
VSI X86VMS SSL3 V3.0-15	Layered Product
VSI X86VMS TCPIP V6.0-26	Layered Product
VSI X86VMS VMS V9.2-3	Operating System
VSI X86VMS VMS923X_BOOTMGR V1.0	Patch (maintenance update)
VSI X86VMS VMS923X_PCSI V1.0	Patch (maintenance update)

```
VSI X86VMS OPENVMS E9.2-4: OPENVMS and related products Platform
```

```
VSI X86VMS TCPIP V6.0-31: VSI TCP/IP Services for OpenVMS.
```

```
VSI X86VMS SSL3 V3.0-21: SSL3 for OpenVMS X86-64 V3.0-21 (Based on OpenSSL
3.0.21)
```

```
Insert the following lines in SYS$MANAGER:SYSTARTUP_VMS.COM:
```

```
@SYS$STARTUP:SSL3$STARTUP.COM
```

```
Insert the following lines in SYS$MANAGER:SYSHUTDOWN.COM:
```

```
@SYS$STARTUP:SSL3$SHUTDOWN.COM
```

```
Review the Installation Guide and Release Notes for post install
directions.
```

Review the Installation Guide and Release Notes for post upgrade verification suggestions.

Refer to SYS\$HELP:SSL30-21-X86.RELEASE_NOTES for more information.

Check the release notes for current status of the product.

VSI X86VMS KERBEROS V3.3-5A

Configure and set up Kerberos

If Kerberos will be run on this system, but has not been used previously, you need to perform the following steps.

- o Run the Kerberos configuration procedure:

```
@SYS$STARTUP:KRB$CONFIGURE.COM
```

- o Add the following line to SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
$ @SYS$STARTUP:KRB$STARTUP
```

- o Add the following line to SYS\$MANAGER:SYLOGIN.COM:

```
$ @SYS$MANAGER:KRB$SYMBOLS
```

VSI X86VMS SSL3 V3.0-21: SSL3 for OpenVMS X86-64 V3.0-21 (Based on OpenSSL 3.0.21)

Insert the following lines in SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
@SYS$STARTUP:SSL3$STARTUP.COM
```

Insert the following lines in SYS\$MANAGER:SYSHUTDWN.COM:

```
@SYS$STARTUP:SSL3$SHUTDOWN.COM
```

Review the Installation Guide and Release Notes for post install directions.

Review the Installation Guide and Release Notes for post upgrade verification suggestions.

Refer to SYS\$HELP:SSL30-21-X86.RELEASE_NOTES for more information.

VSI X86VMS OPENLDAP V2.6-6B: OpenLDAP for OpenVMS X86 V2.6-6B (Based on OpenLDAP 2.6.6)

Insert the following lines in SYS\$MANAGER:SYSTARTUP_VMS.COM:

```
@SYS$STARTUP:LDAP$DEFINE_LOGICALS.COM
```

Insert the following lines in SYS\$MANAGER:SYSHUTDWN.COM:

```
@SYS$STARTUP:LDAP$DEASSIGN_LOGICALS.COM
```

Verify the OpenLDAP configuration template files.

Refer to SYS\$HELP:OPENLDAP0206-6B-X86.RELEASE_NOTES for more information.

Following installation, before the new ACME LDAP agent can be

deployed, the OpenLDAP persona extension must be installed and then the system must be rebooted (it is not sufficient to simply restart the ACME server). Follow the post installation instructions provided in the release notes to complete configuration of the software.

VSI X86VMS PERL542 V5.42-0

Post-installation tasks are required for Perl for OpenVMS.

To use the Perl provided with this kit, run the following set-up command procedure, assuming you installed in SYS\$COMMON.

```
$ @sys$common:[perl-5_42]perl_setup.com
```

You may wish to put that command in SYS\$MANAGER:SYLOGIN.COM to make Perl available to all users on the system.

Perl includes its own help system called perldoc. Type

```
$ perldoc perldoc
```

for the documentation to perldoc itself. Type

```
$ perldoc perldelta
```

for the changes that are new in version V5.42-0 of Perl.

There are many Perl-related resources on the web; point your browser at:

```
http://www.perl.org
```

to get started, and thank you for using Perl for OpenVMS.

VSI X86VMS DECNET_PLUS V9.2-I: DECnet-Plus V9.2-I for OpenVMS X86

Release notes are available in SYS\$HELP:HPE_DECNET-Plus-V84.RELEASE_NOTES and SYS\$HELP:VSI_DECNET_OSI.RELEASE_NOTES

%PCSI-I-SYSTEM_REBOOT, executing reboot procedure ...

