LDAP V5.0 ECO Kit for VSI OpenVMS Alpha

Release Notes

Publication Date: April 2026

Operating Systems: VSI OpenVMS Alpha Version 8.4-2L1
VSI OpenVMS Alpha Version 8.4-2L2

Kit Name: VMS842L2A_LDAP-V0500

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Table of Contents

1. Kit Name

VMS842L2A_LDAP-V0500

2. Kit Description

2.1. Installation Rating

INSTALL_2: To be installed by all customers using the following feature(s):

- ACME_SERVER, when configured for external authentication using the ACME LDAP Agent
- Any layered product or application which uses LDAP directly

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 Alpha Version 8.4-2L1
- VSI OpenVMS Alpha Version 8.4-2L2

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 Kits Superseded by This Kit

VMS842L1A_LDAP-V0100
VMS842L1A_LDAP-V0200
VMS842L1A_LDAP-V0300
VMS842L1A_LDAP-V0400

VMS842L2A_LDAP-V0100
VMS842L2A_LDAP-V0200
VMS842L2A_LDAP-V0300
VMS842L2A_LDAP-V0400

4. Kit Dependencies

VMS842L1A_NOTARY-V0200 (if installing on V8.4-2L1)
VMS842L2A_NOTARY-V0200 (if installing on V8.4-2L2)

All VSI OpenVMS ECO kits now require the Notary V2.0 ECO 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 updated is required for this kit to install.

5. Problems Addressed in This Kit

5.1. Malformed Domain\Username Login May Trigger ACME Server Issues

Problem Description

When configured for external authentication, attempting to login with a username string that ends in the separator character "\" triggers errant audits and possibly an ACME Server restart.

Example of a malformed username at login:

```
Username: SALES\
```

This problem is corrected with this ECO kit.

Images and/or Files Affected

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE

VSI Case Identifier

Jiras BO-673, BO-706
Netsuite NS2054

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha release after V8.4-2L2

Workaround

Do not end a username with "\".

6. Problems Addressed From Previous Kits

6.1. Processes Using LDAP May Exhaust Virtual Memory

Problem Description

Processes which repeatedly call into the LDAP sharable image, [SYSLIB]LDAP$SHR.EXE, will experience a slow but steady consumption of virtual memory. Over a sufficient amount of time, the

process can reach its working set limit. If that occurs, additional attempts to allocate virtual memory will fail and image or process termination may result.

Several memory leaks identified in the LDAP shareable image are corrected in this kit.

Images and/or Files Affected

[SYSLIB]LDAP$SHR.EXE

Quix and/or Bugzilla Cases Reporting This Problem:

VSI Bugzilla 1011

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha release after V8.4-2L2

Workaround

If feasible within the application design, any process which repeatedly calls the LDAP shareable image could be restarted before reaching its working set limit.

The ACME_SERVER, when configured for external authentication and using the ACME LDAP Agent, can be periodically restarted to avoid any unexpected request failures. However, any authentication requests currently in progress at that time could fail, and any requests occurring while the server is restarting could be rejected. Therefore, care should be taken when choosing the time for such a restart.

6.2. Externally Authenticated Account Logins May Spuriously Fail

Problem Description

The ACME_SERVER process leaks a small amount of virtual memory with each external authentication request which uses the ACME LDAP Agent.

Should the virtual memory limits of the server be exceeded, the server will restart itself. However, any login requests that were currently in progress will fail, and new login requests will be rejected until the server restarts. New or retried login requests will perform correctly once the server has restarted.

OPCOM may report the failure with messages similar to these:

```
%%%%%%%%%%  OPCOM  11-FEB-2018 10:12:41.40  %%%%%%%%%%    (FROM NODE <nodename>  AT 11-
FEB-2018 10:12:41.40)
MESSAGE FROM USER AUDIT$SERVER ON <nodename>
SECURITY ALARM (SECURITY) AND SECURITY AUDIT (SECURITY) ON <nodename>, SYSTEM ID: 1234
AUDITABLE EVENT:          REMOTE INTERACTIVE LOGIN FAILURE
EVENT TIME:               11-FEB-2018 10:12:41.40
PID:                      21C66B52
PROCESS NAME:             _TNA1400:
USERNAME:                 <LOGIN>
TERMINAL NAME:            TNA1400:, _TNA1400, HOST: NODE.COM PORT: 58621
IMAGE NAME:               DKA100:[SYS0.SYSCOMMON.][SYSEXE]LOGINOUT.EXE
STATUS:                   %ACME-E-FAILURE, OPERATION FAILURE; IF LOGGING IS ENABLED, SEE
 DETAILS IN THE ACME$SERVER LOG FILE
```

Entries in the Acme Server log file will be similar to these:

```
%ACME-I-LOGAGENT, agent initiated log event on 11-FEB-2018 10:12:41.35
-ACME-I-THREAD, thread: id = 28, type = EXECUTION
-ACME-I-REQUEST, request information, id = 8, function = AUTHENTICATE_PRINCIPAL
-ACME-I-CLIENT, client information, PID = 21C66B52
-ACME-I-AGENT, agent information, ACME id = 2, name = LDAP-STD
-ACME-I-CALLOUT, active callout routine = acme$co_accept_principal
-ACME-I-CALLBACK, active callback routine = acme$cb_send_logfile
-ACME-I-TRACE,  MESSAGE FROM THE MESSAGE FILE: acmekcv$cb_allocate_wqe_vm() for principal
 with domain name failed
```

Several memory leaks found in the ACME LDAP Agent are corrected in this kit.

