

# VSI OpenVMS

## VSI X.25 for OpenVMS Installation Guide

Document Number: DO-DX25IG-01A

Publication Date: August 2018

**Revision Update Information:** This is a new manual.

**Operating System and Version:** VSI OpenVMS Integrity Version 8.4-2  
VSI OpenVMS Alpha Version 8.4-2L1

**Software Version:** VSI X.25 for OpenVMS Version 2.1

---

# VSI X.25 for OpenVMS Installation Guide



VMS Software

---

Copyright © 2018 VMS Software, Inc. (VSI), Burlington, Massachusetts, USA

## Legal Notice

Confidential computer software. Valid license from VSI required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

The information contained herein is subject to change without notice. The only warranties for VSI products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. VSI shall not be liable for technical or editorial errors or omissions contained herein.

HPE, HPE Integrity, HPE Alpha, and HPE Proliant are trademarks or registered trademarks of Hewlett Packard Enterprise.

Intel and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Oracle is a registered trademark of Oracle and/or its affiliates.

The VSI OpenVMS documentation set is available on DVD.

<b>Preface</b> .....	<b>v</b>
1. About VSI .....	v
2. Associated Documentation .....	v
3. How to Order Additional Documentation .....	v
4. VSI Encourages Your Comments .....	v
5. Conventions .....	vi
<b>Chapter 1. Preparing for Installation</b> .....	<b>1</b>
<b>Chapter 2. Installing VSI X.25</b> .....	<b>7</b>
<b>Chapter 3. Post–installation Tasks</b> .....	<b>11</b>



# Preface



This guide describes how to install VSI X.25 for OpenVMS V2.1 HPE servers running the OpenVMS operating system. This guide is intended for system managers who are responsible for installing VSI X.25 for OpenVMS V2.1.

If you have not yet installed VSI X.25 for OpenVMS V2.1, then read this manual sequentially. If you have already performed the installation and need specific information on post-installation tasks, review the table of contents and go to the pages you need.

## 1. About VSI

VMS Software, Inc. (VSI) is an independent software company licensed by Hewlett Packard Enterprise to develop and support the OpenVMS operating system.

VSI seeks to continue the legendary development prowess and customer-first priorities that are so closely associated with the OpenVMS operating system and its original author, Digital Equipment Corporation.

For additional information about VSI OpenVMS products and services, visit: <https://www.vmssoftware.com>

## 2. Associated Documentation

The following manuals are included in the VSI X.25 for OpenVMS V2.1 documentation set..

- *VSI X.25 for OpenVMS V2.1 Configuration Guide* – This guide describes how to configure the product.
- *VSI X.25 for OpenVMS V2.1 Management Guide* – This manual describes how to manage and monitor an X.25 system, and details the tools provided to administer an X.25 system.
- *VSI X.25 for OpenVMS V2.1 Problem Solving Guide* – This manual provides guidance on how to solve problems that may occur when using the product.
- *VSI X.25 for OpenVMS V2.1 Release Notes* – This manual provides late breaking information about the product.

## 3. How to Order Additional Documentation

For information about how to order additional documentation, email the VSI OpenVMS information account: <[info@vmssoftware.com](mailto:info@vmssoftware.com)>. We will be posting links to documentation on our corporate website soon.

## 4. VSI Encourages Your Comments

You may send comments or suggestions regarding this manual or any VSI document by sending electronic mail to the following Internet address: <[docinfo@vmssoftware.com](mailto:docinfo@vmssoftware.com)>. Users who have OpenVMS support contracts through VSI can contact <[support@vmssoftware.com](mailto:support@vmssoftware.com)> for

help with this product. Users who have OpenVMS support contracts through HPE should contact their HPE Support channel for assistance.

## 5. Conventions

Table 1 lists the conventions used in this guide.

