

vSphere SDK for Perl Installation Guide

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VMware vSphere 7.0

VMware ESXi 7.0

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About This Book

vSphere SDK for Perl Installation Guide provides information about installing the vSphere SDK for Perl. VMware[®] provides several SDK products, each of which targets different developer communities and platforms. This guide is for administrators who want to run vSphere SDK for Perl scripts on vSphere systems and for developers who want to develop vSphere SDK for Perl scripts for vSphere systems.

Intended Audience

This book is intended for anyone who installs the vSphere SDK for Perl. All users must understand how to modify and run Perl scripts on the platform of their choice.

Installing vSphere SDK for Perl

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You can install vSphere SDK for Perl on a Linux or a Microsoft Windows system.

This chapter includes the following topics:

- [Installation Overview](#)
- [Overview of Linux Installation Process](#)
- [Installing and Uninstalling vSphere SDK for Perl on Linux Systems](#)
- [Installing and Uninstalling vSphere SDK for Perl on Windows](#)
- [Enabling Certificate Verification](#)

Installation Overview

You can install vSphere SDK for Perl on a supported platform.

You can install vSphere SDK for Perl on a physical or virtual machine. See [Installing and Uninstalling vSphere SDK for Perl on Linux Systems](#) and [Installing and Uninstalling vSphere SDK for Perl on Windows](#).

The content of the vSphere SDK for Perl installer package differs for different platforms.

Platform	Installation Process
Windows	You must install required software.
Linux	You must install required software and you must have Internet access. See Installing Prerequisite Software for Linux Systems . The installer downloads other Perl modules from CPAN.

After installation, you can run vSphere SDK for Perl utility applications from the operating system command line. Each time you run a command, you can specify the target server connection options directly or indirectly. You can also write scripts and manage your vSphere environment using those scripts.

Overview of Linux Installation Process

The installation script for vSphere SDK for Perl is supported on the Linux distributions that are listed in the *Release Notes*.

The installation proceeds as follows.

- 1 The installer checks whether the following required prerequisite software are installed on the system.

Perl	Perl version 5.8.8 or version 5.10 must be installed on your system.
OpenSSL	<p>The vSphere SDK for Perl requires SSL because most connections between the system on which you run the command and the target vSphere system are encrypted with SSL.</p> <p>The OpenSSL library (<code>libssl-devel</code> package) is not included in the default Linux distribution. See Installing Prerequisite Software for Linux Systems.</p>
LibXML2	<p>Used for XML parsing. The vSphere SDK for Perl requires 2.9.6 or later.</p> <p>The <code>libxml2</code> package is not included in the default Linux distribution. See Installing Prerequisite Software for Linux Systems.</p>
uuid	Included in <code>uuid-devel</code> for SLES 11 and in <code>e2fsprogs-devel</code> for other Linux platforms. Required by the UUID Perl module.

- 2 If the required software is found, the installer proceeds. Otherwise, the installer stops and informs you that you must install the software. See [Installing Prerequisite Software for Linux Systems](#) for instructions.

- 3 The installer checks whether the following Perl modules are found, and whether the correct version is installed.

- Crypt-SSLeay-0.72
- IO-Compress-Zlib-2.037
- Compress-Raw-Zlib-2.037
- Archive-Zip-1.28
- Data-Dumper-2.121
- XML-LibXML-2.0129
- libwww-perl-6.15
- LWP-Protocol-https-6.07
- XML-LibXML-Common2.0129
- XML-Namespacesupport-1.12
- XML-SAX-0.99
- UUID-0.27
- SOAP-Lite-0.710.08
- HTML-Parser-3.60
- version-0.78

- MIME-Base64-3.14
- Socket6-023
- IO-Socket-INET6-2.71
- Net-INET6Glue-0.600_1
- Net-HTTP-6.10

Earlier versions of `libwww-perl` include the `LWP-Protocol-https` module. More recent versions of `libwww-perl` do not include the `LWP-Protocol-https` module and you must install that module.