Images and/or Files Affected

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 1011

Release Version of OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha Release After V8.4-2L2

Workaround

The ACME_SERVER can be periodically restarted to avoid any unexpected request failures. However, any authentication requests currently in progress at that time could fail, and any requests occurring while the server is restarting could be rejected. Therefore, care should be taken when choosing the time for such a restart.

6.3. Externally Authenticated Account Logins May Spuriously Fail

Problem Description

This is an update to the issue described above in Section 6.2.

Additional memory leaks were identified which caused the same behavior as described above in Section 6.2.1. With this ECO kit, all known memory leaks in the LDAPACME$LDAP-STD_ACMESHR image have been corrected. No further memory leaks or any continuously growing virtual address space have been observed during testing.

A new image, LDAPACME$LDAP-STD_ACMESHR_TRACE, is provided for debug analysis by support personnel should any new leaks or other issues be found in the future.

Images and/or Files Affected

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE
[SYSLIB]LDAPACME$LDAP-STD_ACMESHR_TRACE.EXE (new)

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 1497

Release Version of OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha Release After V8.4-2L2

Workaround

See Section 6.2.5

6.4. External Authentication Login Failures and ACME_SERVER Crashes

Problem Description

Externally authenticated login attempts may spuriously fail and the ACME_SERVER may crash and restart during any of these failures.

The ACME LDAP Agent could incorrectly release an LDAP data buffer before the processing of that buffer is complete. Should the buffer content change during the remaining processing, the results are unpredictable and may include failed login attempts and ACME_SERVER crashes and restarts.

With this ECO kit, the buffer processing is corrected.

Images and/or Files Affected

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE
[SYSLIB]LDAPACME$LDAP-STD_ACMESHR_TRACE.EXE

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 2149

Release Version of OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha Release After V8.4-2L2

6.5. LDAP Client Protocol Selection Enhancements

Problem Description

The OpenVMS LDAP client protocol handling was out of date.

- The default security protocol option for an LDAP client was limited to using SSLV3, which has been deprecated by the industry and is no longer considered secure.
- The LDAP client also did not allow selecting the current standard protocol of TLSV1.2. Connections using TLSV1.2 could only be achieved via selecting the option to negotiate the connection protocol.

This change allows a program to select any of the latest TLS protocols available on OpenVMS. If no protocol is selected, the LDAP client will now negotiate to the highest supported protocol instead of defaulting to SSLV3.

Protocol support is provided by the VSI SSL1 product that supports protocols up to TLSV1.2.

New constants have been defined in the standard system library <ldap.h> to specify the protocols available to the client.

These values can be passed to the client via the ldap_set_options() function specifying the LDAP_OPT_TLS_VERSION option.

The following constants are defined for C and C++ language users. Other languages can build their own definitions using the associated decimal values as shown.

LDAP_PORT_SECURITY_NEGOTIATE = 23
LDAP_PORT_SECURITY_SSLV3 = 30
LDAP_PORT_SECURITY_TLSV10 = 31
LDAP_PORT_SECURITY_TLSV11 = 32
LDAP_PORT_SECURITY_TLSV12 = 33

Images and/or Files Affected

[SYSLIB]LDAP$SHR.EXE
[SYSLIB]SYS$STARLET_C.TLB

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 2191

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha Release After V8.4-2L2

6.6. Potential LDAP Application Vulnerability to Man-in-the-Middle Attacks

Problem Description

The ACME LDAP Agent was limited by the LDAP client to TLS encryption options on StartTLS connections only (port 389). These types of connections are susceptible to man-in-the-middle attacks and may be a security risk in certain environments.

This change expands TLS encryption options to include targeted TLS versions and allows TLS encryption for LDAPS connections (port 636) that do not risk the same security exposure.

The ACME LDAP Agent is now able to select the desired combination of encryption and connection type.

