Lenovo ToolsCenter Suite CLI User's Guide

Version 1.0.0

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Note
Before using this information and the product it supports, read the information in “Notices” on page 71.

Edition notice

This edition applies to version 1.0.0 of ToolsCenter Suite CLI and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this publication

Lenovo ToolsCenter Suite CLI is a command line interface program that covers the server management scope and includes firmware configuration, system inventory, and miscellaneous functions. This guide provides information about how to download and use ToolsCenter Suite CLI.

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 ToolsCenter Suite CLI User's Guide*.

Table 1. Commonly used terms

Term	Definition
ASU	Advanced Setting Utility A utility that allows you to modify firmware settings from the command line on multiple operating-system platforms.
BIOS	Basic Input Output System The code that controls basic hardware operations, such as interactions with diskette drives, hard disk drives, and the keyboard.
BMU	Bare Metal Update Standard IPMI-compliant device for monitoring system sensors and surfacing sensor data.
CDM	Common Diagnostic Model Standard diagnostics subprofile of the CIM specification.

Table 1. Commonly used terms (continued)

Term	Definition
CIM	Common Information Model Standard developed by the Distributed Management Task Force for enterprise level modeling of computer systems.
CIM Object Manager (or CIM broker)	High level service in the operating system that manages the creation and life cycle of managed object data. The format of managed data conforms to the CIM specification.
CIM Provider	Platform specific management software that interfaces between a CIM object manager and any lower level platform interfaces.
CLI	Command Line Interface A type of computer interface in which the input command is a string of text characters.
CMM	Chassis Management Module A Flex System module that allows you to configure and manage all Flex System components that are installed.
CMPI	Common Management Programming Interface Programming API designed to bridge the differences between multiple CIMOM implementations and CIM provider APIs.
CMR	Conversion Management Routine
CNA	Converged Network Adapter An I/O device that combines the functionality of a host bus adapter (HBA) with that of a network interface controller (NIC).
DIMM	Dual Inline Memory Module A double SIMM (single inline memory module). Contains one or more random access memory (RAM) chips.
DSA	Dynamic System Analysis Strategic problem determination tool for data collection, fault detection and remediation.
Firefox	Open source browser from Mozilla.
Fix-ID	Unique identifier for updates.
FoD	Features on Demand A Windows Server 2012 feature that allows the install files for features to be removed from the operating system. This reduces the size of the operating system.

Table 1. Commonly used terms (continued)

Term	Definition
FTP	File Transfer Protocol A standard network protocol that is used for transferring files from one host to another over a TCP-based network.
GUI	Graphical User Interface A type of computer interface that presents a visual metaphor of a real-world scene, often of a desktop, by combining high-resolution graphics, pointing devices, menu bars and other menus, overlapping windows, icons and the object-action relationship.
HBA	Host Bus Adapter An integrated circuit adapter or circuit board that provides I/O processing and physical connectivity between a host system and storage devices or a network.
HTTP	Hypertext Transfer Protocol The set of rules utilized on the World Wide Web to transfer various types of files. Types of files can include graphics, audio, video, text, and multimedia.
IMM	Integrated Management Module Firmware that consolidates the service processor functionality, Super I/O, video controller, and remote presence capabilities in a single chip on the server system board. The IMM replaces the baseboard management controller (BMC) and Remote Supervisor Adapter II in IBM System x servers.
IOM	ISDN-oriented Modular Interface A system architecture and its bus used for communication between VLSI ICs for the lower layers of ISDN.
IPMI	Intelligent Platform Management Interface Industry standard interface for communications between management applications and baseboard management controllers.
IPMI SEL	Intelligent Platform Management Interface System Event Log Used to view System Event Log (SEL) entries.
iSCSI	Internet Small Computer System Interface An internet protocol based storage networking standard for linking data storage devices and transferring data.

Table 1. Commonly used terms (continued)

Term	Definition
KCS	Keyboard Controller Style Keyboard An interface that is used between a Baseboard Management Controller and payload processor in Intelligent Platform Management Interface architecture.
KMS	Key Management System A method for activating physical computers or virtual machines on a local network.
LED	Light Emitting Diode A two-lead semiconductor device that produces visible light when electric current passes through it.
LightPath	The light emitting diode (LED) indicators on each resource in your system provide status about informational and error events, location, and resource faults as well as other immediately required information.
MAC	Media Access Control sublayer of the data link layer (DLL) in the seven-layer Open Systems Interconnection (OSI) network reference model. It enables multiple terminals or network nodes to communicate within a multiple access network that incorporates a shared medium.
Multitool	Used to parse DSA logs to html and text views.
OOB	Out-of-Band Pertaining to user-specific data that has meaning only for connection-oriented (stream) sockets. The server generally receives stream data in the same order that it was sent. OOB data is received independent of its position in the stream (independent of the order in which it was sent).
PCIE	Peripheral Component Interconnect Express A high-speed serial expansion bus standard for connecting a computer to peripheral devices.
PXE	Preboot Execution Environment An industry standard target/server interface that allows networked computers that are not yet loaded with an operating system to be configured and booted remotely. PXE is based on Dynamic Host Configuration Protocol (DHCP).

Table 1. Commonly used terms (continued)

Term	Definition
RAS	Reliability, Availability, Serviceability IBM standard requirements for system design and operation.
SFTP	Simple File Transfer Protocol A file transfer protocol with a level of complexity between TFTP and FTP.
SOL	Serial Over LAN Protocol for enabling serial communication over TCP/IP using standard IPMI commands.
TCS	ToolsCenter Suite
uEFI	unified Extensible Firmware Interface Replaces BIOS as the interface between the operating system and platform firmware.
UTF8	8-bit Unicode Transformation Format A variable-length character encoding that can encode all possible characters in Unicode, using 8-bit code units.
UX	UpdateXpress
UXSP	UpdateXpress System Pack A package of updates that have been verified to work well together and can be updated together.
UXSPI	UpdateXpress System Pack Installer A software application that applies UpdateXpress System Packs (UXSPs) and individual updates to your system.
VPD	Vital Product Data Configuration and informational data that is associated with a particular set of hardware or software and allows for administration from the system or network level, such as, but not limited to serial number and FRU.
WoL	Wake on LAN A technology that allows a computer to be powered on or awakened from sleep mode using a network message.

Publications and related information

To view a PDF file, you need Adobe Acrobat Reader, which can be downloaded for free from the Adobe website at www.adobe.com/products/acrobat/readstep.html.

Information centers and topic collections

The Lenovo ToolsCenter for System x and BladeCenter Information Center provides information for System x and BladeCenter tools.

Publications

The latest version of the *Lenovo ToolsCenter Suite CLI User's Guide* can be downloaded from Lenovo ToolsCenter Suite CLI for Lenovo x86 servers.

This publication provides information about how to download and use Lenovo ToolsCenter Suite CLI to collect system information, configure firmware settings, and update firmware.

Web resources

The following websites and information center topics are resources for using ToolsCenter Suite CLI.

Websites

- Lenovo ToolsCenter Suite CLI for Lenovo x86 servers

  https://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-TCLI

  Use this website to download the Lenovo ToolsCenter Suite CLI tool and documentation.
- Lenovo ToolsCenter for Lenovo x86 servers

  http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-CENTER

  Use this website to download tools that support System x and BladeCenter products.
- Lenovo Flex System Compute Nodes

  http://pic.dhe.ibm.com/infocenter/flexsys/information/topic/com.ibm.acc.common.nav.doc/compute_blades.html

  Use this web page to obtain information about Flex System Compute Nodes.
- Lenovo BladeCenter Support products and services

  http://shop.lenovo.com/us/en/systems/servers/blades/bladecenter/

  Use this website to obtain information about online technical support, downloads and drivers, and RETAIN tips for BladeCenter products.
- Lenovo Server and Storage Resource Library

  http://shop.lenovo.com/us/en/systems/server-library/

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

  http://www.lenovo.com/us/en/serverproven/

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

  http://support.lenovo.com/us/en/

  Use this website to obtain service and support information for Lenovo products.
- IBM PureSystems Redbooks

http://www.redbooks.ibm.com/portals/puresystems/

Use this website to find published Redbooks on Flex Systems.

- Using System x Features on Demand Redbook

  http://www.redbooks.ibm.com/redbooks.nsf/RedpieceAbstracts/redp4895.html?Open

  Use this website to download the *Using IBM System x Features on Demand* publication.

Forums

- Lenovo Forums

  https://forums.lenovo.com

  Use this website to access the Lenovo Discuss forums, Knowledge Base, Blog, Support, and Product web pages.

- developerWorks Forums

  https://www.ibm.com/developerworks/community/forums/html/forum?id=11111111-0000-0000-0000-000000002691#topicsPg=0

  Use this website on ibm.com to learn about various forums that are available to discuss technology-related and product-related issues pertaining to System x hardware and software products. This website includes a link for obtaining the forum using a Rich Site Summary (RSS) feed.

- IBM BladeCenter Forum

  https://www.ibm.com/developerworks/community/forums/html/forum?id=11111111-0000-0000-0000-000000000819

  Use this website on ibm.com to learn about various forums that are available to discuss technology-related and product-related issues pertaining to BladeCenter hardware and software products. This website includes a link for accessing the forum using a Rich Site Summary (RSS) feed.

Chapter 1. Technical overview

Lenovo ToolsCenter Suite CLI is a collection of server management tools that utilize a command line interface program to manage firmware, hardware, and operating systems for CMM, IMM, and Flex-IOM based systems using the applications listed in the table below. ToolsCenter Suite CLI is comprised of individual ToolsCenter application modules that are easily updated. The first release of Lenovo ToolsCenter Suite CLI replaces the Advanced Settings Utility and Online Dynamic System Analysis tools and includes the ToolsCenter Suite CLI Portable Edition.

You can run multiple ToolsCenter Suite CLI binaries on a client operating system while using ToolsCenter Suite CLI to manage multiples servers.

ToolsCenter Suite CLI provides multinode support for IMM and supports In-Band and Out-of-band modes for both single and multiple partitions within one complex.

The following table lists the ToolsCenter Suite CLI applications.

Table 2. ToolsCenter Suite CLI applications

Application	Description
config	• View the current system configuration settings. • Create and change configuration settings for IMM-based systems.
inventory	• Acquire system information for IMM and CMM-based systems. • Inventory and compares devices.
misc	• logmgr • ospower • Reboot IMM. • Reboot CMM. • Reboot IOM. • usblan

To get started using Lenovo ToolsCenter Suite CLI, see Chapter 3, “Downloading and using ToolsCenter Suite CLI,” on page 7.

Chapter 2. Hardware and software requirements

Lenovo ToolsCenter Suite CLI has specific hardware and operating system requirements. Before you begin using ToolsCenter Suite CLI, review the topics in this section.

Hardware requirements

ToolsCenter Suite CLI supports IMM2, CMM, and Flex-IOM based systems. To successfully run ToolsCenter Suite CLI, the system on which you install ToolsCenter Suite CLI must meet certain hardware requirements.

Disk space requirements

To install ToolsCenter Suite CLI, the system must have a minimum of 300 MB of disk space.

Memory requirements

It is recommended that ToolsCenter Suite CLI 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 ToolsCenter Suite CLI.

