

BootIt[®] UEFI

User Manual



TeraByte Unlimited
Las Vegas, Nevada, USA
<https://www.terabyteunlimited.com>

Copyright © 2018-2026 TeraByte, Inc. All Rights Reserved

Revision: 2026-06-07

Contents

What You Can Do With BootIt UEFI	5
Installing BootIt UEFI	6
Limitations & UEFI Issues	6
System Requirements	7
Changes from BootIt Bare Metal	7
Before You Begin	8
Create a Windows 10/11 Recovery Drive.....	8
Create a Windows 7 System Repair Disc.....	8
Prepare for a BootIt UEFI setup	9
Review the two-step installation process.....	9
Step A: Creating the Boot Media or ISO Image	9
Boot Media and UEFI Systems.....	9
Step A: Create the Boot Media using the MakeDisk Utility (Windows users).....	10
Video Method	13
Video Mode	14
Device Options	14
Global Geometry and MBR Options.....	15
Step A: Create USB Flash Drive (UFD) Boot Media Manually (Linux users)	20
Step B: Installing BootIt UEFI on Your Hard Disk	21
Step B: Boot from the CD/DVD or USB flash drive	21
Install BootIt UEFI for the first time	21
Upgrade from an earlier version of BootIt UEFI	23
Choose the partition manually	23
Complete the installation	23
Uninstalling BootIt UEFI	24
The Installation & Recovery Boot Menu	24
Using Image for UEFI.....	25
Using BootIt UEFI	26
The Boot Menu	26
The Normal Boot Menu.....	26
Set up the Normal Boot Menu	27
Add or edit a normal boot menu item.....	28
Boot Details	29
Password.....	30
MBR Details	30
GPT Details	31

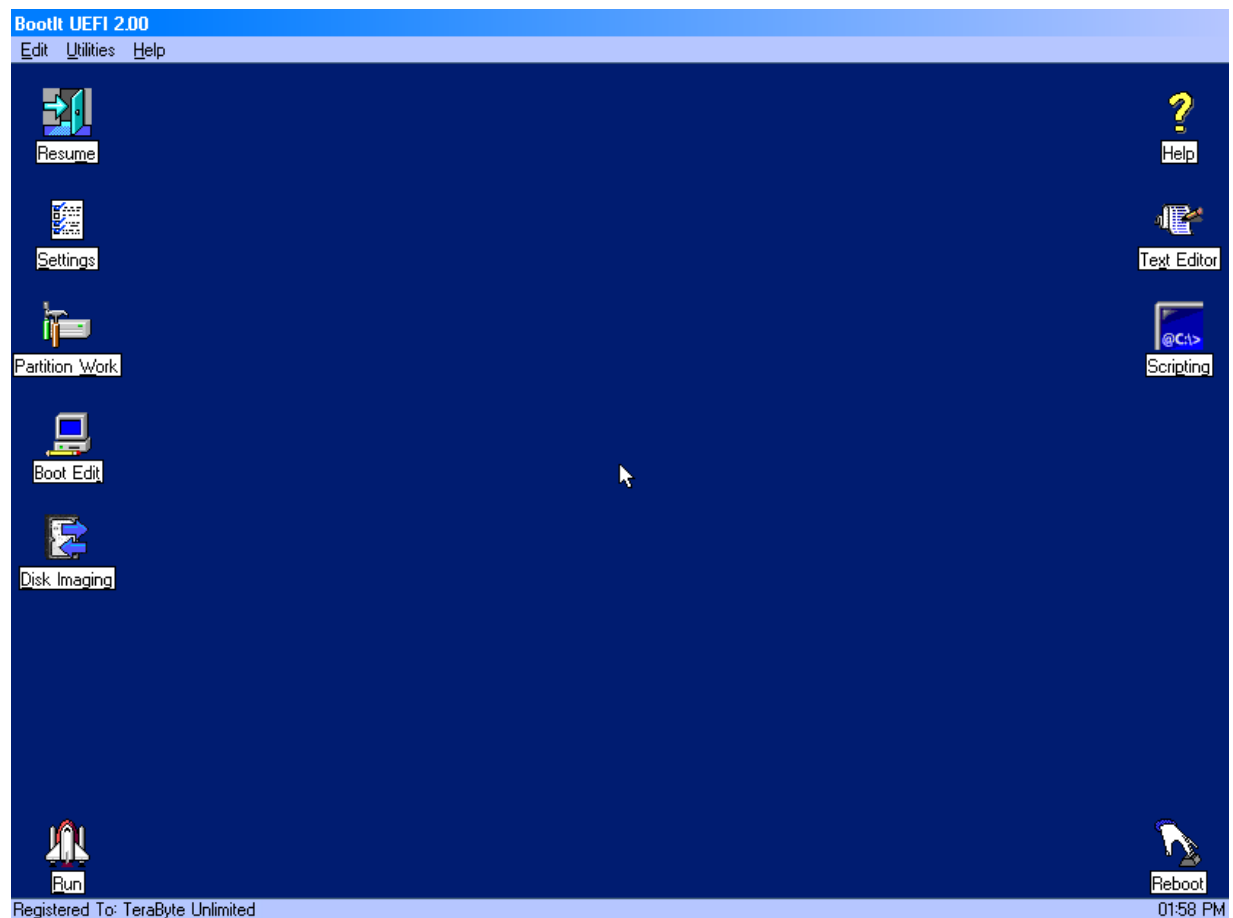
The Direct Boot Menu	31
Boot an item using the Direct Boot Menu	32
Item Menu	32
View Menu.....	32
Working with Partitions	34
Selecting a Drive	34
Partition Operations	35
Create a partition or volume.....	35
Delete a partition or volume	35
Undelete a partition or volume	36
Format a partition or volume	36
Resize a partition or volume.....	37
Copy a partition or volume	38
Slide a partition or volume.....	39
Align a FAT/FAT32 partition.....	39
View partition properties.....	39
BCD Edit.....	41
Editing a file.....	42
Applying TRIM.....	43
Drive Settings.....	44
Wipe Entire Drive	47
Change Disk Type	50
View MBR	50
Reorder GPT.....	51
Program Settings.....	52
Startup	53
General	54
Device	57
Unmanaged Directories	57
Global Geometry and Alignment.....	57
Security	60
Time Zone.....	60
Users.....	61
Display Settings.....	62
Creating Icons and Backgrounds	63
Installing Operating Systems	64
Installing an Operating System (OS).....	64
Advanced Program Options.....	66
INI File Options.....	66

