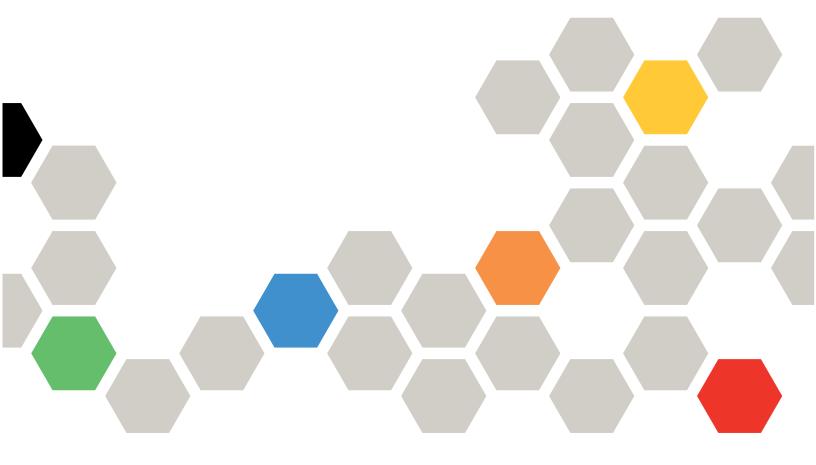# Lenovo Bootable Media Creator
Installation and User's Guide

Version 10.3

Note

Before using this information and the product it supports, read the information in Appendix C "Notices" on page 51.

Tables

Contents

About this publication

This publication provides information about how to download and use Lenovo 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
SOL	Serial Over LAN
SSL	Secured Socket Layer

Table 1. Acronyms (continued)

Acronym	Definition
TFTP	Trivial File Transport Protocol
TUI	Text User Interface
uEFI	Unified Extensible Firmware Interface
USB	Unified Serial Bus
UXSP	UpdateXpress System Pack
UXSPI	UpdateXpress System Pack Installer
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 http://www.adobe.com/products/acrobat/readstep.html website at:
www.adobe.com/products/acrobat/readstep.html.

Publications

The most recent version of Lenovo Bootable Media Creator (BoMC) Users Guide is available for download
at: http://publib.boulder.ibm.com/infocenter/toolsctr/v1r0/topic/bomc_lenovo/printable_doc.html.

Web resources

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

Websites

- Bootable Media Creator (BoMC) for Lenovo x86 servers

  http://support.lenovo.com/us/en/documents/LNVO-BOMC

  Use this website to download the Lenovo Bootable Media Creator tool and documentation.
- Lenovo ToolsCenter website

  https://support.lenovo.com/us/en/documents/LNVO-CENTER

  Use this website to download tools that support System x and BladeCenter products.

These websites provide information about product compatability and support, warranties and licenses, and
various technical resources:

- Lenovo BladeCenter Support products and services

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

  http://www.lenovo.com/us/en/serverproven/
- System x Support website

  Lenovo Server and Storage Resource Library

Forums

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

- System x Forum website

developerWorks Forums

- BladeCenter Forum website

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

Chapter 1. Technical overview

You can use Lenovo 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 System x and BladeCenter systems.

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 System x and BladeCenter tools and updates from UpdateXpress System Packs, which contain Windows and Linux firmware and device driver updates. You can also create a Lenovo ServerGuide Setup and Installation CD for deploying Windows operating systems and updates on supported systems.

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

Bootable Media Creator can acquire the latest bootable environment, UpdateXpress System Pack, individual updates, and LenovoPreboot Dynamic System Analysis from the local system or it can download these tools and the Lenovo ServerGuide from the Lenovo website. An Internet connection is required to download tools and updates from the Lenovo website. 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. This includes instances of Lenovo Bootable Media Creator that are bundled in other tools, such as UpdateXpress System Pack Installer.

Bootable Media Creator10.3 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 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.

1

Chapter 2. Downloading Lenovo Bootable Media Creator

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

Hardware and software requirements

Lenovo 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 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 MB = 2.4 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 MB = 2.4 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*. Beginning with version 9.50, BoMC no longer supports the *legacy only* boot mode.

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 BladeCenter, Flex System, and System x systems.