Supported Intel and AMD processor-based systems

ToolsCenter Suite CLI supports the following Intel and AMD processor-based systems using Dynamic System Analysis:

Table 3. Supported IBM systems

Server	Machine type
IBM BladeCenter HS23	7875, 1929
IBM BladeCenter HS23E	8038, 8039
IBM Flex System x220 Compute Node	7906, 2585
IBM Flex System x222 Compute Node	7916
IBM Flex System x240 Compute Node	7863, 8737, 8738, 8956
IBM Flex System x280 X6/x480 X6/x880 X6	4259, 7903
IBM Flex System x440 Compute Node	7917
IBM iDataPlex dx360 M4 server	7912, 7913
IBM iDataPlex dx360 M4 Water Cooled server	7918, 7919
IBM NeXtScale nx360 M4	5455, 5456
IBM System x3100 M4	2582
IBM System x3100 M5	5457
IBM System x3250 M4	2583
IBM System x3250 M5	5458
IBM System x3300 M4	7382

Table 3. Supported IBM systems (continued)

Server	Machine type
IBM System x3500 M4	7383
IBM System x3530 M4	7160
IBM System x3550 M4	7914
IBM System x3630 M4	7158, 7159
IBM System x3650 M4	7915
IBM System x3650 M4 BD	5466
IBM System x3650 M4 HD	5460
IBM System x3750 M4	8722, 8733
IBM System x3750 M4	8752, 8718
IBM System x3850 X6/x3950 X6	3837, 3839

Table 4. Supported Lenovo systems

Server	Machine type
Lenovo Flex System x240 M4 Compute Node	7162, 2588
Lenovo Flex System x240 M5 Compute Node	2591, 9532
Lenovo Flex System x280 X6/x480 X6/x880 X6 Compute Node	4258, 7196
Lenovo Flex System x440	7167, 2590
Lenovo NeXtScale nx360 M5	5465
Lenovo NeXtScale nx360 M5	5467
Lenovo System x3500 M5	5464
Lenovo System x3550 M5	5463
Lenovo System x3650 M5	5462
Lenovo System x3750 M4	8753
Lenovo System x3850 X6/x3950 X6	6241

Server options

ToolsCenter Suite CLI supports the following third-party vendors:

- Brocade
- Broadcom
- Emulex
- Fusion-IO
- Intel
- LSI
- Mellanox
- QLogic

Software requirements

The information in this section describes the required software for ToolsCenter Suite CLI.

To run ToolsCenter Suite CLI, you must have administrator or root-equivalent operating system privileges.

Required device drivers

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

The following list provides information about collecting device drivers, firmware levels, and log data.

- 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 ToolsCenter Suite CLI. If it is not loaded, run **`modprobe sg`**.
- To collect Broadcom Ethernet firmware levels, the Broadcom NetXtreme Gigabit Ethernet drivers must be installed. The `tg3` driver that is provided by default in current Linux distributions does not export this information. These drivers are available for download from the ToolsCenter Suite CLI at www-947.ibm.com/support/entry/portal/support.
- To collect LSI Logic 1020/1030 SCSI Controller and RAID information, the `mptctl` driver must be loaded. Run **`lsmod`** and verify that the `mptctl` driver is loaded before running Dynamic System Analysis. If it is not loaded, run **`modprobe mptctl`**.
- To collect Emulex HBA information from a Linux system, the emulex driver and utility (corekit) must be installed. Run **`lsmod`** and verify that `lpfc` and `lpfcdfc` are loaded before running ToolsCenter Suite CLI.
- To collect Service Processor logs, configuration, and environmental data, the appropriate Service Processor driver must be installed. These drivers are available for download from the IBM Support Portal at www-947.ibm.com/support/entry/portal/support.
- (Linux only) To update firmware using ToolsCenter Suite CLI on 64-bit Linux operating systems, the 32-bit compatibility library, `compat-libstdc++`, must be installed. You can use the following command to determine if this library is installed: `rpm -qa | grep compat-libstdc++-296`.
- (Linux only) To collect ServeRAID information for ServeRAID controller 7t, 8i, 8k-l, 8k, 8s on systems running Red Hat 5, `libstdc++.so.5` must be installed.
- 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.
- To use the UpdateXpress comparison analysis feature, the system on which the analysis is performed must have an Internet connection. UpdateXpress versions 4.02 and later are supported.

Supported browsers

To view the information that is collected by ToolsCenter Suite CLI, you must use one of the following Web browsers.

- Internet Explorer 6.0 Service Pack 1 or later
- Mozilla 1.4.0 or later
- Firefox 1.04 or later

Supported operating systems

Use the information in this section to identify operating systems that are supported by ToolsCenter Suite CLI.

Windows

ToolsCenter Suite CLI supports the following Windows operating systems.

Microsoft Windows Server 2012 Editions

- Microsoft Windows Server 2012 (x86-64)
- Microsoft Windows Server 2012 R2 (x86-64)

Microsoft Windows Server 2008 Editions

- Microsoft Windows Server 2008 (x86-32/x86-64)
- Microsoft Windows Server 2008 R2 (x86-64)

Linux

ToolsCenter Suite CLI supports the following Linux operating systems.

Red Hat

- Red Hat Enterprise Linux 7 Server (x64) Editions (up to U1)
- Red Hat Enterprise Linux 6 Server (x86 & x64) Editions (up to U6)
- Red Hat Enterprise Linux 5 Server (x86 & x64) Editions (up to U10)

SUSE

- SUSE Linux Enterprise Server 12 (x64)
- SUSE Linux Enterprise Server 11 (x86 & x64) (SP4)
- SUSE Linux Enterprise Server 10 (x86 & x64) (SP4)

ESXi

ToolsCenter Suite CLI supports the following versions of the ESXi operating systems on a remote target:

- ESXi 6.0 (up to U1)
- ESXi 5.5 (up to U3)

Chapter 3. Downloading and using ToolsCenter Suite CLI

The topics in this section describe how to download and use Lenovo ToolsCenter Suite CLI. ToolsCenter Suite CLI is a command line interface program that does not require installation.

Using ToolsCenter Suite CLI for Windows

This procedure describes how to download and extract ToolsCenter Suite CLI for Windows.

About this task

ToolsCenter Suite CLI is available for download from: Lenovo ToolsCenter Suite CLI for Lenovo x86 servers.

Procedure

1. Select a ToolsCenter Suite CLI package for your operating system:
   - `lnvgy_utl_onecli_tcli01f-1.0.0_winsrvr_i386.zip`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_winsrvr_x86-64.zip`
2. Copy the ToolsCenter Suite CLI binary file to the target server or to a removable medium that has been inserted into the target machine.
3. After downloading the appropriate ToolsCenter Suite CLI zip file, manually extract the files.
4. Open a Command Prompt window.
5. On the command line, enter `cd` to change to the directory where the ToolsCenter Suite CLI binary file is located: `c:\onecli`.
6. Enter `OneCli.exe` and press the `enter` key. You are now ready to begin using ToolsCenter Suite CLI.

Using ToolsCenter Suite CLI for Linux

This procedure describes how to download and extract ToolsCenter Suite CLI for Linux.

About this task

ToolsCenter Suite CLI is available for download from: Lenovo ToolsCenter Suite CLI for Lenovo x86 servers.

Procedure

1. Select a ToolsCenter Suite CLI package for your Linux operating system:
   - `lnvgy_utl_onecli_tcli01f-1.0.0_rhel5_i386.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_rhel5_x86-64.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_rhel6_i386.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_rhel6_x86-64.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_rhel7_x86-64.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_sles10_i386.tgz`
   - `lnvgy_utl_onecli_tcli01f-1.0.0_sles10_x86-64.tgz`

- lnvgy_utl_onecli_tcli01f-1.0.0_sles11_i386.tgz
- lnvgy_utl_onecli_tcli01f-1.0.0_sles11_x86-64.tgz
- lnvgy_utl_onecli_tcli01f-1.0.0_sles12_x86-64.tgz

2. Copy the ToolsCenter Suite CLI binary file to the target server or to a removable medium that has been inserted into the target machine.
3. After downloading the appropriate ToolsCenter Suite CLI TGZ file, issue the **tar -xf binary_name** command to complete the file extraction.
4. Open a Linux Terminal window.
5. On the command line, enter cd to change to the directory where the ToolsCenter Suite CLI binary file is located.
6. Enter ./OneCli and press the enter key. You are now ready to begin using ToolsCenter Suite CLI.

   Note: Do not extract the files in Windows and then copy the extracted files to Linux. There is link information between the *.o files, and extraction in Windows will cause this information to be lost.

ToolsCenter Suite CLI applications and commands

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

- config
- inventory
- misc
  - logmgr
  - ospower
  - rebootimm
  - rebootcmm
  - rebootiom
  - usblan

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 ToolsCenter Suite CLI applications use the same basic application and command syntax, customizable by varying commands and parameters.

ToolsCenter Suite CLI 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 ToolsCenter Suite CLI application, on a command line, enter the command string and press Enter.

Chapter 4. Configuration

The topics in this section describe how to use the Lenovo ToolsCenter Suite CLI config application and commands to view the current system configuration settings and make changes to IMM2 and uEFI. The saved configuration information can be used to replicate or restore other systems. The config application also manages system certification.

For information about specific config application commands, refer to the following sections:

- "Commands that display configuration settings" on page 11
- "Commands that change or set system configuration settings" on page 22
- "Commands that save, replicate, and restore configuration settings" on page 26
- "Commands for certificate management" on page 32

Configuration setting

A configuration setting has three components: groupname, configname, and instance.

configuration setting format:

```
<groupname>.<configname>[.instance]
```

This table provides a description of the configuration setting components.

Table 5. Configuration setting components

Component	Required/Optional	Description
groupname	Required	• Required for all settings. • Unique identifier of a group; cannot be duplicated. • Use the **showgroup** command to view all of the supported groups in an instance.
configname	Required	• Required for all settings. • Unique identifier of a configuration name; cannot be duplicated within a group, but can be duplicated in different groups.
instance	Optional	• The instance ID of a setting instance. • Values start from 1 and are in an ascending order. • For more information, see "Instance and non-instance settings."

Instance and non-instance settings

An instance setting includes the [.instance] component, otherwise it is considered a non-instance setting. An instance setting requires an instance ID.

Instance settings have a minimum and maximum number of allowed instances. To determine which settings have instances and the number of instances allowed, use the **showvalues** command with the **--instances** parameter. The output will provide the number of instances.

Single instances do not have an instance number and appear as a non-instance setting. The output of the **showvalues** command has the maximum number of instances as *single*. For example, the `iSCSI.initiatorName` is a single instance.

You can use the **show** or **set** commands for single instances. This list provides some examples of single/non-instance settings:

- IMM.HttpPortControl
- IMM.RetryLimit
- IMM.LanOverUsbIMMIP
- IMM.NetworkSettingSync
- SYSTEM_PROD_DATA.SysInfoProdName
- AdvancedRAS.MachineCheckRecovery
- SystemRecovery.POSTWatchdogTimer
- Processors.TurboMode

If there are multiple instances, the settings will be shown multiple times. Multiple instances can be viewed using the **show** command. For example, if there are three user accounts in an IMM system, then you will see three *loginid* settings as shown in the following list.

- IMM.Loginid.1
- IMM.Loginid.2
- IMM.Loginid.3

However, if an IMM system has no user account, the **show** command will not display anything.

Other instance settings include the following examples:

- IMM.UserAccountManagementPriv.1
- IMM.Community_Name.1
- IMM.RemoteConsolePriv.1
- iSCSI.AttemptName.1
- VPD.CompVPD_PartNumber.1
- PXE.NicPortPxeMode.1

Creating and deleting instances

This topic describes how to create and delete instances.

About this task

There are restrictions for creating and deleting instances of settings that are part of a record. For more information about these restrictions, see “Record management” on page 11.

Procedure

- To create an instance, use the **set** command. If an instance does not already exist, and the instance number is between 1 and the maximum number of allowed instances, the instance is automatically created and set to the value specified in the **set** command.
- To delete an instance, use the **delete** command. This command deletes an instance, if deleting the instance does not cause the number of instances for that setting to go below the minimum number of allowed instances for the setting.

Record management

Settings that have instances can be part of a record. A record is a group of settings that have dependencies on each other. For example, a user ID and a password are dependent on each other. A user ID must have a password and a password must have a user ID. Therefore, they are grouped in the same record.

Each record has a setting that is defined as the *record key*. It represents the primary setting for a record.

Settings that are part of a record are marked as:

- *recordKey*, if the setting is the record key, or
- *recordKey=key_name*, if the setting is part of a record but is not the key

Use the **showvalues** command with the **--instances** parameter to determine if a setting is part of a record. To see examples of the **showvalues** output for settings that are part of a record, see "showvalues command" on page 14.

All of the settings in a record are created or deleted as a group. To create an instance of a record, you must first perform a **set** on the key setting of that record. This automatically creates an instance and sets it to the default value for all of the other settings in that record. For more information about creating or deleting a setting instance, see "Creating and deleting instances" on page 10 and "set command" on page 22.

