

VSI OMNI API for OpenVMS Installation Guide

Operating System and Version: VSI OpenVMS IA-64 Version 8.4-1H1 or higher
VSI OpenVMS Alpha Version 8.4-2L1 or higher

Software Version: VSI OMNI Version 4.1

VSI OMNI API for OpenVMS Installation Guide



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Preface

This document describes the installation of the VSI OMNI API (Application Programming Interface) software on a VSI OpenVMS system. Refer to this document in the future when installing maintenance updates or reinstalling the VSI OMNI API software. For more information about VSI OMNI API features and functions, refer to the VSI OMNI API Software Product Description (SPD) in your software distribution kit.

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.

2. Intended Audience

This document is for application programmers, network managers, and system managers who have experience in network management and distributed processing.

3. Document Structure

The manual is organized as follows:

- Chapter 1: *Pre-installation Requirements* describes the hardware and software requirements that must be met before you can install the VSI OMNI API software.
- Chapter 2: *Installing VSI OMNI API on OpenVMS Systems* describes the system environment required to install and run the VSI OMNI API software. This chapter also provides the VSI OMNI API installation procedures and guidelines.
- Chapter 3: *Post-Installation Considerations* describes how to start or stop the VSI OMNI API process and access the release notes after the installation. The chapter also provides more information about the installed product.

4. Associated VSI OMNI Documents

The following documents provide more information about using the VSI OMNI API software:

- *VSI OMNI API Guide to Using Omni Directory Services*
- *VSI OMNI API Omni Definition Facility User Guide*
- *VSI OMNI API Guide to Using OmniView*

5. Related ISO/IEC Documents

The following documents provide more information about the ISO/IEC standard Manufacturing Message Specification (MMS):

- *Industrial Automation Systems — Manufacturing Message Specification Service Definition,*

ISO/IEC 9506–1

- *Industrial Automation Systems — Manufacturing Message Specification Protocol Specification, ISO/IEC 9506–2*

6. Related System Documents

See your OpenVMS system documentation for information about software installation and licensing procedures.

7. OpenVMS Documentation

The full VSI OpenVMS documentation set can be found on the VMS Software Documentation webpage at <https://docs.vmssoftware.com>.

8. 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>. Users who have VSI OpenVMS support contracts through VSI can contact <support@vmssoftware.com> for help with this product.

9. Conventions

The following conventions are also used in this manual:

Convention	Meaning
OMNI	The term “OMNI” refers to the VSI OMNI API product or to functions and services provided by the VSI OMNI API software.
OpenVMS	The term “OpenVMS” refers to the OpenVMS product or to operations and functions performed by the OpenVMS VAX or OpenVMS operating system.
NODE>	The OpenVMS user prompt is the system name followed by a right angle bracket (>).
UPPERCASE, lowercase	The system differentiates between uppercase and lowercase characters. Literal strings that appear in descriptions, examples, or command syntax must be entered exactly as shown.
Boldface type	Boldface type emphasizes user input to system prompts.
system output	This typeface indicates system output in interactive examples.
Ctrl/ x	Hold down the Ctrl key while you press another key, indicated here by x.
<i>n</i>	A lowercase italic <i>n</i> indicates the generic use of a number.
<i>x</i>	A lowercase italic <i>x</i> indicates the generic use of a letter.
<i>italic type</i>	Italic type emphasizes important information, names of API calls and procedures, or the complete titles of documents.
.	Vertical ellipses (dots) in examples indicate that information has been omitted for clarity.

Convention	Meaning
.	
.	

Chapter 1. Pre-installation Requirements

This chapter lists the minimum system hardware and software environment required to install and run the VSI OMNI API software on OpenVMS.

Online release notes are included on the installation media. Directions for accessing the release notes are provided in Section 2.1.5. VSI recommends that you read the release notes before installing or running the VSI OMNI API software.

1.1. System Hardware Requirements

The minimum hardware configuration to perform the installation as described in the *VSI OMNI API Software Product Description (SPD)* is as follows:

- A supported HPE Integrity or HPE Alpha processor (see the *VSI OMNI API Software Product Description (SPD)* for details)
- An online terminal with access to the system.

Refer to the VSI OMNI API SPD to determine whether there are additional hardware requirements that apply to your application.

