Lenovo XClarity Essentials OneCLI User Guide for ThinkServer

Version 4.0.1

Note

Before using this information and the product it supports, read the information in Appendix B “Notices” on page 23.

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Contents

Tables

About this publication

Lenovo XClarity Essentials OneCLI (OneCLI) is a collection of command-line applications that facilitate Lenovo server management by providing functions, such as system configuration, system inventory, firmware, and device driver updates. This guide provides information about how to download and use OneCLI.

Who should read this guide

This guide is for system administrators or other individuals responsible for system administration who are familiar with firmware and device driver maintenance.

Conventions and terminology

Paragraphs that start with a Note, Important, or Attention in bold have specific meanings to highlight key information:

Note: These notices provide important tips, guidance, or advice.

Important: These notices provide information or advice that might help you avoid inconvenient or difficult situations.

Attention: These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

The following table provides a description of commonly used terms in the *Lenovo XClarity Essentials OneCLI Users Guide for ThinkServer*.

Table 1. Commonly used terms

Term	Definition
FoD	Features on Demand A management software that provides a convenient way for users to order and activate optional features through the management software web interface.
HBA	Host Bus Adapter Up to four I/O modules can be installed in the Flex System Enterprise Chassis, including Ethernet switch modules, Fibre Channel switch modules, Infiniband, and pass-thru modules (optical and copper).

Publications and related information

Online help document and topic collections

For information about the System x and BladeCenter tools, go to the XClarity Essentials online help site http://sysmgt.lenovofiles.com/help/index.jsp

Publications

For the latest version of the *Lenovo XClarity Essentials OneCLI Users Guide*, go to:
Lenovo XClarity Essentials OneCLI Web site

Supported websites

This section provides support web resources.

- Lenovo XClarity Essentials OneCLI Web site

  Use this Web site to download the Lenovo XClarity Essentials OneCLI tool and documentation.
- Lenovo XClarity Essentials website

  Use this Web site to download tools that support Lenovo branded systems. XClarity Essentials products are also available for download to support IBM branded systems.
- Lenovo Flex System support products and services

  Use this Web page to obtain information about Flex System products.
- System x Support website

  Use this Web site to obtain information about online product information for servers, storage, and networking products.
- Lenovo ServerProven

  Use this Web site to obtain information about the hardware compatibility of ThinkSystem, Flex, System x systems and BladeCenter with applications and middleware.
- Lenovo Service and Support

  Use this Web site to obtain service and support information for Lenovo products.
- Features on Demand on LenovoPress

  Use this Web site to download the *Using Lenovo System x Features on Demand* publication.

Chapter 1. Technical overview

Lenovo XClarity Essentials OneCLI (hereinafter referred to as OneCLI) for ThinkServer systems is a collection of server management tools that utilize a command-line interface program to manage firmware, hardware, and operating systems using the applications listed in the table below. XClarity Essentials OneCLI is comprised of individual ToolsCenter application modules that are easily updated.

The following table lists the XClarity Essentials OneCLI applications.

Table 2. XClarity Essentials OneCLI applications

Application	Description
inventory	• Inventory and compares devices.

To get started using Lenovo XClarity Essentials OneCLI, see Chapter 3 “Downloading and using OneCLI” on page 7.

Chapter 2. Hardware and software requirements

Lenovo XClarity Essentials OneCLI has specific hardware and operating system requirements. Before you begin using XClarity Essentials OneCLI, review the topics in this section.

Hardware requirements

XClarity Essentials OneCLI supports ThinkServer systems. To successfully run XClarity Essentials OneCLI, the system on which you install XClarity Essentials OneCLI must meet certain hardware requirements.

Disk space requirements

To install XClarity Essentials OneCLI, the system must have a minimum of 300 MB of disk space.

Memory requirements

It is recommended that XClarity Essentials OneCLI run on a system with a minimum of 2 GB of physical memory.

Supported hardware

Use this information to identify systems that are supported by XClarity Essentials OneCLI.