Commands that display configuration settings

The topics in this section provide detailed information about how to use the config application and commands to display different aspects of the system configuration settings.

Table 6. Commands that display configuration settings

Command	Description
show	Displays the value of one or more settings.
showvalues	Displays possible setting values.
showdefault	Displays the default setting values.
comparedefault	Displays the default and the current setting values.
showdes	Displays the setting detail information.
showgroups	Displays groups of settings.
nodes	Displays node numbers.

Setting classes

Classes are used to indicate groups of settings for commands that support functionality for multiple settings.

Commands that support classes are:

- show
- showvalues
- showdefault
- comparedefault
- showdes
- loaddefault

This table lists setting classes and their descriptions.

Table 7. Settings classes

Class	Description	Example
all	Includes all of the settings.	
authentication	All of the settings classified as authentication settings. This includes: • passwords • userIDs • authority-related settings	This example lists the settings defined by authentication, including password settings. Password settings are not displayed unless the **showvalues** command is used with the password class. `Onecli.exe config showvalues authentication`
backupctl	• Lists all of the settings that are not restored when you run the **restore** command. • An additional flag is required for these settings to be included during a **restore** operation. For more information, see "restore command" on page 29. • Class filter for the **show**, **showvalues**, and **showdefault** commands.	This example lists the settings that are not restored if saved. `Onecli config show backupctl`
noreplicate	• Lists all of the settings that are not replicated when you run the **replicate** command. These settings are usually unique to each system. • Class filter for the **show**, **showvalues**, and **showdefault** commands.	This example lists the settings that are not replicated. `Onecli config show noreplicate`

Table 7. Settings classes (continued)

Class	Description	Example
password	• Lists all of the settings that are classified as password settings. • Password setting values are not displayed using the **show** command. • Use the `password` class with the **showvalues** and the **showdefault** commands.	This example list the settings defined by the password settings. Password settings are displayed with the **showvalues** command and the `password` class. `Onecli config showvalues password`
readonly	• Includes all of the settings that are read-only. • These are settings that you cannot change.	
writeonly	• Includes all of the settings that are write-only. • These are settings that you can change but cannot be read, such as passwords.	

show command

Use the **show** command to view the current value of one or more settings.

show command syntax:

```
OneCli.exe config show [command option] [--output<folder>][connection option]
```

Table 8. show command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.

Table 8. show command parameters (continued)

Parameter	Required/Optional	Notes
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is --n1. **Note:** Use only one connection option in a command line entry.

Example of the show command:

```
OneCli.exe config show --imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
IMM.Cert_CSR_Export_Format=DER
IMM.SSH_SERVER_KEY=Installed
IMM.PowerRestorePolicy=Restore
IMM.PSUOversubscriptionMode=NonRedundant With Throttling
IMM.AutoROMPromotion=Enabled
......
Memory.Sparing=Disable
Memory.MemorySpeed=Max Performance
......
Processors.PerCoreP-state=Disable
Processors.CoresinCPUPackage=All
......
LegacySupport.RehookINT19h=Disabled
LegacySupport.LegacyThunkSupport=Enabled
```

showvalues command

Use the **showvalues** command to list all of the possible values for one or more settings. **showvalues** also lists the suppressed, greyed-out dependency information.

showvalues command syntax:

```
OneCli.exe config showvalues[command option][--output<folder>][connection
option]
```

Table 9. showvalues command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
–output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The “x” represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Example of the showvalues command:

```
OneCli.exe config showvalues
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Find IMM usblan ip address is 169.254.95.118
Connected to IMM IP address: 169.254.95.118
IMM.SSL_HTTPS_SERVER_CSR=*generate=export
IMM.PowerRestorePolicy=Always Off=<Restore>=Always On
IMM.ThermalModePolicy=<Normal>=Performance
IMM.FrontButton_PWR_Perm=Disabled=<Enabled>
IMM.ManufacturingCertInfo=char[] minchars=0 maxchars-47 pattern=^[a-zA-Z0-9./+]
{0,47}$default=""
......
Power.S3Enable=<Disble>=Enable
This setting is suppressed if the result of the following expression is true: "
( Power.S3Enable == Disable ) "
Memory.CKSelfRefresh=<AUTO>=L1: CK_DRIVEN=L2: CK_TRI_STATE=L3: CK_LOW=L4: CK_HIGH

This setting is suppressed if the result of the following expression is true: "
( ( Memory.MemoryPowerManagement
== Automatic ) || ( Memory.MemoryPowerManagement == Disable ) ) "
......
This setting is readonly if the result of the following expression is true: "
( ! ( OperatingModes.ChooseOperatingMode == Custom Mode ) ) "
......
```

```
SYSTEM_PROD_DATA.SysInfoProdName=char[] minchars=0 maxchars=29
SYSTEM_PROD_DATA.SysInfoProdIdentifier=char[] minchars=0 maxchars=64 default=
"System X"
SYSTEM_PROD_DATA.SysInfoProdIdentifierEx=char[] minchars=0 maxchars=128
default="System X"
```

showdefault command

Use the **showdefault** command to show the default values of one or more settings.

showdefault command syntax:

```
OneCli.exe config showdefault[command option][--output<folder>][connection option]
```

Table 10. showdefault command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Note: Some settings do not have a default value and will not be included in the list.

Example of the showdefault command:

```
OneCli.exe config showdefault
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Find IMM usblan ip address is 169.254.95.118
```

```
Connected to IMM IP address: 169.254.95.118
IMM.SMTP_Authentication=Disabled
IMM.SMTP_UserName=
IMM.SMTP_Password=
IMM.SMTP_AuthMethod=CRAM-MD5
IMM.SMTP_ReversePath=
IMM.Select_LDAP_Servers=Use Pre-Configured LDAP Servers

......

Processors.CoresinCPUPackage=All
Processors.QPILinkFrequency=Max Performance
Power.Power_ActiveEnergyManager=Capping Enabled
Power.PowerPerformanceBias=Platform Controlled
Power.PlatformControlledType=Efficiency - Favor Performance
Power.WorkloadConfiguration=Balanced
DevicesandIOPorts.ActiveVideo=Onboard Device
DevicesandIOPorts.PCI64-BitResourceAllocation=Enable
DevicesandIOPorts.MMConfigBase=Auto
DevicesandIOPorts.IntelVTforDirectedIOVT-d=Enable
DevicesandIOPorts.COMPort1=Enable
......
```

comparedefault command

Use the **comparedefault** command to compare the current values to the default values of one or more settings.

comparedefault command syntax:

```
OneCli.exe config comparedefault[command option][--output<folder>]
[connection option]
```

Table 11. comparedefault command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
–output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.

Table 11. comparedefault command parameters (continued)

Parameter	Required/Optional	Notes
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is --n1.

Note: Some settings do not have a default value and will not be included in the list.

Example of the comparedefault command:

```
OneCli.exe config comparedefault imm --imm USERID:PASSWORD@10.240.252.102
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address: 10.240.252.102
IMM.MinPasswordLen=5&lt;0>
IMM.PwChangeInterval=0<0>
IMM.PwMaxFailure=5<5>
IMM.PwDiffChar=0<2>
IMM.DefPasswordExp=Disabled<Disabled>
IMM.FirstAccessPwChange=Disabled<Disabled>
IMM.RemoteAlertRecipient_Status.1=Enabled
IMM.RemoteAlertRecipient_Status.2=Enabled

......
```

The value contained in the "<>" is the default value, while the other value is current setting value.

showdes command

Use the **showdes** command to view a detailed description of one or more settings. For uEFI settings, the detailed description for this command is the same information that you access when you press F1 during startup.

showdes command syntax:

```
OneCli.exe config showdes[command option][--output<folder>][connection
option]
```

Table 12. showdes command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Example of the showdes command:

```
OneCli.exe config showdes imm --imm USERID:PASSORD@10.240.252.102
```

This is the output generated from this example:

```
IMM.IMMInfo_Location: IMM Location

Help for IMM Location
---------------------
Configure the "IMM Information", "location" setting.


IMM.IMMInfo_RoomId: IMM RoomId

Help for IMM RoomId
-------------------
Configure the "IMM Information", "RoomId" setting.


IMM.IMMInfo_RackId: IMM RackId

Help for IMM RackId
-------------------
Configure the "IMM Information", "RackId" setting.
......
```

showgroups command

Use the **showgroups** command to list the setting groups that are available on a server.

showgroups command syntax:

```
OneCli.exe config showgroups[--output<folder>][connection option]
```

Table 13. showgroups command parameters

Parameter	Required/Optional	Notes
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Note: The **showgroups** command does not require any command options.

Example of the showgroups command:

```
OneCli.exe config showgroups imm --imm USERID:PASSORD@10.240.252.102
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI
version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address: 10.240.252.102
UEFI
 - AdvancedRAS
 - BackupBankManagement
 - DevicesandIOPorts
 - DiskGPTRecovery
 - LegacySupport
 - Memory
 - Node1
 - OperatingModes
 - POSTAttempts
 - Power
 - Processors
 - SystemRecovery
BootModes
BootOrder
BroadcomGigabitEthernetBCM5720-910
 - BroadcomGigabitEthernetBCM5720-000AF72567E6
 - BroadcomGigabitEthernetBCM5720-000AF72567E7
IMM
LSIMegaRAIDConfigurationTool-070
PXE
SYSTEM_PROD_DATA
SecureBootConfiguration
UEFIMisc
VPD
iSCSI
```

The support group includes:

- uEFI
- BootModes
- BootOrder
- IMM
- PXE
- SYSTEM_PROD_DATA
- SecureBootConfiguration
- UEFIMisc
- VPD
- iSCSI

The subgroups of uEFI are:

- AdvancedRAS
- BackupBankManagement
- DevicesandIOPorts
- DiskGPTRecovery
- LegacySupport
- Memory
- Node1
- OeratingModes
- POSTAttempts
- Power
- Processors
- SystemRecovery

nodes command

Use the **nodes** command to detect the available nodes in the current system.

nodes command syntax:

```
OneCli.exe config nodes[--output<folder>][connection option]
```

Table 14. nodes command parameters

Parameter	Required/Optional	Notes
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection options	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **Note:** Use only one connection option in a command line entry.

Notes:

- The **nodes** command can be used on a multinode or a single-node system.
- On a single node system, 1 is always reported.

- On a multinode system, the available number of nodes is reported.

Example of the nodes command:

```
OneCli.exe config nodes
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
System Nodes : 1
```

Commands that change or set system configuration settings

The topics in this section provide detailed information about how to use the config application and commands to change and set the system configuration settings.

Table 15. Commands that change and set configuration settings

Command	Description
set	Changes a setting value to a new value.
loaddefault	Changes a setting value to the default value.
createuuid	Creates a uuid value and creates the setting.
delete	Deletes a setting instance group.

set command

Use the **set** command to create a setting or to change the value of a setting. The **set** command also creates an instance, when an instance number does not exist and if the instance value is less than or equal to the maximum number of allowed instances for a setting.

For more information about instances, see "Instance and non-instance settings" on page 9.

set command syntax:

```
OneCli.exe config set <settingname> <settingvalue>[--output<folder>]
[connection option]
```

Table 16. set command parameters

Parameter	Required/Optional	Notes
settingname	Required	The **settingname** parameter is required for changing a setting value.
settingvalue	Optional	The **settingvalue** parameter is the new value for the setting that is being changed.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.

Table 16. set command parameters (continued)

Parameter	Required/Optional	Notes
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is --n1.

Notes:

- If a **settingvalue** is blank, enter a value in quotes.
- If a **settingname** is a valid setting instance which did not exist before, the **set** command will create a setting instance.