Video	66
Mouse	67
Options	67
HDn	72
License	73
SVGA/VGA	73
Using Scripting (TBOSDT Pro for BootIt)	75
Obtaining Technical Support	76
Ordering and Licensing BootIt UEFI	76
Trademarks	76
Definition of Shareware	77
TeraByte Unlimited (Trial-Use) License Agreement	78
TeraByte Unlimited (Full-Use) License Agreement	81

What You Can Do With BootIt UEFI

While you can read a detailed description of each BootIt UEFI (BIU) feature in [Using BootIt UEFI](#) on page 26, the following is a brief overview of just some of the many tasks you can accomplish using BootIt UEFI:

- Configure detailed boot items to fit your needs.
- Boot from any partition on up to sixteen hard drives (OS must support being booted in UEFI mode from selected partition).
- Boot multiple operating systems from a single EFI System partition.
- Partition GPT (GUID Partition Table) drives.
- Create over 200 primary partitions on EMBR drives (if desired).
- Create volumes (logical partitions) in extended partitions.
- Resize Ext2/3/4, FAT, FAT32, and NTFS file system partitions without data loss.
- Edit text files on Ext2/3/4, FAT, FAT32, and NTFS file system partitions.
- Edit the Windows BCD file.
- Convert between FAT and FAT32 without data loss.
- Format FAT, FAT32, and NTFS partitions.
- Set up users and passwords.
- Create and restore compressed images of your partitions using the included CUI version of Image for UEFI.
- ... and Yes, it supports Windows Server Operating Systems for the same price.





Installing BootIt UEFI

Before you install BootIt UEFI (BIU), take a moment to read about its limitations and system requirements. Next, complete the procedures in [Before You Begin](#) on page 8. Finally, create the boot media or ISO image as described on page 9, and then install BootIt UEFI on your hard drive as described on page 21.

Limitations & UEFI Issues

BootIt UEFI supports accessing the drives through the BIOS (basic input/output system) using UEFI as well as directly, which may be faster. If direct access is enabled, but unable to be used, native UEFI access will be used.

When possible, using the most current BIOS version is recommended. Older UEFI versions generally have more issues, less support, and are more unstable. Some features are not available if the UEFI environment lacks support (e.g. TRIM, burning optical media).

Several UEFI issues you may see are listed below:

- UEFI boot entries get changed and hidden.
- UEFI boot entries order changes unexpectedly.
- UEFI boot entries are filled with duplicates, incorrect item boots (may require clearing/disabling invalid boot items and resetting boot order).
- Renaming a directory using the UEFI file system causes the directory to be removed (chkdsk needed to repair).
- Boots to Windows or last booted item until booted into BootIt UEFI (boot order is ignored).
- Attempting to write to booted ISO causes EFI file system to disappear (requires restart).
- Boot variables lost.
- Environment becomes unresponsive, requiring restart.
- The Direct Boot feature and **Use UEFI BM** boot option will not work on systems that don't support BootNext (such as the Surface Pro 4). In those cases the system will boot as if a reboot was requested.
- On systems where unmounted UEFI file systems are not remounted, using the Boot Menu to boot a menu item, switch to the Direct Boot menu, or enter maintenance mode results in an **Unable to open BOOTIT.DAT** error message. This issue is more likely to occur with UEFI implementations based on an older code base. If a BIOS update is not available to resolve the problem, using the **UEFINoRemount** option will allow basic usage of BootIt UEFI. If you need Image for UEFI in this mode you will need to switch to the CUI version. Refer to the following KB article for more details on enabling and using this option as well as the limitations involved:
<https://kb.terabyteunlimited.com/kb-articles/unable-to-open-bootit-dat-error-message/>
- We also want to note that due to the way the motherboard manufactures have implemented UEFI variables in NVRAM with no easy reset method, should any bugs in the system UEFI cause boot problems due to UEFI variables, the system BIOS would need to be flashed using their method that does not depend on the system being able to be booted.

System Requirements

Verify that your computer system meets the minimum requirements listed below. Note that most current systems exceed these requirements and should support BootIt UEFI.

- Standard x64 PC using AMD64/EMT64 and UEFI 64-bit.
- UEFI BIOS x64 version 2.1 or later (more current versions usually provide more features and stability).
- CD/DVD drive or USB flash drive (needed to create the boot media).
- UEFI BIOS-accessible hard drive or SSD.

Changes from BootIt Bare Metal

For users of BootIt Bare Metal (BootIt BM), the following differences should be noted:

New

- Boots and installs on UEFI systems.

- Boot Manager supports booting multiple operating systems on GPT drives.
- GPT partitions can be hidden.
- Secure Boot is supported.

Changed

- Image for UEFI is provided for imaging.
- TBOSDT for BootIt (UEFI version) provided for scripting support.
- Direct Boot Menu items are UEFI boot items (controlling partition states not supported).

Obsolete / Removed

- Booting on Legacy systems and booting in Legacy mode on UEFI systems.
- Boot Manager support for Legacy operating systems on MBR/EMBR drives (MBR/EMBR drives are still supported as non-booting drives).
- Multi-OS feature.

Before You Begin

TeraByte Unlimited has taken every effort to make BootIt UEFI as safe as possible. However, it is not possible to provide a 100-percent guarantee of safety.

If you ever choose to set a disk type as EMBR and are not using the **Limit Primaries** option for that drive then it is extremely important that you do not use any partitioning software (such as Windows Disk Management, DISKPART, or FDISK) on that drive. If you ignore this warning, you are taking a serious risk of data corruption on that drive.

Before using BootIt UEFI on any system for the first time, back up all data on all hard drives. It's better to be safe than sorry.

It's always a good idea to have a Recovery Drive, System Repair Disc, or installation media that can be used to boot the system and perform repairs should something ever go wrong. Windows 7/8.x/10 include repair capabilities on the installation media. You should configure the disk to give you all the functionality you may need by adding any drivers or utilities as well as configuring the configuration files. The following sections explain this process. (If you have Image for Windows, the TBWinRE boot media also includes the Windows System Recovery Options utility.)