**Table 1. Conventions**

<b>Convention</b>	<b>Meaning</b>
UPPERCASE TEXT	Uppercase text indicates the name of a command, a file, a parameter, a procedure, or utility.
\$ <i>@SYS</i> <i>\$UPDATE:VMSINSTAL</i>	In interactive examples, prompts or displayed text appears in a monospace font. User input appears in a bold monospace font.
Ctrl/x	In interactive examples, a sequence such as Ctrl/x indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button; for example, Ctrl/C or Ctrl/Z.
[YES ]	In an installation prompt, square brackets indicate that the enclosed item is a default value. Square brackets also serve as delimiters for a directory name in a file specification.

# Chapter 1. Preparing for Installation

VSI X.25 for OpenVMS V2.1 enables appropriately configured systems to connect to an X.25 Packet Switched Data Network (PSDN) via an X.25 relay node on the same Local Area Network (LAN), via an X.25 connector node, or directly using a synchronous communications device.

Full details of the features and facilities provided by VSI X.25 for OpenVMS V2.1 are provided in the Software Product Description (DO-DX2501-01A).

Throughout the rest of this guide, the product VSI X.25 for OpenVMS V2.1 is referred to as VSI X.25.

---

## Note

(Alpha only) If you intend to run VSI X.25 for OpenVMS Alpha over a LAN (using LLC2) or to access a PSDN directly, an appropriate synchronous interface card is required. For details of the synchronous communications devices supported on Alpha, refer to the *VSI X.25 for OpenVMS Software Product Description* (SPD).

---

The X.25 installation kit is installed using the POLYCENTER Software Installation Utility (PCSI). This utility is provided as part of the operating system software.

In addition to the VSI OpenVMS operating system, VSI X.25 requires that DECnet/OSI for OpenVMS Systems be installed.

If you choose to install all the required software products at the same time, install the OpenVMS operating system and layered products in the following order:

1. VSI OpenVMS operating system
2. DECnet/OSI for OpenVMS Systems
3. VSI X.25 for OpenVMS V2.1

During the installation of X.25, a check is made for the required DECnet and WANDD software. If the DECnet software is not present, you are prompted to install it before proceeding. WANDD software is now included in the VSI X.25 product.

---

## Note

You cannot install and run VSI X.25 without the DECnet software.

---

The PCSI files are provided in the VSI-I64VMS-X25-V0201--1.ZIPEXE file. Enter the following command to extract the files:

```
$ run VSI-I64VMS-X25-V0201--1.ZIPEXE;
```

```
UnZipSFX 6.01 of 29 September 2014, by Info-ZIP (http://www.info-zip.org).
  inflating: VSI-I64VMS-X25-V0201--1.PCSI$COMPRESSED
  inflating: VSI-I64VMS-WANDD-V0201--1.PCSI$COMPRESSED
extracting: VSI-I64VMS-X25-V0201--1.PCSI$COMPRESSED_VNC
extracting: VSI-I64VMS-WANDD-V0201--1.PCSI$COMPRESSED_VNC
```

This rest of this chapter details the tasks that need to be completed or considered *before* attempting to install VSI X.25.

1. **Read the Release Notes.** VSI X.25 provides release notes in the kit. You should review the release notes because they contain important information that you should know before installing. The release notes are included in the kit.
2. **Determine the default privileges of the installing account.** To install VSI X.25, you must be logged in to an account that has SETPRV or at least the following privileges: CMKRNL, WORLD, SYSPRV.

Log in and enter the DCL command:

```
$ SHOW PROCESS/PRIVILEGES
```

The POLYCENTER Software Installation Utility turns off BYPASS privilege at the start of the installation.

3. **Check Process Quotas.** The POLYCENTER Software Installation Utility requires that the installation account has requires the minimum quotas:

ASTLM	24
BIOLM	18
BYTLM	32768
DIOLM	18
ENQLM	200
FILLM	100

4. **Use the OpenVMS Authorize Utility to verify and change process quotas for the installation account in the user authorization file (SYSUAF.DAT).**

For example, to verify and then change the BYTLM quota for the *account-name* installation account, enter the following command sequence:

```
$ SET DEFAULT SYS$SYSTEM
$ RUN AUTHORIZE
UAF> SHOW account-name
UAF> MODIFY account-name /BYTLM = 32768
UAF> EXIT
$ LOGOUT
```

After the quotas for the installation account have been changed, log out of the installation account and log in again for the new quotas to take effect. You can then proceed with the installation. User account quotas are stored in the file SYSUAF.DAT.