Example of the set command:

```
OneCli.exe config set IMM.DST Off --imm USERID:PASSORD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI
version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
IMM.DST=Off
Waiting for command completion status.
Command completed successfully.
```

loaddefault command

Use the **loaddefault** command to load the default values of one or more settings.

loaddefault command syntax:

```
OneCli.exe config loaddefault[command option][--output<folder>][connection option]
```

Table 17. loaddefault command parameters

Parameter	Required/Optional	Notes
command option	Optional	**all** Default value. Displays all of the supported settings. **group name** Displays the settings that belong to a group name. **setting name** The setting name value.
–output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The “x” represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Example of the loaddefault command:

```
OneCli.exe config loaddefault BootModes.SystemBootMode
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Find IMM usblan ip address is 169.254.95.118
Connected to IMM IP address: 169.254.95.118
BootModes.SystemBootMode=UEFI Mode
Waiting for command completion status.
Command completed successfully.
```

createuuid command

Use the **createuuid** command to generate and set the Universally Unique Identifier.

createuuid command syntax:

```
OneCli.exe config createuuid <uuidsetting> [--output<folder>][connection option]
```

Table 18. createuuid command parameters

Parameter	Required/Optional	Notes

uuidsetting	Required	The setting name is:
		`SYSTEM_PROD_DATA.`
		`SysInfoUUID`

--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection options	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Note: The value of the uuid created by the **createuuid** command depends on the time slot and the system information. Therefore, each time this command is run, you will get different setting values.

Example of the creatuuid command:

```
OneCli.exe config createuuid SYSTEM_PROD_DATA.SysInfoUUID
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI
version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Find IMM usblan ip address is 169.254.95.118
Connected to IMM IP address: 169.254.95.118
SYSTEM_PROD_DATA.SysInfoUUID=8037729c1e35b7010ac700059a3c7a00
Waiting for command completion status.
Command completed successfully.
```

delete command

Use the **delete** command to delete an instance of a setting.

delete command syntax:

```
OneCli.exe config delete <setting_instance> [--output<folder>][connection option]
```

Table 19. delete command parameters

Parameter	Required/Optional	Notes
setting_instance	Required	A unique value is required for this parameter.

Table 19. delete command parameters (continued)

Parameter	Required/Optional	Notes
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Note: The **`delete`** command is used only for a setting instance. It does not work for a normal setting.

Example of the delete command:

```
OneCli.exe config delete imm.loginid.6
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Find IMM usblan ip address is 169.254.95.118
Connected to IMM IP address: 169.254.95.118
Deleting imm.loginid.6
Waiting for command completion status.
Command completed successfully.
```

Related concepts:

"Instance and non-instance settings" on page 9
provides more information about setting instances.

Commands that save, replicate, and restore configuration settings

The topics in this section provide detailed information about how to use the config application and commands to save, replicate, and restore system configuration settings and how to run commands in batch mode.

Table 20. Commands that save, replicate, and restore a system

Command	Description
save	Saves the current settings.
replicate	Replicates the saved setting value to another system.
restore	Restores a saved setting value to the current system.
batch	Runs multiple **`config`** commands in a batch file.

save command

Use the **save** command to save all of the settings to a file.

save command syntax:

```
OneCli.exe config save --file<savetofilename>[--output<folder>][connection option]
```

Table 21. save command parameters

Parameter	Required/Optional	Notes
--file	Required	The file name where settings and values are stored. ToolsCenter Suite CLI reads the setting from the system and then stores the setting and value in the file.
–output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The “x” represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Example of the save command:

```
OneCli.exe config save --file saved.txt --imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Warning: Setting IMM.NTPHost1 has an invalid value and will not be saved.
Warning: Setting IMM.NTPHost2 has an invalid value and will not be saved.
Warning: Setting IMM.NTPHost3 has an invalid value and will not be saved.
Warning: Setting IMM.NTPHost4 has an invalid value and will not be saved.
Settings saved to saved.txt
```

The format of the content in the saved file is:

```
<settingname1>=<settingvalue1>
<settingname2>=<settingvalue2>
<settingname3>=<settingvalue3>
```

This is an example of the `saved.txt` file output:

```
IMM.PowerRestorePolicy=Restore
IMM.ThermalModePolicy=Normal
IMM.PowerOnAtSpecifiedTime=0:0:0:0:0
IMM.MinPasswordLen=0
IMM.PwChangeInterval=0
```

```
IMM.PwMaxFailure=5
IMM.PwDiffChar=0
IMM.DefPasswordExp=Disabled
IMM.FirstAccessPwChange=Disabled
```

replicate command

Use the **replicate** command to replicate all of the settings in the configuration file.

replicate command syntax:

```
OneCli.exe config replicate --file<filename>[--output<folder>]
[connection option]
```

Table 22. replicate command parameters

Parameter	Required/Optional	Notes
--file	Required	• The file name for the saved settings and values to be stored. • ToolsCenter Suite CLI reads the setting and value from the file and applies it to the system.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Example of the replicate command:

```
OneCli.exe config replicate --file saved.txt --imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
IMM.PowerRestorePolicy=Restore
IMM.ThermalModePolicy=Normal
IMM.PowerOnAtSpecifiedTime=0:0:0:0:0
IMM.MinPasswordLen=0
IMM.PwChangeInterval=0
IMM.PwMaxFailure=5
IMM.PwDiffChar=0
IMM.DefPasswordExp=Disabled
IMM.FirstAccessPwChange=Disabled
......
Waiting for command completion status.
IMM reported the following errors.
Failed to set the following settings:
```

```
    IMM.RemoteAlertRecipient_CriticalAlertsCategory (IMM Error code : 10)
    IMM.RemoteAlertRecipient_SystemAlertsCategory (IMM Error code : 10)
    IMM.RemoteAlertRecipient_WarningAlertsCategory (IMM Error code : 10)
Command completed  with error.
```

restore command

Use the **restore** command to restore all of the settings that are defined in the update configuration file on the server.

restore command syntax:

```
OneCli.exe config restore --file <filename>[--output<folder>][connection option]
```

Table 23. restore command parameters

Parameter	Required/Optional	Notes
--file	Required	• The file name for the saved settings and values to be stored. • ToolsCenter Suite CLI reads the setting and value from the file and applies it to the system.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Note: The **restore** command is similar to the **replicate** command; the only difference is that **restore** can set the **noreplicate** settings. The **restore** command uses the saved configuration to restore a configuration when unexpected changes occur.

Example of the restore command:

```
OneCli.exe config restore --file saved.txt --imm USERID:
PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
IMM.PowerRestorePolicy=Restore
IMM.ThermalModePolicy=Normal
IMM.PowerOnAtSpecifiedTime=0:0:0:0:0
IMM.MinPasswordLen=0
IMM.PwChangeInterval=0
```

```
IMM.PwMaxFailure=5
IMM.PwDiffChar=0
IMM.DefPasswordExp=Disabled
IMM.FirstAccessPwChange=Disabled
......
Waiting for command completion status.
IMM reported the following errors.
Failed to set the following settings:
    IMM.RemoteAlertRecipient_CriticalAlertsCategory (IMM Error code : 10)
    IMM.RemoteAlertRecipient_SystemAlertsCategory (IMM Error code : 10)
    IMM.RemoteAlertRecipient_WarningAlertsCategory (IMM Error code : 10)
Command completed  with error.
```

batch command

Use the **batch** command to queue config operations without any knowledge of the scripting capabilities of the operating system on which ToolsCenter Suite CLI is running. When you enter the **config** commands in a batch file, the ToolsCenter Suite CLI config application individually reads and executes each config command.

batch command syntax:

```
OneCli.exe config batch --file <batchfilename>[--output<folder>][connection option]
```

The format in the batch file should be:

```
<command1> <command1 options>
<command2> <command2 options>
<command3> <command3 options>
```

The `--output` or `connection option` is not required for the command in the batch file as shown above.

Table 24. batch command parameters

Parameter	Required/Optional	Notes
--file	Required	• The file name of the batch file, which has the **config** commands. • ToolsCenter Suite CLI individually reads and executes each command.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection options	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Notes:

- In batch mode, the **show** and **set** commands ignore the suppressed information. You can see the suppressed settings' current value using **show**, and set the suppressed settings without an error.
- All of the commands in a batch file must target an individual system and not multiple systems. A batch file that contains commands that target multiple systems is not supported.
- The example batch file shown below, contains the **set** and **show** commands. All of the **set** commands are sent to IMM at same time, and then all of the **show** commands are sent.

This is an example of batchfile.txt:

```
set IMM.Community_AccessType.1 Get
set IMM.Duplex1 Auto
set IMM.MTU1 1500
set IMM.SNMPv1Agent Enabled
set IMM.SNMPv3Agent Disabled
show IMM.SNMPv3Agent
set IMM.SNMPv3Agent Enabled
show IMM.SNMPv3Agent
```

Example of the batch command:

```
OneCli.exe config batch --file batchfile.txt --imm USERID:
PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Batch mode start.
[set IMM.Community_AccessType.1 Get]
IMM.Community_AccessType.1=Get

[set IMM.Duplex1 Auto]
IMM.Duplex1=Auto

[set IMM.MTU1 1500]
IMM.MTU1=1500

[set IMM.SNMPv1Agent Enabled]
IMM.SNMPv1Agent=Enabled

[set IMM.SNMPv3Agent Disabled]
IMM.SNMPv3Agent=Disabled

Beginning intermediate batch update.
Waiting for command completion status.
Command completed successfully.
Completed intermediate batch update.
[show IMM.SNMPv3Agent]
IMM.SNMPv3Agent=Disabled

[set IMM.SNMPv3Agent Enabled]
IMM.SNMPv3Agent=Enabled

Beginning intermediate batch update.
Waiting for command completion status.
Command completed successfully.
Completed intermediate batch update.
```

```
[show IMM.SNMPv3Agent]
IMM.SNMPv3Agent=Enabled

Batch mode completed successfully.
```

Commands for certificate management

The topics in this section provide detailed information about how to use the config application and commands to manage certificates.

Table 25. Configuration commands for certificate management

Command	Description
generate	Generates a certificate.
export	Exports a certificate to a local system.
import	Imports a certificate from a local system to another system.
deletecert	Deletes a certificate.

Using ToolsCenter Suite CLI for certificate management

ToolsCenter Suite CLI manages Certificate Authority (CA) and Certificate Sign Request (CSR) files on IMM-based systems using the **generate**, **import**, **export**, and **deletecert commands**.

Before you begin

Before you can manage a certificate on IMM, to ensure that the corresponding certificate server is disabled, complete these steps:

1. Verify that the IMM HTTPS Server Configuration for web server is disabled using this command line entry:

   ```
   Onecli.exe config show IMM.SSL_Server_Enable
   ```

   Output generated:

   ```
   IMM.SSL_Server_Enable=Disabled
   ```

2. If the server is enabled, disable IMM HTTPS Server Configuration for Web Server using this command line entry:

   ```
   Onecli.exe config set IMM.SSL_Server_Enable Disabled
   ```

   Output generated:

   ```
   Onecli.exe IMM.SSL_Server_Enable=Disabled
   ```

   The IMM must be restarted before the selected value (enable / disable) takes effect. Use the command: **onecli misc rebootimm**.

3. Before using SSL Client Certificate Management, disable SSL Client Configuration for the LDAP Client first:

   a. Verify that the SSL Client Configuration for LDAP Client is disabled using this command line entry:

      ```
      Onecli.exe config show IMM.SSL_Client_Enable
      ```

      Output generated:

      ```
      IMM.IMM.SSL_Client_Enable=Disabled
      ```

   b. If the server is enabled, disable the IMM SSL Client Configuration for LDAP using this command line entry:

      ```
      Onecli.exe config set IMM.SSL_Client_Enable Disabled
      ```

      Output generated:

      ```
      IMM.SSL_Client_Enable=Disabled
      ```

After completing the steps noted above, you can use ToolsCenter Suite CLI to manage certificates on IMM.

About this task

The following procedure provides an overview of how to use the ToolsCenter Suite CLI config application and commands to:

- View the current status of certificate setting
- View the available commands for a setting
- Generate a Certificate Sign Request (CSR)
- Export a certificate sign request
- Generate a self-signed certificate
- Import a Certificate
- Delete a certificate

Procedure

- To view the current status of a certificate setting, use this command line entry:

  ```
  Onecli.exe config show IMM.SSL_HTTPS_SERVER_CERT
  ```

  Output generated:

  ```
  IMM.SSL_HTTPS_SERVER_CERT=Private Key and CA-signed cert
  installed, Private Key stored, CSR available for download.
  ```

- To view the available commands for a certificate setting, use this command line entry:

  ```
  Onecli.exe config showvalues IMM.SSL_HTTPS_SERVER_CSR
  ```

  Output generated:

  ```
  IIMM.SSL_HTTPS_SERVER_CSR=*generate=export
  ```

  IIMM.SSL_HTTPS_SERVER_CSR is supported by the **generate** and **export** commands.