Supported Intel and AMD processor-based systems

XClarity Essentials OneCLI supports the following Intel and AMD processor-based systems:

Table 3. Supported systems

Server	Machine type
ThinkServer RD340	All
ThinkServer RD350	All
ThinkServer RD440	All
ThinkServer RD450	All
ThinkServer RD540	All
ThinkServer RD550	All
ThinkServer RD640	All
ThinkServer RD650	All
ThinkServer RQ750	All
ThinkServer RS140	All
ThinkServer RS160	All
ThinkServer SD350	5493
ThinkServer TD340	All
ThinkServer TD350	All
ThinkServer TS140	All
ThinkServer TS150	All
ThinkServer TS440	All

Table 3. Supported systems (continued)

Server	Machine type
ThinkServer TS450	All
ThinkServer TS460	All
ThinkSystem ST50/ST58	7Y48, 7Y49, 7Y50
ThinkSystem ST50 V2	7D8J, 7D8K
ThinkSystem ST58 V2	7D8L
ThinkSystem SR635	7Y89, 7Y99
ThinkSystem SR655	7Y00, 7Z01

Server options

XClarity Essentials OneCLI supports the following third-party vendors:

- Brocade
- Broadcom
- Intel
- Marvell
- Mellanox

Software requirements

The information in this section describes the required software for XClarity Essentials OneCLI.

To run XClarity Essentials OneCLI, you must have administrator or root-equivalent operating system privileges.

Required device drivers

It is recommended to have the appropriate service processor device drivers installed and running before running OneCLI. It provides access to additional problem determination information, including the hardware event logs.

The following list provides necessary device drivers and utilities when running OneCLI to collect system information.

- To collect SCSI and USB device information (including diagnostics), the sg driver must be loaded. Run `lsmod` and verify that the sg driver is loaded before running OneCLI. If it is not loaded, run `modprobe sg`.
- To collect Emulex HBA information from a system with Linux host OS, the emulex driver and utility (corekit) must be installed. Run `lsmod` and verify that lpfc and lpfcdfc are loaded before running OneCLI.
- To collect Service Processor logs, configuration, and environmental data, the appropriate Service Processor driver must be installed. These drivers are available to download from: http://www.lenovo.com/support.
- To update firmware using OneCLI on 64-bit Linux operating systems, the 32-bit compatibility library, `compat-libstdc++`, must be installed. Users can use the following command to determine if this library is installed: `rpm -qa | grep compat-libstdc++-296`.
- To collect Emulex FC HBA data, the Emulex utility (`HBAcmd`) must be installed.
- To transfer data collections to the support site using SFTP (by default) or FTP, `libcurl` must be installed.

Supported browsers

To view the information collected by OneCLI, you are recommended to use one of the following Web browsers:

- Internet Explorer
- Chrome
- Firefox

Supported operating systems

Use the information in this section to identify operating systems supported by OneCLI.

Notes:

- OneCLI only supports the operating system in English. If you are using the operating system in other languages, the unreadable information will appear in the log.
- For more information about the operating system compatibility of Lenovo servers, go to https://lenovopress.com/osig.

Windows

OneCLI supports the following Windows operating systems.

Microsoft Windows Pro for Workstations (only on SR655)

- Microsoft Windows 11 Pro, version 21H2
- Microsoft Windows 10 Pro, version 21H2

Microsoft Windows Server 2022 Editions

- Microsoft Windows Server 2022 (x64)

Microsoft Windows Server 2019 Editions

- Microsoft Windows Server 2019 (x64)

Microsoft Windows Server 2016 Editions

- Microsoft Windows Server 2016 (x64)
- Microsoft Windows Server, version 1709 (x64)
- Microsoft Windows Server, version 1803 (x64)

Microsoft Windows Server 2012 Editions

- Microsoft Windows Server 2012 (x64)
- Microsoft Windows Server 2012 R2 (x64)

Microsoft Windows Server 2008 Editions

- Microsoft Windows Server 2008 (x64)
- Microsoft Windows Server 2008 R2 (x64)

Linux

OneCLI supports the following Linux operating systems.