Create a Windows 10/11 Recovery Drive

1. Click the **Start** button or press the Windows key.
2. Type **Recovery Drive** to search for it.
3. Run the app.
4. Follow the instructions presented to create the boot media.

Create a Windows 7 System Repair Disc

5. Click the **Start** button.
6. Click **All Programs**.

7. Select **Maintenance >> Create System Repair Disc**.
8. Follow the instructions presented to create the disc.

Prepare for a BootIt UEFI setup

1. Be sure to read *Before You Begin* on page 8.
2. Verify that you have the latest version of and support information for BootIt UEFI by visiting: www.terabyteunlimited.com
3. If not already done, consider creating a startup disk as described in *Before You Begin*.
4. Back up all the data on all of your hard drives.
5. Create the **BootIt UEFI Setup** CD/DVD or USB flash drive (UFD) as described on page 9.
6. Consider reviewing the example tutorials available on the TeraByte website. While these tutorials were created using the previous versions of the program (BootIt BM, BootIt NG), the basics of the procedures are very similar (<https://www.terabyteunlimited.com/howto/>).
7. Install or upgrade BootIt UEFI on your hard disk as described on page 21.
8. Read *Using BootIt UEFI* on page 26.
9. For an example of how to install operating systems, refer to *Installing Operating Systems* on page 64.

Review the two-step installation process

- A. Create the installation media, bootable ISO (International Standards Organization) image, or CD/DVD disc as described in *Step A: Creating the Boot Media or ISO Image*.
- B. Use the installation media to install BootIt UEFI on your hard disk as described in *Step B: Installing BootIt UEFI on Your Hard Disk* on page 21.

Note

- Verify that you have the latest version of and support information for BootIt UEFI by visiting: www.terabyteunlimited.com
- Before beginning the BootIt UEFI installation, be sure to read *Before You Begin* on page 8.

Step A: Creating the Boot Media or ISO Image

The first of two steps in setting up BootIt UEFI from a downloaded copy of the software is to create the installation boot media. If you are installing on multiple computers, each computer must have its own license and you may wish to create boot media for each system (usually only necessary if a system requires special settings for the boot media). The boot media will be either a CD/DVD disc or a USB flash drive (UFD). Depending upon your version of Windows, you can either use Windows Explorer or File Manager to complete the following procedure.

Boot Media and UEFI Systems

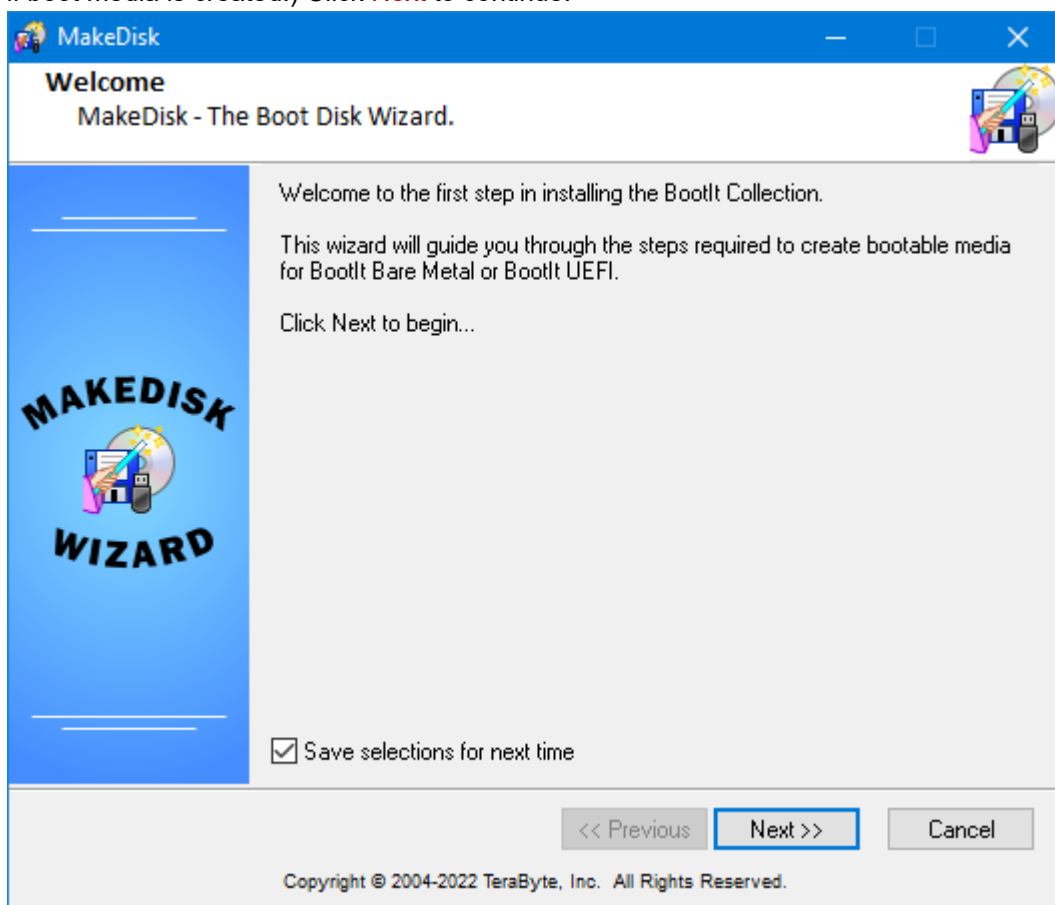
Computer systems that come from the manufacturer with Windows 8.x or Windows 10/11 installed include a BIOS interface known as the Unified Extensible Firmware Interface (UEFI). This BIOS interface boots media differently than a traditional (Legacy) BIOS. Microsoft also requires these systems to use a feature of UEFI called Secure Boot. When Secure Boot is enabled, the system will only boot items that have a digital signature that is included in the system firmware. The manufacturers include a digital certificate, provided by Microsoft, to boot Windows on their systems. Secure boot can be disabled (on non-ARM

systems) to allow you to boot other operating systems and environments. Boot media must be specifically created for UEFI to allow UEFI to boot from it. However, most systems also include the ability to boot traditional boot media though a method or mode typically called Legacy or BIOS.