- To generate a Certificate Sign Request (CSR), use this command line entry:

  ```
  Onecli.exe config generate IMM.SSL_HTTPS_SERVER_CSR template.xml
  ```

  Output generated:

  ```
  Certificate was generated successfully!
  ```

  An xml file, such as `template.xml`, is required for the **generate** command and for all settings which support **generate**, except *SSH_SERVER_KEY*. For more information about the `template.xml`, see "The template.xml file" on page 36.

  A certificate sign request must be signed by an independent certificate authority to be a certificate. You can use the config application to generate a Self-signed Certificate.

- To generate a self-signed certificate, use this command line entry:

  ```
  Onecli config generate IMM.SSL_HTTPS_SERVER_CERT asu.xml
  ```

  Output generated:

  ```
  Certificate was generated successfully!
  ```

- To export a certificate sign request, use this command line entry:

  ```
  Onecli config export IMM.SSL_HTTPS_SERVER_CSR tmp_csr.der
  ```

  Output generated:

  ```
  Certificate was exported successfully!
  ```

  The `tmp_csr.der` file is saved in the current directory.

  You can export a certificate or certificate sign request. If a certificate sign request is signed by a independent certificate authority, it is a CA-singed certificate.

- To import a certificate, after completing the export a certificate sign request step, using independent certificate authority, sign the request in the `tmp_csr.der` file. You can only import the CA-signed certificate (which differs from the self-signed certificate) into the HTTPS Server Certificate Management section.

  For the SSL Client Certificate Management section, use the first two settings which only permit CA-signed certificates to be imported:

  – SSL_LDAP_CLIENT_CERT
  – SSL_LDAP_CLIENT_CSR

  These settings permit both self-signed and CA-signed certificates to be imported:

  – SSL_CLIENT_TRUSTED_CERT1
  – SSL_CLIENT_TRUSTED_CERT2
  – SSL_CLIENT_TRUSTED_CERT3

  If a certificate already exists, it must be deleted before importing another certificate.

What to do next

For more detailed information about how to use the config applications and commands for certificate mangement, refer to the individual command topics in this section.

Generating a management certificate

If you want to generate a certificate which is not self-signed, you must first generate a certificate sign request file, and then sign it for it to be a certificate. Use certificate authority to sign a certificate sign request. Certificate authority is an entity that issues digital certificates for use by independent certificate authority.

About this task

This procedure describes how to set up a certificate authority for Linux.

Procedure

1. Download the latest OpenSSL binary file from: `http://www.openssl.org`. Use `openssl-1.0.0.tar.gz` as an example.
2. Open a Linux shell, and extract the tar `-xvf openssl-1.0.0.tar.gz` file.
3. Run this script to set up certificate authority.

```
CATOP=./demoCA
# create the directory hierarchy
mkdir -p ${CATOP}
mkdir -p ${CATOP}/certs
mkdir -p ${CATOP}/crl
mkdir -p ${CATOP}/newcerts
mkdir -p ${CATOP}/private
touch ${CATOP}/index.txt
echo 01 > ./demoCA/serial
#generate a certificate authority key, you need set a pass phrase for it
openssl genrsa -des3 -out ${CATOP}/private/cakey.pem 2048
#generate a certificate authority certificate, information required such
as Country name etc.openssl req -new -x509 -days 365 -key ${CATOP}/
private/cakey.pem -out ${CATOP}/cacert.pem
```

4. To sign a certificate sign request using the certificate authority you just created, run this script:

Important: Ensure that you do not sign the certificate sign request, whose common name is the same as any other certificate sign request signed by this certificate authority, otherwise certificate authority will fail to sign it.

```
       #Suppose your certificate sign request file is "asu_csr.der"
      #convert certificate sign request format from DER to PEM, certificate
sign request file could  be got by asu export command
      openssl req  -in asu_csr.der -inform DER -out asu_csr.pem -outform PEM
      #sign the certificate sign request using the certificate authority just
set up
      openssl ca  -policy policy_anything -out  asu_cert.pem -infiles
asu_csr.pem
   #convert certificate format from PEM to DER, ready for asu import command
   openssl x509 -in asu_cert.pem -inform  PEM  -out asu_cert.der -outform DER
```

The result of running this script is a signed certificate: `asu_cert.der`. This is used for the certificate sign request file: `asu_csr.der`.

Revoking a management certificate

A management certificate cannot be signed twice. If it is necessary to sign a certificate again, it must first be revoked.

Procedure

Run this script to revoke a certificate signed by a certificate authority.

```
openssl ca -revoke  cert.pem
```

generate command

Use the **generate** command to generate a private key and public key pair with a self-signed certificate or a certificate sign request.

generate command syntax:

```
OneCli.exe config generate<setting> --file<exportfilename>[--output<folder>]
[connection option]
```

Table 26. generate command parameters

Parameter	Required/Optional	Notes
setting	Required	Certificate management setting
--file	Required	• This is the file name of ***generate** file, using the format of `template.xml`. • For more information about the `template.xml`, see "The template.xml file" on page 36.
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.

Table 26. generate command parameters (continued)

Parameter	Required/Optional	Notes
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Notes:

- The **generate** command is used specifically for certificate management. The supported settings are certificate management settings.
- The supported setting list can be generated using **showvalues** using a value such as **generate**.
- The values after the ***** are for the supported certificate management settings:

```
IMM.SSH_SERVER_KEY=*generate
IMM.SSL_HTTPS_SERVER_CERT=*generate=import=export
IMM.SSL_HTTPS_SERVER_CSR=*generate=export
IMM.SSL_LDAP_CLIENT_CERT=*generate=import=export
IMM.SSL_LDAP_CLIENT_CSR=*generate=export
IMM.SSL_SERVER_DIRECTOR_CERT=*generate=import=export
IMM.SSL_SERVER_DIRECTOR_CSR=*generate=export
IMM.SSL_CLIENT_TRUSTED_CERT1=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT2=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT3=*import=export=deletecert
```

Example of the generate command:

```
OneCli.exe config generate IMM.SSL_HTTPS_SERVER_CERT
--file template.xml --imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Waiting for command completion status.
 Certificate was generated successfully!
```

The template.xml file

Use the template file (`template.xml`), located in the `onecli` folder, as an example of the correct syntax to use with the **generate** command for certificate management. You can modify this file to generate a certificate.

This table provides a list of the `template.xml` file variables and their definitions.

Table 27. template.xml file variables

Variables	Definition
Country Name	The two-letter ISO abbreviation for your country.
State or Province Name	The state or province where your organization is located. This entry cannot be abbreviated.
Locality Name	The city where your organization is located.
Organization Name	The exact legal name of your organization. Do not abbreviate your organization name.
Common Name	A fully qualified domain name that resolves to the SSL VPN device. For example, if you intend to secure the URL `https://ssl.yourdomain.com`, then the common name of the certificate sign request should be `ssl.yourdomain.com`.
Name	This is an optional field for entering a contact name.
Email Address	This is an optional field for entering a contact email address.
Organization Unit Name	This is an optional field for the name of the unit in your organization.
Surname	This is an optional field for entering a surname of contact person.
givenName	This is an optional field for entering a given name of contact name.
Initials	This is an optional field for entering initials of contact name.
dnQualifier	This is an optional field for entering the domain name qualifier.
Challenge password	This is an optional attribute. If you specify a challenge password in the certificate sign request, you must know the challenge password if you want to revoke the certificate later.
unstructuredName	This is an optional field for entering the unstructured name for contact

template.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<config version="2.1">
<new_key_and_self_signed_cert_info>
<item type="Required">
<vectorID>0001</vectorID>
<name>countryName</name>
<value minlen="2" maxlen="2">XX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>stateOrProvinceName</name>
<value minlen="1" maxlen="30">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>localityName</name>
<value minlen="1" maxlen="50">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
```

```
<name>organizationName</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>commonName</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Name</name>
<value minlen="1" maxlen="60">XXXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>emailAddress</name>
<value minlen="1" maxlen="60">XXXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>validityPeriod</name>
<value minlen="0" maxlen="2">XX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>organizationalUnitName</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Surname</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>givenName</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Initials</name>
<value minlen="0" maxlen="20">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>dnQualifier</name>
<value minlen="0" maxlen="60">XXXX</value>
 </item>
</new_key_and_self_signed_cert_info>
<new_key_and_cert_sign_req_info>
<item type="Required">
<vectorID>0001</vectorID>
<name>countryName</name>
<value minlen="2" maxlen="2">XX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>stateOrProvinceName</name>
<value minlen="1" maxlen="30">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>localityName</name>
<value minlen="1" maxlen="50">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
```

```
<name>organizationName</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Required">
<vectorID>0001</vectorID>
<name>commonName</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Name</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>emailAddress</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>organizationalUnitName</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Surname</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>givenName</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>Initials</name>
<value minlen="0" maxlen="20">XXXX</value>
</item>
<item type="Optional">
<vectorID>0001</vectorID>
<name>dnQualifier</name>
<value minlen="0" maxlen="60">XXXX</value>
</item>
<item type="Optional">
<vectorID>0002</vectorID>
<name>challengePassword</name>
<value minlen="6" maxlen="30">XXXX</value>
</item>
<item type="Optional">
<vectorID>0002</vectorID>
<name>unstructuredName</name>
<value minlen="1" maxlen="60">XXXX</value>
</item>
</new_key_and_cert_sign_req_info>
</config>
```

export command

Use the **export** command to export a selected certificate or certificate sign request (CSR) file. The **export** command generates a binary file that is saved in the current directory.

export command syntax:

```
OneCli.exe config export<setting> --file<exportfilename>[--output<folder>]
[connection option]
```

Table 28. export command parameters

Parameter	Required/Optional	Notes
setting	Required	Certificate management setting
--file	Required	Export file name
–output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The “x” represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Additional information:

- The **`export`** command is used for certificate management. The supported settings are certificate management settings.
- Use the **`showvalues`** command with the **`*`** value to get the settings list. The values after the **`*`** are for the supported certificate management settings:

```
IMM.SSH_SERVER_KEY=*generate
IMM.SSL_HTTPS_SERVER_CERT=*generate=import=export
IMM.SSL_HTTPS_SERVER_CSR=*generate=export
IMM.SSL_LDAP_CLIENT_CERT=*generate=import=export
IMM.SSL_LDAP_CLIENT_CSR=*generate=export
IMM.SSL_SERVER_DIRECTOR_CERT=*generate=import=export
IMM.SSL_SERVER_DIRECTOR_CSR=*generate=export
IMM.SSL_CLIENT_TRUSTED_CERT1=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT2=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT3=*import=export=deletecert
```

Example of the export command:

```
OneCli.exe config export IMM.SSL_HTTPS_SERVER_CERT --file temp.cert
--imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Waiting for command completion status.
 Certificate was exported successfully!
```

import command

Use the **`import`** command to import a certificate into an IMM. You can only import a CA-signed certificate into the HTTPS Server Certificate Management section.

A CA-signed certificate differs from a self-signed certificate. In the SSL Client Certificate Management section for a CA-signed certificate, only CA-signed certificates can be imported. There are two settings:

- SSL_LDAP_CLIENT_CERT
- SSL_LDAP_CLIENT_CSR

For a self-signed certificate there are three settings:

- SSL_CLIENT_TRUSTED_CERT1
- SSL_CLIENT_TRUSTED_CERT2
- SSL_CLIENT_TRUSTED_CERT3

Both self-signed and CA-signed certificates can be imported. If a certificate already exists, you must delete it before importing another certificate. The certificate to be imported should be in DER format.

import command syntax:

```
OneCli.exe config import<setting> --file<importfilename>[--output<folder>]
[connection option]
```

Table 29. import command parameters

Parameter	Required/Optional	Notes
setting	Required	Certificate management setting
--file	Required	Import file name
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**`--imm <user:pwd@ip>`** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **`--node <x>`** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Additional information:

- The **`import`** command is used for certificate management. The supported settings are certificate manage settings.
- Use the **`showvalues`** command with the **`*`** value to get the settings list. The values after the **`*`** are for the supported certificate management settings:

```
IMM.SSH_SERVER_KEY=*generate
IMM.SSL_HTTPS_SERVER_CERT=*generate=import=export
IMM.SSL_HTTPS_SERVER_CSR=*generate=export
IMM.SSL_LDAP_CLIENT_CERT=*generate=import=export
IMM.SSL_LDAP_CLIENT_CSR=*generate=export
IMM.SSL_SERVER_DIRECTOR_CERT=*generate=import=export
IMM.SSL_SERVER_DIRECTOR_CSR=*generate=export
```

```
IMM.SSL_CLIENT_TRUSTED_CERT1=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT2=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT3=*import=export=deletecert
```

Example of the import command:

```
OneCli.exe config import IMM.SSL_HTTPS_SERVER_CERT --file temp.cert
--imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Waiting for command completion status.
 Certificate was imported successfully!
```

deletecert command

Use the **deletecert** command to delete a certificate on an IMM.

deletecert command syntax:

```
OneCli.exe config deletecert<setting>[--output<folder>][connection option]
```

Table 30. deletecert command parameters

Parameter	Required/Optional	Notes
setting	Required	Certificate management setting
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.
connection option	Optional	**--imm <user:pwd@ip>** Use for OOB. Use for in-band, if you know the LAN over USB IP of the target IMM. Use to specify the target IMM. **--node <x>** Use for inband cases on a multinode system. The "x" represents a numeric value. If the x is 2, the target imm is in the 2nd node of multinode system. The value is `--n1`.

Additional information:

- The **deletecert** command is used for certificate management. The supported settings are certificate management settings.
- Use the **showvalues** command with the * value to get the settings list. The values after the * are for the supported certificate management settings:

```
IMM.SSH_SERVER_KEY=*generate
IMM.SSL_HTTPS_SERVER_CERT=*generate=import=export
IMM.SSL_HTTPS_SERVER_CSR=*generate=export
IMM.SSL_LDAP_CLIENT_CERT=*generate=import=export
IMM.SSL_LDAP_CLIENT_CSR=*generate=export
IMM.SSL_SERVER_DIRECTOR_CERT=*generate=import=export
IMM.SSL_SERVER_DIRECTOR_CSR=*generate=export
```

```
IMM.SSL_CLIENT_TRUSTED_CERT1=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT2=*import=export=deletecert
IMM.SSL_CLIENT_TRUSTED_CERT3=*import=export=deletecert
```

Example of the deletecert command:

```
OneCli.exe config deletecert IMM.SSL_HTTPS_SERVER_CERT --file temp.cert
--imm USERID:PASSW0RD@9.125.90.xx
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM IP address:9.125.90.xx
Waiting for command completion status.
Certificate was deletecert successfully!
```

Chapter 5. Inventory

The topics in this section describe how to use the Lenovo ToolsCenter Suite CLI inventory application and commands to acquire system information for IMM, CMM, and IOM-based systems.

This table lists the inventory application commands.

Table 31. 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 the entire 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 32. getdevices command parameters

Parameter	Required/Optional	Notes
--output	Optional	By default, the log file output is saved to: `../Onecli-%PID%-%date%-%time%/`.

Example of the getdevices command:

This example of the inventory application and the **getdevices** command displays the full inventory list of a server on the console. The output is saved to a log file directory. By default, the log file is saved to: `../Onecli-%PID%-%date%-%time%/`.

```
OneCli.exe inventory getdevices --output c:\onecli\log
```

This is the complete device list generated by this example.

```
1 - system_overview
2 - installed_applications
3 - installed_hotfixes
4 - device_drivers
5 - system_services
6 - network_settings
7 - resource_utilization
8 - processes
9 - os_configuration
10 - hardware_inventory
11 - pci_information
12 - firmware_vpd
13 - imm_configuration
14 - environmental
```

```
15 - light_path
16 - Network
17 - fusiono
18 - lsi
19 - intelssd
20 - application_event
21 - system_event
22 - security_event
23 - chassis_event_logs
24 - ipmi_event_logs
```

getinfor command

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

getinfor command syntax:

```
OneCli.exe inventory getinfor[--device]][--upload [IBM]|[username:password
@ftphost/path/]][--output][--proxy userid:password@IP[:port]]
[--htmlreport][--ffdc][connection opt]
```

Table 33. 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: `../Onecli-%PID%-%date%-%time%/`.
--upload	Optional	• If **multitool** is specified, the output files are uploaded to the Lenovo multitool web server. • If **Lenovo** is specified, the output files are uploaded to the Lenovo ftp server. • 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.
--htmlreport	Optional	Output contains HTML format.
--ffdc	Optional	Use the misc application with the **–ffdc** parameter to get the ffdc log.
Connection options	Optional	Use for remote operations.

Portable Edition -inventory example:

This is an example of the inventory application and the **getinfor** command using ToolsCenter Suite CLI Portable Edition on removable medium (CD-ROM, or USB key).

```
Onecli.exe inventory getinfor --output d:\onecli\inventory –htmlreport
--device lsi  --upload lenovo –proxy user:
password@host:port –ffdc ;
```

The “Inventory device xxx” list is displayed on the console. A temporary directory is created to save the XML or HTML report.

formatlog command

Use the **formatlog** command to translate the XML file, which is created by the **getinfor** command, to another format such as HTML.

formatlog command syntax:

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

Table 34. formatlog command parameters

Parameter	Required/Optional	Notes
--srcdata	Required	
--output	Optional	By default, the log file output is saved to `../Onecli-%PID%-%date%-%time%/`. The `Onecli-update-compare.xml` file is saved in the `/onecli` folder. If any of the files already exist, they will be overwritten.
--htmlreport	Optional	Specifies **--htmlreport**.

Example of the formatlog command: This example formats and saves the `--srcdata xxx.xml` file as an HTML report.

```
OneCli.exe inventory formatlog --srcdata xxx.xml --output d:\onecli\inventory
 --htmlreport
```

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 ibm\
[username:password@ftphost]@ftphost/path/]
```

Table 35. 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	Specify Lenovo to upload the files to a Lenovo server.
--output	Optional	A report file is saved to the specified directory.

Example of the upload command: In this example, **--srcdata** is used to identify the log file name that will be formatted and uploaded to a server.

```
OneCli.exe inventory upload --srcdata xxx.xml
--output d:\onecli\inventory --output d:\onecli\log
--upload Lenovo/serverip --proxy user:
password@host:port
```

Chapter 6. Misc

The topics in this section describe how to use the Lenovo ToolsCenter Suite CLI misc application and commands.

The following table lists the ToolsCenter Suite CLI misc application commands.

Table 36. misc application commands

Commands	Description
logmgr	Displays and clears the system and IMM event logs.
ospower	Powers on, powers off, and reboots the host sever OS; displays the current power state of the host server OS.
rebootimm	Manually reboots IMM.
rebootcmm	Manually reboots CMM.
rebootiom	Manually reboots IOM.
usblan	LAN over USB management.

logmgr command

Use the **logmgr** commands to display and clear the system event log and the IMM event log. The **logmgr** commands support in-band and out-of-band mode.

logmgr command syntax:

```
OneCli.exe misc logmgr <cmds> [<options>] [<connect opts>]
```

Options:

--help
Displays help information for commands and then exits without executing the command.

--output <arg>
Specifies the output directory.

Connection option:

--imm <arg>
Specifies the IMM connection information.

Table 37. logmgr commands and syntax examples

Command	Syntax example	Description
showsel	`OneCli.exe logmgr showsel --imm USERID:PASSW0RD@10.240.197.65`	• Displays the system event log of the server. • Displays the remote IMM system event log using: `--imm user:password@ip:port` • Can be run on the local host OS without specifying the connection options.

Table 37. logmgr commands and syntax examples (continued)

Command	Syntax example	Description
clearsel	`OneCli.exe misc logmgr clearsel`	• Clears the system event log of the server. • Clears the remote IMM system event log using: `--imm user:password@ip:port` • Can be run on the local host OS without specifying the connection options.
showimmlog	`OneCli.exe misc logmgr showimmlog --imm USERID: PASSWORD@10.240.197.65`	• Displays the IMM event log of the server. • Displays the remote IMM event log using: `--imm user:password@ip:port` • Can be run on the local host OS without specifying the connection options.
clearimmlog	`OneCli.exe misc logmgr clearimmlog`	• Clears the IMM event log of the server. • Clears the remote IMM event log using: `--imm user:password@ip:port` • Can be run on the local host OS without specifying the connection options.
clearall	`OneCli.exe misc logmgr clearall --imm USERID: PASSW0RD@10.240.197.65`	• Clears the IMM event log and the system event log of the server. • Clears the remote IMM event log and the system event using: `--imm user:password@ip:port` • Can be run on the local host OS without specifying the connection options.

Example of the clearimmlog command output:

```
Lenovo OneCli tcli01d-1.0.0
Based on module version 1.0.0
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved
start to clear IMM log from system
clear IMM log Successfully!
```

ospower command

Use the **ospower** commands to power on, power off, reboot the host server OS, and display the current OS power state of the host server. The **ospower** commands support in-band and out-of-band mode.

ospower command syntax:

```
OneCli.exe misc ospower <cmds> [<options>] [<connect opts>]
```

Options:

--help
Displays help information for commands and then exits without executing the command.

--output <arg>
Specifies the output directory.

Connection option:

--imm <arg>
Specifies the IMM connection information.

Table 38. ospower commands and examples

Command	Syntax example	Description
turnon	`OneCli.exe logmgr turnon --imm USERID:PASSW0RD@10.240.xx.xx Lenovo OneCli tcli01d-1.0.0`	• Powers on the host server OS. • Powers on the remote system host OS using: `--imm user:password@ip:port`
turnoff	`OneCli.exe ospower turnoff --imm USERID:PASSW0RD@10.240.xx.xx`	• Powers off the host server OS. • Powers off the remote system host OS using: `--imm user:password@ip:port`
reboot	`OneCli.exe misc ospower reboot --imm USERID:PASSW0RD@10.240.xx.xx`	• Reboots the host server OS. • Reboots the remote system host OS using: `--imm user:password@ip:port` • Reboot only works if the current power state is on.
state	`OneCli.exe misc ospower state --imm USERID:PASSW0RD@10.240.xx.xx`	• Checks the host server OS power states. • Checks the power state of the remote system host OS using: `--imm user:password@ip:port`

Example of the state command output:

```
Lenovo OneCli tcli01d-1.0.0
Based on module version 1.0.0
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved
start to check the System OS state
Server Power is currently On!
```

rebootimm command

Use the **rebootimm** command to reboot IMM manually. This is similar to the **flash** command **--noreboot** parameter, which specifies that ToolsCenter Suite CLI will not reboot IMM after flashing firmware.

rebootimm command syntax:

```
OneCli.exe misc rebootimm[--imm<userid:password@IP[:port]>]
```

Table 39. IMM - rebootimm command parameters

Parameter	Required/Optional	Notes
--imm	Optional	• Target IMM information. • Reboot the target IMM. • By default, reboots the current system's IMM.

Example of the rebootimm command:

```
OneCli.exe misc rebootiom --imm USERID:PASSW0RD@9.125.90.xx[:5989]
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to IMM at IP address:9.125.90.xx on Port:5989
Issue the reboot command to IMM
IMM  is rebooting now
Waiting 4 minutes to check.
Successfully reboot IMM.
```

rebootcmm command

Use the **rebootcmm** command to reboot CMM manually. This is similar to the **flash** command **--noreboot** parameter, which specifies that ToolsCenter Suite CLI will not reboot CMM after flashing firmware.

rebootcmm command syntax:

```
OneCli.exe misc rebootcmm[--cmm<userid:password@IP[:port]>]
```

Table 40. CMM - rebootcmm command parameters

Parameter	Required/Optional	Notes
--cmm	Required	CMM IP and credential information.

