



Lenovo Bootable Media Creator Installation and User Guide



Version 11.5.0

Note

Before using this information and the product it supports, read the information in Appendix C “Notices” on page 53.

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About this publication

This publication provides information about how to download and use Lenovo XClarity® Essentials Bootable Media Creator, including creating and using bootable media to update, diagnose, and deploy systems, troubleshooting and support, and a command reference.

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.

In this book, when you are instructed to enter a command, type the command and press Enter.

The following table provides a description of commonly used acronyms in the *Lenovo Bootable Media Creator Users Guide* and graphical user interface.

Table 1. Acronyms

Acronym	Definition
AMM	Advanced Management Module
BIOS	Basic Input Output System
BMC	Base Management Controller
CLI	Command Line Interface
DHCP	Dynamic Host Configuration Protocol
DSA	Dynamic System Analysis
EFI	Extensible Firmware Interface
FTP	File Transfer Protocol
GUI	Graphical User Interface
HBA	Host Bus Adapter
HTTP	Hypertext Transfer Protocol
IMM	Integrated Management Module
IPv6	Internet Protocol version 6
ISO	International Organization for Standardization
NFS	Network File System
PXE	Preboot Execute Environment
RSA	Remote Supervisor Adapter

Table 1. Acronyms (continued)

Acronym	Definition
SOL	Serial Over LAN
SSL	Secured Socket Layer
TFTP	Trivial File Transport Protocol
UEFI	Unified Extensible Firmware Interface
USB	Unified Serial Bus
UXSP	UpdateXpress System Pack
VLAN	Virtual Local Area Network

Publications and related information

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

Publications

[Lenovo Bootable Media Creator \(BoMC\) User Guide](#)

Use this Web site to download the most up-to-date version of *Lenovo Bootable Media Creator Installation and User Guide*.

Web resources

The following Web sites provide tool and information resources for Bootable Media Creator.

Web sites

- [Bootable Media Creator \(BoMC\) for Lenovo x86 servers](#)
Use this Web site to download the Lenovo XClarity Essentials Bootable Media Creator tool and documentation.
- [Lenovo XClarity Essential website](#)
Use this Web site to download tools that support ThinkSystem, System x, and BladeCenter products.

These Web sites provide information about product compatibility and support, warranties and licenses, and various technical resources:

- [Lenovo BladeCenter Support products and services](#)
- [Lenovo ServerProven](#)
- [Lenovo Server and Storage Resource Library](#)

Forums

Use these Web sites to learn about various forums that are available to discuss technology-related and product-related issues pertaining to ThinkSystem, System x, and BladeCenter hardware and software products. These Web sites include links for obtaining the forums using Rich Site Summary (RSS) feeds.

- [ThinkSystem Forum Web site](#)
- [System x Forum Web site](#)
- [BladeCenter Forum website](#)

Chapter 1. Technical overview

You can use Lenovo XClarity Essentials Bootable Media Creator to create bootable media that is suitable for applying firmware updates, running preboot diagnostics, and deploying Microsoft Windows operating systems on supported ThinkSystem, System x, and BladeCenter systems.

ThinkSystem, System x, and BladeCenter tools each have their own bootable CD. Using Bootable Media Creator, you can create a single bootable image on supported media (such as CD, DVD, ISO image, USB flash drive, or set of PXE files) that bundles multiple ThinkSystem, System x, and BladeCenter tools and updates from UpdateXpress System Packs, which contain firmware update packages. You can also create a Lenovo ServerGuide Setup and Installation CD for deploying Windows operating systems and firmware, device driver updates on System x and BladeCenter systems.

Important: Device drivers are not included in the bootable image and must be updated separately.

Bootable Media Creator can acquire the latest bootable environment, UpdateXpress System Pack, individual updates, and Lenovo Preboot Dynamic System Analysis from the local system or it can download these tools and the Lenovo ServerGuide from the Lenovo Web site. An Internet connection is required to download tools and updates from the Lenovo Web site. You can use an HTTP proxy when connecting to the Web. If you use an HTTP proxy, the HTTP server must support Secure Sockets Layer (SSL).

You can run only one instance of Bootable Media Creator on a system at a time, whether it is started from the graphical or command-line interface.

Bootable Media Creator filters the update packages included in the bootable media based on the purpose of the media and the machine types you have selected.

- For deployment media containing Lenovo ServerGuide, which is a Windows-based tool, the Windows PE update packages for the machine types you have selected are added to the media.
- For diagnostic or update media, which use Linux-based tools, only the Linux firmware update packages for your selected machine types are included. Prior versions of the tool included all available update packages, resulting in significantly larger media.

You must have administrator or root-equivalent operating-system privileges to use Bootable Media Creator.

Chapter 2. Downloading Lenovo XClarity Essentials Bootable Media Creator

This section provides information about the hardware and software requirements, downloading instructions, and updating procedures.

Hardware and software requirements

Lenovo XClarity Essentials Bootable Media Creator has specific requirements for hardware and software. These requirements include support for operating systems and hardware running Bootable Media Creator, and support for certain hardware for creating and using bootable media.

Hardware requirements

To successfully run Lenovo XClarity Essentials Bootable Media Creator, the system where you install Bootable Media Creator must meet certain hardware requirements.

- The system running Bootable Media Creator must have 1.5 GB or more of available disk space.

Note: The required disk space depends on the size of bootable media that you want to create. You must have at least 4 times the disk space used by the working directory, which includes the bootable environment, update packages, and tools. For example, if you create a bootable ISO image and the working directory size is 600 MB, the required free disk space is $4 * 600 \text{ MB} = 2.4 \text{ GB}$.

- The Intel or AMD x86 processor-based systems that are booted using the created bootable media must have 1.5 GB or more of available memory.
- For PXE media, you must have at least 4 times the memory of the created PXE image. For example, if the created PXE image is 600 MB, the required memory is $4 * 600 \text{ MB} = 2.4 \text{ GB}$ to boot the PXE image.

EFI Boot

Bootable Media Creator (BoMC) supports creating Extensible Firmware Interface (EFI) bootable media. Unified Extensible Firmware Interface (UEFI) supports two types of boot modes: *Legacy* and *EFI*. This requires that the boot modes in the uEFI setting are set to *UEFI Only* or *UEFI and Legacy*.

The following table shows the boot modes supported by different Bootable Media Creator versions:

Table 2. Supported boot mode

Bootable Media	Boot mode	Server	Version 9.50– Version 11.2	Version 11.3.0 and later versions
ISO	EFI	ThinkSystem	Supported	Supported
		System x	Supported	Supported
	LEGACY	ThinkSystem	Not Supported	Supported
		System x	Not Supported	Not Supported
CD	EFI	ThinkSystem	Supported	Supported
		System x	Supported	Supported
	LEGACY	ThinkSystem	Not Supported	Supported
		System x	Not Supported	Not Supported

Table 2. Supported boot mode (continued)

USB	EFI	ThinkSystem	Supported	Supported
		System x	Supported	Supported
	LEGACY	ThinkSystem	Not Supported	Supported
		System x	Not Supported	Not Supported
PXE	EFI	ThinkSystem	Supported	Supported
		System x	Supported	Supported
	LEGACY	ThinkSystem	Not Supported	Supported
		System x	Supported	Supported

IPv6 enablement

Beginning with version 9.20, Bootable Media Creator supports IPv6 addressing. This section provides information about enabling IPv6 compatibility.

Serial over LAN connections

To use the Bootable Media Creator on a Serial over LAN (SOL) connection in an IPv6 network, all of the following criteria must be met:

- The Advanced Management Module (AMM) on the BladeCenter has a firmware level that supports IPv6 with both Serial over LAN and IPv6 enabled.
- The network connectivity between the SOL console and the BladeCenter uses IPv6.
- Network connectivity for a file transfer in unattended mode has been set up prior to establishing the SOL connection.

Acquisition

- Bootable Media Creator can perform acquisition over a direct LAN connection using IPv6.
- Bootable Media Creator can perform acquisition and update the support list through a proxy server with IPv6 enabled. Network connectivity from the proxy server to the destination server is not restricted to IPv6.

Connection test

- You can test connectivity from the HTTP Proxy page of the Bootable Media Creator by supplying an IPv6 address enclosed in brackets as shown here: [2002:325b:1000::97d:5a20].
- The IPv6 protocol stack is preinstalled on the system running Bootable Media Creator.

Supported hardware

You can use Bootable Media Creator to create bootable media that supports various ThinkSystem, BladeCenter, Flex System, and System x servers.

Supported systems

You can run Bootable Media Creator on any x86 system that is running a supported operating system.

The following ThinkSystem servers are supported by Bootable Media Creator:

Table 3. ThinkSystem servers

Server	Machine type
Lenovo ThinkSystem SR630 Server	7X01, 7X02
Lenovo ThinkSystem SR650 Server	7X05, 7X06
Lenovo ThinkSystem SR530 Server	7X07, 7X08
Lenovo ThinkSystem SR550 Server	7X03, 7X04
Lenovo ThinkSystem SR570 Server	7Y02, 7Y03
Lenovo ThinkSystem SR590 Server	7X98, 7X99
Lenovo ThinkSystem ST550 Server	7X09, 7X10
Lenovo ThinkSystem ST558 Server	7Y15, 7Y16
Lenovo ThinkSystem SR850 Server	7X18, 7X19
Lenovo ThinkSystem SR860 Server	7X69, 7X70
Lenovo ThinkSystem SN550 Server	7X16
Lenovo ThinkSystem SN850 Server	7X15
Lenovo ThinkSystem SD530 Server	7X21
Lenovo ThinkSystem SD650 DWC Server	7X58
Lenovo ThinkSystem SR950 Server	7X11, 7X12, 7X13
Lenovo ThinkSystem SR670 Server	7Y36, 7Y37, 7Y38
Lenovo ThinkSystem SR150/SR158 Server	7Y54, 7Y55
Lenovo ThinkSystem SR250/SR258 Server	7Y51, 7Y52, 7Y53, 7Y72, 7Y73
Lenovo ThinkSystem ST250/ST258 Server	7Y45, 7Y46, 7Y47
Lenovo ThinkAgile VX Series	7Y12, 7Y13, 7Y14, 7Y92, 7Y93, 7Y94, 7Z58
Lenovo ThinkAgile MX Certified	7Z20
Lenovo ThinkAgile HX Series	7X82, 7X83, 7X84, 7Y88, 7Y89, 7Y90, 7Y95, 7Y96, 7Z03, 7Z04, 7Z05, 7Z08, 7Z09, 7Z06, 7Z07

The following System x are supported by Bootable Media Creator:

Table 4. System x servers

Server	Machine type
BladeCenter HS22	7809, 7870, 1936, 1911
BladeCenter HS22V	7871, 1949
BladeCenter HS23	7875
BladeCenter HS23E	8038, 8039
BladeCenter HX5	1909, 1910, 7872, 7873
BladeCenter Server HS23	1929
Flex System X220 Compute Node	7906, 7916
Flex System X240	7162, 2588
Flex System X240 Compute Node	8738, 8737, 7863, 8956
Flex System X240 M5	2591, 9532
Flex System X280/X480/X880 X6	4259, 7903
Flex System X440 Compute Node	7917
Flex System X880 X6	7196, 4258
Lenovo Converged HX Series	8693, 8695
NeXtScale nx360 M4	5455
NeXtScale nx360 M5	5465
NeXtScale nx360 M5 DWC	5467
Smart Analytics System	7949
System x iDataPlex dx360 M4	7912, 7913
System x iDataPlex dx360 M4 Water Cooled server	7918, 7919
System x iDataPlex dx360 M2 server	6391, 7621, 7323
System x3100 M4	2582
System x3100 M5	5457
System x3200 M2	4367, 4368
System x3200 M3	7327, 7328
System x3250 M2	4194, 4190, 7657, 4191
System x3250 M3	4261, 4251, 4252
System x3250 M4	2583
System x3250 M5	5458
System x3250 M6	3633, 3943
System x3300 M4	7382
System x3400 M2	7836, 7837
System x3400 M3	7378, 7379