Supported systems

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

The following BladeCenter servers are supported by Bootable Media Creator:

Table 2. BladeCenter servers

Server	Machine type
IBM BladeCenter HS22	1936, 7809, 7870
IBM BladeCenter HS22V	1949, 7871
IBM BladeCenter HS23	7875
IBM BladeCenter HS23E	8038, 8039
IBM BladeCenter HX5	1909, 7872, 7873

The following Flex System servers are supported by Bootable Media Creator:

Table 3. Flex System servers

Server	Machine type
Flex System x220 Compute Node	2585, 7906
Flex System x222 Compute Node	7916
Flex System x240 Compute Node	7863, 8737, 8956
Lenovo Flex System x240	7162, 2588
Lenovo Flex System x240 M5	2591, 9532
Flex System x280 X6/480 X6/x880 X6 Compute Node	4259, 7903
Lenovo Flex System x280 X6/480 X6/x880 X6 Compute Node	7196, 4258
Flex System x440 Compute Node	7917
Lenovo Flex System x440	2590, 7167

The following System x and xSeries servers are supported by Bootable Media Creator:

Table 4. System x and xSeries servers

Server	Machine type
IBM NeXtScale nx360 M4	5455
Lenovo NeXtScale nx360 M5	5465
Lenovo NeXtScale nx360 M5 DWC	5467

Table 4. System x and xSeries servers (continued)

Server	Machine type
IBM Smart Analytics System	7949
IBM System x3100	4348
IBM System x3100 M4	2582
IBM System x3100 M5	5457
IBM System x3200	4362, 4363
IBM System x3200 M3	7327, 7328
IBM System x3250	4364, 4365, 4366
IBM System x3250 M3	4251, 4252, 4261
IBM System x3250 M4	2583
IBM System x3250 M5	5458
IBM System x3300 M4	7382
IBM System x3350	4192, 4193
IBM System x3400 M2 and x3500 M2	7836, 7837, 7839
IBM System x3400 M3	7378, 7379
IBM System x3455	7940, 7941
IBM System x3500 M3	7380
IBM System x3500 M4	7383
Lenovo System x3500 M5	5464
IBM System x3530 M4	7160
IBM System x3550 M3	4254, 7944
IBM System x3550 M4	7914
LenovoSystem x3550 M5	5463
IBM System x3620 M3	7376
IBM System x3630 M3	7377
IBM System x3630 M4	7158
IBM System x3650 M2	4199, 7947
IBM System x3650 M3	4255, 5454, 7945
IBM System x3650 M4	5460, 7915
Lenovo System x3650 M4	8062
IBM System x3650 M4 BD	5466
LenovoSystem x3650 M5	5462
IBM System x3650 T	7980
IBM System x3655	7943
IBM System x3690 X5	7147, 7148, 7149, 7192
IBM System x3750 M4	8722, 8733
Lenovo System x3750 M4	8753
IBM System x3750 M4	8752, 8718
IBM System x3750 X5	7148, 7149

Table 4. System x and xSeries servers (continued)

Server	Machine type
IBM System x3755 M3	7164
IBM System x3800	8866
IBM System x3850 X5	7143, 7145, 7191
IBM System x3850 X6/x3960 X6	3837, 3839
Lenovo System x3850 X6/x3960 X6	6241
IBM System x3950	7366, 8878
IBM System x3950 X5	7143, 7146, 7191
IBM System xiDataPlex Direct Water Cooled dx360 M4	7918, 7919
IBM System xiDataPlex dx360 M2	6380, 7321, 7323
IBM System xiDataPlex dx360 M3	6391
IBM System xiDataPlex dx360 M4	7912, 7913

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

Supported operating systems

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

- **Windows:**
  - Microsoft Windows 10
  - Microsoft Windows 2016
  - Microsoft Windows Server 2012
  - Microsoft Windows Server 2012 R2
  - Microsoft Windows Small Business Server 2011
  - Microsoft Windows Server 2008 R2
  - Microsoft Windows Server 2008 Web, Standard, and Enterprise Edition (supports only Service Pack 1)
  - Microsoft Windows 7
  - Microsoft Windows Vista Ultimate Editions
- **Linux:**
  - Red Hat Enterprise Linux version 7.0 with and without the Xen Kernel (supports Update 2)
  - Red Hat Enterprise Linux version 6.0 x64 with and without the Xen Kernel (supports Updates 1-8)
  - SUSE Linux Enterprise Server 12 with or without the Xen Kernel (supports Update 1)
  - SUSE Linux Enterprise Server 11 x64 with or without the Xen Kernel (supports Service Packs 1-4)

- 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
- UpdateXpress System Pack Installer

Supported browsers

To use the graphical interface for creating bootable media, one of the following supported browsers must be accessible to Lenovo Bootable Media Creator.

- Firefox 2.0 or later
- Internet Explorer 6.0 or later.