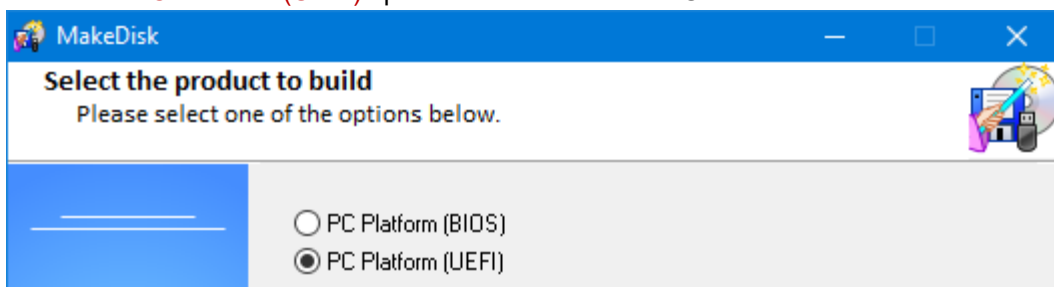
BootIt UEFI boots on UEFI systems (Legacy mode is not supported). Secure Boot can be enabled or disabled.

Step A: Create the Boot Media using the MakeDisk Utility (Windows users)

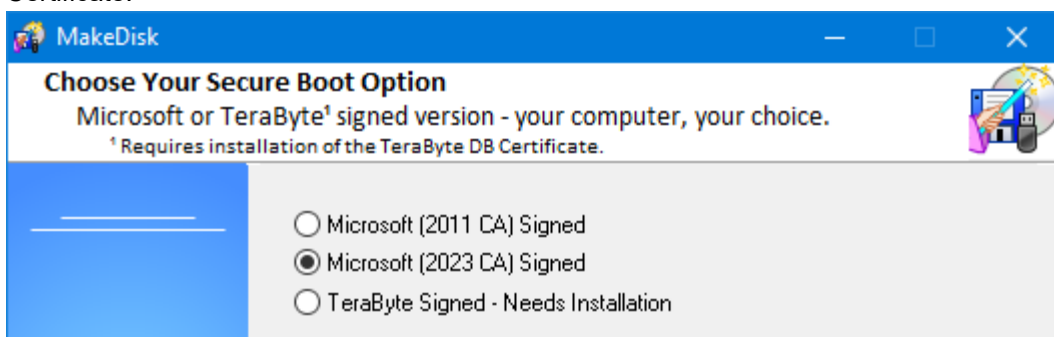
1. Extract the contents of **bootit_collection_en_v2.zip** (Full version) or **bootit_collection_en_trial.zip** (Trial version) to a folder of your choice.
 - In Windows you can double click the ZIP file and then use the **Extract all files** or **Extract All** link shown in the left pane, toolbar, or ribbon of Explorer to extract the contents. Alternatively, after opening the ZIP file, you can select all the files listed and copy them to another folder to extract the contents. Please note that whichever foregoing method you use, the contents of the ZIP file must be extracted to another folder before proceeding.
2. Run **MakeDisk.exe** from the folder of Step 1. For versions of Windows with UAC enabled, this will trigger a UAC prompt. Select to allow the program to run.
3. The MakeDisk welcome screen is displayed. If you would like to save the selections you make as you step through the wizard, check the “Save selections for next time” box. (Selections will only be saved if boot media is created.) Click **Next** to continue.



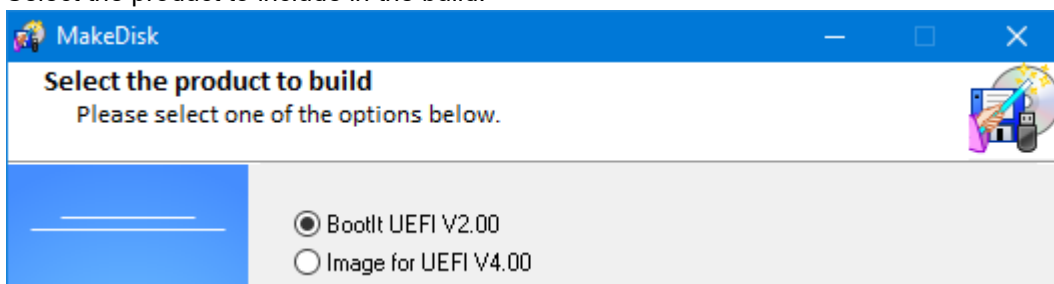
4. Select the **PC Platform (UEFI)** option to create the BootIt UEFI media and then click **Next**.



5. Select the desired Secure Boot option: **Microsoft (2011 CA) Signed**, **Microsoft (2023 CA) Signed**, or **TeraByte Signed**. Using the TeraByte signed version required installation of the TeraByte DB Certificate.