Note If you intend to use vSphere SDK for Perl with SSL certification, verify that `LWP::UserAgent 6.00` or later is installed. The installer does not check this module, and earlier versions do not work with SSL.

- 4 The installer proceeds depending on whether the Perl modules are found.
 - If a recommended Perl module is not found at all, the installer installs it using CPAN. You must meet the installation prerequisites or the installer cannot install the Perl modules and stops. See [Installing and Uninstalling vSphere SDK for Perl on Linux Systems](#).
 - If an earlier version of a recommended module is found, the installer does not install a different version from CPAN and proceeds with the installation. After completing the installation, the installer displays a message that the version on the system does not match the recommended version, and recommends that you install the version vSphere SDK for Perl was tested with. You can install the modules by using the package installer for your platform, the installation CD, or CPAN.
 - If a later version of a recommended module is found, the installer proceeds with the installation and does not display a message after the installation.

Note The installer does not overwrite existing versions of recommended Perl modules. You must update those modules manually.

- 5 After all required software and all prerequisite Perl modules are installed, you can install vSphere SDK for Perl. See [Installing Prerequisite Software for Linux Systems](#).

If a previous version of vSphere SDK for Perl is installed on your system, and you install vSphere SDK for Perl in a different directory, you must reset the `PATH` environment variable. You can reset the variable, before or after the installation, by using the command appropriate for your distribution and shell, for example `setenv` or `export`. If you do not reset the path, the system might still look for executable files in the old location.

Installing and Uninstalling vSphere SDK for Perl on Linux Systems

Before you can install the vSphere SDK for Perl package on a Linux system, that system must meet specific prerequisites.

- **CPAN** - You must have CPAN installed on your system. The command for installing CPAN depends on the Linux distribution and uses the following syntax.

```
<package_manager> install cpan
```

- **Internet access** - You must have Internet access when you run the installer because the installer uses CPAN to install prerequisite Perl modules.
- **Development Tools and Libraries** - You must install the Development Tools and Libraries for the Linux platform that you are working with before you install vSphere SDK for Perl and prerequisite Perl modules.
- **Proxy settings** - If your system is using a proxy for Internet access, you must set the `http://` and `ftp://` proxies as follows.

```
export http_proxy=<proxy_server>:port
export ftp_proxy=<proxy_server>:port
```

Installing Prerequisite Software for Linux Systems

If the prerequisite software is not installed, the installer stops and requests that you install it.

Installation of prerequisite software depends on the platform that you are using. See the *Release Notes* for the supported versions of each Linux platform.

Platform	Installation
RHEL 6.6 64-bit	Find the required modules on the installation DVD, or use yum to install them. <pre>yum install e2fsprogs-devel libuuid-devel yum install glibc.i686 yum install perl-XML-LibXML</pre>
RHEL 7.1 64-bit	Find the required modules on the installation DVD, or use yum to install them. <pre>yum install e2fsprogs-devel libuuid-devel openssl-devel perl-devel yum install glibc.i686 zlib.i686 yum install perl-XML-LibXML libncurses.so.5 perl-Crypt-SSLeay</pre>
RHEL 7.3 64-bit	Find the required modules on the installation DVD, or use yum to install them. <pre>yum install e2fsprogs-devel libuuid-devel openssl-devel perl-devel yum install glibc.i686 zlib.i686 yum install perl-XML-LibXML libncurses.so.5 perl-Crypt-SSLeay</pre> <p>You might have to install GCC by running <code>yum group install "Development Tools"</code> if there is no compiler already installed.</p>