    Note: Microsoft Windows Server 2003 requires Internet Explorer 7.0 or later.
- Mozilla 1.7 or later
- SeaMonkey 1.1.4 or later

Supported bootable media

Lenovo 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 JumpDrive Lightning 1-GB, 2-GB, 4-GB, 8-GB, 16-GB, and 32-GB
- SanDisk USB flash drives, including Cruzer Micro 1-GB, 2-GB, 4-GB, 8-GB, 16-GB, and 32-GB

Supported bootable environment

Lenovo 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 5. 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

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 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 Bootable Media Creator (BoMC) for Lenovo x86 servers website at: http://support.lenovo.com/us/en/documents/LNVO-BOMC.

Updating Lenovo 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. For detailed information about the supported operating systems, see "Supported operating systems" on page 6.

Operating system	Command name
Microsoft Windows	lnvgy_utl_bomc_*v.r.m*_windows_i386.exe
Red Hat Enterprise Linux 7.0, to Update 1	lnvgy_utl_bomc_*v.r.m*_rhel7_x86-64.bin
Red Had Enterprise Linux 6.0 64-bit, to Update 7	lnvgy_utl_bomc_*v.r.m*_rhel6_x86-64.bin
SUSE Linux Enterprise Server 12,	lnvgy_utl_bomc_*v.r.m*_sles12_x86-64.bin
SUSE Linux Enterprise Server 11 64-bit, to SP4	lnvgy_utl_bomc_*v.r.m*_sles11_x86-64.bin

The License Agreement page opens.

Step 2. Accept the license agreement and proceed to the Welcome page.

Step 3. 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 4. Click **Next**.

Step 5. 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 6. Click **Next**.

Step 7. 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 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

You can create a new bootable image using one of the supported bootable media: ISO image, CD, DVD, USB flash drive, or PXE files.

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	lnvgy_utl_bomc_*v.r.m*_windows_i386.exe
Red Hat Enterprise Linux 7.0, to Update 1	lnvgy_utl_bomc_*v.r.m*_rhel7_x86-64.bin
Red Had Enterprise Linux 6.0 64-bit, to Update 7	lnvgy_utl_bomc_*v.r.m*_rhel6_x86-64.bin
SUSE Linux Enterprise Server 12,	lnvgy_utl_bomc_*v.r.m*_sles12_x86-64.bin
SUSE Linux Enterprise Server 11 64-bit, to SP4	lnvgy_utl_bomc_*v.r.m*_sles11_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 Media Purpose page, complete these fields and then click **Next**:

Updates
Select this check box to bundle UpdateXpress System Pack Installer 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 UpdateXpress System Pack Installer.
- 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**. Selecting this option disables the following options:

Diagnostics
Enable Task Autorun
Create the media to use tui mode

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

Enable Task AutoRun

Select this check box to automatically start either UpdateXpress System Pack Installer or Dynamic System Analysis, when you boot from the media. This option cannot be selected with **Deployment**.

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

Check the Lenovo website

Select this radio button to acquire the latest updates from the Lenovo website 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 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 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 Systems page.

Step 8. 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 website.

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/hdb`).

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. 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 combining firmware and operating system updates

You can combine firmware updates with operating system updates into a single bootable media.

When creating firmware update media, the Bootable Media Creator copies the required Linux updates directly from the root of the working directory. Operating system updates can be located in another directory. To include additional updates on firmware update media, follow these steps.

Step 1.　Create a subdirectory in the working directory to hold the updates.Example: *workingdirectory*`\windows_updates`

Step 2.　Use the UpdateXpress System Pack Installer to download updates to this directory.

Step 3.　Create the media.The directory that you created is created as a subdirectory of the root directory on the bootable media, and includes the UpdateXpress System Pack Installer.

You can now use the media on a Windows system by executing the command: *X:*`\windows_updates\uxspi400.exe`, where *X:* is the drive of the bootable media.

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 UpdateXpress System Pack Installer, or UpdateXpress cannot detect the update. You can download updates from the Lenovo Service and Support website at http://support.lenovo.com/us/en/.

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 UpdateXpress System Pack Installer tool and bootable environment are acquired from the Lenovo website by default.
`lnvgy_utl_bomc_10.3_windows_i386.exe –function=update –iso=bmc.iso –local= c:\workingdir`

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

Creating bootable to acquire updates from an NFS or Samba server

You can create a bootable media that acquires UpdateXpress System Pack Installer or individual updates from an NFS or Samba server.

Complete the following procedure to create a bootable media for Linux systems that acquires updates from an NFS or Samba server.