6. Select the product to include in the build:



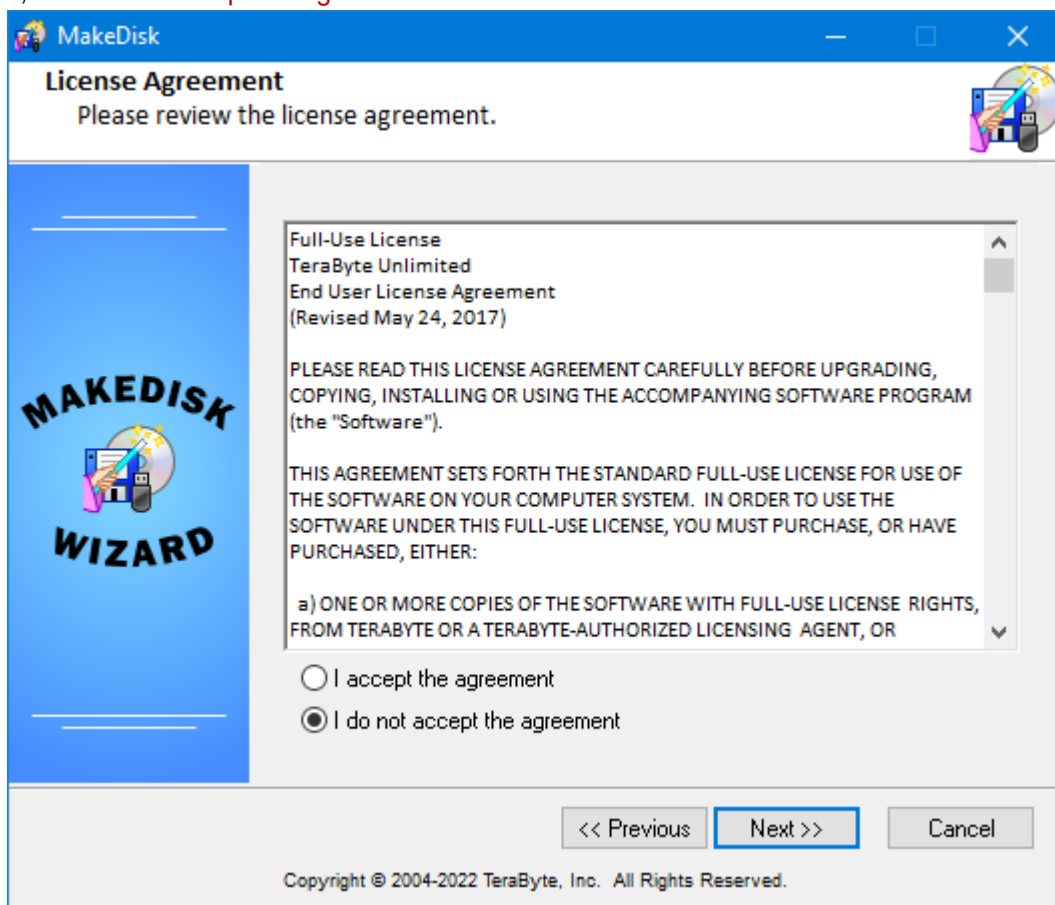
BootIt UEFI

Select to include BootIt UEFI and, optionally, Image for UEFI and Scripting Support (selected in a later step) on the boot media.

Image for UEFI (GUI)

Select to include only Image for UEFI on the boot media. If you select this option you will need to select either **Simple** mode or **Traditional** mode for Image for UEFI in the next step. For more information on these modes please refer to the Image for DOS manual.

7. The product license agreement screen is displayed. Read the license agreement, and, if you accept it, select the **I accept the agreement** button and click **Next**.



8. Select the optional components.

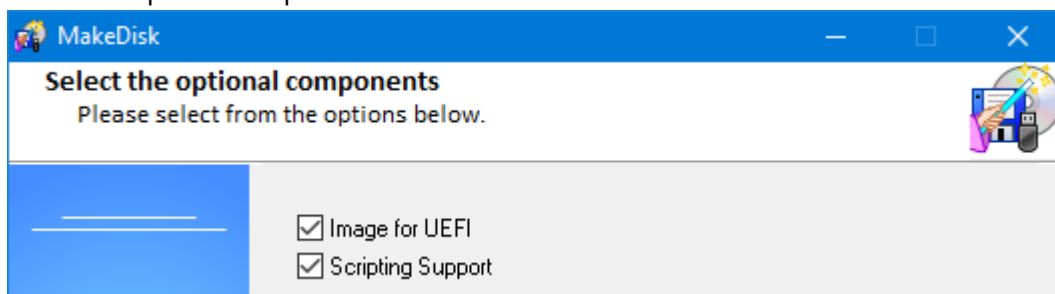


Image for UEFI

Select to include Image for UEFI. Image for UEFI will also be installed on the system when you install BootIt UEFI using the boot media.

Scripting Support

Select to include TBOSDT Pro for BootIt. Supports adding, deleting, sliding, copying, and resizing partitions in addition to the standard features of TBOSDT Pro.

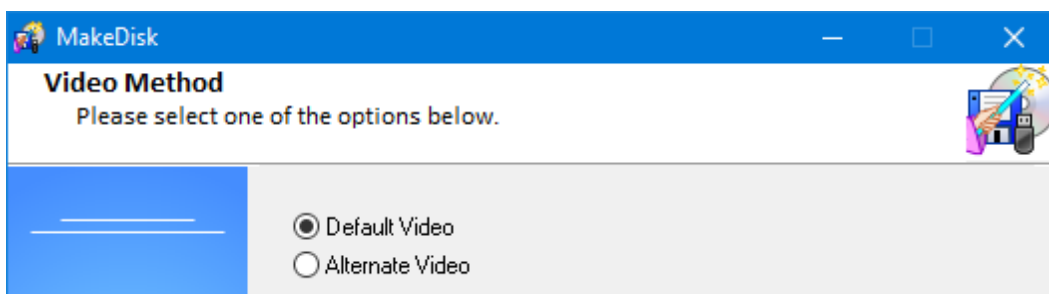
This option is available if you are using the purchased version.

9. The MakeDisk wizard will now proceed through the option screens, each of which is detailed below. Select the desired options on each screen and then click **Next** to proceed. If you are creating only the Image for UEFI media and selected the Simple mode option some of the following option screens will not be shown.

Note

When booting a computer using the BootIt UEFI setup media, be aware that all settings except the video mode/method come from the installed copy of BootIt UEFI if it's installed. The video mode/method is updated when BootIt UEFI is reinstalled/updated, but the other settings are not. For systems on which BootIt UEFI is not installed the settings as configured here will be used when the setup media is booted.

Video Method



Default Video

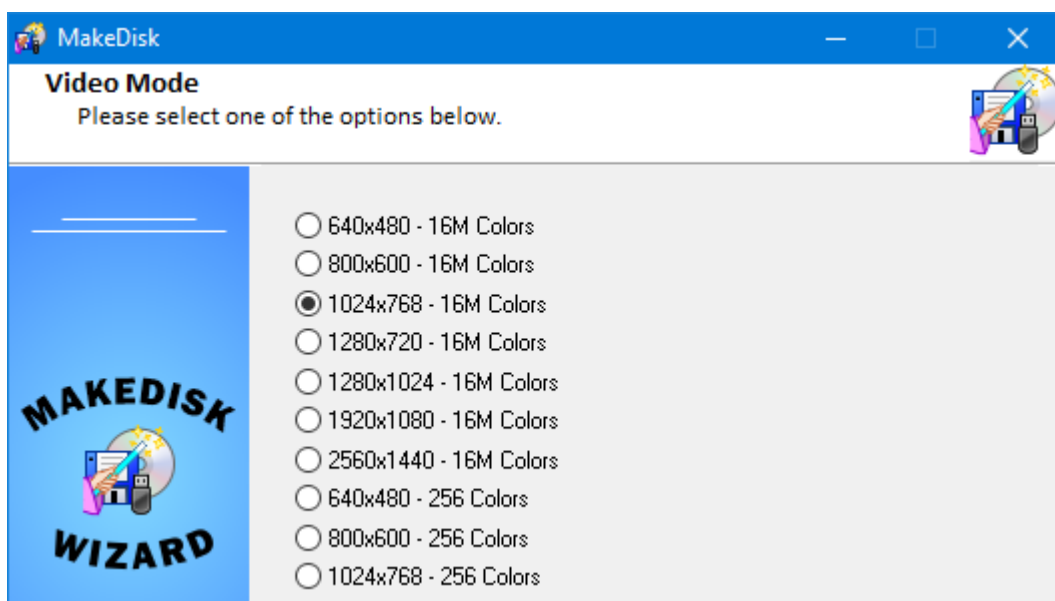
Uses the GOP video standard for the display. Support is provided by the video card's BIOS. This is the recommended video method.