Red Hat

- Red Hat Enterprise Linux 9 Server (x64) Editions (up to U0)
- Red Hat Enterprise Linux 8 Server (x64) Editions (up to U6)
- Red Hat Enterprise Linux 7 Server (x64) Editions (up to U9)

SUSE

- SUSE Linux Enterprise Server 15 (x64) (up to SP4)
- SUSE Linux Enterprise Server 12 (x64) (up to SP5)

Chapter 3. Downloading and using OneCLI

The topics in this section describe how to download and use OneCLI. OneCLI is packaged as the compressed file (zip file for Windows and tgz file for Linux), which can be used by being decompressed, be removed by being deleted, and be upgraded by being replaced with the new files.

From V2.5.0, OneCLI supports to collect the inventory and service data by double-clicking the self-extracting executable file. This executable file automatically runs the OneCLI command to collect inventory and service data. After this procedure is completed, it automatically cleans up the files while leaving the execution result and output log at the default designated directory.

The extracted executable file has the same content as the compressed file. However, self-extracting and cleaning up at every invocation might bring system overload, so it is not recommended to use this feature at regular basis. This feature is suitable for the scenario that users have limited time to learn about the OneCLI parameters or hurry to troubleshoot a failing system.

Lenovo recommends the compressed file for regular usage. Considering the security, it is also recommended to decompress the files to a directory only accessible to administrative users.

The following tables show the formats of the compressed file and the self-extracting executable file for Windows and Linux:

Table 4. The format of compressed file and self-extracting executable file for Windows

Operating system	Compressed file	Self-extracting executable file
Microsoft Windows	lnvgy_utl_lxce_oneclixxx-x.x.x_ winsrv_x86-64.zip	lnvgy_utl_lxceb_oneclixxx-x.x.x_ winsrv_x86-64.exe

Table 5. The format of compressed file and self-extracting executable file for Linux

Operating system	Compressed file	Self-extracting executable file
SUSE Linux Enterprise Server Edition	lnvgy_utl_lxce_oneclixxx-x.x.x_sles_ x86-64.tgz	lnvgy_utl_lxceb_oneclixxx-x.x.x_sles_ x86-64.bin
Red Hat Enterprise Linux Edition	lnvgy_utl_lxce_oneclixxx-x.x.x_rhel_ x86-64.tgz	lnvgy_utl_lxceb_oneclixxx-x.x.x_rhel_ x86-64.bin
Notes: • From V2.6.0, OneCLI provides the RPM package for Red Hat Enterprise Linux 6 and its later versions. By default, OneCLI RPM is installed in `/opt/lenovo/lnvgy-utl-lxce-onecli`. After installing OneCLI RPM, users can run OneCLI by inputting `OneCLI`. • To install OneCLI RPM, run `rpm -ivh lnvgy_utl_lxce_oneclixxx-x.x.x_rhel_x86-64.rpm`. • To update OneCLI RPM, run `rpm -Uvh lnvgy_utl_lxce_oneclixxx-x.x.x_rhel_x86-64.rpm`.		

Downloading and using OneCLI on Windows

This section describes how to download and use OneCLI on Windows.

Procedure

Step 1. Download the OneCLI zip file from Lenovo XClarity Essentials OneCLI Web site to the target server or to the system administrator workstation.

Step 2. Copy the OneCLI zip file to the desired directory.

Step 3. Decompress the OneCLI zip file by double-clicking it in Windows file explorer or using a decompression software.

Step 4. Right-click Windows Command Prompt and select **Run as administrator** to launch Windows Command Prompt.

Step 5. Switch to the directory in step 2, and run `OneCli.exe`. All options are displayed.

