

SORT V2.2 Patch Kit for VSI OpenVMS IA-64

Release Notes

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Operating Systems: VSI OpenVMS IA-64 Version 8.4-1H1
VSI OpenVMS IA-64 Version 8.4-2
VSI OpenVMS IA-64 Version 8.4-2L1
VSI OpenVMS IA-64 Version 8.4-2L3

Kit Name: VMS842L3I_SORT-V0202

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1. Kit Name

VMS842L3I_SORT-V0202

2. Kit Description

2.1. Installation Rating

INSTALL_1: To be installed by all customers.

This installation rating serves as a guide to which customers should apply this remedial kit.

Reference the Disclaimer of Warranty and Limitation of Liability Statement.

2.2. Reboot Requirement

No reboot is necessary after installation of this kit.

However, there are additional steps that must be performed to use the images provided by this kit on all nodes of a VMSCluster using a common system disk. Refer to Special Installation Instructions for required post-installation actions.

2.3. Version(s) of VSI OpenVMS to Which This Kit May Be Applied

- VSI OpenVMS IA-64 Version 8.4-1H1
- VSI OpenVMS IA-64 Version 8.4-2
- VSI OpenVMS IA-64 Version 8.4-2L1
- VSI OpenVMS IA-64 Version 8.4-2L3

The images and files in this kit apply to any of these VSI OpenVMS versions. Because patch kits are removed by PCSI during upgrades to newer OpenVMS versions, the kit will need to be reinstalled if an upgrade is done from an older listed version to any newer listed version.

3. Kits Superseded by This Kit

VMS842L1I_SORT-V0100
VMS842L3I_SORT-V0200
VMS842L3I_SORT-V0201

4. Kit Dependencies

VMS842L3I_PTHREAD-V0200

PTHREAD V2 is required when you are installing this kit on any version of VSI OpenVMS IA-64.

VMS841H1I_NOTARY-V0200 (if installing on V8.4-1H1)
VMS842I_NOTARY-V0200 (if installing on V8.4-2)

All VSI OpenVMS patch kits now require the Notary V2.0 patch kit for their respective version of VSI OpenVMS. This is to ensure correct validation regardless of the manifest version in use.

The Notary V2.0 kit named above which matches the version of VSI OpenVMS being patched is required for this kit to install.

VMS842L1I_UPDATE-V0100 (if installing on V8.4-2L1)

All new ECO kits for VSI OpenVMS IA-64 V8.4-2L1 require the VMS842L1I_UPDATE-V0100 kit.

5. Problems Addressed in This Kit

5.1. HYPERSORT Bug Fixes

Problem Description

The SORT V2.2 ECO kits are being released with equivalent functionality for all VSI OpenVMS architectures.

Several issues affecting HYPERSORT image operation under certain conditions have been addressed in this update.

These include the following:

- When using a logical search list, HYPERSORT gives an error if the input file is not in the first directory of the logical search list.
- If a **PIPE** command is used together with **SORT** to gather data, HYPERSORT fails with an error.
- Possible hang when a **SORT** command uses HYPERSORT under certain circumstances.
- An abort caused by a program using a callable MERGE interface even if the process has very large quotas.
- Under certain circumstances, HYPERSORT might result in access violation and a warning.
- HYPERSORT may result in hang when dealing with unprocessed I/O buffers on the pending queue.
- HYPERSORT may encounter an access violation when a combination of callable record and file interfaces is used.
- Under certain circumstances, a **SORT** command using HYPERSORT may not complete as expected.
- An access violation caused by a COBOL program under certain conditions.

This ECO kit corrects all these problems.

Images and/or Files Affected

[SYSLIB]HYPERSORT.EXE

VSI Case Identifier

Jiras DEV-3051, DEV-3487, UT-397, UT-417, UT-424
Netsuites NS9473, NS9512

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS IA-64 release after V8.4-2L3.

5.2. SORT Processing of Floating-Point Data

Problem Description

SORT may encounter an alignment fault when processing floating-point data that is not properly aligned. In addition, when VAX floating-point data is used as the sort key, **/STABLE** might produce an incorrect record ordering under certain circumstances.

The problem is fixed in this ECO kit.

Images and/or Files Affected

[SYSLIB]SORTSHR.EXE

VSI Case Identifier

Jira UT-413

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS IA-64 release after V8.4-2L3.

6. Problems Addressed From Previous Kits

6.1. SORT Fails on Files With a Large Global Buffer Count

Problem Description

If an RMS global buffer count greater than 32767 is established for a file, attempts to sort that file fail with the error:

```
%SORT-F-OPENOUT, error opening <file> as output
-RMS-F-GBC, invalid global buffer count
```

This patch kit corrects the problem, allowing files with very large global buffer counts to be sorted normally.