Table 4. System x servers (continued)

Server	Machine type
System x3500 M2	7839
System x3500 M3	7380
System x3500 M4	7383
System x3500 M5	5464
System x3530 M4	7160
System x3550 M2	4198, 7946
System x3550 M3	7944, 4254
System x3550 M4	7914
System x3350 M5	5463, 8869
System x3620 M3	7376
System x3630 M3	7377
System x3630 M4	7158
System x3650 M2	7947, 4199
System x3650 M3	7945, 5454, 4255
System x3650 M4	7915
System x3650 M4 BD	5460, 5466
System x3650 M5	5462, 8871
System x3690 X5	7147, 7149, 7192, 7148
System x3750 M4	8733, 8718, 8722, 8752, 8753
System x3755 M3	7164
System x3850 X5/X3950 X5	7143,7145,7146,7191
System x3850 X6/X3950 X6	6241
System x3850/X3950 X6	3839,3837
System x440 M5	2590,7167

Notes: The following systems support both single node and multi node:

- IBM BladeCenter HX5
- IBM BladeCenter 3850 X5
- IBM BladeCenter 3950 X5
- Flex System x280 X6/x480 X6/x880 X6 Compute Node
- IBM System x3850 X6/x3960 X6
- Lenovo Flex System x3850 X6/x3950 X6, 6241
- Lenovo Flex System x280 X6/x480 X6/x880 X6 Compute Node, 4258, 7196

The following Storage systems are supported by Bootable Media Creator:

Table 5. Storage systems

Storage	Machine type
Lenovo Storage D1212/D1224	4587
Lenovo Storage D3284	6413

Supported operating systems

Lenovo XClarity Essentials Bootable Media Creator supports the following operating systems, which include 32-bit and 64-bit versions.

- **Windows:**
 - Microsoft Windows 7
 - Microsoft Windows 8
 - Microsoft Windows 10
 - Microsoft Windows 2008 R2
 - Microsoft Windows Server 2012
 - Microsoft Windows Server 2012 R2
 - Microsoft Windows Server 2016
 - Microsoft Windows Server 2019
- **Linux:**
 - Red Hat Enterprise Linux 7 Server (x64) Editions (up to SP5)
 - SUSE Linux Enterprise Server 12 (x64) (up to SP3)
 - SUSE Linux Enterprise Server 15 (x64)
- Because there is no executable file for the Windows 64-bit operating system, you can run the executable file for the Windows 32-bit operating system through Windows on Windows (WOW).
- You cannot run Bootable Media Creator on Windows Preinstallation Environment (WinPE).

Supported tools

You can bundle these tools on the bootable media:

- Lenovo ServerGuide
- Preboot Dynamic System Analysis
- LXCE UpdateXpress

Supported bootable media

Lenovo XClarity Essentials Bootable Media Creator creates bootable images on several forms of media, including CD, DVD, ISO image, PXE files, and USB flash drive.

Supported PXE servers

You can create bootable Preboot Execution Environment (PXE) files for the following PXE servers:

- Altiris PXE server (Windows only)
- Dynamic Host Configuration Protocol (DHCP) server (Linux only)
- Trivial File Transport Protocol (TFTP) server (Linux only)

Supported USB flash drives

You can create bootable media on the following USB flash drives:

- Lexar USB flash drives, including the JumpDrive Lightning series
- SanDisk USB flash drives, including the Cruzer Micro series

Important: If the capacity of USB flash drive is larger than 32GB, only 32GB is formatted and used by the bootable media. You need to manually format the extra space if you want to use it for other tasks.

Supported bootable environment

Lenovo XClarity Essentials Bootable Media Creator requires a compatible bootable environment for creating bootable media. Each bootable environment version listed in the following table is aligned with a version number in the bootable environment zip file.

Table 6. Supported bootable environment

BoMC version	Bootable Environment Version
Before BoMC 9.50	140
Between 9.50 and 9.63	141
BoMC 10.0, 10.1, 10.2, and 10.3	7.42
BoMC 11.0, 11.1.0	7.42 and 1.0.0-1.0.0
BoMC 11.2.0, 11.3.0, 11.4.0	7.42, 1.0.0-1.0.1 and later version

Note: If you create media from a local repository and specify the --toolzip or -t option, BoMC reports the following warning message: The bootable environment is not the supported version. It may cause failure to create media. Are you sure you want to continue? (y or n)

Downloading Lenovo XClarity Essentials Bootable Media Creator

Bootable Media Creator is a self-extracting application that does not require installation and is ready to be used after downloading. The files are extracted automatically to a random, temporary directory each time Bootable Media Creator runs.

You can download Bootable Media Creator from the Web site at:
<http://datacentersupport.lenovo.com/us/en/documents/LNVO-BOMC>

Attention: For security reasons, store the Bootable Media Creator application, including its extractions, and all the sensitive logs to a safe place where only authorized users can access.

Updating Lenovo XClarity Essentials Bootable Media Creator

If a Bootable Media Creator update is available on the Web, you can download a newer version to your local system.

Complete the following procedure to update Bootable Media Creator:

- Step 1. To start the Bootable Media Creator wizard, on a command line, enter the applicable command name for your operating system with no options. Bootable Media Creator command names vary and are based on the operating system from which you are running the command. The following table lists the name of the command for each supported operating system. xxx_xx.x.x means the version of the Bootable Media Creator. For detailed information about the supported operating systems, see “Supported operating systems” on page 8.

Operating system	Command name
Microsoft Windows 7	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 8	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe

Operating system	Command name
Microsoft Windows 2008 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 10	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2016	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2019	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Red Hat Enterprise Linux 7.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

Step 2. To check the Web for the latest version of Bootable Media Creator and download the newer version, click **Check for the latest version of this tool** and save the file in the directory where the command was run.

Step 3. Click **Next**.

Step 4. On the HTTP Proxy page, complete the following steps:

a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number of the HTTP proxy server.

b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and then complete these fields:

User name

The user name for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

Step 5. Click **Next**.

Step 6. Select one of the following options:

If a newer version is not available, click **Next** to continue creating bootable media, or click **Cancel** to close the wizard.

If a newer version is available, click **Download Now** to download the latest version.

Chapter 3. Creating and updating bootable media

You can use Lenovo XClarity Essentials Bootable Media Creator to create and update bootable images on various media. The topics in this section describe how to create and update bootable images for each type of media.

Creating bootable media for ThinkSystem servers

You can create one of the following bootable images for ThinkSystem servers:

- Bootable ISO image
- Bootable USB storage drive
- Bootable CD/DVD
- Bootable PXE file

Complete the following procedure to create bootable media.

- Step 1. On a command line, enter the command name with no options to start the Bootable Media Creator wizard. The command name varies and is based on the operating system from which you are running the command. The following table lists the name of the command for each supported operating system.

Operating system	Command name
Microsoft Windows 7	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 8	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 2008 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 10	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2016	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2019	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Red Hat Enterprise Linux 7.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

- Step 2. On the Welcome page, type a description in the **Descriptive name** field. The descriptive text is displayed on the screen when you use the bootable media.

- Step 3. Click **Next**.

- Step 4. On the Targeted System page, select one or more machine types that you want the bootable media to support, and then click **Next**.

Notes:

- You can only select machine type in one table among Storage Platforms, ThinkSystem Platforms and System x Platforms. If select ThinkSystem Platforms only, the Media Purpose page will not display.

- Use **Update List** to update the system support list for all functions.
- Use **Rollback** to roll back to the original system support lists bundled with each function.
- You can manually add or delete machine types for Lenovo systems using the + or - button.
- If a function is not supported by a system, selection of the unsupported function is disabled for that system.
- To add support for new systems or updates released after the current version of the Bootable Media Creator, use **Update List** to update the support list from the Lenovo Web site.

Step 5. On the Acquire Location page, complete these fields and then click **Next**:

Check the Lenovo Web site

Select this radio button to acquire the updates from the Lenovo Web site before creating the bootable media.

UpdateXpress System Pack (UXSPs)

This is the preferred method to obtain updates.

Select this radio button to acquire complete UpdateXpress System Packs. Each UpdateXpress System Pack contains an integration-tested bundle of online, firmware updates for each ThinkSystem server.

Latest available individual updates

Select this option to acquire individual updates.

Look in a local directory

Select this option to acquire updates, tools, and boot environment from the local system. Type the fully qualified path and file name in the given field, or click **Browse** to select the file.

Step 6. On the HTTP Proxy page, complete the following steps:

- a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy server to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy server to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number for the HTTP proxy server.

- b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and enter the following credential information:

User name

The user name to use for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

- c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

Step 7. Click **Next** to go to the Targeted Directory page.

Step 8. On the Targeted Directory page, specify the directory where you want to store the downloaded files.

Step 9. On the Media Format page, specify the format to use for the bootable media.

To create an ISO image:

1. For **Device type**, select **CD/DVD**.
2. Select **Write to image file** and then type the fully qualified path and file name for the ISO image in the given field.

To create a CD or DVD:

1. For **Device type**, select **CD/DVD**.
2. Select **Write directly to device** to write the bootable medium to the specified CD or DVD drive.
3. For **Disk**, select the letter associated with the CD or DVD drive for Windows (such as E:) or the device name for Linux (such as /dev/hdb).

To create a USB flash drive:

1. For **Device type**, select **USB**.
2. Select **Write directly to device** to write the bootable medium to the specified USB flash drive.
3. For **Disk**, select the letter associated with the USB flash drive for Windows (such as E:) or the device name for Linux (such as /dev/sdb).

To create PXE files:

1. For **Device type**, select **PXE**.
2. For **PXE TFTP server address**, specify the IP address of the TFTP server to use for PXE boot.
3. For **Directory to write PXE files to**, select the fully qualified path or click **Browse** to select the path where you want to write the PXE files in the given field.

Step 10. Click **Next**. If you selected only UXSPI functions on the Media Purpose page, the Unattended Mode Configuration page is displayed. Complete the following applicable fields:

Do not use unattended mode

Select this radio button to disable unattended mode.

Use unattended mode

Select this radio button to enable unattended updates. If you select this option you must complete the following additional fields:

Upload log files to:

Use this list to choose where to place the log files when unattended updates are complete. Your choices are:

- TFTP Server
- FTP Server
- NFS Share
- Samba Server
- USB Drive

Notes:

1. To upload log files to a TFTP, FTP, or Samba server, or to an NFS share, the directory where the files are to be uploaded must already exist (it will not be created as part of the upload process), and it must allow anonymous access.
2. To upload the unattended log package to the specified location, you must ensure that you can perform the following actions, if you are using the RHEL6.4 x86-64 operating system environment:

- For Samba shares: `mount -t cifs // $address/$directory $mount_point -o user=anonymous, password=anonymous`
- For NFS shares: `mount -t nfs $address:$directory $mount_point`
- For FTP and TFTP uploads, ensure that the local file can be uploaded to the address and directory specified in the **FTP** or **TFTP** command.

Server Address

The address of the server where the log files will be loaded.

Save to directory

The directory where the logs are saved.

- Step 11. On the Confirm Choices page, review the configuration information you provided for creating the bootable media.
- Step 12. Optional: Click **Save** to save this configuration information to a file, which you can import into this tool to recreate this bootable media at a later time.
- Step 13. Click **Next**.