1.2. System Software Requirements

Your system requires the following minimum software versions:

- Mandatory: VSI OpenVMS Integrity V8.4-1H1 or Alpha V8.4-2L1
- Optional:
 - VSI DECwindows Motif for OpenVMS Version 1.7—necessary if you want to use OmniView
 - ORACLE Rdb Version 7.3 - necessary if you want to use the Omni Definition Facility.

Pre-requisite software and software versions may change. Refer to the current *VSI OMNI API Software Product Description (SPD)* for the latest pre-requisite information.

The following command displays the OpenVMS system version you are running:

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

1.3. License Registration

You must use the License Management Facility (LMF) to register the VSI OMNI software license before you can run either the Installation Verification Procedure (IVP) or the software. License registration information is included in the Product Authorization Key (PAK). The PAK contains licensing information that should be registered *before* you start the installation.

To register the license, log into the SYSTEM account and set your default to SYS\$UPDATE. Register the license under LMF using either of the following methods:

1. Invoke the following procedure and enter the data supplied by the PAK:

```
$ SYS$UPDATE:VMSLICENSE.COM
```

2. Enter the following command, using the qualifiers that specify the data supplied by the PAK:

```
$ LICENSE REGISTER VSI OMNI/qualifier,...
```

If you plan to use the VSI OMNI software on more than one node of a cluster system, you must load the license on each of the other nodes after you have completed this one.

See the *VSI OpenVMS License Management Utility Guide* for more information about using LMF.

1.4. Installation Privileges

You require either the SETPRV privilege or all of the following privileges:

```
CMKRNL  
WORLD  
SYSPRV
```

The following command verifies your installation privileges:

```
$ SHOW PROCESS /PRIVILEGES
```

1.5. Required Disk Space

The following free disk space is required on OpenVMS systems:

Blocks to Install	Blocks to Run	VSI OMNI-specific Files	ODS Directory Structure
45,000	40,000	35,000	3,500

Enter the following command to verify the available disk space:

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

The VSI OMNI API installation process allows you to locate the Omni Directory Services (ODS) directory structure on a disk other than the system disk. If you install the ODS directory structure on a separate disk, make sure that the disk has adequate free space.

1.6. System Parameters and Settings

The VSI OMNI API installation requires specific system parameter settings.

1.6.1. Displaying System Parameters

The following minimum system parameter values are required for the installation and to accommodate the space requirements for VSI OMNI API data structures:

```
FREE_GBLPAGES = 1000
```

```
FREE_GBLSECTS = 15
```

Use the following commands to determine the current number of free global pages and free global sections:

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

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

The system displays the current values associated with the FREE_GBLPAGES and FREE_GBLSECTS parameter.

For additional information about these parameters, or for help when verifying the values, see the *VSI OpenVMS System Manager's Manual* for information about the OpenVMS System Generation Utility (SYSGEN).

- If you need to change one or more system parameters, continue with Section 1.8.2.
- If you do not need to change system parameters, proceed to Section 1.9.

1.6.2. Changing GBLPAGES and GBLSECTIONS with AUTOGEN

If you need to change the number of global pages or global sections, invoke AUTOGEN after you have entered the new parameter values in the file SYS\$SYSTEM:MODPARAMS.DAT. AUTOGEN adjusts values for the parameters associated with the values that you reset manually.

To change system parameters with AUTOGEN:

1. Use an editor to access the SYS\$SYSTEM:MODPARAMS.DAT file.
 - a. To change a parameter value that is already listed in the file, delete the current value associated with that parameter and enter the new value.
 - b. To modify incremental parameters, such as GBLPAGES or GBLSECTIONS, use the ADD_ command. The following example increases the global page setting by 380: ADD_GBLPAGES = 380
2. After you have made all of your changes, exit from the editor.
3. Invoke the AUTOGEN procedure with the following command to recalculate your system parameters:

```
$ @SYS$UPDATE:AUTOGEN GETDATA REBOOT [NOFEEDBACK]
```

If you specify REBOOT, AUTOGEN performs a system shutdown and reboots the system when it has finished. Users logged in on the system are immediately disconnected during the shutdown. The reboot puts the new parameter values into effect. The AUTOGEN utility adjusts some SYSGEN parameters based on the

consumption of resources since the last reboot. If you do not want to use this adjustment, include the NOFEEDBACK parameter in the command line.