Shutdown/reboot deferred when this product is
installed as part of the O/S installation/upgrade

%PCSI-I-SYSTEM_REBOOT, executing reboot procedure ...

Running SYS\$UPDATE:SYS\$MD.COM to update the memory disk...

Updating the system memory disk. Please do not interrupt this procedure...

Created memory disk DKB100:[VMS\$COMMON.SYS\$LDR]SYS\$MD.DSK;2

- using 171088 blocks in 1 extent with 18969 spare blocks
- mounted on LDM2995: with volume label MD26235442DB

- contains OpenVMS E9.2-4

Please use the OpenVMS X86-64 Boot Manager to ensure that you have a valid Boot Option for this system.

You can run the OpenVMS X86-64 Boot Manager by choosing the DCL option from the main menu and then execute this command:

```
$$$ @SYS$MANAGER:BOOT_OPTIONS
```

You can also execute this command from a properly privileged account after booting your OpenVMS X86-64 system.

The upgrade is now complete.

When the newly upgraded system is first booted, a special startup procedure will be run. This procedure will:

- o Run AUTOGEN to set system parameters.
- o Reboot the system with the newly set parameters.

You may shut down now or continue with other operations.

Process X86VMS_INSTALL logged out at 23-AUG-2026 23:03:21.23

Press Return to continue...

You can install or upgrade the OpenVMS X86-64 operating system or you can install or upgrade layered products that are included on the OpenVMS X86-64 distribution media.

You can also execute DCL commands and procedures to perform "standalone" tasks, such as backing up the system disk.

Please choose one of the following:

- 1) Upgrade, install or reconfigure OpenVMS X86-64 Version E9.2-4
- 2) Display layered products that this procedure can install
- 3) Install or upgrade layered products
- 4) Show installed products
- 5) Reconfigure installed products
- 6) Remove installed products
- 7) Find, Install or Undo patches; Show or Delete Recovery Data
- 8) Execute DCL commands and procedures
- 9) Shut down this system

Enter CHOICE or ? for help: (1/2/3/4/5/6/7/8/9/?) **9**

Shutting down the system

VSI Dump Kernel - Handles Shutdown/Reboot/Crash Dumps

** Error logs not dumped, system disk is write locked.

SYSTEM SHUTDOWN COMPLETE

**** Hit any key to reboot system ****

Restarting the system...

Shell> **FS1:**

fs1:\> **cd efi\vms**

fs1:\EFI\VMS> **vms_bootmgr.efi**

Scanning devices and preparing the OpenVMS Boot Manager Build 160...

VSI OpenVMS Boot Manager: V9.2-* Build 160

ENABLED: Symmetric Multi-Processing
 ENABLED: Crash Dump Processing
 ENABLED: Legacy Serial Port Console for remote COM 1
 ENABLED: Using Environment ROM

Checking Required Processor Features: PASSED
 Identifying devices. This may take a while. COMPLETED

VIRTUAL MACHINE GUEST:
 VMware (tm) No Mouse support; Use Commands or Arrow Keys

BOOT MANAGER DEVICE: DKB0
 DEFAULT BOOT COMMAND: BOOT DKB100 0x00 0x00000001

CONNECT A REMOTE TERMINAL SESSION NOW.
 Enter the TERMINAL command for remote connection assistance.

BOOTMGR> **DEVICES**

BOOTABLE DEVICES:

B = BootMgr Device, V = Default VMS Boot Device. Set BOOTMGR flag for path info.

V DKB100	(HD) = FS0	UEFI: E9_2_4	VMS: X86SYS1	18432 MB	SATA
Disk					
B DKB0	(DVD) = FS1	UEFI: E9_2_4	VMS: None	1295 MB	SATA
DVD					

BOOTMGR> **BOOT DKB100**

Booting...

%VMS_BOOTMGR-I-SECBOOT, SYSBOOT signature validated.