The Creation Progress page is displayed. Bootable Media Creator then creates the bootable media. A progress bar indicates that the acquisition and creation are in progress and shows the percentage of progress.

- Step 14. When the bootable media is finished, click **Next**.
- Step 15. Click **Finish**.

Creating bootable media for System x servers

You can create one of the following bootable images for System X servers:

- Bootable ISO image
- Bootable USB storage drive
- Bootable CD/DVD
- Bootable PXE file

Complete the following procedure to create bootable media.

- Step 1. On a command line, enter the command name with no options to start the Bootable Media Creator wizard. The command name varies and is based on the operating system from which you are running the command. The following table lists the name of the command for each supported operating system.

Operating system	Command name
Microsoft Windows 7	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows 8	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows 2008 R2	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows 10	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows Server 2012	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows Server 2012 R2	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows Server 2016	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>
Microsoft Windows Server 2019	<code>lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe</code>

Operating system	Command name
Red Hat Enterprise Linux 7.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

- Step 2. On the Welcome page, type a description in the **Descriptive name** field. The descriptive text is displayed on the screen when you use the bootable media.
- Step 3. Click **Next**.
- Step 4. On the Targeted System page, select one or more machine types that you want the bootable media to support, and then click **Next**.

Notes:

- You can only select machine type in one table among Storage Platforms, ThinkSystem Platforms and System x Platforms. If select ThinkSystem Platforms only, the Media Purpose page will not display.
 - Use **Update List** to update the system support list for all functions.
 - Use **Rollback** to roll back to the original system support lists bundled with each function.
 - You can manually add or delete machine types for Lenovo systems using the + or - button.
 - If a function is not supported by a system, selection of the unsupported function is disabled for that system.
 - To add support for new systems or updates released after the current version of the Bootable Media Creator, use **Update List** to update the support list from the Lenovo Web site.
- Step 5. If you selected System x systems in the previous step, on the Media Purpose page, complete these fields and then click **Next**:

Updates

Select this check box to bundle LXCE UpdateXpress and firmware updates for the targeted systems on the bootable media.

- If you create bootable media on a system that is the same machine type as the target system or a system that is in the supported systems list, the machine type is automatically highlighted and selected.
- Updating firmware is performed using LXCE UpdateXpress.
- This function updates only firmware. Device drivers must be updated separately.
- IBM Intellistation Pro is no longer available or supported.

Include firmware updates in the bootable media

This option is displayed only if you have selected **Deployment**. By default, the Lenovo ServerGuide Setup and Installation CD includes only device driver updates. Select this check box to include firmware updates on the CD. The firmware updates are deployed after the operating system deployment has finished.

Diagnostics

Select this check box to bundle Dynamic System Analysis on the bootable media.

Note: This option is disabled if you select **Deployment**.

Deployment

Select this check box to create a Lenovo ServerGuide Setup and Installation CD.

Note: This option is displayed only on Microsoft Windows platforms.

Deploy Windows 64 bit

Select this radio button to deploy 64-bit versions of Windows.

Deploy Windows 32 bit

Select this radio button to deploy 32-bit versions of Windows.

Step 6. On the Acquire Location page, complete these fields and then click **Next**:

Check the Lenovo Web site

Select this radio button to acquire the latest updates from the Lenovo Web site before creating the bootable media.

UpdateXpress System Pack (UXSPs)

This is the preferred method to obtain updates.

Select this radio button to acquire complete UpdateXpress System Packs. Each UpdateXpress System Pack contains an integration-tested bundle of online, firmware updates for each ThinkSystem, System x, and BladeCenter system.

Latest available individual updates

Select this option to acquire individual updates.

Look in a local directory

Select this option to acquire updates, tools, and boot environment from the local system. Type the fully qualified path and file name in the given field, or click the **Browse** to select the file.

Step 7. On the HTTP Proxy page, complete the following steps:

a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy server to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy server to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number for the HTTP proxy server.

b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and enter the following credential information:

User name

The user name to use for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

Step 8. Click **Next** to go to the Targeted Systems page.

Step 9. On the Target Directory page, specify the directory where you want to store the downloaded files.

Step 10. On the Media Format page, specify the format to use for the bootable media.

To create an ISO image:

1. For **Device type**, select **CD/DVD**.

2. Select **Write to image file** and then type the fully qualified path and file name for the ISO image in the given field.

To create a CD or DVD:

1. For **Device type**, select **CD/DVD**.
2. Select **Write directly to device** to write the bootable medium to the specified CD or DVD drive.
3. For **Disk**, select the letter associated with the CD or DVD drive for Windows (such as E:) or the device name for Linux (such as /dev/hdb).

To create a USB flash drive:

1. For **Device type**, select **USB**.
2. Select **Write directly to device** to write the bootable medium to the specified USB flash drive.
3. For **Disk**, select the letter associated with the USB flash drive for Windows (such as E:) or the device name for Linux (such as /dev/sdb).

To create PXE files:

1. For **Device type**, select **PXE**.
2. For **PXE TFTP server address**, specify the IP address of the TFTP server to use for PXE boot.
3. For **Directory to write PXE files to**, select the fully qualified path or click **Browse** to select the path where you want to write the PXE files in the given field.

Step 11. Click **Next**. If you selected only UXSPI functions on the Media Purpose page, the Unattended Mode Configuration page is displayed. Complete the following applicable fields:

Do not use unattended mode

Select this radio button to disable unattended mode.

Use unattended mode

Select this radio button to enable unattended updates. If you select this option you must complete the following additional fields:

Upload log files to:

Use this list to choose where to place the log files when unattended updates are complete. Your choices are:

- TFTP Server
- FTP Server
- NFS Share
- Samba Server
- USB Drive

Notes:

1. To upload log files to a TFTP, FTP, or Samba server, or to an NFS share, the directory where the files are to be uploaded must already exist (it will not be created as part of the upload process), and it must allow anonymous access.
2. To upload the unattended log package to the specified location, you must ensure that you can perform the following actions, if you are using the Rhel6.4 x86-64 operating system environment:
 - For Samba shares: `mount -t cifs // $address/ $directory $mount_point -o user=anonymous, password=anonymous`
 - For NFS shares: `mount -t nfs $address: $directory $mount_point`

- For FTP and TFTP uploads, ensure that the local file can be uploaded to the address and directory specified in the **FTP** or **TFTP** command.

Server Address

The address of the server where the log files will be loaded.

Save to directory

The directory where the logs are saved.

- Step 12. On the Confirm Choices page, review the configuration information you provided for creating the bootable media.
- Step 13. Optional: Click **Save** to save this configuration information to a file, which you can import into this tool to recreate this bootable media at a later time.
- Step 14. Click **Next**.

The Creation Progress page is displayed. Bootable Media Creator acquires UpdateXpress System Pack updates if appropriate, acquires Dynamic System Analysis if specified, and then creates the bootable media. A progress bar indicates that the acquisition and creation are in progress and shows the percentage of progress.

- Step 15. When the bootable media is finished, click **Next**.
- Step 16. Click **Finish**.

Creating bootable media for Storage systems

You can create a bootable ISO image for Storage systems.

Complete the following procedure to create bootable media.

Note: You can also run the command `bomc.exe --function=jbod --iso bootable.iso -l workingdir` to create the bootable media for Storage systems.

- Step 1. On a command line, enter the command name with no options to start the Bootable Media Creator wizard. The command name varies and is based on the operating system from which you are running the command. The following table lists the name of the command for each supported operating system.

Operating system	Command name
Microsoft Windows 7	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 8	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 2008 R2	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 10	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012 R2	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2016	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2019	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Red Hat Enterprise Linux 7.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

- Step 2. On the Welcome page, type a description in the **Descriptive name** field. The descriptive text is displayed on the screen when you use the bootable media.
- Step 3. Click **Next**.
- Step 4. On the Targeted System page, select one or more machine types that you want the bootable media to support, and then click **Next**.

Notes:

- You can only select machine type in one table among Storage Platforms, ThinkSystem Platforms, and System x Platforms. If select Storage Platforms only, the Media Purpose page will not display.
- If a function is not supported by a system, selection of the unsupported function is disabled for that system.

- Step 5. On the Acquire Location page, complete these fields, and then click **Next**:

Look in a local directory

Select this option to acquire jbdupdate utility and boot environment from the local system. Type the fully qualified path and file name in the given field, or click **Browse** to select the file.

Note: The jbdupdate utility should be put into the local directory manually. Boot environment can be downloaded from the Web, if it is not found in the local directory.

- Step 6. On the HTTP Proxy page, complete the following steps:

- a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy server to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy server to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number for the HTTP proxy server.

- b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and enter the following credential information:

User name

The user name to use for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

- c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

- Step 7. Click **Next** to go to the Media Format page.
- Step 8. On the Media Format page, select **Write to image file**, and specify the fully qualified path and file name for the ISO image in the given field.
- Step 9. Click **Next**. On the Confirm Choices page, review the configuration information you provided for creating the bootable media.
- Step 10. Optional: Click **Save** to save this configuration information to a file, which you can import into this tool to recreate this bootable media at a later time.

Step 11. Click **Next**.

The Creation Progress page is displayed. Bootable Media Creator downloads the related files for Storage systems, and then creates the bootable media. A progress bar indicates that the acquisition and creation are in progress and shows the percentage of progress.

Step 12. When the bootable media is finished, click **Next**.

Step 13. Click **Finish**.

Creating bootable media for a specific firmware update

You can create bootable media containing a specific firmware update, such as BIOS or Baseboard Management Controller (BMC).

Complete the following procedure to create bootable media for a specific firmware update:

Step 1. Download the firmware update, such as BIOS or BMC, to the working directory on the local system. Be sure to download both the binary files and the XML file used by the LXCE UpdateXpress, or UpdateXpress cannot detect the update. You can download updates from [Lenovo Service and Support](#) Web site.

Step 2. Create a bootable media using the downloaded firmware update. For example, enter the following command from a system running Windows to create an ISO image using the update file located in the c:\workingdir directory. The LXCE UpdateXpress tool and bootable environment are acquired from the Lenovo Web site by default.

```
lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update --iso=bmc.iso --local=c:\workingdir--machine-type=1909,1910
```

Note: If no machine type is specified, the default value is **All**, which will download all available machine types.

Creating a Lenovo ServerGuide Setup and Installation CD

You can use Bootable Media Creator to create a Lenovo ServerGuide Setup and Installation CD only for System x platforms.

Creation of a Lenovo ServerGuide CD is supported only on Windows operating systems, and requires that you install the English version of the Windows Automated Installation Kit (AIK) or the Assessment and Deployment Kit (ADK).

- Use the AIK for the Windows Server 2003 family, Windows Server 2003 R2 family, Windows Vista, Windows Server 2008 family, Windows 7 family, and Windows Server 2008 R2 family. It is available from <http://www.microsoft.com/en-us/download/details.aspx?id=5753>.
- Use the ADK is for the Windows Server 2012 family, Windows 10 family, and Windows Server 2016 family. It is available from <http://www.microsoft.com/en-us/download/details.aspx?id=30652>.

Note: For ADK installation, the optional module “Application Compatibility Toolkit (ACT)” must be checked.

The amount of drive space required to create a Lenovo ServerGuide Setup and Installation CD depends on the options selected.

- Creating a Lenovo ServerGuide Setup and Installation CD for deployment requires only 1.5 GB of space, regardless of the number of systems selected. The generated ISO image is approximately 700 MB in size and will fit on a CD.

- If you select **Updates**, the amount of space required depends on the number of systems selected for update. If all systems are selected, approximately 6 GB of drive space is required. The resulting ISO image will be approximately 3.3 GB and will require a DVD.