Images and/or Files Affected

[SYSLIB]SORTSHR.EXE

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 3088

Release Version of VSI OpenVMS That Contains This Change

VSI OpenVMS IA-64 V8.4-2L3

6.2. SORT Enhancements, Bug Fixes, and Performance Improvements

Problem Description

The SORT V2 ECO kits were being released with equivalent functionality for all VSI OpenVMS architectures. The kits provide enhancements and bug fixes for SORT (both SORTSHR and HYPERSORT), and a significant potential performance improvement for HYPERSORT.

For a complete description of the changes, refer to the additional release notes in:

SYS$HELP:VSI_OPENVMS_SORT_V2_RELEASE_NOTES.TXT
SYS$HELP:VSI_OPENVMS_SORT_V2_RELEASE_NOTES.PDF

Images and/or Files Affected

[SYSEXE]SORTMERGE.EXE
[SYSLIB]SORTSHR.EXE
[SYSLIB]HYPERSORT.EXE

VSI Case Identifiers

Jiras BO-1499,UT-298,UT-321,UT-322,UT-325
Netsuite NS6060, NS7155

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS IA-64 release after V8.4-2L3.

6.3. HYPERSORT Bug Fixes

Problem Description

The SORT V2.1 ECO kits are being released with equivalent functionality for all VSI OpenVMS architectures.

The kits provide the previous SORT V2 functionality plus additional bug fixes for HYPERSORT.

The following issues with HYPERSORT are addressed with this kit:

- Spurious access violations using the callable interface.
- Access violations during SORT, MERGE or CONVERT operations.

- Sorted VFC files might have missing print controls.
- Rare cases where the last record from the input file is not included in the output file.
- The OPT$_NOSIGNAL options flag in the callable interface now correctly returns errors to the caller rather than signaling them as an exception.
- The output file now properly defaults to the current directory, matching the behavior of the traditional SORTSHR.
- Sorting a stream file might return the error:

  ```
  %RMS-F-USZ, invalid user buffer size
  ```

- The callable interface might return the error:

  ```
  %SORT-W-VAR_FIX, records may be truncated or padded in output file
  ```

Images and/or Files Affected

[SYSLIB]HYPERSORT.EXE

VSI Case Identifiers

Jira BO-2136, DEV-3051, UT-365, UT-364
Netsuite NS8868

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS IA-64 release after V8.4-2L3.

7. Images or Files Replaced

[SYSEXE]SORTMERGE.EXE

Image name:	"SORTMERGE"
Image file identification:	"V08-014"
Image build identification:	"XFWL-C6E-000213"
Link identification:	"Linker I02-37"
Link Date/Time:	26-SEP-2026 13:58:45.23
Image Checksum (MD5):	15BCA212B2CA24CC6B177AC062739E68

[SYSLIB]SORTSHR.EXE

Image name:	"SORTSHR"
Image file identification:	"V08-013"
Image build identification:	"XFWL-C6E-000213"
Link identification:	"Linker I02-37"
Link Date/Time:	26-SEP-2026 13:58:21.56

Image Checksum (MD5):	D2B4E74B94B786A980694FB016B7756C

If installing on V8.4-1H1 or V8.4-2

[SYSLIB]HYPERSORT.EXE

Image name:	"HYPERSORT"
Image file identification:	"V08-008"
Image build identification:	"XE3F-M5D-000213"
Link identification:	"Linker I02-37"
Link Date/Time:	26-SEP-2026 18:50:33.76
Image Checksum (MD5):	9F5A5B9255C501AF7EE234CA1547EA57

If installing on V8.4-2L1 or V8.4-2L3

[SYSLIB]HYPERSORT.EXE

Image name:	"HYPERSORT"
Image file identification:	"V08-008"
Image build identification:	"XFWL-C6E-000213"
Link identification:	"Linker I02-37"
Link Date/Time:	26-SEP-2026 13:58:25.25
Image Checksum (MD5):	CBAD7482ADF3178A33373C4F94C8FEF6

Note

VMS Software, Inc. will only distribute kits in signed form. There is no need for most customers to compare file checksums for security or kit integrity reasons.

However, some sites may require such checking even when using signed kits. The image or file checksums are supplied (in MD5 format) to provide comparisons to the extracted final kit files. To find a file checksum, use:

```
$ CHECKSUM/ALGORITHM=MD5 filename
$ SHOW SYMBOL CHECKSUM$CHECKSUM
```

Note

Because a file or image may be replaced by multiple ECO kits over time, a PCSI generation number is used to ensure that the latest version of the file or image is preserved on your system during **PRODUCT INSTALL** of an ECO kit. Should a particular kit installation discover a newer version of a file or image in place on the system disk, the following message will be displayed:

```
%PCSI-I-RETAIN, file filename will not be replaced because file from kit
 has lower generation number
```

This is a normal occurrence depending on the order of kit installation. The correct version of the file or image will remain on the system after the current kit installation. The `%PCSI-I-RETAIN` message is informational only and does not indicate a problem.