Collecting inventory and service data on Windows

This section describes how to collect inventory and service data on Windows. This procedure might take 15 – 45 minutes. The output result will be stored in the `%SystemDrive%\Lenovo_Support` directory. By default, `%SystemDrive%` is the C drive.

Procedure

Step 1. Download the self-extracting executable file from Lenovo XClarity Essentials OneCLI Web site to the target server.

Note: The file extension is EXE on the download page.

Step 2. In Windows file explorer, right-click the executable file, and select **Run as administrator** to launch the program. The inventory and service data are collected.

Downloading and using OneCLI on Linux

This section describes how to download and use OneCLI on Linux. The procedure is the same for both Red Hat and SUSE platforms.

Procedure

Step 1. Download the OneCLI zip file from Lenovo XClarity Essentials OneCLI Web site to the target server or to the system administrator workstation.

Step 2. Copy the tgz file to the desired directory and decompress it by running the following shell command.

```
tar -xvf lnvgy_utl_lxce_oneclixxx-xxx.tgz
```

Step 3. Run `./OneCli`. All options are displayed.

Collecting inventory and service data on Linux

This section describes how to collect inventory and service data on Linux. This procedure might take 15 – 45 minutes. The output result will be stored in the `/var/log/Lenovo_Support` directory.

Procedure

Step 1. Download the self-extracting executable file from Lenovo XClarity Essentials OneCLI Web site to the target server.

Note: The file extension is BIN on the download page.

Step 2. Run the following shell command to make the file executable.

```
chmod +x lnvgy_utl_lxceb_oneclixxx-xxx.bin
```

Step 3. Run the following command to collect inventory and service data.

```
./lnvgy_utl_lxceb_oneclixxx-xxx.bin
```

XClarity Essentials OneCLI applications and commands

Applications represent each of the XClarity Essentials OneCLI functions. Applications map to the latest individual tool level, making tool updates quick and easy. XClarity Essentials OneCLI currently has the following applications:

- inventory

Commands are used in conjunction with applications. Each application supports a different set of commands. Commands map to the current individual tool function level.

Application and command syntax

All of the XClarity Essentials OneCLI applications use the same basic application and command syntax, customizable by varying commands and parameters.

XClarity Essentials OneCLI application and command syntax

```
./Onecli <or> onecli.exe <application><command>[command option][connectoption]
```

Note: `./Onecli` is for Linux, and `onecli.exe` is for Windows.

To execute a XClarity Essentials OneCLI application, on a command line, enter the command string and press `Enter`.

Chapter 4. Inventory

The topics in this section describe how to use the OneCLI inventory application and commands to acquire system information for ThinkServer systems.

This table lists the inventory application commands.

Table 6. Inventory application commands

Command	**Description**
getdevices	Gets the supported device inventory list.
getinfor	Gets device inventory information.
formatlog	Translates the `getinfor` XML file content into other formats, such as HTML.
upload	Uploads the `getinfor` XML file content to a specified server.

getdevices command

Use the `getdevices` command to display all of the system device list. The output generated from this command can be used with the `getinfor` command.

getdevices command syntax

```
OneCli.exe inventory getdevices [<options>]
```

Table 7. getdevices command parameters

Parameter	Required/Optional	Notes
--output	Optional	By default, the log file output is saved to: `logs/Onecli-%PID%-%date%-%time%/` **Note:** Arguments for the --output parameter are case sensitive.

getinfor command

Use the `getinfor` command to generate device inventory information after using the `getdevices` command to obtain the device list. By default, the device list is output to the XML file.

getinfor command syntax

```
Onecli.exe inventory getinfor [--device <device name|all>] [--output <folder>]
[--upload [ftp://username:password@ftphost/path/]]
[--proxy userid:password@IP[:port]] [--htmlreport]
```