See the *VSI OpenVMS System Manager's Manual* for more information about AUTOGEN.

1.7. Installation Account Process Quotas

The following minimum process quotas are required for the installation account; this is typically the SYSTEM account:

Quota Name	Minimum Quota
ASTLM	24
BIOLM	18
BYTLM	32768
DIOLM	18
ENQLM	2000
FILLM	50
PGFLQUO	30000
PRCLM	1+
WSDEF	256
WSEXTENT	3072
WSQUO	768

Use the AUTHORIZE utility to display installation process quotas by entering the following commands:

```
$ SET DEFAULT SYS$SYSTEM
```

```
$ RUN AUTHORIZE
```

```
UAF> SHOW SYSTEM
```

If no changes are necessary, enter the EXIT command to leave the AUTHORIZE utility. To modify system account quotas (BYTLM, for example):

```
UAF> MODIFY SYSTEM /BYTLM=32768
```

The utility responds with a message confirming the change and you can enter the EXIT command to leave the utility. You must then log out and log in again to reset the system account quotas.

For further information about AUTHORIZE, refer to the *VSI OpenVMS System Manager's Manual*.

1.8. Backing Up the System Disk

VSI recommends that you perform a full system disk backup before you start any installation procedures. Use the backup procedures established for your site. For information about performing a system disk backup, refer to your OpenVMS documentation.

Chapter 2. Installing VSI OMNI API on OpenVMS Systems

This chapter provides the requirements and procedures for installing the VSI OMNI Application Programming Interface (API) software on an OpenVMS system.

2.1. Installation Considerations

This section provides information you may require during the installation process.

2.1.1. DASware Installation

The VSI OMNI API Version 4.1 installation procedure allows you to install DASware (DASTKRUN, DASTK232).

DASTKRUN and DASTK232 provide extensions to VSI OMNI API, as required by some device access systems. On OpenVMS, DASware is not required by the following protocols:

- MMS
- AP
- H1
- Allen-Bradley

You can therefore skip the DASware installation if you intend to use one of the suggested Device Access systems.

The pre-requisites are as follows:

- DASTKRUN—VSI OMNI API
- DASTK232—DASTKRUN.

2.1.2. VMSINSTAL Requirements

When you invoke VMSINSTAL, it verifies whether you have:

- Logged into a privileged account
- Adequate quotas for the installation
- Other users logged in on the system
- Minimum SYSTEM account quotas listed in Section 1.9

If VMSINSTAL detects any errors during the installation, it notifies you and exits from the installation procedure. You can restart the installation after you have corrected the problem.

2.1.3. VMSINSTAL Error Messages

If the installation fails for any reason, either during the installation or the IVP, VMSINSTAL displays a message similar to the following:

```
%VMSINSTAL_E_INSFAIL, The installation of OMNI V4.1 has failed.
```

Refer to the *VSI OpenVMS System Management Utilities Reference Manual* for information about VMSINSTAL error messages. If it is possible to correct the problem, repeat the installation from the beginning. Otherwise, follow the procedures described in Chapter 3.

2.1.4. Stopping the Installation

Press Ctrl/Y to abort the installation at any time. You can enter a question mark (?) at any time for additional information. To restart the installation after pressing Ctrl/Y, you must repeat the entire procedure.

2.1.5. Accessing the Release Notes

VSI OMNI API release notes are in an online ASCII text file that you can read or print before or after the installation. The release notes contain information about known problems or restrictions that apply to the current version of the product.

Note: VSI recommends that you read the release notes before you install or run the VSI OMNI API software.

To display or print the release notes, use the `OPTIONS N` parameter when you invoke VMSINSTAL for the installation in Section 2.2. The `OPTIONS N` parameter also enables you to exit the installation procedure after reading the release notes.

VMSINSTAL copies the release notes to `SY$HELP` by default. The release notes file installed by VMSINSTAL is labeled with the current product name and version number, such as `OMNI041.RELEASE_NOTES`.

2.2. Installation Procedure

To perform the installation, you must be logged in on the system manager's account, or an account with the appropriate privileges.