Step 1.　Create a `start.sh` file in the working directory, and customize it with information for NFS or Samba.The following text shows a sample `start.sh` file.
```
#!/bin/sh
#
# This script prepares the current Linux environment for ToolsCenter.
export PATH=$PATH:/sbin:/usr/sbin:/usr/local/sbin:/root/bin:/usr/local|
/bin:/usr/bin:/usr/X11R6/bin:/bin:
/usr/games:/usr/lib/mit/bin:/usr/lib/mit/sbin

cp -f /toolscenter/media_check.sh /tmp/media_check.sh
chmod +x /tmp/media_check.sh

cd /toolscenter/
chmod -R +x * /dev/null 2>/dev/null
dos2unix /toolscenter/bomc.config > /dev/null 2>&1

#disable Crtl+z and Ctrl+c
trap "" 2 20
```

```
BOMC_MENU=/toolscenter/menu/show_menu.sh
BOMC_LOG_FILE=/tmp/bomc.log
BOMC_REMOTE_CHECK=/toolscenter/menu/check_remote.sh

# Export the UXSPI_TIMEOUT environment to uxspi
TIMEOUT=60
if cat bomc.config | grep IBM_SYSTEM_TIMEOUT > /dev/null 2>&1
then
  TIMEOUT=`cat bomc.config | grep IBM_SYSTEM_TIMEOUT | sed 's
/IBM_SYSTEM_TIMEOUT=//'`
fi
export UXSPI_TIMEOUT=${TIMEOUT}

#Export environment for UXSPI UXSP's/latest
if cat bomc.config | grep "IBM_SYSTEM_LATEST=YES" > /dev/null 2>&1
then
 export UXSPI_LATEST=1
fi

# setup a mount point
mkdir -p /bomcmount
# NFS mount (replace ¡192.168.196.61:/nfsboot¡ with your NFS server¡
s IP and directory)
mount -t nfs 192.168.196.61:/nfsboot /bomcmount -o unlock
# Samba mount (replace ¡//192.168.253.26/sambaroot¡ with your Samba
server¡s IP and
# directory)
#mount -t cifs //192.168.253.26/sambaroot /bomcmount -o user=Guest,
password=passw0rd

# SEP environment variable
export SEP_REPOSITORY_PATH=/toolscenter
export SEP_INSTALL_PATH=/tmp

# UXSPI environment variable
export UXLITE_CLEAN_INVFILE=1
export UXSPI_CLEAN_INVFILE=1
export UXSPI_BOOTABLE=/bomcmount

if [ -d /toolscenter/uxspi ]
then
 export UXSPI_BINARY_PATH=`find /toolscenter/uxspi -name 'uxspi*.anyos'
| sort | tail -n 1`
else
 export UXSPI_BINARY_PATH=""
fi
export UXSPI_GUI_CMD="xterm -geometry 170x59 +sb -e ${UXSPI_BINARY_PATH}"
if [ "${UXSPI_LATEST}" = "1" ]
then
 export UXSPI_TUI_CMD="${UXSPI_BINARY_PATH} update —tui —firmware -l
${UXSPI_BOOTABLE}
—timeout=${UXSPI_TIMEOUT}  -L"
else
export UXSPI_TUI_CMD="${UXSPI_BINARY_PATH} update —tui —firmware -l
${UXSPI_BOOTABLE}
—timeout=${UXSPI_TIMEOUT}"
fi


${BOMC_REMOTE_CHECK} /toolscenter
```

```
if [ $? -eq 0 ]; then
  echo "Remote mounting via remote IMM/network" >> ${BOMC_LOG_FILE}
else
  echo "NOT mounted via remote IMM/network" >> ${BOMC_LOG_FILE}
  export UXSPI_REDUCE_COPY=1
fi
# DSA environment variable
export DSA_PATH=/tmp/embed:/tmp/embed/qlogic:/usr/X11R6/lib64:/usr/X11R6/lib
export DSA_GUI_CMD="xterm -geometry 170x59 +sb -e /toolscenter/dsa/start.sh –gui"