Platform	Installation
RHEL 7.5 64-bit	<p>Find the required modules on the installation DVD, or use yum to install them.</p> <pre>yum install e2fsprogs-devel libuuid-devel openssl-devel perl-devel yum install glibc.i686 zlib.i686 yum install perl-XML-LibXML libncurses.so.5 perl-Crypt-SSLeay</pre> <p>You might have to install GCC by running <code>yum group install "Development Tools"</code> if there is no compiler already installed.</p>
RHEL 7.6 64-bit	<p>Find the required modules on the installation DVD, or use yum to install them.</p> <pre>yum install e2fsprogs-devel libuuid-devel openssl-devel perl-devel yum install glibc.i686 zlib.i686 yum install perl-XML-LibXML libncurses.so.5 perl-Crypt-SSLeay</pre> <p>You might have to install GCC by running <code>yum group install "Development Tools"</code> if there is no compiler already installed.</p>
SUSE Enterprise	<p>Install the prerequisite packages from the SLES SDK DVD. When you insert the DVD, it offers to autorun. Cancel the autorun and use the <code>yast</code> package installer to install OpenSSL or other missing required packages.</p> <ul style="list-style-type: none"> ■ SLES 11 SP3 64-bit <pre>yast -i openssl-devel libuuid-devel libuuid-devel-32bit</pre> ■ SLES 12 64-bit <pre>yast -i openssl-devel libuuid-devel libuuid-devel-32bit e2fsprogs-devel</pre> <p>Some users might be authorized to use the Novell Customer Center and use <code>yast</code> to retrieve missing packages from there.</p>
Ubuntu 12.04 64-bit	<ol style="list-style-type: none"> 1 Connect to the Internet. 2 Update the local repository of libraries from a terminal window. <pre>sudo apt-get update</pre> 3 Install the required libraries from a terminal window. <pre>sudo apt-get install ia32-libs build-essential gcc uuid uuid-dev perl libssl-dev perl-doc liburi-perl libxml-libxml-perl libcrypt-ssleay-perl</pre>
Ubuntu 14.04 64-bit	<ol style="list-style-type: none"> 1 Connect to the Internet. 2 Update the local repository of libraries from a terminal window. <pre>sudo apt-get update</pre> 3 Install the required libraries from a terminal window. <pre>sudo apt-get install lib32z1 lib32ncurses5 lib32bz2-1.0 gcc-multilib build-essential gcc uuid uuid-dev perl libssl-dev perl-doc liburi-perl libxml-libxml-perl perl libcrypt-ssleay-perl</pre>

Platform	Installation
Ubuntu 15.10 64-bit	<ol style="list-style-type: none"> 1 Connect to the Internet. 2 Update the local repository of libraries from a terminal window. <pre>sudo apt-get update</pre> 3 Install the required libraries from a terminal window. <pre>sudo apt-get install lib32z1 lib32ncurses5 build-essential uuid uuid-dev perl libssl-dev perl-doc libxml-libxml-perl libcrypt-ssleay-perl libsoap-lite-perl</pre>
Ubuntu 16.04 64-bit	<ol style="list-style-type: none"> 1 Connect to the Internet. 2 Update the local repository of libraries from a terminal window. <pre>sudo apt-get update</pre> 3 Install the required libraries from a terminal window. <pre>sudo apt-get install lib32z1 lib32ncurses5 build-essential uuid uuid-dev libssl-dev perl-doc libxml-libxml-perl libcrypt-ssleay-perl libsoap-lite-perl libmodule-build-perl</pre>

Install vSphere SDK for Perl on a Linux System

You can install the vSphere SDK for Perl and run a command to verify that installation was successful.

Note The vSphere SDK for Perl installer package is based on the deprecated vSphere CLI installer package and is incompatible with existing vSphere CLI installations.

Prerequisites

- Verify that there is no existing vSphere CLI installation on the system.
- Verify that you have installed the required prerequisite software.

Procedure

- 1 Download the vSphere SDK for Perl Linux installer package.

You can find the installer in the **Automation Tools and SDKs** section of the **Drivers & Tools** tab of the vSphere download page.

- 2 Log in as root.
- 3 Untar the vSphere SDK for Perl binary that you downloaded.

```
tar -zxvf VMware-vSphere-Perl-SDK-7.X.X-XXXXX.x86_64.tar.gz
```

A `vmware-vsphere-vcli-distrib` directory is created.