Complete the following procedure to create a Lenovo ServerGuide Setup and Installation CD:

- Step 1. On a command line, enter **Invgy_utl_bomc_v.r.m_windows_i386.exe** to start the Lenovo XClarity Essentials Bootable Media Creator wizard.
- Step 2. On the Welcome page, type a description in the **Descriptive name** field. The descriptive text is displayed on the screen when you use the bootable media.
- Step 3. Click **Next**.
- Step 4. On the Targeted System page, select one or more machine types that you want the bootable media to support, and then click **Next**.

Notes:

- You can only select machine type in one table between ThinkSystem Platforms and System x Platforms. If select ThinkSystem Platforms only, the Media Purpose page will not display.
- Use **Update List** to update the system support list for all functions.
- Use **Rollback** to roll back to the original system support lists bundled with each function.
- Click **Select All** to select all machine types or click **Unselect All** to deselect all machine types.
- You can manually add or delete machine types for Lenovo systems using the **Add** or **Delete** button.
- If a function is not supported by a system, selection of the unsupported function is disabled for that system.
- To add support for new systems or updates released after the current version of the Bootable Media Creator, use **Update List** to update the support list from the Lenovo Web site.

- Step 5. If you selected System x systems in the previous step, on the Media Purpose page, select the following fields:

Updates (optional)

Includes device driver updates and the LXCE UpdateXpress on the Lenovo ServerGuide Setup and Installation CD.

- If you create bootable media on a system that has the same machine type as the target system or a system that is in the supported systems list, the machine type is automatically highlighted and selected.
- IntelliStation Pro is not supported.

Deployment

Select this check box to create the Lenovo ServerGuide Setup and Installation CD.

Note: This option is only displayed on Windows platforms.

Deploy Windows 64 bit

Select this radio button to deploy 64bit versions of Windows

Deploy Windows 32 bit

Select this radio button to deploy 32bit versions of Windows

- Step 6. Click **Next** to proceed to the Acquire Location page.
- Step 7. On the Acquire Location page, complete these fields and then click **Next**:

Check the Lenovo Web site

Select this radio button to acquire the latest updates from the Lenovo Web site before creating the bootable media.

UpdateXpress System Pack (UXSPs)

This is the preferred method to obtain updates.

Select this radio button to acquire complete UpdateXpress System Packs. Each UpdateXpress System Pack contains an integration-tested bundle of online, firmware updates for each ThinkSystem, System x, and BladeCenter system.

Latest available individual updates

Select this option to acquire individual updates.

Look in a local directory

Select this option to acquire updates, tools, and boot environment from the local system. Type the fully qualified path and file name in the given field, or click the **Browse** to select the file.

Step 8. On the HTTP Proxy page, complete the following steps:

a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy server to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy server to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number for the HTTP proxy server.

b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and enter the following credential information:

User name

The user name to use for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

Step 9. Click **Next** to go to the Targeted Systems page.

Step 10. On the Media Format page, complete one of the following tasks to specify the format to use for the bootable media:

To create an ISO image:

1. For **Device type**, select **CD/DVD**.
2. Select **Write to image file** and then type the fully qualified path and file name for the ISO image in the given field.

To create a CD or DVD, complete these fields:

1. For **Device type**, select **CD/DVD**.
2. Select **Write directly to device** to write the bootable medium to the specified CD or DVD drive.

3. For **Disk**, select the letter associated with the CD or DVD drive for Windows (such as E:) or the device name for Linux (such as /dev/hdb).
- Step 11. On the Confirm Choices page, review the configuration information you provided for creating the Lenovo ServerGuide Setup and Installation CD.
- Step 12. Optional: Click **Save** to save this configuration information to a file, which you can import into this tool to recreate the Lenovo ServerGuide Setup and Installation CD at a later time.
- Step 13. Click **Next**.

The Creation Progress page is displayed. Lenovo XClarity Essentials Bootable Media Creator acquires the Lenovo ServerGuide package and UpdateXpress System Pack updates if you specified them, and then creates the Lenovo ServerGuide Setup and Installation CD or CD image. A progress bar indicates that the acquisition and creation are in progress and shows the percentage of progress.

- Step 14. When the bootable media is finished, click **Next**.
- Step 15. Click **Finish**.

To use the completed CD, insert it in the target server, boot the server, and follow the on-screen prompts.

Updating existing bootable media

You can update bootable images on writable media using the image's configuration file created by Lenovo XClarity Essentials Bootable Media Creator.

Complete the following procedure to update existing bootable media.

- Step 1. On a command line, enter the command name with no options to start the Bootable Media Creator wizard. The command name varies and is based on the operating system from which you are running the command. The following table lists the name of the command for each supported operating system.

Operating system	Command name
Microsoft Windows 7	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 8	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 2008 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 10	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012 R2	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2016	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2019	Invgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Red Hat Enterprise Linux 7.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	Invgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

- Step 2. On the Welcome page, type a description in the **Descriptive name** field. The descriptive text is displayed on the screen when you use the bootable media.
- Step 3. Click **Load in a previously saved configuration** to load settings that are defined in a specific configuration file.

- Step 4. Click **Next**.
- Step 5. Type the fully qualified path and file name for the configuration file, and then click **Next**.
- Step 6. On the Targeted System page, select one or more machine types that you want the bootable media to support, and then click **Next**.

Notes:

- You can only select machine type in one table between ThinkSystem Platforms and System x Platforms. If select ThinkSystem Platforms only, the Media Purpose page will not display.
- Use **Update List** to update the system support list for all functions.
- Use **Rollback** to roll back to the original system support lists bundled with each function.
- You can manually add or delete machine types for Lenovo systems using the **Add** or **Delete** button.
- If a function is not supported by a system, selection of the unsupported function is disabled for that system.
- To add support for new systems or updates released after the current version of the Bootable Media Creator, use **Update List** to update the support list from the Lenovo Web site.

- Step 7. On the Media Purpose page, complete these fields and then click **Next**:

Updates

Select this check box to bundle LXCE UpdateXpress and firmware updates for the targeted systems on the bootable media.

- If you create bootable media on a system that is the same machine type as the target system or a system that is in the supported systems list, the machine type is automatically highlighted and selected.
- Updating firmware is performed using LXCE UpdateXpress.
- This function updates only firmware. Device drivers must be updated separately.
- IBM Intellistation Pro is no longer available or supported.

Include firmware updates in the bootable media

This option is displayed only if you have selected **Deployment**. By default, the Lenovo ServerGuide Setup and Installation CD includes only device driver updates. Select this check box to include firmware updates on the CD. The firmware updates are deployed after the operating system deployment has finished.

Diagnostics

Select this check box to bundle Dynamic System Analysis on the bootable media.

Note: This option is disabled if you select **Deployment**.

Deployment

Select this check box to create a Lenovo ServerGuide Setup and Installation CD. This option is disabled if you select **Diagnostics**.

Create media to use a text-based (non-graphical) user interface

Select this check box to start the tools in a text user interface. If this check box is not selected, the tools start in a graphical user interface. This option cannot be selected with **Deployment**.

- Step 8. On the Acquire Location page, complete these fields and then click **Next**:

Check the Lenovo Web site

Select this radio button to acquire the latest updates from the Lenovo Web site before creating the bootable media.

UpdateXpress System Pack (UXSPs)

This is the preferred method to obtain updates.

Select this radio button to acquire complete UpdateXpress System Packs. Each UpdateXpress System Pack contains an integration-tested bundle of online, firmware updates for each ThinkSystem, System x, and BladeCenter system.

Latest available individual updates

Select this option to acquire individual updates.

Look in a local directory

Select this option to acquire updates, tools, and boot environment from the local system. Type the fully qualified path and file name in the given field, or click the **Browse** to select the file.

Step 9. On the Target Directory page, specify the directory where you want to store the downloaded files.

Step 10. On the Targeted Systems page, select one or more machine types that you want the bootable media to support and then click **Next**. Use **Update List** to update the system support list for all functions.

Use **Rollback** to roll back to the original system support lists bundled with each function.

- Click **Select All** to select all machine types or click **Unselect All** to deselect all machine types.
- You can manually add or delete machine types for Lenovo systems using the **Add** or **Delete** button.
- If a function is not supported by a system, selection of the unsupported function is disabled for that system.
- To add support for new systems or updates released after the current version of the Bootable Media Creator, use **Update List** to update the support list from the Lenovo Web site.

Step 11. On the HTTP Proxy page, complete the following steps:

- a. Select a proxy option:

Do not use proxy

Select this option if you do not require an HTTP proxy server to connect to the Web.

Use proxy

Select this option if you require an HTTP proxy server to connect to the Web, and then complete these fields:

Host name

The host name, IP address, or domain name of the HTTP proxy server.

Port

The port number for the HTTP proxy server.

- b. If credentials must be specified to authenticate to the HTTP proxy server, select the **Authenticate using the following credentials** check box and enter the following credential information:

User name

The user name to use for authenticating to the HTTP proxy server.

Password

The password for the specified user name.

- c. To test the connection to the specified HTTP proxy server, click **Test Connection**.

Step 12. On the Media Format page, specify the format to use for the bootable media.

To create an ISO image:

1. For **Device type**, select **CD/DVD**.
2. Select **Write to image file** and then type the fully qualified path and file name for the ISO image in the given field.

To create a CD or DVD:

1. For **Device type**, select **CD/DVD**.
2. Select **Write directly to device** to write the bootable medium to the specified CD or DVD drive.
3. For **Disk**, select the letter associated with the CD or DVD drive for Windows (such as E:) or the device name for Linux (such as /dev/hdb).

To create a USB flash drive:

1. For **Device type**, select **USB**.
2. Select **Write directly to device** to write the bootable medium to the specified USB flash drive.
3. For **Disk**, select the letter associated with the USB flash drive for Windows (such as E:) or the device name for Linux (such as /dev/sdb).

To create PXE files:

1. For **Device type**, select **PXE**.
2. For **PXE TFTP server address**, specify the IP address of the TFTP server to use for PXE boot.
3. For **Directory to write PXE files to**, select the fully qualified path or click **Browse** to select the path where you want to write the PXE files in the given field.

Step 13. Click **Next**. If you selected only UXSPI functions on the Media Purpose page, the Unattended Mode Configuration page is displayed. Complete the following applicable fields:

Do not use unattended mode

Select this radio button to disable unattended mode.

Use unattended mode

Select this radio button to enable unattended updates. If you select this option you must complete the following additional fields:

Upload log files to:

Use this list to choose where to place the log files when unattended updates are complete. Your choices are:

- TFTP Server
- FTP Server
- NFS Share
- Samba Server
- USB Drive

Notes:

1. To upload log files to a TFTP, FTP, or Samba server, or to an NFS share, the directory where the files are to be uploaded must already exist (it will not be created as part of the upload process), and it must allow anonymous access.
2. To upload the unattended log package to the specified location, you must ensure that you can perform the following actions, if you are using the Rhel6.4 x86-64 operating system environment:
 - For Samba shares: `mount -t cifs // $address / $directory $mount_point -o user=anonymous, password=anonymous`

- For NFS shares: `mount -t nfs $address:$directory $mount_point`
- For FTP and TFTP uploads, ensure that the local file can be uploaded to the address and directory specified in the **FTP** or **TFTP** command.

Server Address

The address of the server where the log files will be loaded.

Save to directory

The directory where the logs are saved.

Step 14. On the Confirm Choices page, review the configuration information you provided for creating the bootable media.

Step 15. Optional: Click **Save** to save this configuration information to a file, which you can import into this tool to recreate this bootable media at a later time.

Step 16. Click **Next**.