%%%%%%%%%% VSI OpenVMS (tm) x86-64 Console %%%%%%%%%%

THE GUEST CONSOLE HAS BEEN SUSPENDED
USE A TERMINAL UTILITY FOR OPA0 ACCESS

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

SYSBOOT> **CONTINUE**

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4
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MDS Mitigation active, variant verw(MD_CLEAR)
%DECnet-I-LOADED, network base image loaded, version = 05.92.09

%SMP-I-CPUTRN, CPU #2 has joined the active set.
%SMP-I-CPUTRN, CPU #1 has joined the active set.
%SMP-I-CPUTRN, CPU #4 has joined the active set.
%SMP-I-CPUTRN, CPU #3 has joined the active set.
%SMP-I-CPUTRN, CPU #5 has joined the active set.

Installing required known files...

Configuring devices...

%RUN-S-PROC_ID, identification of created process is 00000404
%STARTUP-E-NOPAGFIL, No page files have been successfully installed.
%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.24 %%%%%%%%%%%
Operator _AG4002\$OPA0: has been enabled, username SYSTEM

%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.24 %%%%%%%%%%%
Operator status for operator _AG4002\$OPA0:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.25 %%%%%%%%%%%
Logfile has been initialized by operator _AG4002\$OPA0:
Logfile is AG4002::SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;6

%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.25 %%%%%%%%%%%
Operator status for operator AG4002::SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;6
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%SYSTEM-I-BOOTUPGRADE, security auditing disabled
%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.29 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%JBC-E-OPENERR, error opening SYS\$COMMON:[SYSEXE]QMAN\$MASTER.DAT;

%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.29 %%%%%%%%%%%
Message from user SYSTEM on AG4002
-RMS-E-FNF, file not found

```
%SYSTEM-I-BOOTUPGRADE, security server not started
%SYSTEM-I-BOOTUPGRADE, ACME server not started
%%%%%%%%%% OPCOM 24-AUG-2026 14:05:19.44 %%%%%%%%%%
Message from user SYSTEM on AG4002
TDF-I-SETTDF TDF set new timezone differential
```

```
NET$STARTUP, Network not started due to UPGRADE boot
%SYSTEM-I-BOOTUPGRADE, Coordinated Startup not performed
%EIA0, Link up: 10 gbit, 00-50-56-AC-3D-77
```

AUTOGEN will now be run to compute the new system parameters. The system will then shut down and reboot, and the installation or upgrade will be complete.

After rebooting you can continue with such system management tasks as:

```
    Configuring networking software (TCP/IP Services, DECnet, other)
    Using SYS$MANAGER:CLUSTER_CONFIG.COM to create an OpenVMS Cluster
    Creating FIELD, SYSTEST and SYSTEST_CLIG accounts if needed
```

```
%AUTOGEN-I-BEGIN, GETDATA phase is beginning.
%AUTOGEN-I-NEWFILE, Previous contents of SYS$SYSTEM:CLU$PARAMS.DAT have
    been copied to SYS$SYSTEM:CLU$PARAMS.OLD. You may wish to purge
    SYS$SYSTEM:CLU$PARAMS.OLD.
%AUTOGEN-I-NEWFILE, Created a new version of SYS$SYSTEM:PARAMS.DAT
    You may wish to PURGE SYS$SYSTEM:PARAMS.DAT
%AUTOGEN-S-END, GETDATA phase has successfully completed.
%AUTOGEN-I-BEGIN, GENPARAMS phase is beginning.
%AUTOGEN-I-NEWFILE, Created a new version of SYS$MANAGER:VMSIMAGES.DAT
    You may wish to PURGE SYS$MANAGER:VMSIMAGES.DAT
%AUTOGEN-I-NEWFILE, Created a new version of SYS$SYSTEM:SETPARAMS.DAT
    You may wish to PURGE SYS$SYSTEM:SETPARAMS.DAT
%AUTOGEN-S-END, GENPARAMS phase has successfully completed.
%AUTOGEN-I-BEGIN, GENFILES phase is beginning.
```

Calculations for dump and page files.

Errorlog dump file calculations:

A 122 block Errorlog dump file will be created.

```
%SYSGEN-I-CREATED, SYS$SYSROOT:[SYSEXE]SYS$ERRLOG.DMP;3 created
```

**** WARNING **** - No page files are currently installed.
This may eventually cause a system hang or failure.

Dump file calculations:

Current file is DKB100:[SYS0.SYSEXE]SYSDUMP.DMP
Current file size is 12052186 blocks.