export DSA_CMD_CMD="xterm -geometry 170x59 +sb -e /toolscenter/dsa/start.sh –cmd"
#export DSA_TUI_CMD="/toolscenter/dsa/start.sh –cmd"

# Export environment for exit script command
if cat bomc.config | grep "IBM_SYSTEM_MEDIA_EJECT=NO" > /dev/null 2>&1
then
 export BOMC_EXIT_CMD="/toolscenter/tcexit_noeject.sh"
else
 export BOMC_EXIT_CMD="/toolscenter/tcexit.sh"
fi
# Export environment for UXSPI autorun command
if cat bomc.config | grep "IBM_SYSTEM_AUTORUN=update" > /dev/null 2>&1
then
 export UXSPI_AUTORUN=1
fi




# Export the unattended mode environment variable
UNATTD_FULLSTR=`cat bomc.config | grep IBM_SYSTEM_UNATTENDED | sed 's
/IBM_SYSTEM_UNATTENDED=//'`
if echo ${UNATTD_FULLSTR} | grep '[tftp://|ftp://|nfs://|smb://|usb:/]'
 > /dev/null 2>&1
then
 echo "Unattended mode specified by user" >> ${BOMC_LOG_FILE}
 export BOMC_UNATTENDED_MODE=1
fi

if [ $# -eq 0 ]
then
 echo "Running in non SOL mode" >> ${BOMC_LOG_FILE}
 export DSA_TUI_CMD="/toolscenter/dsa/start.sh –cmd"
 if [ "${BOMC_UNATTENDED_MODE}" = "1" ]
 then
  echo "Calling show_menu.sh unattended" >> ${BOMC_LOG_FILE}
  ${BOMC_MENU} unattended
 else
  echo "Calling show_menu.sh attended" >> ${BOMC_LOG_FILE}
  ${BOMC_MENU} attended
 fi
else
 if [ "$1" = "serial" ]
 then
     echo "Running in SOL mode - Console" >> ${BOMC_LOG_FILE}
   export BOMC_SOL_MODE=1
   export DSA_TUI_CMD="/toolscenter/dsa/start.sh serial –cmd"
 if [ "${BOMC_UNATTENDED_MODE}" = "1" ]
 then
   echo "Calling show_menu.sh unattended" >> ${BOMC_LOG_FILE}
   ${BOMC_MENU} unattended
 else
```

```
        echo "Calling show_menu.sh attended" >> ${BOMC_LOG_FILE}
         ${BOMC_MENU} attended
     fi
      elif [ "$1" = "serial-on" ]
      then
          while [ 1 ];do
            clear
            echo "ToolsCenter started on SOL console......type \"reboot\"
         to reboot the system"
        read INPUT
           if [ "${INPUT}" = "reboot" ]
           then
            echo "Rebooting the system ..."
              ${BOMC_EXIT_CMD} reboot
              exit
        elif [ "${INPUT}" = "r2d2" ]
        then
           sh
        fi
         done
     fi
    fi

    # Exit ToolsCenter
    echo "Using Exit Script: ${BOMC_EXIT_CMD}...."
    sleep 3

    if [ "${BOMC_UNATTENDED_MODE}" = "1" ]
    then
     # Shut down the system when it's unattended image
     ${BOMC_EXIT_CMD} shutdown
    elif cat bomc.config | grep "IBM_SYSTEM_PXE_FILE=NULL" > /dev/null 2>&1
    then
     echo "Rebooting the system ..."
     ${BOMC_EXIT_CMD} reboot
    else
     # Shut down the system when it's PXE image
     echo "Shut down the system ..."
     ${BOMC_EXIT_CMD} shutdown
    fi
    exit 0
```