5. **Check system disk space.** To install VSI X.25 (including all the optional software components) your system requires approximately 12000 blocks of free disk storage space.

If you do not want to install all the optional components, you should calculate the required disk space by referring to following table. Note that the disk space requirement for a specific component should be *added* to the disk space required for VSI X.25.

Software Component	Approx. Required Disk Space (blocks)
X.25 Client	10330
X.29 Support	500

Software Component	Approx. Required Disk Space (blocks)
X.25 Mail	150
X.25 Accounting	100
Trace	570
Programming Examples	350

To determine the number of free disk blocks on the current system disk, enter the following command at the DCL prompt:

```
$ SHOW DEVICE SYS$SYSDEVICE
```

If necessary, create enough free disk space to accommodate the installation of X.25 Client.

Chapter 2 describes options the POLYCENTER Software Installation Utility provides if there is insufficient disk space to complete the VSI X.25 installation.

6. **Use SYSGEN and AUTOGEN Utilities to set system parameters.** The System Generation Utility (SYSGEN) and the AUTOGEN Utilities prepare your system for an installation of VSI X.25. AUTOGEN uses system configuration data to automatically set system parameters.

VSI X.25 requires the system parameter MAXBUF to have a minimum value of 2048.

To determine the values of the system parameters, invoke the System Generation Utility (SYSGEN) as follows:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>
```

At the SYSGEN> prompt, enter the SHOW command to display the value of a specific system parameter. The following example displays the value for the MAXBUF system parameter:

```
SYSGEN> SHOW MAXBUF
```

After displaying the parameters with the SHOW command, enter the EXIT command at the SYSGEN> prompt to return to DCL level.

7. **Check free global pagelets.** To install and run VSI X.25, you must have sufficient free global pagelets and global sections.

---

## Note

On OpenVMS Alpha architectures, the term pagelet denotes a 512– byte quantity of memory equivalent to a memory page on VAX systems.

VSI X.25 requires *at least* 64 global pagelets and 1 global section.

You must first find out how many free global pagelets and sections are on your system, and then use AUTOGEN if you need to increase the global pagelets and global sections system parameters.

Use the WRITE command with the F\$GETSYI lexical function to find the number of free global pagelets and global sections. The following example shows how to get this information at your terminal (the default for SYS\$OUTPUT):

```
$ WRITE SYS$OUTPUT F$GETSYI("CONTIG_GBLPAGES")
```

```
15848
$ WRITE SYS$OUTPUT F$GETSYI ("FREE_GBLSECTS ")
24
```

Compare the values displayed with those required for X.25.

- If the values displayed by the system are greater than the values required for VSI X.25, you do not need to increase the system parameter settings.
- If one of the values is less than the value required for VSI X.25, you must increase the system parameter setting using AUTOGEN. Proceed to the next section.

8. **Use the AUTOGEN command procedure to change system parameters.** AUTOGEN automatically adjusts values for parameters that are associated with the values you reset manually.

Edit the `SYS$SYSTEM:MODPARAMS.DAT` file. To change a parameter value, delete the current value associated with that parameter and enter the new value. To add a new parameter, add a line to the file that includes both the name of the parameter and its value. For example:

```
WSMAX = 8096
```

To modify incremental parameters such as free global pagelets and global sections, use the `ADD_` prefix. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

Note that when you set the page file quota, do not use a value that exceeds the amount of page file space available on the system. After you make all your changes, exit from the editor.

9. **Execute the AUTOGEN procedure to recalculate your system parameters:** The following command recalculates your system parameters and reboots the system.