Example of the rebootcmm command:

```
OneCli.exe misc rebootcmm --cmm USERID:PASSW0RD@9.125.90.xx[:5989]
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to CIMOM at IP address:9.125.90.xx on Port:5989
Issue the reboot command
CMM is rebooting now
Waiting 4 minutes to check.
Successfully reboot CMM.
```

rebootiom command

Use the **rebootcmm** command to reboot IOM manually.

rebootiom command syntax:

```
OneCli.exe misc rebootiom[--cmm<userid:password@IP[:port]> --iobay<bay number>
```

Table 41. IOM - rebootiom command parameters

Parameter	Required/Optional	Notes
--cmm	Required	CMM IP and credential information.
--iobay	Required	IO bay number of the switch.

Example of the rebootiom command:

```
OneCli.exe misc rebootiom --cmm USERID:PASSW0RD@9.125.90.xx[:5989]
--iobay 2
```

This is the output generated from this example:

```
Lenovo ToolsCenter One CLI version 1.00.01A
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2018 All Rights Reserved
Connected to CIMOM at IP address:9.125.90.xx on Port:5989
Issue the reboot command to IOM in slot 2
IOM  is rebooting now
Waiting 4 minutes to check.
Successfully reboot IOM.
```

usblan command

Use the **usblan** command to configure a LAN over USB.

usblan command syntax:

```
Onecli.exe misc usblan [opts]
```

Supported [Opts]:

--output <arg>
Specifies the output directory.

--script <arg>
Specifies the script file of the cdc interface; only supported on a Linux platform. The default is: `./cdc_interface.sh`

-h [help]
Specifies Help information.

All of the opts listed above are optional.

Table 42. usblan commands and examples

Command	Syntax example	Output example	Description

enable	`onecli.exe usblan enable`	`Lenovo OneCli 1.0.0`
		`Based on module version 0.2.0`
		`Licensed Materials - Property of Lenovo`
		`(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved`
		`Succeed to enable IMM Lan over USB.`
			Enables all of the USB LAN devices on the OS side.

Table 42. usblan commands and examples (continued)

Command	Syntax example	Output example	Description

disable	`onecli.exe usblan disable`	`Lenovo OneCli 1.0.0`
		`Based on module version 0.2.0`
		`Licensed Materials - Property of Lenovo`
		`(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved`
		`Succeed to disable IMM Lan over USB.`
			Disables all of the USB LAN devices on the OS side.

query	`onecli.exe usblan query`	`Lenovo OneCli 1.0.0`
		`Based on module version 0.2.0`
		`Licensed Materials - Property of Lenovo`
		`(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved`
		`No /Device state /IMM IP /Host IP`
		`0 /connected /169.254.95.118 /169.254.95.120`
			Queries all of the USB LAN devices' status on the OS side.
			
			query output status:
			• disabled: USBLAN interface is down
			• enabled: USBLAN interface is up, but IMM IP is not reachable
			• connected: IMM IP is reachable

Note: : One and only one of the above commands should be specified in a command line.

Chapter 7. ASU and DSA proxy Tools

Lenovo ToolsCenter Suite CLI supports the use of proxy tools for mapping Advanced Settings Utility and Dynamic System Analysis scripts. The ToolsCenter Suite CLI directory contains the `asu.exe` and `dsa.exe` standalone executable binary files.

The topics in this section provide detailed information about how to map the ASU and DSA scripted commands to ToolsCenter Suite CLI, adding functionality without writing new scripts.

ASU proxy tool

ToolsCenter Suite CLI can utilize scripts from prior releases of Advanced Settings Utility using the ASU proxy tool. The ASU proxy tool is an executable binary that maps a script to its corresponding ToolsCenter Suite CLI command.

ASU proxy tool syntax:

```
asu.exe asu [command][-parameter]
```

For more information about ASU, refer to:

- The https://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-ASU web page.
- The User's Guide for the Advanced Settings Utility for Lenovo x86 servers, which is available for download.

The following table lists commands and parameters used by the ASU proxy tool and the corresponding ToolsCenter Suite CLI commands and parameters.

Table 43. ASU commands and parameters

ASU Command	ASU parameter	ToolsCenter Suite CLI command	ToolsCenter Suite CLI parameter
show	-n	show	–node
	--host --user --password		--imm user:pwd@host
	--group		The mapped result for `asu show --group IMM` is `OneCli show IMM`. The **`--group`** parameter is removed in the ToolsCenter Suite CLI command string.
showvalues	-n	showvalues	--node
	--host --user --password		--imm user:pwd@host
	--group		The mapped result for `asu show --group IMM` is `OneCli show IMM`. The **`--group`** parameter is removed in the ToolsCenter Suite CLI command string.

Table 43. ASU commands and parameters (continued)

ASU Command	ASU parameter	ToolsCenter Suite CLI command	ToolsCenter Suite CLI parameter
showdefault	-n	showdefault	--node
	--host --user --password		--imm user:pwd@host
	--group		The mapped result for `asu show --group IMM` is `OneCli show IMM`. The **`--group`** parameter is removed in the ToolsCenter Suite CLI command string.
comparedefault	-n	comparedefault	--node
	--host --user --password		--imm user:pwd@host
showgroups	-n	showgroups	--node
	--host --user --password		--imm user:pwd@host
set	-n	set	--node
	--host --user --password		--imm user:pwd@host
loaddefault	-n	loaddefault	--node
	--host --user --password		--imm user:pwd@host
creatuuid	--host --user --password	creatuuid	--imm user:pwd@host
delete	-n	delete	--node
	--host --user --password		--imm user:pwd@host
save		save	The **`--file`** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host
	--group		The mapped result for `asu show --group IMM` is `OneCli show IMM`. The **`--group`** parameter is removed in the ToolsCenter Suite CLI command string.
replicate		replicate	The **`--file`** parameter is added by default.
	--host --user --password		--imm user:pwd@host
restore		restore	The **`--file`** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host

Table 43. ASU commands and parameters (continued)

ASU Command	ASU parameter	ToolsCenter Suite CLI command	ToolsCenter Suite CLI parameter
batch		batch	The **--file** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host
generate		generate	The **--file** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host
export		export	The **--file** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host
import		import	The **--file** parameter is added by default.
	-n		--node
	--host --user --password		--imm user:pwd@host
deletecert	-n	deletecert	--node
	--host --user --password		--imm user:pwd@host
nodes	--host --user --password	nodes	--imm user:pwd@host
help	-n	showdes	--node
	--host --user --password		--imm user:pwd@host

Example of an ASU script using the --group parameter:

```
asu.exe asu show --group GROUP1
```

This is the output generated from this example:

```
Lenovo ASU 0.1.5

Lenovo OneCli 0.1.5
Based on module version 0.2.0
Licensed Materials - Property of Lenovo
(C) Copyright Lenovo Corp. 2013-2015 All Rights Reserved
Invoking SHOW command ...
Connected to IMM by IP address 10.240.193.49
IMM.Cert_CSR_Export_Format=DER
IMM.SSH_SERVER_KEY=Installed
```

Example of an ASU script using the --host parameter:

```
asu.exe --host 10.240.12.23 --user USERID --password password
```

In this example, the asu.exe **--host** parameter maps to:

```
OneCli.exe config showdes  --imm USERID:password@10.240.12.23
```

Using the ASU proxy tool

This procedure describes how to use the ASU proxy tool for mapping to ToolsCenter Suite CLI commands.

About this task

Refer to "ASU proxy tool" on page 55 for detailed information about the ASU commands, parameters, and script examples to use with the ASU proxy tool.

There are two steps for mapping:

- Determine which ToolsCenter Suite CLI configuration command you will be mapping to.
- Determine which parameters are necessary for executing the command.

Procedure

1. Start the ASU proxy tool at the command prompt:
   - For Windows, enter `asu.exe`.
   - For Linux, enter `./asu`.
2. Enter the ASU command and parameter or use a predefined script. The ASU proxy tool maps to the ToolsCenter Suite CLI command and then executes it.

DSA proxy tool

ToolsCenter Suite CLI can utilize scripts from prior releases of Dynamic System Analysis using the DSA proxy tool. The DSA proxy tool is an executable binary that maps a script to its corresponding ToolsCenter Suite CLI command.

DSA proxy tool syntax:

```
dsa.exe [-parameter][file]
```

For more information about DSA, refer to:

- The Dynamic System Analysis (DSA) for Lenovo x86 servers web page.
- The Lenovo Dynamic System and Analysis (DSA) Installation and User's Guide, which is available for download.

The DSA parameters table lists DSA parameters used by the DSA proxy tool and the corresponding ToolsCenter Suite CLI commands and parameters.

Table 44. DSA parameters

DSA parameter	ToolsCenter Suite CLI command	ToolsCenter Suite CLI parameter
i	formatlog	srcdata

Table 44. DSA parameters (continued)

DSA parameter	ToolsCenter Suite CLI command	ToolsCenter Suite CLI parameter
d	getinfor	output
diags		diags
disable-imm-lan		disable-imm-lan
no-imm-lan		no-imm-lan
h, ?, help		help
imbid		ibmid
ipmi-lan		imm
t		upload
upload		upload
v		htmlreport
text		textreport
vmware-esxi		esxi
ffdc		ffdc
hldec		hldec
html		output
`[--proxy-address=addr] [--proxy-port=port] [--proxy-user=user] [--proxy-password=pwd]`		--proxy user:pwd@addr:port

Notes about the dsa command parameters:

- The DSA **i** parameter maps to the ToolsCenter Suite CLI **formatlog** command.
- All other DSA parameters map to the ToolsCenter Suite CLI **getinfor** command.

The DSA script examples table provides examples of DSA scripts and the ToolsCenter Suite CLI commands and parameters they map to.

Table 45. DSA script examples

DSA script	ToolsCenter Suite CLI command and parameters
dsa.exe -i test_file -d C:\onecli\	OneCli inventory formatlog --srcdata test_file --output C:\onecli\
dsa.exe -upload --proxy-address=addr --proxy-port=port --proxy-user=user -proxy-password=pwd	OneCli inventory getinfor --output C:\Lenovo_Support\ --proxy user:pwd@addr:port --upload multitool
dsa.exe -v –ffdc	OneCli inventory getinfor --ffdc --htmlreport --output C:\Lenovo_Support\

Example of a DSA script using the -upload parameter:

```
dsa.exe -upload --proxy-address=addr --proxy-port=port --proxy-user=user
- proxy-password=pwd
```

This is the output generated from this example:

```
Lenovo Dynamic System Anaysis<C> Copyright Lenovo Corp. 2004-2015.
<c> Copyright IBM Corp. 2004-2015. All Rights Reserved.

Call command: OneCli inventory getinfor --output
C:\Lenovo_Support\ --proxy user:pwd@addr:port --upload multitool
```

Using the DSA proxy tool

This procedure describes how to use the DSA proxy tool for mapping to ToolsCenter Suite CLI commands.

About this task

Refer to "DSA proxy tool" on page 58 for detailed information about the DSA parameters and script examples to use with the DSA proxy tool.

There are two steps for mapping:

- Determine which inventory command you will be mapping to.
- Determine which parameter details are necessary for executing the command.

Procedure

1. Start the DSA proxy tool at the command prompt:
   - For Windows, enter `dsa.exe`.
   - For Linux, enter `./dsa`.
2. Enter the DSA parameter and the parameter details for executing the script or use a predefined script.

   `-i` Maps to the ToolsCenter Suite CLI **`formatlog xxxx`**

   `All other dsa parameters`
   Map to **`getinforxxxx`**.

   The DSA proxy tool maps to the ToolsCenter Suite CLI command and then executes it.

Chapter 8. Troubleshooting and support

Use this section to troubleshoot and resolve problems with Lenovo ToolsCenter Suite CLI.

Known limitations

ToolsCenter Suite CLI 1.0.0 has the following general limitation.

Broadcom CIM provider v17.0.5 or older installed on an ESXi system warning message

If you have a Broadcom CIM provider v17.0.5 or older installed on an ESXi system, this warning message is displayed: "`You have a Broadcom CIM provider v17.0.5 or older installed in your system. Broadcom CIM Provider versions older than 17.0.5 is not recommended to use for Firmware Update. If you want to update Firmware, please install the latest ESXi patch.`"

config limitations

The limitations listed in this section are specific to the config application.