Page file calculations:

```

A PAGEFILE does not currently exist and will not be created.
Creating incremental 200000 block file...

%SYSGEN-I-CREATED, DKB100:[SYS0.SYSEXE]SYSDUMP.DMP;2 created
%SYSGEN-I-EXTENDED, DKB100:[SYS0.SYSEXE]SYSDUMP.DMP;2 extended

Disk Block Utilization: _DKB100: ~40%

Total: 000037748736
Used: 000015384112
Free: 000022364624

*****
%AUTOGEN-W-REPORT, Warnings were detected by AUTOGEN.
Please review the information in: SYS$SYSTEM:AGEN$PARAMS.REPORT
*****

%AUTOGEN-S-END, GENFILES phase has successfully completed.
%AUTOGEN-I-BEGIN, SETPARAMS phase is beginning.
%SYSGEN-W-SETMAX, value set to maximum for parameter GH_EXEC_CODE
%%%%%%%%%% OPCOM 24-AUG-2026 14:05:34.67 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%SYSGEN-I-WRITECUR, CURRENT system parameters modified by process ID 00000403 in
to file SYS$SYSROOT_MD:[SYSEXE]X86_64VMSSYS.PAR;1

%AUTOGEN-I-SYSGEN, parameters modified
%AUTOGEN-S-END, SETPARAMS phase has successfully completed.
%AUTOGEN-I-BEGIN, REBOOT phase is beginning.

The system is shutting down to allow the system to boot with the
generated site-specific parameters and installed images.

The system will automatically reboot after the shutdown and the
upgrade will be complete.


SHUTDOWN -- Perform an Orderly System Shutdown
on node AG4002

%SHUTDOWN-I-BOOTCHECK, performing reboot consistency check...
%SHUTDOWN-I-CHECKOK, basic reboot consistency check completed

%SHUTDOWN-I-OPERATOR, this terminal is now an operator's console
%SHUTDOWN-I-DISLOGINS, interactive logins will now be disabled
%SET-I-INTSET, login interactive limit = 0, current interactive value = 0
%SHUTDOWN-I-STOPQUEUES, the queues on this node will now be stopped
%%%%%%%%%% OPCOM 24-AUG-2026 14:05:35.12 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%JBC-E-OPENERR, error opening SYS$COMMON:[SYSEXE]QMAN$MASTER.DAT;

%%%%%%%%%% OPCOM 24-AUG-2026 14:05:35.12 %%%%%%%%%%%
Message from user SYSTEM on AG4002
-RMS-E-FNF, file not found