```
$ @SYS$UPDATE:AUTOGEN GETDATA REBOOT
```

When you specify `REBOOT`, AUTOGEN performs an automatic system shutdown and then reboots the system. Any users logged on to the system are immediately disconnected during the shutdown. The automatic reboot puts the new parameter values into effect.

The AUTOGEN Utility automatically adjusts some of the SYSGEN parameters based on the consumption of resources since the last reboot. If you do not want to take advantage of this automatic adjustment, include the `NOFEEDBACK` qualifier on the AUTOGEN command line.

For more information about using AUTOGEN, refer to the OpenVMS system management documentation.

10. **Use the System Generation Utility (SYSGEN) to set dynamic parameters.** Dynamic parameters changed with the SYSGEN command `WRITEACTIVE` become active immediately without any need to reboot your system. In fact, rebooting returns dynamic system parameter values to their previous settings.

Once you change dynamic parameter values, you should complete the installation before rebooting the system. After you finish with the installation, you can reset the dynamic parameters to their previous values or let them be reset automatically when you next reboot your system.

If the dynamic parameter value of `MAXBUF` on your system is less than 2048, use the following series of commands to change the value:

---

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> USE ACTIVE
SYSGEN> SET MAXBUF 2048
SYSGEN> WRITE ACTIVE
SYSGEN> EXIT
```

VSI recommends that you back up your system disk before installing any software. Use the backup procedures that are established at your site. For details on performing a system backup, refer to the OpenVMS system management documentation.



# Chapter 2. Installing VSI X.25

This chapter describes the procedure to install VSI X.25.

In addition, this chapter provides details on how to display a list of the files installed on your system during the installation of VSI X.25. Refer to *Files Installed on Your System*.

1. **Register the X.25 Software License.** Before you run VSI X.25, you must first register a License Product Authorization Key (License PAK) using the License Management Facility (LMF). Your existing HPE license for this product will not work. Refer to the *VSI X.25 for OpenVMS V2.1 Software Product Description* (SPD DO-DX2501-01A) for more information about licensing.

For information on using LMF, refer to the OpenVMS License Management Utility Manual.

If you are installing pre-requisite or optional software along with VSI X.25, review the PAK status and install the PAKs for any pre-requisite or optional software before you install VSI X.25.

2. **Install the software** Provided you have extracted the PCSI files from the ZIPEXE file, you can now install VSI X.25 by enter the following command:

```
$ PRODUCT INSTALL X25CLIENT /SOURCE=kit_location /DEST=SYS$SYSROOT
```

See Chapter 1 for information about extracting the VSI X.25 kit from the ZIPEXE file.

3. **Using PCSI features when installing.** For a description of all the features you can request when starting an installation such as purging files, and using a product configuration file, refer to DCL help for the PRODUCT INSTALL command help. Full details of using the POLYCENTER Software Installation Utility to install and manage software products on your system are provided in the *POLYCENTER Software Installation Utility User's Guide*. If the /SOURCE qualifier is not used, an attempt is made to read the installation kit from PCSI\$SOURCE: [ KITS ].

Some software products require you to make a set of choices when you install the product. For example, if you are installing a tool that checks spelling, you might choose which languages you want to include. When you use the POLYCENTER Software Installation Utility, you can select the options for a product (that is, configure it) in one of three ways:

- By creating a product configuration file (PCF), before you install the product
- By responding to questions asked during the installation procedure
- By modifying your choices after you install a product
- Type the DCL command HELP PRODUCT, followed by the name of a *POLYCENTER Software Installation Utility* command (for example, HELP PRODUCT INSTALL).
- By saving your answers in a PCF and using the file for subsequent installations, you can reduce or eliminate the questions asked when you install a product. You can also create multiple PCFs for each product. This lets you customize software installations for unique hardware situations or for different usage patterns within a group.
- If you create a PCF as a separate operation, rather than as part of the installation procedure, you can determine whether and how your choices are recorded in the PCF. You have the following options:

- **Saving your answer.** You can specify that your response to an installation question (rather than the current default value) be stored in the PCF.
- **Using your answer only once.** You can answer a question without recording your answer in the PCF. This is useful for responding to questions that are specific to a single system (such as a DECnet node name) or installation (such as a time setting).
- **Deferring a question so that it is asked again during a future installation.** For example, you might want an installer to verify that a particular response is still valid for the systems on which each installation is being performed.
- **Preventing a question from being asked again.** If you do not defer a question when you create a PCF, the default response recorded in the PCF is used during future installations. The installer is not prompted for the information. This reduces the length and complexity of the actual installation procedure.