The Creation Progress page is displayed. Bootable Media Creator acquires UpdateXpress System Pack updates if appropriate, acquires Dynamic System Analysis if specified, and then creates the bootable media. A progress bar indicates that the acquisition and creation are in progress and shows the percentage of progress.

Step 17. When the bootable media is finished, click **Next**.

Step 18. Click **Finish**.

Chapter 4. Using bootable media

You can use the Menu program to select the tools to include with Lenovo XClarity Essentials Bootable Media Creator bootable media, such as Dynamic System Analysis or LXCE UpdateXpress.

The Menu program can be run from the graphical user interface or from the text user interface.

Step 1. Select one of the following options:

To use the bootable ISO image, you must burn the ISO image onto a CD or DVD or mount the ISO image to a server using the virtual media function in BladeCenter Advanced Management Module (AMM), Integrated Management Module (IMM), or another equivalent function.

To use the bootable PXE files, complete these steps:

1. Copy the files in the Preboot Execution Environment (PXE) created directory (grub.cfg, img3a, img2a, LiveOS/squashfs.img, pxelinux.0, bsb1.lss, bsb.msg and tc.zip) to the content directory on the Trivial File Transport Protocol (TFTP) server.
2. Configure the PXE boot server to use pxelinux.0 as the boot file.
3. Verify the PXE boot server and TFTP boot server are up and running.

Step 2. Optional: If the device you want to boot from is not first or second in the boot order, press **F12** to select a device.

Step 3. If the --autorun option was not specified when the bootable media was created, from the Menu, select a tool to manually start. When the selected tool is ready, the Menu for the graphic user interface or interactive text-user interface is displayed.

Step 4. Click **Exit** to close the Menu program. The targeted system shuts down if it is PXE booting or performing an unattended update, otherwise it reboots.

Booting from bootable media using the graphical interface

The Menu program runs when the bootable media is booted. The graphical version of the Menu program runs in interactive mode (you can select the function you want to use) or unattended mode. An example of unattended mode would be selecting to automatically run LXCE UpdateXpress when the bootable media is booted.

The following procedure explains how to perform updates and diagnostics using bootable media. To deploy a supported Microsoft Windows operating system on ThinkSystem, System x, and BladeCenter servers, boot the target server from a Lenovo ServerGuide Setup and Installation CD and follow the on-screen prompts.

Step 1. If the graphic interface mode was selected when the bootable media was created, then the GUI starts automatically when you boot from the bootable media.

The Welcome page is displayed, showing the descriptive name of the bootable media, a list of the targeted machines, and a list of functions.

Step 2. Complete these steps to install updates:

- a. On the Welcome page, click **Updates**.
- b. On the Updates page, click the **click here to start update** link. The LXCE UpdateXpress is displayed.
- c. Select one or more updates to install.
- d. Click **Begin** to start installing the updates.

- e. On the **Finish** page, save log files into a USB key or upload files to the SFTP server.

Step 3. Complete these steps to perform diagnostics:

- a. On the Welcome page, click **Diagnostics**.
The Diagnostics page is displayed.
- b. On the Diagnostics page, select one of the following options:
 - Click **click here to start diagnostics (GUI)** to start the graphical user interface.
 - Click **click here to start diagnostics (CLI)** to start the diagnostic command line interface.
- c. Use the Dynamic System Analysis tool to perform diagnostics.

Chapter 5. Troubleshooting and support

Use this section to troubleshoot and resolve problems with Lenovo XClarity Essentials Bootable Media Creator.

For solutions to problems that other customers have encountered, see the System x Forum Web site at: https://forums.lenovo.com/t5/System-x-X6-M5-M4/bd-p/sx01_eg

Limitations and problems

The following known limitations and problems are applicable to Lenovo XClarity Essentials Bootable Media Creator.

All BoMC paths must use standard English-language alphanumeric characters

All BoMC paths must use standard English-language alphanumeric characters and must not include spaces, special characters, or non-English language characters.

BoMC does not support Mellanox firmware updates

BoMC does not support updating Mellanox firmware.

Only TFTP server running on Linux OS is supported when creating a PXE directory with BoMC.

If you are creating a PXE directory with BoMC, only a TFTP server running on a supported version of Linux OS can be used.

BoMC does not support /dev/sda for the --unattended option

BoMC does not support the use of /dev/sda for the --unattended option for the usb protocol.

OpenSSL on ESXi4.1, ESXi5.0, and ESXi5.1 can only support TLS level 1.0

OpenSSL on ESXi4.1, ESXi5.0, and ESXi5.1 can only support Transport Layer Security (TLS) level 1.0. If you set the IMM TLS min level to 1.1 or 1.2, ToolsCenter will fail to get and set the IMM configuration through the ESXi system.

BoMC does not check the arguments specified for the vlan-id and vlan-ip commands

BoMC only calls the `vlan-id` and `vlan-ip` commands to do the configuration. If there is a usage error causing the configuration to fail, BoMC will not check the arguments specified with these commands.

Greeting artwork does not show when booting a uEFI platform

When loading the bootable environment on a non-Unified Extensible Firmware Interface (UEFI) platform, the greeting artwork is displayed stating the following message: Starting Lenovo ToolsCenter Customized Media (*version*). However, when loading the bootable environment on a uEFI platform (such as: IBM BladeCenter HS22, System x3650 M2, x3550 M2, and iDataPlex dx360 M2), only the message is displayed.

Internet access is required to acquire updates and bootable environment

Lenovo XClarity Essentials Bootable Media Creator can acquire updates and a bootable environment from Lenovo. Access to the Internet is required to acquire these files. You might need to disable the firewall to access the Web site. Bootable Media Creator uses:

- Port 443 for HTTPS
- Port 80 for HTTP

For Serial over LAN (SOL) support, the serial console argument must be specified before the tty1 console argument

When you specify a serial console argument (`ttyS0` or `ttyS1`) and the `tty1` console argument using the `--kernel-args` option, you must specify the serial console first.

Example:

```
--kernel-args="vga=0x317 root=/dev/ram0 ramdisk_size=100000 media_boot=yes  
console=ttyS1,19200 console=tty1"
```

You cannot assign multiple static IP addresses

You can assign a custom static IP address to only one NIC in a system. Options are provided to specify IP addresses sequentially beginning with the default value of 192.168.0.100, or sequentially beginning with a static IP address that you specify. For more information, see the **kernel-args** parameter.

The iDataPlex dx360 M2 (machine type 7321) system might fail to boot from the USB key

This problem can occur when a SATA drive is attached to the onboard storage controller and is configured as an IDE interface in Compatibility mode in the system BIOS. This is currently a limitation.

The iDataPlex dx360 M2 (machine type 7321) system might fail to boot from USB key the second time

When using the bootable USB key created by Lenovo XClarity Essentials Bootable Media Creator to boot the iDataPlex dx360 M2 (machine type 7321), if you exit from the program, reboot the system immediately, and attempt to boot from the same USB key again, the system might fail to boot from the USB key. If this occurs, the following message is displayed: Boot Fail. Press Enter to Continue. Press **Enter** to return back to the boot device selection menu.

UXSP packages might not be available for newly-released servers

When you are using the **creating update media** option for newly-released Lenovo systems, the creation might fail if no UXSP package is available for these systems on the IBM Web site. In this case, select **Acquire latest individual updates** to acquire any available updates that have not yet been included in a UXSP.

Some functions may not work properly when loading a configuration generated by a different distribution of the Bootable Media Creator

Some functions of the Bootable Media Creator may not work properly when loading a configuration that was created using the Bootable Media Creator for Linux using Bootable Media Creator for Windows, or vice versa.

Listing all available update packages for tools from the IBM Web site can take more than 15 minutes

Additional update packages for tools may be required to perform the selected tasks such as updating, diagnostics and deployment on some Lenovo systems. If you specify *acquiring packages for multiple machine types* from the Lenovo Web site when creating bootable media, it can take more than 15 minutes to list all the available update packages. If you select more machine types and tools, it can take even longer to list the available packages.

CD-RW bootable media fails to deploy Windows operating systems

This problem can occur when deploying Microsoft Windows operating systems from CD-RW bootable media. If this occurs, the following error message is displayed: There was an error copying files.

To avoid this problem, use CD-R or DVD-R(W) media.

Deployment media creation fails when the path to the working directory is too long

When creating a Lenovo ServerGuide Setup and Installation CD using the Microsoft Windows Automated Installation Kit for Windows 7 (AIK 2.0) or the Microsoft OEM Pre-installation Kit 2.0, the path to the specified *workingdir* must be less than 76 characters.

No operating systems are selectable in ServerGuide

You cannot continue past the operating system selection screen in ServerGuide without selecting an operating system. This condition occurs when the ServerGuide bootable image was created for a different architecture than the one on the target system. You must use the **arch** parameter to specify the architecture to be supported when creating a ServerGuide image.

CD Media will not eject when using a USB CD-ROM on System x3850 X5/x3950 X5 (machine types 7145, 7146)

This problem can occur when booting these systems from the created bootable CD media using a USB CD-ROM. The media might fail to eject automatically when exiting the bootable media, even when using the default configuration setting.

If the problem persists, power off the system, then power the system back on, and manually eject the media during the early portion of the boot process.

Linux platforms require libcurl v7.15 or later for the image creation phase

To perform acquisition and connection tests in an IPv6 environment on supported Linux platforms, you must ensure that the **libcurl** file transfer utility is version 7.15 or later.

Mixed IP address standards not supported

Bootable Media Creator supports both IPv4 and IPv6 addressing. However, for file transfers by FTP or TFTP, **all** of the addresses you use must be either IPv4 or IPv6. Mixing IPv4 and IPv6 addresses is not supported for this function.

Some systems do not recognize some USB keys

Some systems do not recognize SanDisk SDCZ36 4 and 8 GB USB keys. If you experience difficulty using one of these keys, try a different type of USB key.

No hints are displayed for memtest when creating bootable media with both DSA and UXSPI for Serial Over LAN

When using bootable media that includes both DSA and UXSPI for a Serial Over LAN deployment, no information is displayed to indicate that you should input **memtest** on the Serial Over LAN console.

To avoid this problem, create separate images for DSA and UXSPI.

CD creation might fail when there are more than 15 SCSI controllers in the system

Creation of a CD might fail if more than 15 SCSI controllers are enabled on the system that is performing the CD creation. This is caused by a limitation of the **cdrecord** utility used by Bootable Media Creator for creating CDs.

To avoid this problem, disable some of the SCSI storage devices to decrease the number of SCSI controllers recognized by the **cdrecord** utility.

64-bit Linux requires `compat-libstdc++`

To run 32-bit binaries and utilities, including Bootable Media Creator, 64-bit Linux operating systems require the compatibility library `compat-libstdc++`. You can use the following command to determine whether this library is installed:

```
rpm -qa | grep compat-libstdc++-296
```

Updating Preboot Dynamic System Analysis in a bootable environment requires >1GB of memory

Updating pDSA in a bootable environment using UXSPI might fail if the target system does not have more than 1 GB of memory. To avoid this problem, the target system should have at least 2 GB of memory.

PXE boot might fail if the network connection is slow

A slow or busy network connection can cause the PXE boot to fail. If your PXE boot fails due to a slow network connection, retry the process.

System x3755 with iBMC cannot boot from USB

System x3755 with iBMC cannot boot from a BoMC-created USB image. To work around this issue, use a different method to deliver the BoMC boot image.

BoMC may exit to the localhost login interface after a Lenovo Storage firmware update

After you use BoMC 11.5.0 to create bootable media for a firmware update on Lenovo Storage D1212, D1224, or D3284, the system will exit to the CentOS localhost login interface instead of the command line interface.