```

```
SHUTDOWN message on AG4002 from user SYSTEM at AG4002 Batch 14:05:35
AG4002 will shut down in 0 minutes; back up soon. Please log off node AG4002.
Reboot system with AUTOGENerated parameters
```

```
%SHUTDOWN-I-STOPUSER, all user processes will now be stopped
%SHUTDOWN-I-STOPCPU, the secondary processors will now be stopped
%SMP-I-CPUTRN, CPU #1 was removed from the active set.
%SMP-I-CPUTRN, CPU #2 was removed from the active set.
%SMP-I-CPUTRN, CPU #3 was removed from the active set.
%SMP-I-CPUTRN, CPU #4 was removed from the active set.
%SMP-I-CPUTRN, CPU #5 was removed from the active set.
%SHUTDOWN-I-REMOVE, all installed images will now be removed
%SET-I-PSXROOSET, system POSIX root set to SYS$SYSDEVICE:[000000]
%SHUTDOWN-I-DISMOUNT, all volumes will now be dismantled
%%%%%%%% OPCOM 24-AUG-2026 14:05:35.49 %%%%%%%%%
Message from user SYSTEM on AG4002
STARTUP, AG4002 shutdown was requested by the operator.
```

```
VSI Dump Kernel - Handles Shutdown/Reboot/Crash Dumps
```

```
** Dumping error logs to the system disk (AG4002$DKB100:)
** Error logs dumped to AG4002$DKB100:[SYS0.SYSEXE]SYS$ERRLOG.DMP
** (used 116 out of 128 available blocks)
```

```
Restarting the system...
```

```
Attempting to start up from:
```

```
> EFI Internal Shell (Unsupported option)...
```

```
EFI Shell version 2.70 [1.0]
```

```
Current running mode 1.1.2
```

```
Device mapping table
```

```
fs0 :HardDisk - Alias hd23b0a1 blk0
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x1,0x0,0x0)/
HD(1,GPT,6D588E99-9BE7-11F1-94DA-AA000400FEFF,0x266530,0x3E8 00)
fs1 :CDRom - Alias cd23a0a0 blk1
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x0,0x0,0x0)/
CDROM(0x0,0x1B,0xE800)
blk0 :HardDisk - Alias hd23b0a1 fs0
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x1,0x0,0x0)/
HD(1,GPT,6D588E99-9BE7-11F1-94DA-AA000400FEFF,0x266530,0x3E8 00)
blk1 :CDRom - Alias cd23a0a0 fs1
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x0,0x0,0x0)/
CDROM(0x0,0x1B,0xE800)
blk2 :HardDisk - Alias (null)
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x1,0x0,0x0)/
HD(2,GPT,6D588E9A-9BE7-11F1-94D8-AA000400FEFF,0x30,0x266500)
blk3 :HardDisk - Alias (null)
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x1,0x0,0x0)/
HD(3,GPT,6D588E99-9BE7-11F1-94D9-AA000400FEFF,0x2A4D30,0x215 B2AF)
blk4 :BlockDevice - Alias (null)
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x0,0x0,0x0)
blk5 :BlockDevice - Alias (null)
      PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x1,0x0,0x0)
blk6 :BlockDevice - Alias (null)
```

```

PciRoot(0x0)/Pci(0x11,0x0)/Pci(0x3,0x0)/Sata(0x2,0x0,0x0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell>
Shell> FS1:

fs1:\> cd efi\vms

fs1:\EFI\VMS> vms_bootmgr.efi

Scanning devices and preparing the OpenVMS Boot Manager Build 160...

VSI OpenVMS Boot Manager: V9.2-* Build 160

ENABLED: Symmetric Multi-Processing
ENABLED: Crash Dump Processing
ENABLED: Legacy Serial Port Console for remote COM 1
ENABLED: Using Environment ROM

Checking Required Processor Features: PASSED
Identifying devices. This may take a while. COMPLETED

VIRTUAL MACHINE GUEST:
VMware (tm) No Mouse support; Use Commands or Arrow Keys

BOOT MANAGER DEVICE: DKB0
DEFAULT BOOT COMMAND: BOOT DKB100 0x00 0x00000001

CONNECT A REMOTE TERMINAL SESSION NOW.
Enter the TERMINAL command for remote connection assistance.

BOOTMGR> DEVICES

BOOTABLE DEVICES:
B = BootMgr Device, V = Default VMS Boot Device. Set BOOTMGR flag for path info.

V DKB100      (HD) = FS0      UEFI: E9_2_4      VMS: X86SYS1      18432 MB  SATA
Disk
B DKB0        (DVD) = FS1      UEFI: E9_2_4      VMS: None         1295 MB  SATA
DVD

BOOTMGR> BOOT DKB100
Booting...

%VMS_BOOTMGR-I-SECBOOT, SYSBOOT signature validated.

%%%%%%%%%% VSI OpenVMS (tm) x86-64 Console %%%%%%%%%%

-----

THE GUEST CONSOLE HAS BEEN SUSPENDED
USE A TERMINAL UTILITY FOR OPA0 ACCESS

-----

VSI Primary Kernel SYSBOOT

%SYSBOOT-I-VMATYPE, Booting as a VMware (tm) Guest

```

SYSBOOT> **CONTINUE**

VMS Software, Inc. OpenVMS (TM) x86_64 Operating System, E9.2-4
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MDS Mitigation active, variant verw(MD_CLEAR)
%DECnet-I-LOADED, network base image loaded, version = 05.92.09

%SMP-I-CPUTRN, CPU #3 has joined the active set.
%SMP-I-CPUTRN, CPU #5 has joined the active set.
%SMP-I-CPUTRN, CPU #1 has joined the active set.
%SMP-I-CPUTRN, CPU #2 has joined the active set.
%SMP-I-CPUTRN, CPU #4 has joined the active set.
%STDVR-I-STARTUP, OpenVMS startup begun at 24-AUG-2026 14:06:45.21
%EIA0, Link up: 10 gbit, 00-50-56-AC-3D-77
%RUN-S-PROC_ID, identification of created process is 00000404
%RUN-S-PROC_ID, identification of created process is 00000405
%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.60 %%%%%%%%%%%
Operator _AG4002\$OPA0: has been enabled, username SYSTEM

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.60 %%%%%%%%%%%
Operator status for operator _AG4002\$OPA0:
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.61 %%%%%%%%%%%
Logfile has been initialized by operator _AG4002\$OPA0:
Logfile is AG4002::SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;7