2.2.1. Invoking VMSINSTAL

Use either of the following commands to invoke VMSINSTAL:

```
$ @SYS$UPDATE:VMSINSTAL
```

or

```
$ @SYS$UPDATE:VMSINSTAL OMNIA041 ddcu: OPTIONS N
```

In the examples, *ddcu*: is the device name, where *dd* is the device code, *c* is the controller letter, and *u* is the drive unit number of one or more digits (for example, MUA100:). Using `OPTIONS N` allows you

to display or print the release notes before the installation. You can then continue the installation or exit from the procedure.

2.2.2. Installation Process

VMSINSTAL starts the installation process with the display of messages and prompts similar to the following:

1. The VMSINSTAL process starts by displaying a message similar to the following:

```
OpenVMS ALPHA Software Product Installation Procedure V8.4-1H1
It is 20-FEB-2018 at 11:43.
Enter a question mark (?) at any time for help.
```

2. The process then asks if you are satisfied with your system disk backup. Note that system disk backup is a prerequisite for the installation. If you are not satisfied with the disk backup, enter NO to terminate the installation and perform the backup. Otherwise, enter YES or press Return to begin the installation process:

```
* Are you satisfied with the backup of your system disk [YES]? YES
The following products will be processed:
    OMNIV4.1
```

```
        Beginning installation of OMNI V4.1 at 11:43
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, Product's release notes have been moved to SYS$HELP.
Copyright 2017 VMS Software, Inc and Hewlett Packard Enterprise Development, LP
Installation procedure for: VSI OMNI for VSI OpenVMS Alpha (TM) V8.4-1H1
```

3. If you used OPTIONS N in your VMSINSTAL command, the process prompts you for a release notes option number that executes one of the following:

```
1 - Display release notes
```

Displays the online release notes.

```
2 - Print release notes
```

The process prompts you for an ASCII text printer queue name. You can enter the queue name or press Return to send the file to your default print device.

```
3 - Both 1 and 2
```

Displays the release notes online. If you terminate the display with Ctrl/C, the process prompts you for a printer queue name. You can enter the queue name, or you can press Return to send the file to the default print device.

```
4 - None of the above
```

When the selected operation has completed, VMSINSTAL copies the release notes to SYS\$HELP.
Note: VSI recommends that you read the release notes before you continue the installation.

4. The process asks you which products you want to install:

```
Select which products you want to install:
    1) VSI OMNI API
    2) DASTKRUN
    3) DASTK 232
```

4) ALL of the above

* Enter number(s) : [1]:) **YES**

- The process then displays the product identification and authorization key prompt:

```
Product: OMNI
Producer: VSI
Version: 4.1
Release Date: 31-Jul-2014
```

Does this product have an authorization key registered and loaded?

YES

The VSI OMNI API software can be installed but not run unless the Product Authorization Key (PAK) is registered.

- Enter YES to the authorization key prompt if you have registered and loaded the VSI OMNI API PAK.
- Enter NO if you have not registered your PAK. The installation continues but you cannot run either the Installation Verification Procedure (IVP) or the software. To run the IVP after the installation, you must register and load the PAK, then follow the IVP instructions in Section 3.1.
- If VMSINSTAL finds a VSI OMNI API Version 2.n database, you can continue to use that database or create a new one. Normally, this would only occur if you are reinstalling Version 2.2. The system displays a message and prompt similar to the following:

```
*****
VSI OMNI Version 2.n is installed on this system. It is
recommended that the database files be renamed or deleted
if you do not wish to use the existing database.
If you choose not to rename or delete the database, the
existing database will continue to be used.
*****
```

1. Rename existing database
2. Continue to use existing database

* Enter a number [2]: **1**

- The process asks if you wish to use the OMNI_ODF facility. If you answer YES, and if a proper version of RDB is active on the system, VMSINSTALL links the VSI OMNI API shareable to the RDB shareable image and restores OMNI_ODF.EXE in SYS\$COMMON:[SYSEXE].

Do you want to use OMNI_ODF facility? [YES]?

- VMSINSTAL displays the following questions about purging the files replaced by the installation, and whether you want to run the IVP as part of the installation:

Do you want to purge files replaced by this installation [YES]? **YES**

Do you want to run the IVP after the installation [YES]? **YES**

- If a multiversion product is installed, VMSINSTAL then displays the current Rdb/VMS environment:

```
*****
VSI OMNI has determined that the Current PROCESS
Rdb/VMS environment is version n.n (MULTIVERSION)
```

- The installation process then begins and displays a series of informational messages that include the following:

This installation will now continue in an unattended mode of operation, which will not require any user interaction.