Default: Selected

Alternate Video

Uses an alternate method, which is a bug workaround for video issues. It is not recommended to select this option unless you know for certain it is required (e.g. standard GOP doesn't work or you're instructed to use it by TeraByte support).

Video Mode



For the best viewing experience, it is recommended to select 800x600 or higher with 16M colors. If the selected resolution isn't supported a supported resolution will be used instead.

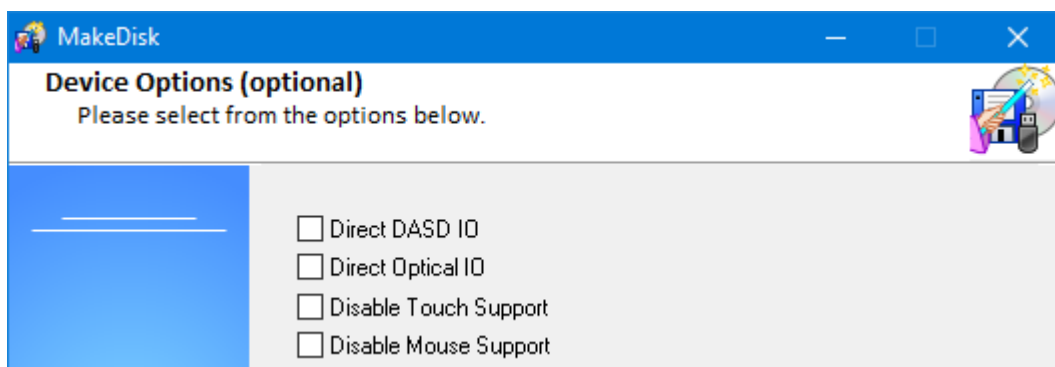
Resolutions using 16M Colors

The selected video resolution will be used with a color depth of 16M.

Resolutions using 256 Colors

The selected video resolution will be used with an emulated color depth of 256.

Device Options



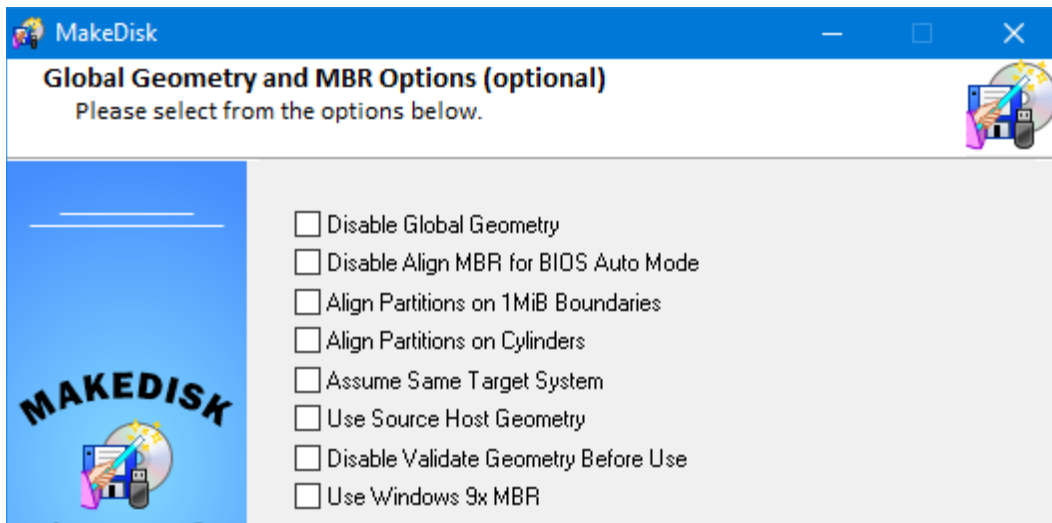
Make any desired changes to the optional device options BootIt UEFI will use when booting the boot media on a system that does not have BootIt UEFI installed. These options will also be used when BootIt UEFI is installed. By default, all options are unselected.

Direct DASD IO

Use direct IO to access hard drives instead of native UEFI IO. Will fall back to native IO if unable to use direct access.

Direct Optical IO	Use direct IO to access optical media instead of native UEFI IO. Will fall back to native IO if unable to use direct access.
Disable Touch Support	Disables UEFI touch screen support.
Disable Mouse Support	Disables mouse support.