Table 8. getinfor command parameters

Parameter	Required/Optional	Notes
--device	Optional	**all** The default value. Displays all of the supported settings. **system_overview, processes** Gets the complete list of supported devices.
--output	Optional	• By default, the log file output is saved to: `logs/Onecli-%PID%-%date%-%time%/` • The `Onecli-inventory.zip` file is saved to this folder. If the files exist, they will be overwritten.
--upload	Optional	• If the **server address** is specified, then the output files are uploaded the specified server. • If not specified, there is no upload.
--proxy	Optional	Use proxy to connect to upload server. **Note:** Both IPv4 and IPv6 addresses are supported. Enclose IPv6 addresses in brackets. For example, `[FE80::3BA7:94FF:FE07:CBD0]`.
--htmlreport	Optional	Output contains HTML format.

formatlog command

Use the `formatlog` command to save the ZIP file that contains multiple XML files, which are created by the `getinfor` command. The `formatlog` command translates these files to another format, such as HTML or TXT.

formatlog command syntax

```
OneCli.exe inventory formatlog [--srcdata][--output][--hldec]
```

Table 9. formatlog command parameters

Parameter	Required/Optional	Notes
--srcdata	Required	
--output	Optional	By default, the output is saved to: `logs/Onecli-%PID%-%date%-%time%/` The `Onecli-update-compare.html` file is saved in this folder. If the file already exists, it will be overwritten.

upload command

Use the `upload` command to upload log files to a server. The XML log files are generated using the `getinfor` command. If the `upload` command is specified, the log file is automatically uploaded to the specified server.

upload command syntax

```
Onecli.exe inventory upload [--srcdata <file>] [--upload ftp://username:password@ftphost/path/]
[--proxy userid:password@IP<[:port]>]
```

Table 10. upload command parameters

Parameter	Required/Optional	Notes
--srcdata	Required	Used to identify the log file that will be formatted and uploaded to a server.
--upload	Required	• If **serveraddress** is specified, upload the output files to this server. • If not specified, there is no upload.
--proxy	Optional	Use proxy to connect to upload server. **Note:** Both IPv4 and IPv6 addresses are supported. Enclose IPv6 addresses in brackets. For example, [FE80::3BA7:94FF:FE07:CBD0].

Chapter 5. Troubleshooting and support

Use this section to troubleshoot and resolve problems with Lenovo XClarity Essentials OneCLI.

Known limitations

XClarity Essentials OneCLI has the following general limitation.

XClarity Essentials OneCLI System Overview page shows wrong OS suite type on Windows server 2012 series OS (Retain tip 95945)

The XClarity Essentials OneCLI System Overview page shows the wrong OS suite type for the Windows server 2012 series operating system: the suite type will be always shown as "Standard Edition" on the inventory page. For the Windows 8 and Windows Server 2012 operating systems, since the suite type is not supported by winAPI, refer to the MSDN at https://msdn.microsoft.com/en-us/library/ms724833%28d=printer,v=vs.85%29.aspx for information.

XClarity Essentials OneCLI cannot display Other Devices information on RHEL6/RHEL7/RHEL8 (Retain tip 91732)

XClarity Essentials OneCLI cannot parse the configuration file `/etc/sysconfig/hwconf` and collect "OtherDevice" information for RHEL6/RHEL7/RHEL8 without Kudzu support.

XClarity Essentials OneCLI shows the volumes' layout and status unknown on windows 2012 series OS (Retain tip 95943)

The XClarity Essentials OneCLI shows the volume layout and status as unknown for Windows 2012 series operating systems when the partition type is static. This is because logical disk management (LDM) was deprecated in favor of Storage Spaces for Windows 8 and Windows 2012. When XClarity Essentials OneCLI attempts to read LDM data from the Windows operating system for these properties, the XClarity Essentials OneCLI shows an unknown status for these two properties of a static disk.

XClarity Essentials OneCLI might show garbled or unreadable characters in some inventory results

The XClarity Essentials OneCLI acquires raw data from the system, some of which is random or unreadable by humans, and does not filter it prior to display. The unreadable characters are isolated occurrences that appear in line with readable text.