Notes: You must ensure the following:

- The *UXSPI_BOOTABLE* environment variable has been exported as your NFS or Samba mounting folder. In this example: `/bomcmount`.

- The *UXSPI_REDUCE_COPY* environment variable is **not** exported, as this can cause network connection problems when performing firmware updates.

Step 2. Create a bootable media. For example, enter the following command from a system running Windows:
lnvgy_utl_bomc_*v.r.m*_windows_i386.exe `-m 8843 —cd=E: -l workingdir`

Before you boot the target system using the created bootable media:

- Place UpdateXpress System Pack or individual updates on the NFS or Samba server.

- Ensure the target system has access to the NFS or Samba server.

Creating a Lenovo ServerGuide Setup and Installation CD

You can use Bootable Media Creator to create a Lenovo ServerGuide Setup and Installation CD.

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 **lnvgy_utl_bomc_v .r.m_windows_i386.e xe** to start the Lenovo 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 Media Purpose page, select the following fields:

Updates (optional)
Includes device driver updates and the UpdateXpress System Pack Installer 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 5.   Click **Next** to proceed to the Acquire Location page.

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

Check the Lenovo website
Select this radio button to acquire the latest updates from the Lenovo website 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 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 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 website.

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. 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 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 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	lnvgy_utl_bomc_*v.r.m*_windows_i386.exe
Red Hat Enterprise Linux 7.0, to Update 1	lnvgy_utl_bomc_*v.r.m*_rhel7_x86-64.bin
Red Had Enterprise Linux 6.0 64-bit, to Update 7	lnvgy_utl_bomc_*v.r.m*_rhel6_x86-64.bin
SUSE Linux Enterprise Server 12,	lnvgy_utl_bomc_*v.r.m*_sles12_x86-64.bin
SUSE Linux Enterprise Server 11 64-bit, to SP4	lnvgy_utl_bomc_*v.r.m*_sles11_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 Media Purpose page, complete these fields and then click **Next**:

Updates
Select this check box to bundle UpdateXpress System Pack Installer 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 UpdateXpress System Pack Installer.
- 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**. Selecting this option disables the following options:

Diagnostics
Enable Task Autorun
Create the media to use tui mode

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

Enable Task AutoRun
Select this check box to automatically start either UpdateXpress System Pack Installer or Dynamic System Analysis, when you boot from the media. This option cannot be selected with **Deployment**.

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

Check the Lenovo website
Select this radio button to acquire the latest updates from the Lenovo website 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 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 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 website.

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 website.

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/hdb`).

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. 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 Bootable Media Creator bootable media, such as Dynamic System Analysis or UpdateXpress System Pack Installer.

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 Remote Supervisor Adapter (RSA) II card, 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. 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 ToolsCenter for Lenovo x86 Servers Information Center 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 UpdateXpress System Pack Installer 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 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 Lenovo ToolsCenter Customized Media utility 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 UpdateXpress System Pack Installer is displayed.

c. Select one or more updates to install.

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.

Booting from bootable media using the text interface

The Menu program runs when the ToolsCenter for Lenovo x86 Servers Information Center bootable media is booted. The text version of the Menu program runs in interactive mode (you can select the function that you want to use) or unattended mode. An example of unattended mode would be selecting to automatically run UpdateXpress System Pack Installer when the bootable media is booted. The menu program supports only update or diagnostic functions.

The following procedure explains how to perform updates or diagnostics using bootable media. If **Create media to use a text-based (no-graphical) user interface** is selected when the bootable media is created, then the Lenovo ToolsCenter Customized Media utility starts automatically when you boot from the bootable media. The Welcome page displays a list of functions that you can perform.

Step 1. To select the Updates function, enter 1 and then enter y.
   The UpdateXpress System Pack Installer utility is displayed.

Step 2. Select one or more of the updates to install.

   Note: Updates start to install when the **Automatic update countdown** reaches 0.

Step 3. To start Diagnostics function, enter 2 and then enter y
   The Dynamic System Analysis tool is displayed. Use the Dynamic System Analysis tool to perform diagnostics on the system.

Chapter 5. Troubleshooting and support

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

For solutions to problems that other customers have encountered, see the System x Forum website customer forum at: developerWorks Forums.

Limitations and problems

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

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 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 website. 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 ToolsCenter 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 ToolsCenter USB key the second time

When using the bootable USB key created by Lenovo Bootable Media Creator to boot the iDataPlex dx360 M2 (machine type 7321), if you exit from the ToolsCenter 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 website. 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 website 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 website 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.

IBM eServer xSeries 336, 346 and 236 systems fail to boot from the USB key

This problem can occur when booting these systems from the created bootable USB key. If this occurs, the following error message is displayed: `Could not find kernel image`. To fix the problem, try defragmentation using the USB key with the Microsoft Windows defragment tool, then try booting from the USB key again.

If the symptoms persist, perform a full format of the USB key, then rebuild the image using the Bootable Media Creator.

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 ToolsCenter, 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 Creator10.3 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.

Using CTRL+C to halt execution of UXSPI in a TUI mode halts further input

When running UXSPI in a bootable environment in Text User Interface (TUI) mode, using **CTRL+C** to stop execution, prevents further input. The tool returns to the Home menu, but the screen is corrupted and further input fails.

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.

Workarounds

The following workarounds are applicable to Lenovo 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 ToolsCenter program
> 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, or create the media to run in TUI mode.

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.

Bootable Media Creator might fail to burn a CD or DVD if it runs on RHEL3 with an IDE CD-ROM or IDE DVD-ROM
> Add `hdx=ide-scsi` to the boot loader configuration file. For example: `/etc/lilo.conf` for LILO or `/boot/grub /menu.lst` for GRUB), where `hdx` is either `hda`, `hdb`, `hdc`, or `hdd`, depending on where your CD or DVD drive is located.

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.

USB key automatically mounts in *noexec* mode on SLES 10 sp4
> As a security measure, USB keys can be mounted in *noexec* mode, which prevents executable files on the key from running. This prevents you from using the BoMC binary, even after using **chmod** to change permissions.