The POLYCENTER Software Installation Utility verifies that any or all of the following are true, depending on your product:

- You are logged in to a privileged account. It is good practice to install software from the system manager's account with your default device and directory set to SYSS\$UPDATE.
- Quotas, system parameters, disk space, [and memory] for installation are adequate. The POLYCENTER Software Installation Utility checks for the quota values specified in Chapter 1. If sufficient disk space is not found, the installation procedure provides options:
  - You can restart the installation and specify another disk to use as an alternate working device for the temporary working directory. See Chapter 1 for information about how to use an alternate working device.
  - You can abort the installation and then create more disk space on the system disk. The VSI OpenVMS Upgrade and Installation Manual describes how to use tailoring utilities so that you can delete files and create more disk space.

If you lack sufficient free disk space for installation or have no other disk to use as an alternate working device, the installation procedure exits.

- The minimum VSI OpenVMS system version is installed (VSI OpenVMS Integrity Version 8.4-2 or VSI OpenVMS Alpha Version 8.4-2L1).
- Users have logged out.

When the POLYCENTER Software Installation Utility detects a problem in any of these areas, it asks if you want to continue the installation.

Use the following commands to stop and restart the installation:

To stop the procedure at any time:

1. Press **Ctrl/Y**
2. Enter the command `PRODUCT REMOVE VSI_X25` to reverse any changes to the system that occurred during the partial installation. This command deletes all files created up to that point and causes the installation procedure to exit.

The POLYCENTER Software Installation Utility resolves some conflicts automatically. For other types of conflicts, the POLYCENTER Software Installation Utility provides feedback on the nature of the conflict, letting you decide how you want to proceed.

Similarly, if the correct version of OpenVMS is installed, and you elect not to use the default values when installing VSI X.25, the Software Integrator warns you that you will need to use the RECONFIGURE option if you want to change the version of OpenVMS to be used.

As an installation procedure progresses, the system displays a percentage to indicate how much of the installation has been completed. For example:

```
Percent Done: 15%...30%...46%...61%...76%...92%%  
POLYCENTER Software Installation Utility-I-SUCCESS, operation completed  
successfully
```

If you started the installation using the /LOG qualifier, the system displays details of the installation.

**This section describes how to recover from errors during product installation.**

If the installation of VSI X.25 fails for any reason, the following message is displayed:

```
%POLYCENTER Software Installation Utility INSTAL-E-INSFAIL,  
The ... installation of VSI X.25 for OpenVMS V2.1 has failed.
```

If the installation fails, you must restart the installation procedure. An error during the installation can occur if one or more of the following conditions exist:

- The operating system version is incorrect.
- The prerequisite software version is incorrect.
- Quotas necessary for successful installation of VSI X.25 are inadequate.
- Process quotas required by the POLYCENTER Software Installation Utility are inadequate (see Chapter 1).

If you are notified that any of these conditions exist, you should take the appropriate action as described in the message. For an explanation of any system messages, refer to the *OpenVMS System Messages and Recovery Procedures Reference Manual* or the online HELP/MESSAGE facility.

The VSI X.25 installation procedure installs a number of files on your system. To list the files, enter the command:

```
$ PRODUCT SHOW OBJECT /PRODUCT=X25CLIENT
```



# Chapter 3. Post–installation Tasks

This chapter summarizes the tasks that should be performed after VSI X.25 has been installed. In addition, this chapter details how to de–install VSI X.25.

You must edit the system startup and shutdown files to provide for automatic startup and shutdown of VSI X.25 when your system is rebooted.