8. Installation Instructions

8.1. Compressed File

This kit is provided for download within a ZIP archive container file.

The kit files may be extracted on any system with UNZIP and copied to your OpenVMS system, or extracted on your OpenVMS system directly.

Assuming you have created an UNZIP symbol to invoke the UNZIP image, you can invoke UNZIP to unpack the kit on OpenVMS using the command:

```
$ UNZIP VMS842L3I_SORT-V0202
```

This will extract the installable PCSI product kit file and its associated signed manifest (_VNC file), used for kit validation during **PRODUCT** commands.

VSI strongly recommends always using the manifest to validate the kit content during any **PRODUCT** commands. This will occur automatically if the files are both contained in the same directory.

UNZIP Tool Availability

Most customers likely have already installed a set of ZIP and UNZIP tools on their VSI OpenVMS systems. Should you need these tools, a set of the Info-ZIP freeware ZIP and UNZIP tools for VSI OpenVMS is available for download on the web at this address: https://vmssoftware.com/community/freeware/.

8.2. Installation Command

Install this kit with the POLYCENTER Software Installation Utility by logging into the SYSTEM account and typing the following command at the DCL prompt:

```
$ PRODUCT INSTALL VMS842L3I_SORT [/SOURCE=location_of_kit]
```

The kit location may be a tape drive, CD/DVD, or a disk directory that contains the kit. The **/SOURCE** qualifier is not needed if the **PRODUCT INSTALL** command is executed from the same directory as the kit location.

This kit requires the use of **/RECOVERY_MODE** and **/SAVE_RECOVERY_DATA** and will automatically set them; they do not need to be present on the command line.

The release notes for any kit may be extracted prior to kit installation using the **PRODUCT EXTRACT RELEASE_NOTES** command.

User-selectable options for installation behavior and scripting are available in this kit, refer to *Appendix A, "User-Selectable Control Options and Scripting Considerations"* for further details.

Additional help on installing PCSI kits can be found by typing **HELP PRODUCT INSTALL** at the system prompt.

8.3. Special Installation Instructions

If this kit is being installed in a non-clustered environment, the following steps may be ignored. In a VMScluster with a shared system disk, additional steps must be taken so that the other nodes which share the system disk will use the new images.

Execute the following command on each node that is sharing the system disk that has been updated:

```
$ INSTALL REPLACE SYS$SHARE:SORTSHR.EXE
```

VSI OpenVMS does not install HYPERSORT.EXE as a known image by default.

If your configuration adds HYPERSORT as a known image for performance reasons, you will need to take an additional step after this kit installation is complete. Execute the following command on any other cluster nodes which share the system disk which was updated, so that the new image is used:

```
$ INSTALL REPLACE SYS$SHARE:HYPERSORT.EXE
```

These same commands should be repeated for other systems sharing the system disk if this patch kit is removed via a PRODUCT UNDO PATCH operation.

8.4. Documentation for SORT V2 Functionality

Additional documentation for SORT V2 functionality included in this kit is copied to the system disk during kit installation. This documentation is provided both in text format (.TXT) for immediate reference and convenience of using the OpenVMS **SEARCH** command, and in PDF format for more legible output and convenience for formatted printing from a browser:

```
SYS$HELP:VSI_OPENVMS_SORT_V2_RELEASE_NOTES.TXT
SYS$HELP:VSI_OPENVMS_SORT_V2_RELEASE_NOTES.PDF
```

The release notes for this kit and the above files containing additional documentation may be extracted from the PCSI kit before kit installation for reference and planning purposes. The PCSI kit files are present after extraction from the ZIP archive as described above in *Section 8.1, "Compressed File"*.

To extract the VSI_OPENVMS_SORT_V2_RELEASE_NOTES.TXT file and the standard kit release notes, use the command:

```
PRODUCT EXTRACT RELEASE_NOTES VMS842L*_SORT /VERSION=V2.2
```

To extract the PDF format additional documentation, use the command:

```
$ PRODUCT EXTRACT FILE VMS842L*_SORT /VERSION=V2.2 /SELECT=*.PDF
```

Either of these commands will create a local copy of the desired file(s) in the current default directory.

An update for the HELP SORT online help that corresponds to these changes will be contained in a future patch update kit.

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11. Patch ID

I64VMS-VMS842L3I_SORT-V0202--4

Note

The terms "ECO kit" and "patch kit" may be used interchangeably in this document. This also applies for other VSI OpenVMS documentation when describing PCSI kits that provide remedial updates to a particular product.

A. User-Selectable Control Options and Scripting Considerations

A.1. Controlling Kit Behavior for Introductory Questions

This kit provides user-selectable control options for kit dialogue interaction and automated scripting capability as described here in this appendix.