> Copy the binary to the hard drive of the system, use **chmod** to give it proper permissions, and execute from the hard drive.

Lenovo 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 websites 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 compatability, supported systems and devices, warranties and licenses, and service and support from this list of websites.

- Lenovo ToolsCenter website

  https://support.lenovo.com/us/en/documents/LNVO-CENTER
- Lenovo BladeCenter Product and Support site

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

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

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

Software service and support

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

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

Appendix A. Accessibility features for Lenovo 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 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 ToolsCenter for Lenovo x86 Servers Information Center 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 website at http://www.lenovo.com/lenovo/us/en/accessibility.html for more information about the commitment that Lenovo has to accessibility.

Appendix B. Lenovo Bootable Media Creator commands

Lenovo 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: --tui, --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 6. Configuration settings

Configuration setting	Equivalent Command Line Interface (CLI) option	Default value
IBM_SYSTEM_ACQUIRE	--no-acquire	YES • YES: The --no-acquire option *is not* specified. • NO: The --no-acquire option *is* 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 • YES: The --force option *is* specified. • NO: The --force option *is not* 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 - *date*
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

Table 6. Configuration settings (continued)

Configuration setting	Equivalent Command Line Interface (CLI) option	Default value
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.
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	-t file_name | --toolzip=file_name	`lnvgy_utl_boot_tools-141_anyos_x86-64.zip`
IBM_SYSTEM_TUI	--tui	`NO` • YES: The --tui option *is* specified. • NO: The --tui option *is not* specified.
IBM_SYSTEM_UNATTENDED	--unattended=protocol://address/directory	NULL
IBM_SYSTEM_UPDATE_HBACNA	**--new**	NO • 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_TUI=NO
IBM_SYSTEM_KERNEL_ARGS=NULL
IBM_SYSTEM_MEDIALABEL="Bootable Media - [time]"
```

How to create bootable media using the CLI - lnvgy_utl_bomc_*v.r.m_distribution*

Use the **lnvgy_utl_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 Bootable Media Creator and *distribution* is the operating system on which Bootable Media Creator runs. The bootable media includes all updates from the UpdateXpress System Pack Installer directory.

Syntax

lnvgy_utl_bomc_*v.r.m_distribution* –help

lnvgy_utl_bomc_*v.r.m_distribution* –version

lnvgy_utl_bomc_*v.r.m_distribution* –license

lnvgy_utl_bomc_*v.r.m_distribution* –check-update

lnvgy_utl_bomc_*v.r.m_distribution* –configfile=*file_name*

lnvgy_utl_bomc_*v.r.m_distribution* –update-supportlist [–show-supportlist]

lnvgy_utl_bomc_*v.r.m_distribution* –rollback-supportlist [–show-supportlist]

lnvgy_utl_bomc_*v.r.m_distribution* [–description=*description*][–function=update | dsa | serverguide] [–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] [–tui] [–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*]

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 website.
- 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 UpdateXpress System Pack Installer.

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.

Consider these guidelines when using this command:

- The command name is different for each supported operating system.
- The command names are case sensitive and must be entered using lower case.
- You can specify options in any order.
- You can specify an option only once.
- (Windows only) Directory paths can be delimited using the slash (/) or backslash (\) character. If a path contains spaces, enclose the entire path in quotation marks.
- (Linux only) Directory paths must be delimited using the slash (/) character. If a path contains spaces, specify the space prefixed with the backslash (\) escape character.

Options

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

Operating system	Command name
Microsoft Windows	lnvgy_utl_bomc_*v.r.m*_windows_i386.exe
Red Hat Enterprise Linux 7.0, to Update 1	lnvgy_utl_bomc_*v.r.m*_rhel7_x86-64.bin
Red Had Enterprise Linux 6.0 64-bit, to Update 7	lnvgy_utl_bomc_*v.r.m*_rhel6_x86-64.bin
SUSE Linux Enterprise Server 12,	lnvgy_utl_bomc_*v.r.m*_sles12_x86-64.bin
SUSE Linux Enterprise Server 11 64-bit, to SP4	lnvgy_utl_bomc_*v.r.m*_sles11_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:

- **uxspi**: Runs UpdateXpress System Pack Installer 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.

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

--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 Bootable Media Creator, and downloads the newer version, if available, to the directory in which this command is running.

- Lenovo 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.

--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 options The **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 website and places the files in the working directory specified by the **--local** option. If not specified, this command acquires complete UpdateXpress System Packs.

- Lenovo 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 LenovoSystem 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.

--new

Allows you to choose to update all firmware packages later with the following options:

- It can be detected after system boots into the media.
- The package version on the media is larger than the version installed on the target system.