Return codes

XClarity Essentials OneCLI issues a return code to indicate either successful execution of a command or to indicate an error occurred while the program was running. A return code of zero indicates the operation succeeds, and a nonzero return code indicates an error.

To determine whether any errors occurred and when based on the associated timestamp, refer to one of the following log files:

- For Windows, review the `C:\Lenovo_Support\onecli.log` file.
- For Linux, review the `/var/log/Lenovo_Support/onecli.log` file.

OneCLI return codes table provides a complete list of all return codes.

Table 11. XClarity Essentials OneCLI common return codes

Return code	Decimal base	Description
0x00	0	Success.
0x01	1	Generic failure.

Table 11. XClarity Essentials OneCLI common return codes (continued)

Return code	Decimal base	Description
0x03	3	Invalid application.
0x04	4	Invalid command.
0x05	5	Invalid parameter.
0x06	6	Local file does not exist.
0x07	7	Invalid file.
0x08	8	Failed to create directory.
0x09	9	Failed to open file.
0x0A	10	Failed to read file.
0x0B	11	Failed to write file.
0x0C	12	Authentication failed.
0x0D	13	Connection failed.
0x0E	14	Ping failed.
0x0F	15	Upload failed.
0x10	16	Download failed.
0x11	17	Internal error.
0x12	18	Time-out.
0x13	19	Failed to get XCC account through KCS.
0x14	20	You are running on an IBM system. Do not use proxy tool in onecli extract path when set the executable binary of legacy ToolsCenter path in global.config.
0x15	21	LAN-over-USB device is disabled on BMC side. Enable it manually.
0x16	22	The BMC default internal IP conflicts with external machine. Correct the problem, and try again.
0x17	23	Failed to restart host system.
0x18	24	Failed to restart BMC.
0x19	25	Platform error.
0x1a	26	• For windows servers, LAN-over-USB device is not detected.. • For linux servers, some tools are not installed, including lsusb,lsmod,and modprobe.
0x1b	27	Failed to get driver information
0x1c	28	Failed to get machine type.
0x1e	30	Internal error of BMC.
0x1f	31	Failed to find applicable hardware component.

Table 11. XClarity Essentials OneCLI common return codes (continued)

Return code	Decimal base	Description
0x20	32	Failed to load LAN-over-USB device driver.
0x21	33	For windows servers: Failed to run commands without root permission. Switch to root user and try again. For linux servers: Failed to run commands without administrator permission. Switch to administrator user and try again.

Appendix A. Accessibility features for OneCLI

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Lenovo and accessibility

See the Lenovo Accessibility website at http://www.lenovo.com/lenovo/us/en/accessibility.html for more information about the commitment that Lenovo has to accessibility.

Accessibility

The following list includes the major accessibility features in Lenovo XClarity Essentials OneCLI:

- Can be operated using only the keyboard
- Communicates all information independent of color
- Supports the attachment of alternate output devices
- Provides online documentation in an accessible format

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

The command-line interface (CLI) is controlled by the keyboard.

You can use the following keyboard shortcuts from the graphical user interface:

Shortcut (Linux)	Shortcut (Windows)	Action
Alt+C	Alt+C	Close the graphical user interface.
Alt+N	Alt+N	Go to the next page.
Alt+P	Alt+P	Go to the previous page.
Tab	Tab	Go to the next control.
Shift+Tab	Shift+Tab	Move to the previous control.
Left arrow	Left arrow	Move back one character.
Right arrow	Right arrow	Move forward one character.
Backspace	Backspace	Delete the character to the left of the cursor.
Delete	Delete	Delete the character under the cursor.
Up arrow	Up arrow	Move focus and selection upwards through the radio buttons.
Down arrow	Down arrow	Move focus and selection downwards through the radio buttons.
Space	Space	Select or clear an option.

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Important notes

Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1 024 bytes, MB stands for 1 048 576 bytes, and GB stands for 1 073 741 824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

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Index