Global Geometry and MBR Options



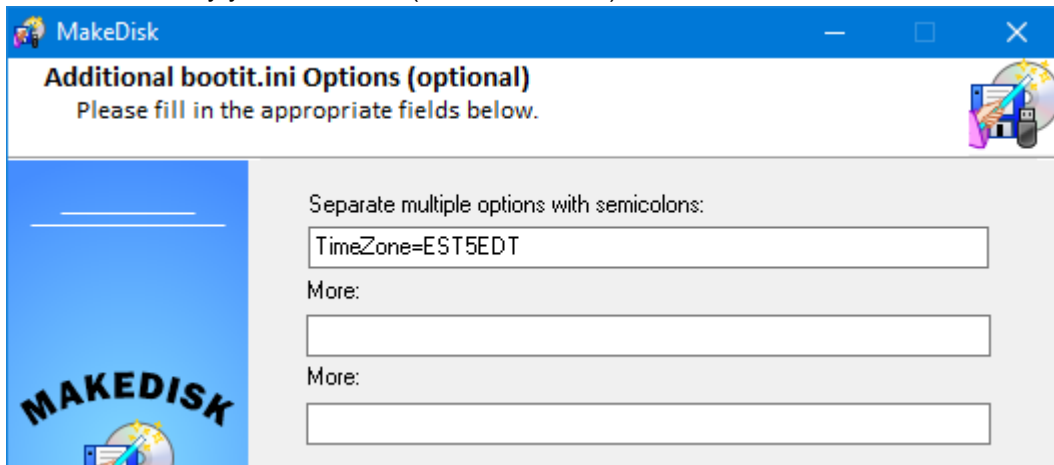
These options control how BootIt UEFI and Image for UEFI manage drive geometry (they will be the default for all drives in the system that have the **Use Global Settings** options selected in **Drive Settings**). Note that all of these options can be changed in BootIt UEFI. By default, all options are unselected. Also, these geometry settings are only applicable to MBR/EMBR drives.

Disable Global Geometry	<p>Disables the global geometry settings. BootIt UEFI and Image for UEFI will revert to using program defaults or drive specific overrides (equivalent to those used by the imaging programs prior to version 2.52).</p> <p>For normal use, it is not recommended to disable Global Geometry, which provides an easy method of applying geometry settings system-wide.</p>
Disable Align MBR for BIOS Auto Mode	<p>The Align MBR for BIOS Auto Mode option is enabled by default to prevent problems with unaligned partitions on systems with their BIOS using Auto Mode. Many newer systems use Auto Mode by default, and some even don't have an option to turn it off. Select this option if you want to disable Align MBR for BIOS Auto Mode.</p>
Align Partitions on 1MiB Boundaries	<p>This option provides a convenient way to enable 1MiB partition alignment for all drives (drives with 512 byte sectors will be aligned on 2048 sectors; drives with 4096 byte sectors will be aligned on 256 sectors). When this option is enabled, partition alignment will be configured using the Windows Vista and Windows 7/8.x/10 standard. This is popular with users of SSD type drives, which require this alignment for optimal performance.</p>

Align Partitions on Cylinders	<p>This option is used in conjunction with Align Partitions on 1MiB Boundaries to provide an easy way to auto determine alignment and to default a blank drive to use either 1MiB alignment or cylinder alignment.</p> <p>For more details, please see Settings Align on Cylinder on page 58.</p>
Assume Same Target System	<p>Enable this option to prevent problems when a backup image of another system's drive is restored to a drive connected to a different system and drive will be put back into the original system.</p> <p>This option uses drive geometry based on the MBR entry of the first partition in the backup image file and applies only when restoring a backup image.</p> <p>For more details, please see Settings Assume Same Target System on page 58.</p>
Use Source Host Geometry	<p>Enables the use of the drive geometry saved in the backup image that represents the geometry from the environment (Windows, Linux, DOS, or UEFI) used to create the backup file. The saved drive geometry is used for the restored partition(s) instead of the geometry in use on the current system (which may differ).</p> <p>For more details, please see Settings Use Source Host Geometry on page 59.</p>
Disable Validate Geometry Before Use	<p>The Validate Geometry Before Use option is used to ensure that the geometry from the MBR on the original system is aligned to known standards before accepting it for use. It only applies when the Assume Same Target System option is enabled. Select this option if you want to disable Validate Geometry Before Use.</p> <p>For more details, please see Settings Validate Geometry Before Use on page 59.</p>
Use Windows 9x MBR	<p>Windows Vista and later tied the kernel loader to the MBR code such that using previous MBR code may not allow Windows Vista or later to boot on certain machines. Leave this option unselected (the default) to use the code base compatible with Windows Vista or later. The new MBR code will continue to boot older OSes with the exception of some (rare) configurations using Win9x on FAT32.</p> <p>For more details, please see Settings Use New Windows MBR on page 56.</p>

- The **Additional bootit.ini Options** screen is displayed. Enter any additional bootit.ini file options you require. If unsure, just leave the fields blank (most of the options you should set to use BootIt UEFI or Image for UEFI are set for you by default). For example, you might want to use the **TimeZone**

variable to identify your time zone (as shown below). Click **Next** to continue.



The screenshot shows a window titled 'MakeDisk' with a blue header bar. Below the header, the title 'Additional bootit.ini Options (optional)' is displayed in bold, followed by the instruction 'Please fill in the appropriate fields below.' To the left of the input fields is a blue vertical bar containing the 'MAKEDISK' logo. The main area contains three text input fields. The first field is preceded by the text 'Separate multiple options with semicolons:' and contains the text 'TimeZone=EST5EDT'. The second and third fields are each preceded by the text 'More:'.

MakeDisk

Additional bootit.ini Options (optional)
Please fill in the appropriate fields below.

Separate multiple options with semicolons:

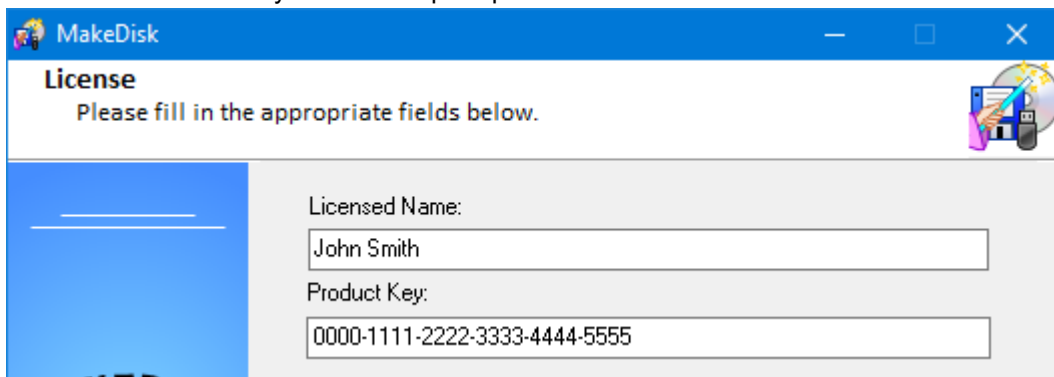
TimeZone=EST5EDT

More:

More:

MAKEDISK

11. The BootIt **License** screen is displayed. If you have purchased a BootIt Collection license, enter the registration information you were provided with in the text boxes shown on this screen. Leaving the text boxes empty will result in BootIt UEFI operating in a limited mode. If you are using the trial version of BootIt UEFI you won't be prompted to enter license information. Click **Next**.