Workarounds

The following workarounds are applicable to Lenovo XClarity Essentials Bootable Media Creator.

When deploying Windows 2008 editions on a System x3250 M5 with or without ServeRAID C100 enabled, a blue screen might occur

To avoid this problem, complete the following steps:

1. Open **uEFI** settings.
2. Open the **Device and I/O Ports** setting.
3. If the *ServeRAID C100* is enabled, change the **onboard SATA ports as** to RAID or IDE.
4. If the *ServeRAID C100* is not enabled, change the **onboard SATA ports as** to IDE.
5. Save the changed settings. The system will work normally when you reboot from ServerGuide.

The keyboard does not work when confirming to exit bootable media

After booting a system with bootable media created using Bootable Media Creator, when you select to exit the program, you are prompted to confirm the exit action. The keyboard cannot be used to confirm the exit action.

Use the mouse to confirm the exit action.

cygwin1.dll conflict

Bootable Media Creator ships the `cygwin1.dll` (version 1.5.24, renamed to `cygwinz.dll`), which is required by the `mkisofs.exe` and `cdrecord.exe` utilities. The cygwin DLL does not support multiple versions running at the same time. You must exit all other applications that depend on `cygwin1.dll` before running Bootable Media Creator on a Microsoft Windows system.

USB flash drives that are used by Linux are not recognized by Windows

To enable Microsoft Windows to recognize the USB flash drive for Bootable Media Creator on a Windows system, format the USB flash drive on a Linux system to *FAT32* file format using the `mkdosfs` utility. For example: `mkdosfs -I -F 32 /dev/sdb`.

Failure when burning created ISO files to CD/DVD, or created CD/DVD fails to boot

If you are unable to burn created ISO files to CD or DVD media, or if the CD or DVD you have created fails to boot, try using an alternative media writing software or use a different brand and type of media.

IBM BladeCenter HS22 fails to boot from the SanDisk 4GB bootable USB key

When using the SanDisk 4GB bootable USB key created by Bootable Media Creator to boot a BladeCenter HS22 (machine type 7870), the system might boot directly into the OS environment installed on the hard disk drive but not boot into the USB key.

Update the uEFI firmware or use a Lexar USB key or a bootable CD.

Lenovo XClarity Essentials Bootable Media Creator log file

Each log record includes: the version, command line arguments, program runtime data, and detailed trouble shooting information. New log information is appended to the `bomc103.log` file.

The Bootable Media Creator log file, `bomc103.log`, is located in the following directories:

- Windows: `%SystemDrive%\Lenovo_Support\`
- Linux: `/var/log/Lenovo_Support/`

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.

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.

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.

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 Web sites for additional information and updates:

[Lenovo Service and Support](#) and the <http://www.lenovo.com/support> have the latest technical information, device drivers, and updates.

The [Publications Center](#) has additional documentation.

Getting help from the World Wide Web

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

- [Lenovo XClarity Essential website](#)
- [Lenovo BladeCenter Product and Support site](#)
- [Flex System overview website](#)
- [Lenovo 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 Web site at: <https://datacentersupport.lenovo.com/us/en/supportphonenumberlist>
- For Lenovo support services, see the Lenovo Service and Support Web site at: <http://datacentersupport.lenovo.com/us/en/>
- For information about supported Lenovo products, see the Lenovo Server and Storage Resource Library Web site at: <https://www3.lenovo.com/us/en/data-center/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.

- 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 Web site at: <https://datacentersupport.lenovo.com/us/en/supportphonenumberlist>

Appendix A. Accessibility features for Lenovo XClarity Essentials Bootable Media Creator

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

Accessibility features

The following list includes the major accessibility features in Lenovo XClarity Essentials Bootable Media Creator:

- 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
- (Microsoft® Windows® systems only) Supports interfaces commonly used by screen readers and screen magnifiers

The Bootable Media Creator topic collection in the bootable media for Lenovo x86 Servers information center, and its related publications, are accessibility-enabled.

Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

Lenovo and accessibility

See the [Lenovo Accessibility](http://www.lenovo.com/lenovo/us/en/accessibility.html) Web site at <http://www.lenovo.com/lenovo/us/en/accessibility.html> for more information about the commitment that Lenovo has to accessibility.

Appendix B. Lenovo XClarity Essentials Bootable Media Creator commands

Lenovo XClarity Essentials Bootable Media Creator uses a single command with varying options to create bootable media.

How to read syntax diagrams

Review the following conventions to understand how to read the syntax diagrams that are used in the command descriptions.

The syntax diagram consists of options and option arguments.

- *Options* consist of a hyphen and single letter or two hyphens and multiple letters. For example: `-h` or `--help`. Options can be followed by one or more *option arguments*.
- *Option arguments* are placed after the option. For example: `[- - cd=volume]` In this example *volume* is the option argument.

Consider these conventions when reading syntax diagrams:

- Options that are enclosed in brackets (`[]`) are optional. Do not include these brackets in the command.
- Options that are enclosed in braces (`{ }`) are required. Do not include these braces in the command.
- Options that are not enclosed in either brackets or braces are required.
- The names of options are case sensitive and must be typed exactly as shown. Options preceded by two dashes (`--`) must be specified in their entirety.
- The names of option arguments that require substitution by actual values are italicized.
- The pipe (`|`) character signifies that you choose one option or the other. For example, `[a | b]` indicates that you can choose either a or b, but not both. Similarly, `{a | b}` indicates that you must choose either a or b.
- An ellipsis (`...`) signifies that you can repeat the option argument on the command line.

Configuration file

Each time you create bootable media, configuration information is saved in a file named `bomc.config`, which is stored in a working directory and on bootable media.

- When you boot a system using bootable media, the tools that are bundled on the bootable media check the configuration file to read the user-specified command line (CL) options, such as: `--timeout`, and `--latest`.
- You can create bootable media using the configuration file by copying the configuration file to the working directory, modifying the settings, and then running the `bomc.exe --configfile=working_directory\bomc.config` command.
- For security purposes, the proxy user ID and password are not saved in the configuration file.

The configuration file uses the Java property file format `name=value`. The default values specified in this file are listed in the following table.

Table 7. Configuration settings

Configuration setting	Equivalent Command Line Interface (CLI) option	Default value
IBM_SYSTEM_ACQUIRE	--no-acquire	YES <ul style="list-style-type: none"> YES: The --no-acquire option <i>is not</i> specified. NO: The --no-acquire option <i>is</i> specified.
IBM_SYSTEM_AUTORUN	--autorun={update dsa none}	The first value specified by the function option.
IBM_SYSTEM_CD	--cd=volume	NULL
IBM_SYSTEM_DEPLOY_ARCHITECTURE	--arch=x86 x64	x64
IBM_SYSTEM_FORCE_OVERWRITE	--force	NO <ul style="list-style-type: none"> YES: The --force option <i>is</i> specified. NO: The --force option <i>is not</i> specified.
IBM_SYSTEM_FUNCTION	--function=update,dsa,serverguide	uxspi
IBM_SYSTEM_ISO_FILE	--iso=file_name	NULL
IBM_SYSTEM_KERNEL_ARGS	--kernel-args="key=value[key=value...]"	NULL
IBM_SYSTEM_LATEST	--latest	NO
IBM_SYSTEM_MACHINETYPE	-m [all {machine_type[,machine_type] none] --machine-type=[all {machine_type[,machine_type] none]	NULL
IBM_SYSTEM_MEDIALABEL	--description=description	Bootable media - <i>date</i>
IBM_SYSTEM_NO_FIRMWARE_UPDATE	--no-firmware	NULL
IBM_SYSTEM_NO_TIMESTAMP	There is no corresponding CLI option. This value can only be set in the bomc.config file.	NO By default, the unattended mode log package is named: UXSPI_mt_serialnumber_timestamp.tar.gz Note: Setting the value of this option to YES , removes the timestamp from the name of the file that is uploaded: UXSPI_mt_serialnumber .tar.gz
IBM_SYSTEM_PAUSE_ON_ERROR	There is no corresponding CLI option. This value can only be set in the bomc.config file.	60 Specifies the length of time, in seconds, to pause during upload of the unattended package in the event of an error to give you time to respond.

Table 7. Configuration settings (continued)

Configuration setting	Equivalent Command Line Interface (CLI) option	Default value
IBM_SYSTEM_PROXY_ADDRESS	--proxy-address=address	NULL
IBM_SYSTEM_PROXY_PASSWORD	--proxy-password=password	NULL Note: This password is not saved in the configuration file.
IBM_SYSTEM_PROXY_PORT	--proxy-port=port	NULL
IBM_SYSTEM_PROXY_USER	--proxy-user=user_ID	NULL
IBM_SYSTEM_PXE_FILE	--pxe=directory	NULL
IBM_SYSTEM_PXE_TFTP_ADDRESS	--tftp-pxe-address=ip_address	9.123.196.61
IBM_SYSTEM_TIMEOUT	--timeout=1-65535	60
IBM_SYSTEM_TOOL_FILE	-tfile_name --toolzip=file_name	lnvgy_utl_boot_tools-141_anyos_x86-64.zip
IBM_SYSTEM_UNATTENDED	--unattended=protocol://address/directory	NULL
IBM_SYSTEM_UPDATE_HBACNA	--new	NO <ul style="list-style-type: none"> • YES: The --new option is specified. • NO: The --new option is not specified.
IBM_SYSTEM_USB_KEY	--usbkey=volume	NULL
IBM_SYSTEM_VLANID	vlan-id=0-4095	NULL
IBM_SYSTEM_VLANIP	vlanip=ip_address	NULL
IBM_SYSTEM_WORKINGDIR	-l directory --local=directory	The current directory where the tool is being run from.

Example

This is an example of a configuration file:

```
IBM_SYSTEM_MACHINETYPE=8853
IBM_SYSTEM_WORKINGDIR=D:\workingdir
IBM_SYSTEM_TOOL_FILE=ibm_utl_boot_tools-100_anyos_x86-64.zip
IBM_SYSTEM_ACQUIRE=YES
IBM_SYSTEM_FUNCTION=update
IBM_SYSTEM_ISO_FILE=NULL
IBM_SYSTEM_PXE_FILE=NULL
IBM_SYSTEM_USB_KEY=NULL
IBM_SYSTEM_CD=bootable.iso
IBM_SYSTEM_PROXY_PASSWORD=NULL
IBM_SYSTEM_PROXY_USER=NULL
IBM_SYSTEM_PROXY_PORT=NULL
IBM_SYSTEM_PROXY_ADDRESS=NULL
IBM_SYSTEM_AUTORUN=NULL
IBM_SYSTEM_TIMEOUT=60
IBM_SYSTEM_FORCE=NO
IBM_SYSTEM_LATEST=NO
IBM_SYSTEM_KERNEL_ARGS=NULL
```

IBM_SYSTEM_MEDIALABEL="Bootable Media - [time]"

How to create bootable media using the CLI - `lnvgy_utl_lxce_bomc_v.r.m_distribution`

Use the `lnvgy_utl_lxce_bomc_v.r.m_distribution` command to create bootable media for CD, DVD, ISO, PXE files, or a USB flash drive, where *v.r.m* is the version of Lenovo XClarity Essentials Bootable Media Creator and *distribution* is the operating system on which Bootable Media Creator runs. The bootable media includes all updates from the LXCE UpdateXpress directory.