Estimated time to completion from this point is 5 minutes. This estimate is based on a configuration consisting of a DEC 3000 Model 500 and installation from a CD Rom.

The current time is: 11:45.47

%VMSINSTAL-I-RESTORE, Restoring product save set B ...

* Now building the Version 4.1 database...

%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSHLP.EXAMPLES. OMNI].

.

.

.

* If you would like to have VSI OMNI for VMS startup during the system startup, add the following line to SYS\$STARTUP:SYSTARTUP_VMS.COM.

\$ @SYS\$STARTUP:OMNI_STARTUP.COM

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

.

.

.

- If you entered YES to run the IVP, the process displays informational messages about the progress of the installation, including the VSI OMNI API and IVP startups. Appendix A provides a complete installation dialogue sample, including the VSI OMNI API startup and IVP.
- The process then displays a series of messages about the success of the installation, then exits from the VMSINSTAL utility:

Now checking that files have reached target directories...

%OMNI-S-IVP, THE VSI OMNI IVP has successfully completed

Installation of OMNI V4.1 completed at 11:51

Adding history entry in VMI\$ROOT:[SYSUPD]VMSINSTAL.HISTORY

Creating installation data file: VMI\$ROOT:[SYSUPD]OMNI041.VMI_DATA

VMSINSTAL procedure done at 11:56

Chapter 3. Post-Installation Considerations

This chapter explains how to start, verify, and stop the VSI OMNI Application Programming Interface (API) software, and provides account process information.

3.1. Running the Installation Verification Procedure

If you did not run the Installation Verification Procedure (IVP) as part of the installation, you should run it separately after you have installed and started the product.

You must enable the following privileges to invoke the IVP:

```
NETMBX
PRMMBX
SYSLCK
WORLD
GROUP
```

Enter the following command to run the IVP:

```
$ @SYS$TEST:OMNI_IVP
```

The VSI OMNI IVP verifies that the VSI OMNI system is correctly installed and displays informational messages as it progresses. If the IVP fails, it displays a message indicating the reason for the failure. Correct the problem and then re-execute the IVP. When the VSI OMNI IVP has executed successfully, the VSI OMNI API software is ready for use.

The VSI OMNI IVP can fail for various reasons. The following table lists the possible causes for an IVP failure and ways to resolve the problem.

Possible Cause	Resolution
Error while checking process quotas	See the required process quotas in Section 1.9
Error while checking process privileges	See the required process privileges in this section.
Missing files error	See Appendix B for the list of files.

3.2. Starting VSI OMNI API

If you do not invoke the IVP during installation, you must use the following command to start VSI OMNI API (before running any application program):

```
$ @SYS$STARTUP:OMNI_STARTUP FULL
```

Otherwise, you can execute the following command to start up VSI OMNI API:

```
$ @SYS$STARTUP:OMNI_STARTUP [AST]
```

You must specify the AST parameter if you wish to use the AST-based version of VSI OMNI API, rather than the thread-based version.

3.3. Stopping VSI OMNI API

You require the following privileges to invoke the VSI OMNI API stop procedure:

```
DETACH
PRMMBX
SYSNAM
CMKRNL
SYSGBL
PRMGBL
WORLD
GROUP
```

Enter the following command to manually shut down the VSI OMNI process:

```
$ @SYS$MANAGER:OMNI_STOP
```

If you want the VSI OMNI process to shut down each time the system is brought down, include the command in the site-specific shutdown file `SYS$MANAGER:SYSHUTDOWN.COM`.

3.4. Example Programs

The `SYS$COMMON:[SYSHLP.EXAMPLES.OMNI]` directory contains some examples of VSI OMNI API usage.

3.5. Accessing the Release Notes

You can consult the VSI OMNI API release notes at any time after the installation from the `SYS$HELP:` directory. `VMSINSTAL` labels the release notes file with the current product name and version number, such as `OMNIAPII041.RELEASE_NOTES` for VSI OpenVMS Integrity and `OMNIAPIA041.RELEASE_NOTES` for VSI OpenVMS Alpha.