The following port security options are now accepted by the ACME LDAP Agent:

Existing options:

- SSL - Negotiate SSLV3 (LDAPS default port 636)
- StartTLS - Negotiate StartTLS connection (default port 389)

New LDAPS options (default port 636):

- SSLTLS - Negotiate TLS encryption with Server

- SSLTLS10 - Select only TLSV1.0 encryption
- SSLTLS11 - Select only TLSV1.1 encryption
- SSLTLS12 - Select only TLSV1.2 encryption

New StartTLS options (default port 389):

- StartTLS10 - Select only TLSV1.0 encryption
- StartTLS11 - Select only TLSV1.1 encryption
- StartTLS12 - Select only TLSV1.2 encryption

Images and/or Files Affected

[SYSLIB]LDAP$SHR.EXE
[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE
[SYSLIB]LDAPACME$LDAP-STD_ACMESHR_TRACE.EXE

Quix and/or Bugzilla Cases Reporting This Problem

VSI Bugzilla 3407

Release Version of VSI OpenVMS That Will Contain This Change

Next VSI OpenVMS Alpha Release After V8.4-2L2

7. Images or Files Replaced

If installing on V8.4-2L1

[SYSLIB]LDAP$SHR.EXE

Image name:	"LDAP$SHR"
Image file identification:	"LDAP V2.0-05002"
Image build identification:	"XE4H-H4N-000198"
Link identification:	"A13-04"
Link Date/Time:	18-APR-2026 11:18:48.07
Image Checksum (MD5):	129B38AA8DC95B4B0867280AC629DD2E

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE

Image name:	"LDAPACME$LDAP-STD_ACMESHR"
Image file identification:	"LDAP-STD V1.26"
Image build identification:	""
Link identification:	"A13-04"
Link Date/Time:	18-APR-2026 11:19:17.02
Image Checksum (MD5):	6C8DDAE30F3CED8D4C83D6A2C49F3FAA

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR_TRACE.EXE

Image name:	"LDAPACME$LDAP-STD_ACMESHR_TRACE"
Image file identification:	"STD_TRACE V1.26"
Image build identification:	""
Link identification:	"A13-04"
Link Date/Time:	18-APR-2026 11:19:20.23
Image Checksum (MD5):	9565C70612ECC1B013906C05C7E1775C

[SYSLIB]SYS$STARLET_C.TLB

File creation date and time:	18-APR-2026 11:22:53.70
Checksum (MD5):	563A1B5DEE0CB57B75AC0F2851C31EF1

If installing on V8.4-2L2

[SYSLIB]LDAP$SHR.EXE

Image name:	"LDAP$SHR"
Image file identification:	"LDAP V2.0-05002"
Image build identification:	"XE80-F4N-000198"
Link identification:	"A13-04"
Link Date/Time:	18-APR-2026 12:10:57.80
Image Checksum (MD5):	16E3EC74165C9CE4EAA7277B07B4291B

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR.EXE

Image name:	"LDAPACME$LDAP-STD_ACMESHR"
Image file identification:	"LDAP-STD V1.26"
Image build identification:	""
Link identification:	"A13-04"
Link Date/Time:	18-APR-2026 12:11:25.95
Image Checksum (MD5):	DC3B2DC74D8EF81C1217F8334EE1E561

[SYSLIB]LDAPACME$LDAP-STD_ACMESHR_TRACE.EXE

Image name:	"LDAPACME$LDAP-STD_ACMESHR_TRACE"
Image file identification:	"STD_TRACE V1.26"
Image build identification:	""
Link identification:	"A13-04"

Link Date/Time:	18-APR-2026 12:11:28.62
Image Checksum (MD5):	3D9380B889DDF15AD38D436004197207

[SYSLIB]SYS$STARLET_C.TLB

File creation date and time:	18-APR-2026 12:14:48.00
Checksum (MD5):	9EA9385D3EB96B0BC83D2516CB857682

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 (in MD5 format) are supplied 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 VMS842L2A_LDAP-V0500
```

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 VMS842L2A_LDAP [/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

While this kit does not require a system reboot, additional steps may be necessary to insure that active applications begin to use the newly supplied images. For most environments, this means restarting the ACME_SERVER if it is configured for external authentication. If there are other applications which use LDAP directly, they may need to be restarted as well according to their own instructions.

To restart the ACME_SERVER, use the command:

```
$ SET SERVER ACME_SERVER /RESTART
```

In a VMScluster with a shared system disk, this command should also be performed on each node sharing the system disk with the installation system.

Note that authentication requests currently in progress when the ACME_SERVER is restarted could fail, and any requests occurring while the server is restarting could be rejected. Therefore, care should be taken when choosing the time for such a restart

Similarly, the ACME_SERVER should be restarted if this ECO kit is removed using PRODUCT UNDO PATCH.

9. Copyright

10. Disclaimer of Warranty and Limitation of Liability

This patch is provided as is, without warranty of any kind. All express or implied conditions, representations, and warranties, including any implied warranty of merchantability, fitness for particular purpose, or non-infringement, are hereby excluded to the extent permitted by applicable law. In no event will VMS Software, Inc. be liable for any lost revenue or profit, or for special, indirect, consequential, incidental or punitive damages, however caused and regardless of the theory of liability, with respect to any patch made available here or to the use of such patch.

11. Patch ID

AXPVMS-VMS842L2A_LDAP-V0500--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 VMS842L2A_LDAP/VERSION=V5.0/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