Syntax

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --help
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --version
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --license
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --check-update
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --configfile=file_name
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --update-supportlist [--show-supportlist]
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --rollback-supportlist [--show-supportlist]
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution [--description=description][--function=update | dsa | serverguide]
[boot-by-legacy-env | boot-by-thinksystem] [--vmware-esxi-update=3.5] [--cd=volume | --iso=file_name |
--pxe=directory | --usbkey=volume] [--autorun=tool] [--machine-type=type] [--tftp-pxe-address=address]
[--local=directory] [--toolzip=file_name] [--latest] [--no-acquire] [--force] [--kernel-arg="options"]
[--proxy-address=address --proxy-port=port] [--proxy-user=user --proxy-password=password]
[--timeout=seconds] [--arch=x86 | x64] [--no-firmware] [--tftp-pxe-address=ip_address] [unattended=
protocol://address/directory]
```

```
lnvgy_utl_lxce_bomc_v.r.m_distribution --function=jbod --iso=file_name [--local=directory] [--proxy-
address=address --proxy-port=port][--proxy-user=user --proxy-password=password][--no-acquire]
[--description=description]
```

Description

- You must have administrator or root-equivalent operating system privileges to use Bootable Media Creator.
- An Internet connection is required to download tools and updates from the IBM Web site.
- If you use an HTTP proxy to connect to the Web, the HTTP server must support Secure Sockets Layer (SSL).

You can run only one instance of Bootable Media Creator on a system at a time, regardless of whether it is started from the graphical or command-line interface. This includes instances of Bootable Media Creator that might be bundled in other tools, such as LXCE UpdateXpress.

If you run this command with no options, the graphical interface is displayed.

While Bootable Media Creator is busy waiting for operations that take more than a few seconds to finish (such as acquiring updates or inventory collection), a series of dots (.) is displayed, about one dot for every 2 seconds.

If you do not specify a bootable media option (--cd, --iso, --pxe, or --usbkey), then the updates for the specified machine type are downloaded to the specified working directory.

Options

v.r.m_distribution

Specifies the version and operating system on which this command is being run.

Operating system	Command name
Microsoft Windows 7	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 8	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 2008 R2	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows 10	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2012 R2	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2016	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Microsoft Windows Server 2019	lnvgy_utl_lxce_bomcxxx_xx.x.x_windows_i386.exe
Red Hat Enterprise Linux 7.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_rhel_x86-64.bin
SUSE Linux Enterprise Server 12.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin
SUSE Linux Enterprise Server 15.X AMD64/EM64T	lnvgy_utl_lxce_bomcxxx_xx.x.x_sles_x86-64.bin

where *v.r.m* is the version, release and modification of Bootable Media Creator (for example, 10.3.0).

--arch=x86 | x64

Specifies the architecture type to be supported by the created ServerGuide image. The default value is x64. Valid values are x86 and x64.

--autorun={update | dsa | none}

Specifies the tool that will run automatically when the created bootable media boots from a system. You can specify one of these tools:

- **update:** Runs LXCE UpdateXpress automatically when the bootable media is booted. This is the default value.
- **dsa:** Runs the Dynamic System Analysis tool automatically when the bootable media is booted.
- **none:** No tool runs automatically when the bootable media is booted.

Notes:

- This option is not valid if the `serverguide` option was selected with the `--function` option.
- This option only supports System x servers. For detailed information about System x server models, see “Supported hardware” on page 4.

--cd=volume

Creates a bootable CD or DVD identified by the specified volume.

(Windows only) *Volume* specifies the volume letter where the CD or DVD is located. Include the colon character (for example, `--cd=d:`)

(Linux only) *Volume* specifies the CD or DVD device name (for example, `--cd=/dev/cdrom`).

Attention: If the CD or DVD is read-writable, existing data will be deleted, regardless of whether the `--force` option is specified. No warning is displayed if data currently exists on the CD or DVD.

Note: You cannot combine this option with the `--iso`, `--pxe`, and `--usbkey` options.

--check-update

Checks the web for the latest version of Lenovo XClarity Essentials Bootable Media Creator, and downloads the newer version, if available, to the directory in which this command is running.

- Lenovo XClarity Essentials Bootable Media Creator is ready to run after it is downloaded. It does not need to be installed.
- If `--check-update` is used in combination with other options; the other options are ignored.

--configfile=file_name

Retrieves option arguments from the specified configuration file

Example: `--configfile=c:\path\config.txt`

- You cannot combine this option with any other options.
- The specified configuration options are saved in a configuration file named `bomc.config` in the working directory and bootable media each time you create a bootable media.

--description=description

Specifies descriptive text that is displayed on the screen when you boot the target system using the created bootable media.

Note: If you do not specify descriptive text, "Bootable media - *date*" is displayed by default, where *date* is the date that the bootable media was created.

--machine-type

“all-legacy-env” and “all-thinksystem” instead of “all”

“all-legacy-env” means all of System x machines

“all-thinksystem” means all of ThinkSystem machines

--force

Overwrites existing data on the bootable media (ISO image, USB flash drive, or PXE files) without displaying a warning message. If this option is not specified, existing bootable media is not overwritten.

Note: Existing data on a read/writable CD or DVD is automatically overwritten, regardless of whether this option is specified.

--function=update,dsa,serverguide

Includes the specified tools on the bootable CD, DVD, or USB flash drives. You can specify one or more of these tools, separated by a comma.

Notes:

- If `dsa` is selected, the bootable media will contain a stand-alone memory test utility that will not be run by default.
- The `serverguide` option is supported for Windows only.
- You cannot combine the `dsa` and `serverguide` options.

-h | -? | --help

Detailed information about the command is displayed, including the syntax, a description of the command, a description of the options, error codes, and examples.

--iso=file_name

Creates a bootable ISO 9660 file with the specified file name (for example, `--iso=bios.iso`).

- The specified file name must end in "iso" (for example, `bios.iso`).
- By default, the ISO file is created in the working directory, specified by the `--local` option. To create the file in a different directory, specify the path and file name (for example, `c:\bios.iso` or `..\bios.iso`).
- You cannot combine this option with the `--cd`, `--pxe`, and `--usbkey` options.

--kernel-args="key=value[key=value...]"

Appends the specified kernel arguments to the boot loader configuration file, which is `grub.cfg`. For example, for Serial Over LAN (SOL) support specify: `--kernel-args="console=ttyS1,19200 console=tty1"`.

- This option is not valid when `serverguide` is selected as the function option.
- The kernel options are in addition to other options that are already specified in the bootable media itself.
- Enclose the key-value pairs in quotation marks.
- Separate the key-value pairs using a space.
- When you specify a serial console argument (`ttyS0` or `ttyS1`) and the `tty1` console argument using the `--kernel-args` option, you must specify the serial console first.

Notes: Using the `ipstatic` and `ipstatic6` optionsThe `ipstatic` optional kernel parameter is used to assign IPv4 addresses to NICs. If you use the `ipstatic` option, be aware of the following limitations:

- If you do not specify an `ipstatic` or `ipstatic6` kernel argument, IP addresses will be assigned to all NICs using DHCP.
- If you specify `ipstatic=auto`, IP addresses will be assigned to all NICs sequentially, beginning with 192.168.0.100, and adding addresses incrementally until reaching 192.168.0.255.
- You can specify the IP address of a single NIC explicitly: `ipstatic=eth0;192.168.0.125:255.255.255.0:192.168.0.1`. This will set one NIC to the specified address. Note that for NIC firmware updates to succeed, the NICs must be configured with an IP address. Therefore, if you use this option and are performing firmware updates, only the NIC specified in the argument (in this example, `eth0`) will succeed. Firmware updates for all of the other NICs in the system will fail.
- You can specify a starting IP address and allow the `auto` parameter to assign IP addresses sequentially beginning with that address, as shown.
`ipstatic=eth0;192.168.0.125:255.255.255.0:192.168.0.1;auto`
- If you specify a static IPv4 address when creating a PXE image, the boot will fail as this will force an address reassignment, which will cause the connection between the target server and the PXE server to be lost.

The `ipstatic6` optional kernel parameter is used to assign IPv6 addresses to NICs. If you use the `ipstatic6` option be aware of the following limitations:

- If you do *not* specify an **ipstatic** or **ipstatic6** kernel argument, IP addresses will be assigned to all NICs using DHCP.
- If you specify `ipstatic6=auto`, IP addresses will be assigned to all NICs sequentially, beginning with adapter `eth0` and `2001::1234:abcd/64` and adding addresses incrementally. That is, `eth1` will receive address `2001::1234:abce/64`, `eth2` will receive address `2001::1234:abcf/64`, and so on.
- You can specify the IPv6 address of a single NIC explicitly: `ipstatic6=eth0;2001::1234:abcd/64`. This will set one NIC to the specified address. Note that in order for NIC firmware updates to succeed, the NICs must be configured with an IP address. Therefore, if you use this option and are performing firmware updates, only the NIC specified in the argument (in this example, `eth0`) will succeed. Firmware updates for all of the other NICs in the system will fail.
- You can specify a starting IPv6 address and allow the `auto` parameter to assign IP addresses sequentially beginning with that address, as shown.
`ipstatic6=eth0;2001::1234:abcd/64;auto`
- If you specify an IPv6 address with no postfix, the postfix will be set to 0 by default.
- If you specify an IPv6 static address when creating a PXE image, the boot might fail, as there is no remote boot specification for IPv6 equivalent to PXE.

--latest

Acquires the latest individual updates from the Lenovo Web site and places the files in the working directory specified by the **--local** option. If not specified, this command acquires complete UpdateXpress System Packs.

- Lenovo XClarity Essentials Bootable Media Creator acquires the latest tools and boot environment automatically each time this command is run if they do not already exist in the working directory specified by the `--local` option.
- ISO files that are located in the specified working directory are not copied to the bootable media being created.

--license

License information is displayed and then exits.

-l directory | --local=directory

Specifies the fully-qualified working directory (for example, `--local=c:\workingdir`).

This is the directory that contains the files needed to create the bootable media. This is also the default directory where the bootable ISO image and Preboot Execution Environment (PXE) files are created. If not otherwise specified with the `--iso` or `--pxe` options.

- If you specify the `--no-acquire` option, this directory must contain all of the files needed to create the bootable media, including the UpdateXpress System Packs, tools, and boot environment. The files must be in specific locations within this directory.
- HTTP and FTP URL style addresses are not supported.

-m [all | {machine_type[,machine_type]} | none] | --machine-type=[all | {machine_type[,machine_type]} | none]

Targets one or more specified machine types, separated by a comma (for example, `--machine-type=4362,4363`). If you specify *all*, this command creates bootable media that supports all Lenovo ThinkSystem, System x, and BladeCenter machine types.

- Beginning with BoMC 9.51, if you specify the `-m all` option to acquire all firmware packages for all supported systems, the machine type list to the ECC server will include all of the systems in the support list for BoMC, not "all".
- The machine type must be a 4-digit number. The wild cards are not allowed.
- Spaces are not allowed in a comma separated list.

- You can find a list of valid machine types from the Bootable Media Creator graphical user interface.

--no-acquire

Acquires UpdateXpress System Pack or individual updates from existing files in the working directory. If this option is not specified, UpdateXpress System Pack or individual updates are acquired from the IBM Web site.

--no-eject

Prevents ejection of the CD/DVD in the media tray after the Bootable Media Creator exits. If this option is not specified, the media will be ejected.

Note: This option is not valid if the `serverguide` option was selected with the `--function` option.

--no-firmware

Indicates that no firmware updates are to be included in the Lenovo ServerGuide Setup and Installation CD.

--proxy-address=address

Specifies the host name, IP address, or DNS address for the HTTP proxy server (for example, `--proxy-address=10.0.0.10`).

- Specify this option if you require an HTTP proxy to connect to the web.
- If you specify this options, you must also specify the **--proxy-port** option.

--proxy-password=password

Specifies the proxy user password for authenticating to the HTTP proxy server.

- Specify this option if you require an HTTP proxy to connect to the web and credentials must be provided to authenticate to the HTTP server.
- If you specify this options, you must also specify the **--proxy-user** option.
- The proxy password is not persistent and is not stored in the configuration file.

--proxy-port=port

Specifies the proxy port number for the HTTP proxy server.

- Specify this option if you require an HTTP proxy to connect to the web.
- If you specify this options, you must also specify the **--proxy-address** option.

--proxy-user=user_ID

Specifies the proxy user ID for authenticating to the HTTP proxy server.

- Specify this option if you require an HTTP proxy to connect to the web and credentials must be provided to authenticate to the HTTP proxy server.
- If your proxy server does not require a password, this option can be omitted.
- The proxy user ID is stored in the configuration file, but the proxy password is not stored.

--pxe=directory

Creates bootable Preboot Execution Environment (PXE) files in the specified directory (for example, `--pxe=pxe_dir`).

- The specified directory is relative to the working directory specified by the `-l | --local` option.
- You cannot combine this option with the `--cd`, `--iso`, and `--usbkey` options.
- The PXE files include `grub.cfg`, `img3a`, `img2a`, `pxelinux.0`, `Live0S/squashfs.img`, and `tc.zip`.
- You cannot use this option if `serverguide` was chosen with the `--function` option.

--legacy-boot

Creates bootable Preboot Execution Environment (PXE) files in legacy mode.

--rollback-supportlist

Reverts to the original bundled system support list for each function.

--show-supportlist

Shows the system support list currently in use for each function (diagnostic, update, and deployment).

--timeout=1-65535

Specifies the amount of time, in seconds, that you have to press a key before the specified tool starts automatically after you boot using the bootable media. You can specify 1 - 65535 seconds. The default value is 60 seconds.

Note: This option is not valid if the `serverguide` option was selected with the `--function` option.

--tftp-pxe-address=ip_address

Specifies the IP address of the TFTP server to use for PXE booting.

-tfile_name | --toolzip=file_name

Uses the specified bootable-environment file that exists in the working directory instead of acquiring it from the IBM Web site.

Note: This option is not valid if the `serverguide` option was selected with the `--function` option.

--unattended=protocol://address/directory

Specifies that the created media is to run in unattended mode, and indicates the upload location for the log file package. When using this option, the `--autorun` parameter is disabled.

protocol

specifies the protocol to use when uploading the log file package. Valid values are:

tftp
ftp
nfs
smb
usb

Notes:

1. In order to specify a port number when using an IPv6 address with FTP and TFTP, you must enclose the IPv6 address in brackets, as shown:
`--unattended=tftp://[2001::1234:abcd]:21/logdir`
2. Use of IPv6 addressing with NFS is not supported.

address

indicates the address of the server.

directory

indicates the name of the directory.

--update-supportlist

Updates the system support list for all functions by acquiring a new ECC list.

Note: You can use the **--update-supportlist** (CLI) or the **Update List** button (GUI) to update the support list from the IBM Web site. This enables the tool to support new systems or new versions of VMWare ESXi update that are released after the current version of the tool.

--usbkey=volume

Creates a bootable USB flash drive identified by the specified volume.

(Windows only) *Volume* specifies the USB flash drive. Include the driver letter and the colon character (for example, `--usbkey=d:`).

(Linux only) *Volume* specifies the device name of the USB flash-drive (for example, `--usbkey=/dev/sdb4`). Existing data will be deleted from the USB flash drive.

- You cannot combine this option with the `--cd`, `--iso`, and `--pxe`.
- You cannot use this option if `serverguide` was chosen with the `--function` option.
- Only **4** is supported as a primary partition number for the Linux operating systems. Volume specified in the option `--usbkey` is like `/dev/sdx4`, in which `sdx` is the hard drive of USB key.

-V | --version

Display the version of Bootable Media Creator.

--vlan-id

Allows you to set the vlan-id.

--vlan-ip

Allows you to set the vlan-ip address.

Notes: The `--vlan-id` and `--vlan-ip` options should be used together. If only one is specified, error code 245 will be returned. If both are specified, BoMC adds the following configuration options to the `bomc_config` file:

- `LENOVO_SYSTEM_VLANID=vlan-id value`
- `LENOVO_SYSTEM_VLANIP=vlan-ip address`

Exit status

The following table contains the codes returned by this command.

- 0: The operation completed successfully.
- 101: An option argument is not valid.
- 120: FTP error: Failed to download file(s).
- 200: One or more files were not saved.
- 201: The specified directory could not be created.
- 202: An applicable update is not available for specified machine-type.
- 203: Acquisition error: Failed to find update by specified update id: %s.
- 204: An unrecoverable error occurred while downloading updates from the IBM update repository.
- 205: One or more specified machine types are not valid.
- 220: The bootable environment is not found in the working directory.
- 221: The specified directory or file is not found.
- 222: The specified directory or files cannot not be created.

- 223:
The specified zip file cannot be uncompressed.
- 224:
The specified zip file does not have the .zip extension.
- 225:
No suitable updates were found. SLES10 updates are needed in the created bootable media. Acquire SLES10 updates before creating bootable media.
- 226:
The mode change failed on one or more files.
- 227:
The specified ISO file does not have the .iso extension.
- 228:
The ISO file cannot be created.
- 229:
The CD or DVD cannot be burned.
- 230:
The specified volume name for the USB flash drive is not found.
- 231:
The function cannot be performed.
- 232:
The USB flash drive has not been initialized.
- 235:
The specified volume is not a valid CD or DVD volume.
- 240:
A newer version of Bootable Media Creator is not available. You are running the latest tool.
- 245:
VLAN id and ip should be specified together.
- 255:
An unknown error occurred.

Examples

1. **Check for a new version of Bootable Media Creator**This example illustrates how to check for and download a new version of Bootable Media Creator on a Linux environment.