- In the **updateSelection** field of the packages XML file, the value is specified as *never*.

Note: --new works only in TUI mode.

--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 website.

--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`, `LiveOS/squashfs.img`, and `tc.zip`.
- You cannot use this option if `serverguide` was chosen with the `-function` option.

--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 website.

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

--tui
Runs the selected tools in a text user interface. If this option is not specified, the tools run in a graphical user interface.

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 website. 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`**lnvgy_utl_bomc_10.3_windows_i386.exe --check-update**

   `Linux` `./lnvgy_utl_bomc_10.3_sles10_i386.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 `8843`. Files are copied to the `c:\workingdir` directory.

   `Windows`**lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 -l c:\workingdir**

   `Linux`**./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843 -l c:/workingdir**

3. **Create a bootable CD using an HTTP proxy**This example illustrates how to create a bootable CD for a system with machine type `8843`. 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 **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 --cd=E: -l workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80**

Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843 --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 `8843` that includes the UpdateXpress System Pack Installer. UpdateXpress System Pack Installer runs automatically when the bootable media boots. The `tc.iso` file is created in the `workingdir` directory.

   Windows **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 --iso=tc.iso -l c:\workingdir --autorun=update**

   Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843 --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 8843 that includes the UpdateXpress System Pack Installer. The updates and files are acquired the IBM website. 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 **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 --usbkey=F: -l c:\working_dir**

   Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843** --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 `8843` that includes the UpdateXpress System Pack Installer. The updates and files are acquired the IBM website. UpdateXpress System Pack Installer 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 27.

   Windows **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 --pxe=pxedir -l workingdir --tftp-pxe-address=192.168.1.6** --autorun=update

   Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843 --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 **lnvgy_utl_bomc_10.3_windows_i386.exe --configfile=c:\config.txt**

   Linux **./lnvgy_utl_bomc_10.3_sles10_i386.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 UpdateXpress System Pack Installer tool and bootable environment are acquired from the IBM website by default.

   Windows **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update --no-acquire --iso=bios.iso -l c:\working_dir**

   Linux **./lnvgy_utl_bomc_10.3_sles10_i386.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 `8843` that includes the UpdateXpress System Pack Installer. 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 **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update -m 8843 --iso=tc.iso -l workingdir -no-acquire**

Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=update -m 8843 --iso=tc.iso -l 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 **lnvgy_utl_bomc_10.3_windows_i386.exe --function=dsa --cd=E: -l workingdir --proxy-address=hkce01.hk.ibm.com --proxy-port=80 --autorun=none**

    Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=dsa --cd=/dev/hda -l 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 SLES10 example, the USB flash drive uses the `/dev/sdb4` device.

    Windows **lnvgy_utl_bomc_10.3_windows_i386.exe --function=dsa --usbkey=F: -l c:\working_dir --autorun=none**

    Linux **./lnvgy_utl_bomc_10.3_sles10_i386.bin --function=dsa** --usbkeykey=/dev/sdb4 **-l 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 **lnvgy_utl_bomc_10.3_windows_i386.exe --function=update,serverguide -m 8843 -l=c:\workingdir --cd=E: --arch=x86 --no-firmware**

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Index

A

accessibility
  features   35
  keyboard   35
  shortcut keys   35

B

BIOS   15
BMC   15
bootable media
  updating   21
Bootable Media Creator
  downloading   8
  downloading latest version   8
bootable media, supported   7
bootable-media, creating   11, 19

C

command   40
configuration file
  files
     configuration   37
  settings, configuration   37
contacting support   29
conventions, syntax diagram   37
creating bootable-media   11, 15

D

disability   35
downloading
  latest version   8
downloading Bootable Media Creator   8
downloadingLenovo Bootable Media Creator   3

F

features, accessibility   35

G

getting help and technical assistance   33
getting help from the World Wide Web   34

H

hardware
  requirements   3
  supported   4
hardware service and support   34

I

important notices   52

K

keyboard   35
known problems   29

L

Lenovo Bootable Media Creator
  downloading   3
  updating   3
limitations   29
log file
  files
     log   33

N

notes, important   52
notices   51

O

operating systems, supported   6

P

problem solving   29
problems   29

R

requirements
  hardware   3

S

ServerGuide   19
service and support, before you call   33
shortcut keys   35
software service and support   34
solving problems   29
support, contacting   29
supported bootable media   7
supported hardware   4
supported operating systems   6
supported tools   7
syntax diagram conventions   37

T

tools, supported   7