vSphere SDK for Perl Installation Guide

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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.

VMware Technical Publications Glossary

VMware Technical Publications provides a glossary of terms that might be unfamiliar to you. For definitions of terms as they are used in VMware technical documentation, go to http://www.vmware.com/support/pubs.

Installing vSphere SDK for Perl

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You can install a vCLI package on a Linux or a Microsoft Windows system. The vCLI installer installs both vSphere SDK for Perl and vCLI.

This chapter includes the following topics:

- Installation Overview
- Overview of Linux Installation Process
- Installing and Uninstalling vCLI on Linux Systems
- Installing and Uninstalling vCLI on Windows
- Enabling Certificate Verification

Installation Overview

You can install a vCLI package on a supported platform.

You can install a vCLI package on a physical or virtual machine. See Installing and Uninstalling vCLI on Linux Systems and Installing and Uninstalling vCLI on Windows.

The vCLI installer installs both vSphere SDK for Perl and vCLI because many vCLI commands run on top of the vSphere SDK for Perl. The content of the installer package differs for different platforms.

Platform	Installation Process
Windows	You must install required software. The installation package includes vCLI and vSphere SDK for Perl.
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 vCLI commands and 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 vCLI is supported on the Linux distributions that are listed in the *Release Notes*.

The vCLI package installer installs the vCLI scripts and the vSphere SDK for Perl. 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	The vCLI requires SSL because most connections between the system on which you run the command and the target vSphere system are encrypted with SSL. The OpenSSL library (`libssl-devel` package) is not included in the default Linux distribution. See Installing Prerequisite Software for Linux Systems.
LibXML2	Used for XML parsing. The vCLI client requires 2.9.6 or later. If you have an older version installed, you must upgrade to 2.9.6 or later. The `libxml2` package is not included in the default Linux distribution. See Installing Prerequisite Software for Linux Systems.
uuid	Included in `uuid-devel` for SLES 11 and in `e2fsprogs-devel` 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`

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 run vCLI commands 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 vCLI 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 vCLI 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 vCLI. See Installing Prerequisite Software for Linux Systems.

If a previous version of vCLI, Remote CLI, or vSphere SDK for Perl is installed on your system, and you install vCLI 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 vCLI on Linux Systems

Before you can install the vCLI package on a Linux system, that system must meet specific prerequisites.

- 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 vCLI 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.
	
	```yum install e2fsprogs-devel libuuid-devel```
	```yum install glibc.i686```
	```yum install perl-XML-LibXML```

RHEL 7.1 64-bit	Find the required modules on the installation DVD, or use yum to install them.
	
	```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```

RHEL 7.3 64-bit	Find the required modules on the installation DVD, or use yum to install them.
	
	```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```
	
	You might have to install GCC by running `yum group install "Development Tools"` if there is no compiler already installed.

SUSE Enterprise	Install the prerequisite packages from the SLES SDK DVD. When you insert the DVD, it offers to autorun. Cancel the autorun and use the `yast` package installer to install OpenSSL or other missing required packages.
	- SLES 11 SP3 64-bit
	
	```yast -i openssl-devel libuuid-devel libuuid-devel-32bit```
	
	- SLES 12 64-bit
	
	```yast -i openssl-devel libuuid-devel libuuid-devel-32bit e2fsprogs-devel```
	
	Some users might be authorized to use the Novell Customer Center and use `yast` to retrieve missing packages from there.

Platform	Installation

Ubuntu 12.04 64-bit	1 Connect to the Internet.
	 2 Update the local repository of libraries from a terminal window.
	
	 ``` sudo apt-get update ```
	
	 3 Install the required libraries from a terminal window.
	
	 ``` 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 ```
	
	 For Ubuntu 12.04 64-bit, the `resxtop` and ESXCLI commands do not work if you do not install the 32-bit compatibility libraries.

Ubuntu 14.04 64-bit	1 Connect to the Internet.
	 2 Update the local repository of libraries from a terminal window.
	
	 ``` sudo apt-get update ```
	
	 3 Install the required libraries from a terminal window.
	
	 ``` 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 libcrypt-ssleay-perl ```
	
	 For Ubuntu 14.04 64-bit, the `resxtop` and ESXCLI commands do not work if you do not install the 32-bit compatibility libraries.

Ubuntu 15.10 64-bit	1 Connect to the Internet.
	 2 Update the local repository of libraries from a terminal window.
	
	 ``` sudo apt-get update ```
	
	 3 Install the required libraries from a terminal window.
	
	 ``` 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 ```
	
	 For Ubuntu 15.10 64-bit, the `resxtop` and ESXCLI commands do not work if you do not install the 32-bit compatibility libraries.

Ubuntu 16.04 64-bit	1 Connect to the Internet.
	 2 Update the local repository of libraries from a terminal window.
	
	 ``` sudo apt-get update ```
	
	 3 Install the required libraries from a terminal window.
	
	 ``` 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 ```
	
	 For Ubuntu 16.04 64-bit, the `resxtop` and ESXCLI commands do not work if you do not install the 32-bit compatibility libraries.

Install the vCLI Package on a Linux System

You can install the vCLI package and run a command to verify that installation was successful.

Prerequisites

Verify that you have installed the required prerequisite software.

Procedure

1 Download the vCLI 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 vCLI binary that you downloaded.

   ```
   tar -zxvf VMware-vSphere-CLI-6.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.

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

■ vCLI 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 vCLI, you can test the installation by running a vCLI command or vSphere SDK for Perl utility application from the command prompt.

Uninstall the vCLI Package on Linux

You can use a script included in the installation to uninstall the vCLI package.

Procedure

1   Navigate to the directory where you installed vCLI.

The default directory is `/usr/bin`.

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

The command uninstalls vCLI and the vSphere SDK for Perl.

Installing and Uninstalling vCLI on Windows

Before you can run vCLI commands from your Windows system, you must install the vCLI package and test the installation by running a command.

Install the vCLI Package on Windows

The vCLI installation package for Windows installs vSphere SDK for Perl and vSphere CLI, but does not include the ActivePerl runtime from ActiveState Software.

The vCLI is supported on the Windows platforms that are listed in the *Release Notes*.

Important   If you want to run ESXCLI commands included in vCLI from a Windows system, you must have the Visual C++ 2008 redistributable for 32-bit installed on that system. Find `vcredist_x86.exe` for Visual C++ 2008 and install it on your Windows system.

Prerequisites

Verify that you have ActivePerl or Strawberry Perl version 5.14 or later installed on your Windows system.

Procedure

1   Download the vCLI 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   (Optional) If prompted to remove older versions of vSphere SDK for Perl or vCLI, you can either accept or cancel the installation, and install the vCLI package on a different system.

> **Important**   The installer replaces both the vSphere SDK for Perl and vCLI. To keep an older version, install this package on a different system.

4   Click **Next** in the Welcome page.

5   To install the vCLI in a nondefault directory, click **Change** and select an alternative directory.

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

6   Click **Next**.

7   Click Install to proceed with the installation.

The installation might take several minutes to complete.

8   Reboot your system.

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

Uninstall the vCLI Package on Windows

You can uninstall the vCLI 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 **Remove**.

3   Click **Yes** when prompted.

The system uninstalls vCLI and vSphere SDK for Perl.

Enabling Certificate Verification

You can enable certificate verification by using variables.

The vSphere SDK for Perl and vCLI use `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, vCLI commands do not complete, and do not display error or warning messages. Use *HTTPS_DEBUG* for troubleshooting before running vCLI commands.