Invalid configuration settings are not saved

Some settings' initial values are not valid as defined in the XML and are not saved.

Restarting the IMM for config values to take effect

For some settings to take effect, you might have to restart the IMM. You might also need to restart the IMM for any values that are set through the ToolsCenter Suite CLI config application and displayed in the IMM web interface.

Some Flex system settings cannot be set with null string

For some Flex systems, the `IMM.IMMInfo_Contact`, `IMM.IMMInfo_Location`, and `IMMInfo_RoomId` settings cannot be set with the value of *null string*.

Some settings might not match their default values

When using the **`comparedefault`** command, some settings might not match their default values, even though the **`loaddefault`** command was run before the **`comparedefault`** command.

ToolsCenter Suite CLI config does not support the loaddefault value for boot order

The ToolsCenter Suite CLI config application does not support the **`loaddefault`** value for boot order. The **`loaddefault`** command does not change the boot order to the default value.

ToolsCenter Suite CLI config might fail to get the set result

After the ToolsCenter Suite CLI config application sets some IMM network settings, this could cause an IMM connection section reset or an IP address change, resulting in the config application failing to get the set result.

ToolsCenter Suite CLI config needs an IMM2 user to work on IMM

Due to the security design, a Flex system has two types of user accounts:

CMM user (LDAP user)

CMM users are available for Web, CLI, and CIM interfaces.

IMM2 user (local user)
IMM2 users are available for IPMI and SNMPv3 interfaces

inventory limitations

The limitations listed in this section are specific to the inventory application.

Basic RAID level is displayed in the ToolsCenter Suite CLI Report

In the ToolsCenter Suite CLI Report on the LSI Controller page, only the basic RAID level is shown. For example, RAID 00 is a subclass of RAID0, while RAID R1-EC is subclass of RAID 1. ToolsCenter Suite CLI only shows them as RAID 0 and RAID 1. This is because the LSI CIM provider cannot detect the exact configuration of the RAID class level of the subclass RAID level.

Brocade device driver limitation
Due to a Brocade device driver limitation, SLES 11.2 and RHEL 5.8 do not support all of the Brocade functions.

Cache Enable information might be inaccurate
Information about Level 1, 2, 3 Cache Enable might be inaccurate

Common tables with instances from multiple data sources may have blank fields
If there is no data for a particular field, the field is blank. This is most often encountered in common tables containing instances from multiple data sources.

Dates fall outside the valid date range for ToolsCenter Suite CLI
When ToolsCenter Suite CLI collects dates and times that are before January 1, 1970, 00:00:00, or after January 19, 2038, 03:14:07, ToolsCenter Suite CLI reports these dates and times as January 1, 1970, 00:00:00. These dates fall outside the valid date range for ToolsCenter Suite CLI.

ESXi Inventory is not supported
ToolsCenter Suite CLI does not support the Inventory application for ESXi.

Excessive number of HDDs takes longer to complete
Having an excessive number of HDDs creates a situation where ToolsCenter Suite CLI is not actually hanging but rather takes days to complete.

Extended collection times
If you encounter extended collection times, it might be helpful to disconnect external devices temporarily. This can include unplugging fibre cables or additional USB devices where information on these devices is not essential to the data collection.

IMM Configuration, Environmentals, and Chassis Event Logs might be missing on System x3850 X5
On System x3850 X5 Standard (7145, 7146) with Windows 2008, in some cases the IMM Configuration, Environmentals, and Chassis Event Logs are missing. If you run ToolsCenter Suite CLI again, this information will be available.

Intel Ethernet controller is displayed as Not Available
The description about the Intel Ethernet controller is displayed as Not Available on the Network Settings page under RHEL6.

LSI CIM provider issue
Due to an LSI CIM provider issue, running ToolsCenter Suite CLI for data

collection in a 2-node System x3850 takes many hours to complete on Microsoft Windows Small Business Server 2011.

LSI Configuration log file is different from other operating systems
On RHEL6.x, because the LSI CIM provider has limited support, the LSI Configuration log file is different from other operating systems.

LSI RAID configured as level "1E" is recognized as level "1"
In the ToolsCenter Suite CLI data collection, LSI RAID is configured as level "1E", but recognized as level "1".

Memory speed reported as Unknown in the Memory section of the Hardware Information report
ToolsCenter Suite CLI might report the memory speed as *Unknown* in the Memory section of the Hardware Information report. This is due to issues with SMBIOS support on some systems.

Merged log may appear to be out of order
On systems where the service processor clock does not have the same timezone settings as the local system, the merged log may appear to be out of order. The entries are sorted correctly but look incorrect because the timezone setting is not displayed.

ToolsCenter Suite CLI is displayed as Unknown in the item PartitionSubType
ToolsCenter Suite CLI is displayed as Unknown in the item PartitionSubType in the Disk Information table on the Hardware Inventory page when the HDD is in the GUID Partition Table (GPT) format on uEFI systems.

PCI Slot and device association might be inaccurate on the following systems:

- System x3850 X5 (7145, 7146)
- System x3950 X5 (7145, 7146)

Physical drive information associated with the IR might be invisible
When a server is configured with multiple RAID controllers (both IR & MR), the physical drive information associated with the IR might be invisible in the LSI information. This problem does not impact the functionality of the RAID or Disk.

QLogic device driver limitation
Due to a QLogic device driver limitation for QLogic 10 Gb CNA, Option 42C1800, the QLogic information on the Hardware Inventory page is not collected on a Windows 2008 Enterprise 64-bit operating system.

QLogic iSCSI Controller information cannot be collected
QLogic iSCSI Controller information cannot be collected in SLES10 Realtime and Red Hat5 Realtime.

QLogic utility limitation
Due to a QLogic utility limitation for QLogic 8 Gb FC Dual-port HBA, Option 42D0510, the QLogic information on the Hardware Inventory page is not collected on Red Hat Enterprise Linux 6 Update 2 (RHEL 6.2).

RAID display functionality has been reverted
To ensure the quality and stability of the ToolsCenter Suite CLI code, some display functionality of RAID information has been reverted to what was used in previous versions of ToolsCenter Suite CLI. This affects the RAID display on the following adapters:

- Megaraid 8480
- Serveraid MR10i

- Serveraid MR10is
- Serveraid MR10m
- Serveraid MR10k
- Serveraid M1015
- Serveraid M5014
- Serveraid M5015

On these adapters, the RAID information is generated from the output of separate command line tools. The format might not match other output in ToolsCenter Suite CLI.

ToolsCenter Suite CLI displays the manufacturer of a SATA hard disk as ATA in the Physical Drive Information table

When an LSI RAID controller connects with a SATA hard disk, ToolsCenter Suite CLI displays the manufacturer of the hard disk as *ATA* in the Physical Drive Information table.

ToolsCenter Suite CLI might report that an adapter is still present with a corrupt MAC address

When an adapter is removed from the system that was previously configured in a network virtual team using the Intel PROSet software package, ToolsCenter Suite CLI might report that the adapter is still present with a corrupt MAC address. You can safely disregard the information returned for this adapter.

v only detects the duplex speed information of one network adapter on RHEL5 U3

ToolsCenter Suite CLI can only detect the duplex speed information of one network adapter on RHEL5 U3 with Xen if multiple network adapters exist.

ToolsCenter Suite CLI shows incorrect core numbers for System x3850 X5 dual node configuration

On System x3850 X5 dual node configuration, ToolsCenter Suite CLI shows incorrect core numbers (always show one core) for processors on the 2nd node (CPU5-8).

Windows 2008 R2 SP1 indicates that IBMSPREM.EXE stopped working

After installing the chipset driver on Windows 2008 R2 SP1, you might receive a dialog box indicating that `IBMSPREM.EXE` has stopped working.

Windows: using the `-upload through a proxy environment` option

On a Windows operating system when trying to run ToolsCenter Suite CLI with the `-upload through a proxy environment` option, it might be necessary to turn off **check for server certificate revocation (requires restart)** from the **Tools** > **Internet Options** > **Advanced** > **Security** menu.

Windows: A disabled Broadcom Ethernet device reports no relevant information

In Windows, when a Broadcom Ethernet device is disabled in Network Connections, no relevant information regarding this device is collected.

Windows: ServeRaid 8e card information cannot be collected

ToolsCenter Suite CLI cannot collect ServeRaid 8e card information on a system with a Windows operating system.

Return codes

ToolsCenter Suite CLI 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 was successful, 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.

The ToolsCenter Suite CLI return codes table provides a complete list of all return codes.

Table 46. ToolsCenter Suite CLI return codes

Return code	Decimal base	Description
0x00	0	Success
0x01	1	Invalid command line
0x02	2	Generic Failure
0x03	3	XML File missing
0x04	4	Reboot Failure
0x05	5	Connect Failure
0x06	6	Platform Error
0x07	7	XML Format Error
0x08	8	Open DLL Failure
0x09	9	Get NULL Pointer
0x0A	10	No Interface Found
0x0B	11	Return Invalid Result
0x0C-0x1F	12-31	Reserved Generic Common Failure
0x20-0x3F	32-63	Inventory Diagnose application error
0x40-0x5F	64-95	Update application error
0x60-0x7F	96-127	Configuration application error
0x80-0x9F	128-159	FoD application error
0xA0-0xDF	160-223	Misc applications error
0xE0-0xFF	224-255	Reserved

Getting help and technical assistance

Use information in this section to assist you in locating technical assistance for your System x, BladeCenter, and Flex System tools.

About this task

If you need help, service, technical assistance or would like more information about products, there is a variety of resources available to assist you. The topics in this section provide information about where to go for additional information

about products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

Before you call

Review and use this information before you call Service and Support to report a problem.

About this task

Complete these steps to try and resolve the problem yourself:

- Ensure that you have the latest version of the tool installed.
- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to Lenovo Service and Support to check for technical information, hints, tips, and new device drivers.
- Use a Lenovo or IBM discussion forum to ask questions.

You can solve many problems without assistance by following the troubleshooting procedures that Lenovo provides in the online help or in the documentation that is provided with your product. The documentation that comes with your system also describes the diagnostic tests that you can perform. Most systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

Using the documentation

Information about your system, preinstalled software, or an optional device is available in the documentation that comes with the product. Product documentation sources include: information centers, online documents, printed documents, readme files, and help files.

About this task

The troubleshooting information in your system documentation might include instructions for using diagnostic programs. The troubleshooting information or the diagnostic programs could indicate that you need additional or updated device drivers or other software. Check these websites for additional information and updates:

Lenovo Service and Support and the IBM Support Portal have the latest technical information, device drivers, and updates.

The IBM Publications Center has additional documentation.

Getting help from the World Wide Web

You can get the latest information about product compatability, supported systems and devices, warranties and licenses, and service and support from this list of websites.

- Lenovo ToolsCenter for Lenovo x86 servers

http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=LNVO-CENTER

- Lenovo BladeCenter Product and Support site

  http://shop.lenovo.com/us/en/systems/servers/blades/bladecenter/
- Lenovo Flex System

  http://shop.lenovo.com/us/en/systems/servers/blades/flex-system/
- Lenovo ServerProven

  http://www.lenovo.com/us/en/serverproven/

Software service and support

You can get assistance for your BladeCenter, Flex System, and System x tools by contacting Service and Support.

- For a list of Lenovo support telephone numbers, see the Lenovo Support Phone List website at https://support.lenovo.com/us/en/supportphonelist.
- For Lenovo support services, see the Lenovo Service and Support website at http://support.lenovo.com/us/en/.
- For information about supported Lenovo products, see the Lenovo Server and Storage Resource Library website at http://shop.lenovo.com/us/en/systems/server-library/.

Hardware service and support

You can get assistance with ordering new equipment or requesting service support. Hardware service and support is available from Service and Support or from your Lenovo reseller, if your reseller is an authorized Lenovo warranty service provider.

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- U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. For a list of Lenovo support telephone numbers, see the Lenovo Support Phone List website at https://support.lenovo.com/us/en/supportphonelist.

Appendix. Accessibility features for ToolsCenter Suite CLI

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 ToolsCenter Suite CLI:

- 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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Printed in USA