1. Add the command line that starts VSI X.25 to the system startup file, `SYS$MANAGER:SYSTARTUP_VMS.COM`.

The following example shows the network startup command line followed by the VSI X.25 startup command line:

```
$ @SYS$MANAGER:STARTNET.COM
.
.
$ IF F$SEARCH ("SYS$STARTUP:X25$STARTUP.COM") .NES. "" THEN @SYS
$STARTUP:X25$STARTUP
```

VSI X.25 cannot start until after the network has started. You must position this new command line after the line that invokes the network startup command procedure.

2. Add the following command line to the system shutdown file, `SYS$MANAGER:SYSHUTDOWN.COM`:

```
$ IF F$SEARCH ("SYS$STARTUP:X25$SHUTDOWN.COM") .NES. "" THEN @SYS
$STARTUP:X25SHUTDOWN
```

3. Add the following command line to `SYLOGIN.COM`:

```
$ IF F$SEARCH ("SYS$MANAGER:X25$SYLOGIN.COM") .NES. "" THEN @SYS
$MANAGER:X25SYSLOGIN
```

Once VSI X.25 has been installed, your system needs to be configured.

Full details on how to configure the product are provided in the *VSI X.25 for OpenVMS V2.1 Configuration Guide*.

To use VSI X.25, each account must have *at least* the following privileges:

```
TMPMBX
NETMBX
PSI$X25_USER
PSI$DECLNAME
```

Use the OpenVMS Authorize Utility to determine whether users have the privileges they require.

The installation procedure modifies the DCL command table so that VSI X.25 specific commands are recognized and processed. However, the previous command table is still in effect for users who are currently logged in.

To use the VSI X.25 specific commands, users must either log out and then log in again, or issue the following DCL command:

```
$ SET COMMAND /TABLES=SYS$LIBRARY:DCLTABLES
```

Once you have completed the required post–installation tasks, reboot the system.

Provided that you have edited the system startup file correctly, the VSI X.25 software is started automatically when you reboot the system on which it is installed.

To start the VSI X.25 software manually, enter the following command from the SYSTEM account:

```
$ @SYS$STARTUP:X25$STARTUP.COM
```

To de–install VSI X.25, enter the command:

```
$ PRODUCT REMOVE X25CLIENT
```

Invoking this command automatically calls the shutdown procedure before removing the product files. Note that complete shutdown of VSI X.25 does not occur until the system is next rebooted.

To invoke the shutdown procedure manually, enter the following command from the SYSTEM account:

```
$ @SYS$STARTUP:X25$SHUTDOWN.COM
```

---

## Note

You do not have to remove VSI X.25 before re–installing the software. If a version of the product exists on the system on which you are attempting to install the same or another version of the product, the Software Integrator will warn you that a version of the product is already installed. You can then choose whether to continue with the installation.

---

After de–installing the product:

1. Remove or comment out:

```
@SYS$STARTUP:X25$STARTUP.COM
```

```
from SYS$MANAGER:SYS$STARTUP_VMS.COM
```

2. Remove or comment out:

```
@SYS$STARTUP:X25$SHUTDOWN.COM
```

```
from SYS$MANAGER:SYSHUTDWN.COM
```

If you encounter a problem while using VSI X.25, please report it to VSI.

Review the *Software Product Description (SPD)* for an explanation of warranty. If you encounter a problem during the warranty period, report the problem as previously indicated or follow alternate instructions provided by VSI for reporting SPD non conformance problems.

## De-installing VSI X.25 for OpenVMS

The following example shows how to de–install VSI X.25.

```
$ PRODUCT REMOVE X25CLIENT
```

The following product has been selected: VSI X.25 for OpenVMS V2.1

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

The following product will be removed: VSI X.25 for OpenVMS V2.1  
%PCSI-I-VOLINFO, estimated space information for volume DISK\$AVMS061FT6-  
PCSI-I-VOLSPC,  
-11187 required; 1401780 available; 1412967 net  
Portion Done: 10%...30%...40%...50%...60%...70%...80%...90%...100%

The following product has been removed: VSI X.25 for OpenVMS V2.1  
\$