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.61 %%%%%%%%%%%
Operator status for operator AG4002::SYS\$SYSROOT:[SYSMGR]OPERATOR.LOG;7
CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY,
LICENSE, OPER1, OPER2, OPER3, OPER4, OPER5, OPER6, OPER7, OPER8, OPER9, OPER10,
OPER11, OPER12

%SET-I-NEWAUDSRV, identification of new audit server process is 0000040B
%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.67 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%JBC-E-OPENERR, error opening SYS\$COMMON:[SYSEXE]QMAN\$MASTER.DAT;

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.68 %%%%%%%%%%%
Message from user SYSTEM on AG4002
-RMS-E-FNF, file not found

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.75 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%SECSRV-I-SERVERSTARTINGU, security server starting up

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.76 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%SECSRV-I-CIACRECLUDB, security server created cluster intrusion database

```

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.76 %%%%%%%%%%
Message from user SYSTEM on AG4002
%SECSRV-I-CIASTARTINGUP, breakin detection and evasion processing now starting u
p

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:51.77 %%%%%%%%%%
Message from user SYSTEM on AG4002
%ACME-I-SERVERSTART, ACME_SERVER starting

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:54.76 %%%%%%%%%%
Message from user SYSTEM on AG4002
%SECSRV-I-PROXYSTARTINGUP, proxy processing now starting up

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:54.77 %%%%%%%%%%
Message from user SYSTEM on AG4002
%SECSRV-E-NOPROXYDB, cannot find proxy database file NET$PROXY.DAT
%RMS-E-FNF, file not found

%%%%%%%%%% OPCOM 24-AUG-2026 14:06:59.86 %%%%%%%%%%
Message from user SYSTEM on AG4002
TDF-I-SETTDF TDF set new timezone differential

Copyright 2026 VMS Software, Inc.
%NET-I-LOADED, executive image LES$LES_V30.EXE loaded
%NET-I-LOADED, executive image NET$ALIAS.EXE loaded
%NET-I-LOADED, executive image NET$SESSION_CONTROL.EXE loaded
%NET$STARTUP-I-STARTPROCESS, starting process DNS
%NET-I-LOADED, executive image SYS$NAME_SERVICES.EXE loaded
%RUN-S-PROC_ID, identification of created process is 00000415
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$NODE_
STARTUP.NCL;
%NET-I-LOADED, executive image NET$CSMACD.EXE loaded
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$CSMAC
D_STARTUP.NCL;
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$SESSI
ON_STARTUP.NCL;
%LES-S-PROC_ID, identification of created process is 00000416
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:06.83 %%%%%%%%%%
Message from user SYSTEM on AG4002
%LES-S-ACPSTARTED, LES$ACP_V30 started running LES$ACP V3.0

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:06.87 %%%%%%%%%%
Message from user SYSTEM on AG4002
%LES-I-LOADING, loading NET$ component NETMANPPI from SYS$COMMON:[SYS$LDR]LES$NE
TMAN.EXE;1

%LES-I-LOADING, loading NET$ component NETMANPPI from SYS$COMMON:[SYS$LDR]LES$NE
TMAN.EXE;1
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$ROUTI
NG_STARTUP.NCL;
%NET-I-LOADED, executive image NET$TRANSPORT_NSP.EXE loaded
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$NSP_T
RANSPORT_STARTUP.NCL;
%NET-I-LOADED, executive image NET$TPCONS.EXE loaded

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%NET-I-LOADED, executive image NET$TRANSPORT_OSI.EXE loaded