- 4 (Optional) If your server uses a proxy to access the Internet, and if your `http://` and `ftp://` proxy were not set when you installed prerequisite software, set them now.

```
export http_proxy=<proxy_server>:port
export ftp_proxy=<proxy_server>:port
```

- 5 Run the installer.

```
sudo vmware-vsphere-cli-distrib/vmware-install.pl
```

- 6 To accept the license terms, enter **yes** and press Enter.

The installer connects to CPAN and installs prerequisite software. Establishing a connection might take a long time.

- 7 Specify an installation directory, or press Enter to accept the default, which is `/usr/bin`.

A complete installation process has the following result.

- A success message appears.
- The installer lists different version numbers for required modules, if any.
- The prompt returns to the shell prompt.

Results

If you accepted the defaults during installation, you can find the installed software in the following locations.

- vSphere SDK for Perl scripts – `/usr/bin`
- vSphere SDK for Perl utility applications – `/usr/lib/vmware-vcli/apps`
- vSphere SDK for Perl sample scripts – `/usr/share/doc/vmware-vcli/samples`

What to do next

See the vSphere SDK for Perl documentation for a reference to all utility applications. After you install vSphere SDK for Perl, you can test the installation by running a utility application from the command line.

Uninstall vSphere SDK for Perl on Linux

You can use a script included in the installation to uninstall the vSphere SDK for Perl.

Procedure

- 1 Navigate to the directory where you installed vSphere SDK for Perl.

The default directory is `/usr/bin`.

- 2 Run the `vmware-uninstall-vSphere-CLI.pl` script.

The command uninstalls the vSphere SDK for Perl.

Installing and Uninstalling vSphere SDK for Perl on Windows

You can install vSphere SDK for Perl on a supported Windows operating system.

Install vSphere SDK for Perl on Windows

The vSphere SDK for Perl installation package for Windows does not include the ActivePerl runtime from ActiveState Software.

The vSphere SDK for Perl is supported on the Windows platforms that are listed in the *Release Notes*.

Note The vSphere SDK for Perl installer package is based on the deprecated vSphere CLI installer package and is incompatible with existing vSphere CLI installations.

Prerequisites

- Verify that there is no existing vSphere CLI installation on the system.
- Verify that you have ActivePerl or Strawberry Perl version 5.14 or later installed on your Windows system.

Procedure

- 1 Download the vSphere SDK for Perl Windows installer package.

You can find the installer in the **Automation Tools and SDKs** section of the **Drivers & Tools** tab of the vSphere download page.

- 2 Start the installer.
- 3 Click **Next** in the Welcome page.
- 4 To install the vSphere SDK for Perl in a nondefault directory, click **Change** and select an alternative directory.

The default location is C:\Program Files\VMware\VMware vSphere CLI.

- 5 Click **Next**.
- 6 Click **Install** to proceed with the installation.

The installation might take several minutes to complete.

- 7 Reboot your system.

If you do not reboot, path settings might not be correct on your Windows platform.

Uninstall vSphere SDK for Perl on Windows

You can uninstall the vSphere SDK for Perl package by following the standard Windows procedure.

Procedure

- 1 Find the option for adding and removing programs on the Windows operating system that you are using.
- 2 In the panel that appears, select **VMware vSphere CLI** and click **Uninstall**.
- 3 Click **Yes** when prompted.

Enabling Certificate Verification

You can enable certificate verification by using variables.

The vSphere SDK for Perl uses `Crypt::SSLEay` to support certificate verification. `Crypt::SSLEay` enables verification of certificates signed by a Certificate Authority (CA) if you set the following two variables.

- `HTTPS_CA_FILE` – The CA file.
- `HTTPS_CA_DIR` – The CA directory.

See the `Crypt::SSLEay` documentation for details on setup.

Caution If the two environment variables `HTTPS_CA_FILE` and `HTTPS_CA_DIR` are set incorrectly or if a problem with the certificate exists, vSphere SDK for Perl scripts might not complete, and might not display error or warning messages. Use `HTTPS_DEBUG` for troubleshooting before running vSphere SDK for Perl scripts.