```
Windows Invgy_util_xce_bomcxxx_xx.x.x_windows_i386.exe --check-update
```

```
Linux ./Invgy_util_xce_bomcxxx_xx.x.x_sles_x86-64.bin --check-update
```

2. **Download the latest UpdateXpress System Pack updates and the boot environment**This example illustrates how to download the latest UpdateXpress System Pack updates and the latest boot environment for systems with machine type 7x21. Files are copied to the c:\workingdir directory.

```
Windows Invgy_util_xce_bomcxxx_xx.x.x_windows_i386.exe --check-update machine-type=1909
```

```
Linux ./Invgy_util_xce_bomcxxx_xx.x.x_sles_x86-64.bin --machine-type=1909 --check-update
```

3. **Create a bootable CD using an HTTP proxy**This example illustrates how to create a bootable CD for a system with machine type 7x21. The updates and files are acquired from an HTTP proxy server with IP address hkce01.hk.ibm.com and using port 80.

Note: The HTTP proxy server must support SSL.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update -m 7x21 --cd=E: -l workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_i386.bin --function=update -m 7x21 --cd=/dev/hda -l workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80
```

4. **Create a bootable ISO image**This example illustrates how to create a bootable ISO image named `tc.iso` for a system with machine type 7x21 that includes the LXCE UpdateXpress. LXCE UpdateXpress runs automatically when the bootable media boots. The `tc.iso` file is created in the `workingdir` directory.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update -m 7x21 --iso=tc.iso -l c:\workingdir --autorun=update
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_i386.bin --function=update -m 7x21 --iso=tc.iso -l workingdir --autorun=update
```

5. **Create bootable USB flash drive**This example illustrates how to create a bootable USB flash drive for a system with machine type 7x21 that includes the LXCE UpdateXpress. The updates and files are acquired the IBM Web site. For the Windows example, the USB flash drive uses the `F:` drive. For the SLES10 example, the USB flash drive uses the `/dev/sdb` device.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update -m 7x21 --usbkey=F: -l c:\working_dir
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_x86-64.bin --function=update -m 7x21 --usbkeykey=/dev/sdb4 -l working_dir
```

6. **Create bootable PXE files**This example illustrates how to create bootable PXE files in the `c:\workingdir\pxedir` directory for a system with machine type 7x21 that includes the LXCE UpdateXpress. The updates and files are acquired the IBM Web site. LXCE UpdateXpress runs automatically when the bootable media boots.

Note: This example requires you to change the Trivial File Transfer Protocol (TFTP) IP address of `grub.cfg`. For more information, see Chapter 4 “Using bootable media” on page 29.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update -m 7x21 --pxe=pxedir -l workingdir --tftp-pxe-address=192.168.1.6 --autorun=update
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_x86-64.bin --function=update -m 7x21 --pxe=pxedir -l workingdir --tftp-pxe-address=192.168.1.6 --autorun=update
```

7. **Create bootable media using a configuration file**This example illustrates create bootable media using option arguments that are set in the `c:\config.txt` configuration file.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --configfile=c:\config.txt
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_x86-64.bin --configfile=/root/config.txt
```

8. **Create bootable media with a single update**This example illustrates how to create a bootable ISO image named `bios.iso` using the existing BIOS firmware update located in the `working_dir` directory. The LXCE UpdateXpress tool and bootable environment are acquired from the IBM Web site by default.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update --no-acquire --iso=bios.iso -l c:\working_dir
```

```
Linux ./Invgy_util_lxce_bomcxxx_xx.x.x_sles_x86-64.bin --function=update --no-acquire --iso=bios.iso -l working_dir
```

9. **Create bootable media using files on the local system**This example illustrates how to create a bootable ISO image named `tc.iso` for a system with machine type 7x21 that includes the LXCE UpdateXpress. The updates and files are acquired from the `c:\workingdir` directory on the local system. The `tc.iso` file is created in the `c:\workingdir` directory.

```
Windows Invgy_util_lxce_bomcxxx_xx.x.x_windows_i386.exe --function=update -m 7x21 --iso=tc.iso -l workingdir -no-acquire
```

```
> Linux ./Invgy_util_ixce_bomcxxx_xx.x.x_sles_x86-64.bin --function=update -m 7x21 --iso=tc.iso -I workingdir --no-acquire
```

10. **Create a bootable diagnostics CD using an HTTP proxy**This example illustrates how to create a bootable diagnostics CD. The Dynamic System Analysis tool and bootable files are acquired from an HTTP proxy server with IP address `hkce01.hk.ibm.com` using port 80.

Note: The HTTP proxy server must support SSL.

```
> Windows Invgy_util_ixce_bomcxxx_xx.x.x_windows_i386.exe --function=dsa --cd=E: -I workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80 --autorun=none
```

```
> Linux ./Invgy_util_ixce_bomcxxx_xx.x.x_sles_x86-64.bin --function=dsa --cd=/dev/hda -I workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80 --autorun=none
```

11. **Create a bootable diagnostics USB flash drive**This example illustrates how to create a bootable diagnostic USB flash drive. For the Windows example, the USB flash drive uses the F: drive. For the SLES12 example, the USB flash drive uses the `/dev/sdb4` device.

```
> Windows Invgy_util_ixce_bomcxxx_xx.x.x_windows_i386.exe --function=dsa --usbkey=F: -I c:\working_dir --autorun=none
```

```
> Linux ./Invgy_util_ixce_bomcxxx_xx.x.x_sles_x86-64.bin --function=dsa --usbkeykey=/dev/sdb4 -I working_dir --autorun=none
```

12. **Create a Lenovo ServerGuide Setup and Installation CD**This example illustrates how to create a bootable Lenovo ServerGuide Setup and Installation CD.

```
> Windows Invgy_util_ixce_bomcxxx_xx.x.x_windows_i386.exe --function=update,serverguide -m 7x21 -I=c:\workingdir --cd=E: --arch=x86 --no-firmware
```

Appendix C. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area.

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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.

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