%NET$STARTUP-I-EXECUTESCRIP, executing NCL script SYS$SYSROOT:[SYSMGR]NET$OSI_T
RANSPORT_STARTUP.NCL;

%SYSMAN-I-OUTPUT, command execution on node AG4002
%SYSMAN-I-IOADDRESS, the DPT is located at address 80651000
%NET-I-LOADED, executive image NET$OSVCM.EXE loaded

%SYSMAN-I-OUTPUT, command execution on node AG4002
%SYSMAN-I-IOADDRESS, the DPT is located at address 80653E00
%NET$STARTUP-I-STARTPROCESS, starting process ACP
%RUN-S-PROC_ID, identification of created process is 00000417
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:09.95 %%%%%%%%%%%
Message from user SYSTEM on AG4002
%NET$ACP-I-STARTUP, DECnet-Plus for OpenVMS ACP starting execution

%RUN-S-PROC_ID, identification of created process is 00000418
%NET$STARTUP-I-EXECUTESCRIP, executing NCL script SYS$SYSROOT:[SYSMGR]NET$SEARC
HPATH_STARTUP.NCL;
%NET$STARTUP-I-STARTPROCESS, starting process EVD
%RUN-S-PROC_ID, identification of created process is 00000419
%NET$STARTUP-I-EXECUTESCRIP, executing NCL script SYS$SYSROOT:[SYSMGR]NET$EVENT
_STARTUP.NCL;
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:10.88 %%%%%%%%%%%
Message from user SYSTEM on AG4002
Event: Change Filter from: Node LOCAL:.AG4002 Event Dispatcher SINK local_sink,
      at: 2026-08-24-14:07:10.878+02:00Iinf
      Old Specific Filter=
      {
        [
          EventCode = (Node LOCAL:.AG4002 , All) ,
          Filter Action = Ignore
        ] ,
        [
          EventCode = (Node LOCAL:.AG4002 Event Dispatcher, All) ,
          Filter Action = Ignore
        ] ,
        [
          EventCode = (Node LOCAL:.AG4002 Event Dispatcher SINK local_sink, All)
        ,
          Filter Action = Pass
        ]
      },

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:10.90 %%%%%%%%%%%
Message from user SYSTEM on AG4002
      Old Global Filter=
      {
        [
          EventCode = ((Node), All) ,
          Filter Action = Ignore
        ] ,
        [
          EventCode = ((Node, Event Dispatcher), All) ,
          Filter Action = Block
        ] ,
      }

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```

    [
    EventCode = ((Node, Event Dispatcher, SINK), All) ,
    Filter Action = Block
    ] ,
    [
    EventCode = ((Node, Event Dispatcher, Outbound Stream), All) ,
    Filter Action = Block
    ] ,
    [
    EventCode = ((Node, Event Dispatcher, SINK, Inbound Stream), All) ,
    Filter Action = Block
    ]
},
Old Catch All=Pass,
New Specific Filter=
{
    [
    EventCode = (Node LOCAL:.AG4002 , All) ,
    Filter Action = Ignore
    ] ,
    [
    EventCode = (Node LOCAL:.AG4002 Event Dispatcher, All) ,
    Filter Action = Ignore

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% OPCOM 24-AUG-2026 14:07:10.91  %%%%%%%%%%%%%%
Message from user SYSTEM on AG4002

    ] ,
    [
    EventCode = (Node LOCAL:.AG4002 Event Dispatcher SINK local_sink, All)
,
    Filter Action = Pass
    ]
},

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% OPCOM 24-AUG-2026 14:07:10.92  %%%%%%%%%%%%%%
Message from user SYSTEM on AG4002
New Global Filter=
{
    [
    EventCode = ((Node), All) ,
    Filter Action = Ignore
    ] ,
    [
    EventCode = ((Node, Event Dispatcher), All) ,
    Filter Action = Block
    ] ,
    [
    EventCode = ((Node, Event Dispatcher, SINK), All) ,
    Filter Action = Block
    ] ,
    [
    EventCode = ((Node, Event Dispatcher, Outbound Stream), All) ,
    Filter Action = Block
    ] ,
    [