The general form of a VSI OpenVMS ECO kit, when using **`PRODUCT INSTALL`**, consists of three initial questions regarding these topics:

1. System disk backup: A reminder that VSI recommends backing up the system disk before installing updates, followed by a `Do you want to continue?` yes/no question, default is `YES`.

2. Reboot requirement: A summary of whether the kit being installed requires a system reboot, followed by a `Do you want to continue?` yes/no question, default is `YES`.

3. Archival of updated files: A description of saving an "_OLD" copy of each image or file updated by the kit, followed by a `Do you want to save "_OLD" copies of replaced files?` yes/no question, default is `NO`.

Other questions may be asked later, depending on the target disk or system environment or other kit-specific requirements.

Note

An initial `Do you want to continue?` question may be asked directly by the PCSI utility during any **`PRODUCT`** command - this has nothing to do with the kit being used. To avoid that

question, you must supply sufficient detail to uniquely identify the product you wish to use and specify **/OPTIONS=NOCONFIRM** on the **PRODUCT** command.

Control options are available to customize the dialogue for the initial three kit questions. The controls are logical names, which may be defined in the process logical name table with a value of YES or NO.

To modify the behavior of a VSI OpenVMS ECO kit regarding the initial questions, define one or more of the following logical names before issuing the **PRODUCT INSTALL** command.

- To skip one or more of the questions, define the corresponding logical name shown here to YES:

SKIP$BACKUP	Skips system backup awareness question.
SKIP$REBOOT	Skips system reboot awareness question.
SKIP$ARCHIVE_OLD	Skips question about saving "_OLD" files. This will take the default, which is NO.
SKIP$INTRO	Skips all three of the above questions.

- To specifically override the default for saving "_OLD" files, define this logical name to YES or NO:

VSIKIT$ARCHIVE_OLD	Sets an answer for saving "_OLD" files behavior. This will skip the archive "_OLD" files question regardless of the above SKIP$* logical names.

- Two additional logical names may be defined as YES to modify the amount of explanatory text displayed for each question:

VSIKIT$VERBOSE	Shows all explanatory text for questions.
VSIKIT$BRIEF	Skips some general details in the explanations.

  The default if neither name is defined is VERBOSE. If both names are defined to YES, VERBOSE overrides BRIEF. The BRIEF form is displayed for any questions that are skipped.

For example, to skip all three questions but save an archive "_OLD" copy of each replaced file:

```
$ DEFINE VSIKIT$ARCHIVE_OLD YES
$ DEFINE SKIP$INTRO YES
$ PRODUCT INSTALL kitname
```

A.2. Standard Behavior for YES/NO Questions Asked During Kit Installation

Any YES/NO questions asked during kit installation now follow these rules:

1. **Ctrl/Y** issued while a question is being asked will force the current **PRODUCT** operation to terminate. This is completely safe to do while the initial three questions are being asked during **PRODUCT INSTALL** as no changes have yet been made to the target disk.

2. Some questions may ignore **Ctrl/Y** and ask for a specific answer (for example, if aborting the current operation may have side effects for the system). Additionally, note the following:

   - PCSI may trap **Ctrl/Y** directly for some **PRODUCT** operations.

- **Ctrl/Y** may be disabled during some sensitive kit processing.

3. The default YES/NO answer is automatically chosen if a kit is installed from a batch job, unless explicitly overridden by a logical name that provides the particular value, such as VSIKIT$ARCHIVE_OLD.

A.3. Installing a Kit From a Batch Job

To install a kit from a batch job, you will need to fully qualify the kit name so PCSI will have enough information to select the kit without asking for confirmation. For example, to install this kit:

```
$ PRODUCT INSTALL VMS842L3I_SORT/VERSION=V2.2/OPTIONS=NOCONFIRM
```

If the kit is located in a directory other than the current default directory, you will also need to add the qualifier:

```
/SOURCE=location_of_the_kit
```

For a batch job, any YES/NO question will automatically select the default answer. Use the control logical names explained above to modify the behavior if necessary. For the system disk backup and reboot questions, the batch behavior is identical to the default. For the save "_OLD" files question, define the VSIKIT$ARCHIVE_OLD logical name to YES if you want to save copies of the files, since the batch default is NO.

A.4. Deprecated Logical Names From HPE ECO Kits

The three names listed below were used by older VSI OpenVMS ECO kits for compatibility with HPE ECO kit behavior. These old names continue to function, but VSI encourages you to modify any scripts you may have to use the new names shown instead:

Old Name	**New Name**
NO_ASK$BACKUP	SKIP$BACKUP
NO_ASK$REBOOT	SKIP$REBOOT
ARCHIVE_OLD	VSIKIT$ARCHIVE_OLD