```

```

        EventCode = ((Node, Event Dispatcher, SINK, Inbound Stream), All) ,
        Filter Action = Block
    ]
},
New catch All Filter=Pass
eventUid    19677A28-9FC5-11F1-8331-AA0004006906
entityUid   1966B6DD-9FC5-11F1-832E-AA0004006906
streamUid   1966B6DD-9FC5-11F1-832E-AA0004006906

%NET$STARTUP-I-STARTPROCESS, starting process DTSS
%RUN-S-PROC_ID, identification of created process is 0000041A
%NET$STARTUP-I-EXECUTESCRIPT, executing NCL script SYS$SYSROOT:[SYSMGR]NET$APPLI
CATION_STARTUP.NCL;
%NET-I-LOADED, executive image NET$LOOP_APPLICATION.EXE loaded
%NET$STARTUP-I-OPERSTATUS, DECnet-Plus for OpenVMS operational status is RUNNING
-ALL
%%%%%%%%%% OPCOM  24-AUG-2026 14:07:12.31  %%%%%%%%%%%
Message from user SYSTEM on AG4002
Warning: DECdtm log file not found (SYS$JOURNAL:SYSTEM$AG4002.LM$JOURNAL)
        %RMS-E-FNF, file not found
        TP server process waiting

%STARTUP-I-AUDITCONTINUE, audit server initialization complete
%%%%%%%%%% OPCOM  24-AUG-2026 14:07:12.41  %%%%%%%%%%%
Message from user AUDIT$SERVER on AG4002
Security alarm (SECURITY) and security audit (SECURITY) on AG4002, system id: 16
41
Auditable event:          Audit server starting up
Event time:               24-AUG-2026 14:07:12.39
PID:                     00000403
Username:                 SYSTEM

The OpenVMS system is now executing the site-specific startup commands.

%DCL-I-SUPERSEDE, previous value of SSL3$ROOT has been superseded

%TCPIP-I-INFO, TCP/IP Services startup beginning at 24-AUG-2026 14:07:13.45
%TCPIP-I-NORMAL, timezone information verified
%RUN-S-PROC_ID, identification of created process is 00000422
%%%%%%%%%% OPCOM  24-AUG-2026 14:07:15.47  %%%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet Loaded

%%%%%%%%%% OPCOM  24-AUG-2026 14:07:15.49  %%%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "inet" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM  24-AUG-2026 14:07:15.49  %%%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "net" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM  24-AUG-2026 14:07:15.50  %%%%%%%%%%%

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Message from user INTERnet on AG4002
Subsystem "socket" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.50 %%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "iptunnel" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.51 %%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "ipv6" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.51 %%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "snmpinfo" configured by process 00010022
Status: success

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.52 %%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "kvci" configured by process 00010022
Status: success

%TCPIP-I-SETLOCAL, setting domain and/or local host
%TCPIP-I-STARTCOMM, starting communication
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.97 %%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet Started

%TCPIP-I-SETPROTP, setting protocol parameters
%TCPIP-I-DEFINTE, defining interfaces
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.98 %%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet ACP Created INTERnet interface: IE0

%%%%%%%%%% OPCOM 24-AUG-2026 14:07:15.99 %%%%%%%%%%
Message from user INTERnet on AG4002
%TCPIP-I-FSIPADDRUP, IE0 10.10.102.242 primary active on node AG4002, interface
IE0

%TCPIP-I-STARTNAME, starting name service
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:16.09 %%%%%%%%%%
Message from user INTERnet on AG4002
Subsystem "proxy" configured by process 00010003
Status: success

%TCPIP-S-STARTDONE, TCP/IP Kernel startup completed
%TCPIP-I-PROXYLOADED, loaded 0 NFS proxy records
%TCPIP-I-LOADSERV, loading TCPIP server proxy information
%TCPIP-I-SERVLOADED, auxiliary server loaded with 0 proxy records
-TCPPIP-I-SERVSKIP, skipped 0 communication proxy records
-TCPPIP-I-SERVTOTAL, total of 0 proxy records read
%TCPIP-S-STARTDONE, TCPIP$PROXY startup completed
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:16.55 %%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet ACP Activate FTP Server

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%%%%%%%%%% OPCOM 24-AUG-2026 14:07:16.56 %%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet ACP NOLISTEN Process creation success: Service - FTP

%TCPIP-S-STARTDONE, TCPIP$FTP startup completed
%TCPIP-S-STARTDONE, TCPIP$FTP_CLIENT startup completed
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:16.68 %%%%%%%%%%
Message from user INTERnet on AG4002
INTERnet ACP Activate TELNET Server

%TCPIP-S-STARTDONE, TCPIP$TELNET startup completed
%TCPIP-S-STARTDONE, TCP/IP Services startup completed at 24-AUG-2026 14:07:16.74

%DECW$DEVICE-I-NODEVICE, no graphics devices found.
%SET-I-INTSET, login interactive limit = 64, current interactive value = 0
%RUN-S-PROC_ID, identification of created process is 00000425
%%%%%%%%%% OPCOM 24-AUG-2026 14:07:17.02 %%%%%%%%%%
Message from user SYSTEM on AG4002
%SMHANDLER-S-STARTUP, server management event handler startup

SYSTEM      job terminated at 24-AUG-2026 14:07:19.03

Accounting information:
Buffered I/O count:          7128      Peak working set size:      13024
Direct I/O count:           13580      Peak virtual size:         258032
Page faults:                 13528      Mounted volumes:           0
Charged CPU time:            0 00:00:07.74      Elapsed time:              0 00:00:33.86

Welcome to OpenVMS (TM) x86_64 Operating System, Version E9.2-4

```