The screenshot shows a window titled 'MakeDisk' with a blue header bar. Below the header, the title 'License' is displayed in bold, followed by the instruction 'Please fill in the appropriate fields below.' To the left of the input fields is a blue vertical bar containing the 'MAKEDISK' logo. The main area contains two text input fields. The first field is preceded by the text 'Licensed Name:' and contains the text 'John Smith'. The second field is preceded by the text 'Product Key:' and contains the text '0000-1111-2222-3333-4444-5555'.

MakeDisk

License
Please fill in the appropriate fields below.

Licensed Name:

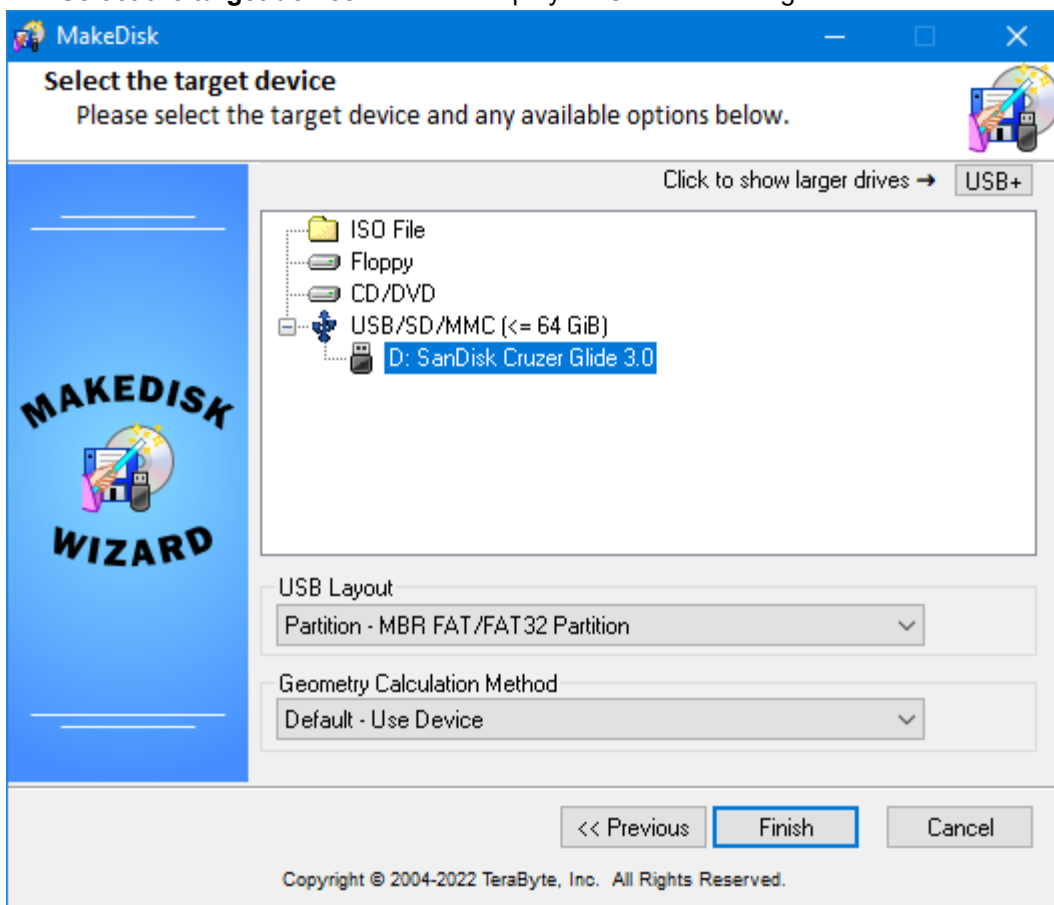
John Smith

Product Key:

0000-1111-2222-3333-4444-5555

MAKEDISK

12. The **Select the target device** screen is displayed. Choose the target that MakeDisk should use.



If you choose the **ISO File** option, you must supply an ISO file name.

If you choose the **USB/SD** option to create a bootable flash drive, select the USB Layout to use:

No Partition - FAT/FAT32 Volume	The entire UFD is configured as one big unpartitioned device. If you were to view a 4 GB UFD created using this option in Windows, you'd see free space beyond the amount used by MakeDisk up to the size of the drive. This free space is available to be used normally. If the UFD is 4GB or smaller, it's formatted as FAT. Otherwise, it's formatted as FAT32.
Partition - MBR FAT/FAT32 Partition	The entire UFD is used as a single bootable partition. The computer's BIOS will usually detect this type of UFD as a hard drive. Any unused space on the UFD is available to be used normally. If the UFD is 4GB or smaller, it's formatted as FAT. Otherwise, it's formatted as FAT32.
Partition - MBR FAT/FAT32 Partition (Int13h Extensions)	This is the same as the Partition - MBR FAT/FAT32 Partition mode except that the INT 13 Extension is used (this is required for some computers to boot a UFD).
Partition – MBR UEFI System Partition	The UFD is configured as an MBR drive that contains an EFI System Partition. This type of drive may not boot on Legacy BIOS (non-UEFI) systems. Additionally, the partition may not be accessible normally via a drive letter.
Partition – GPT	The UFD is configured as a GPT drive that contains an EFI System

UEFI System Partition	Partition. This type of drive will only boot on UEFI systems in UEFI mode. Additionally, the partition may not be accessible normally via a drive letter.
Multi-Partition – MBR FAT/FAT32 (+exFAT)	Will create a small FAT or FAT32 partition for BootIt UEFI and create an exFAT partition in the remaining space. If this layout already exists, MakeDisk can update the BootIt UEFI partition and leave the exFAT partition unchanged.
Multi-Partition – MBR FAT/FAT32 (Int13h Extensions) (+exFAT)	This is the same as the Multi-Partition – MBR FAT/FAT32 (+exFAT) mode except the INT 13 Extension is used (this is required for some computers to boot a UFD).
Multi-Partition MBR UEFI System Partition (+exFAT)	The UFD is configured as an MBR drive that contains a small EFI System Partition that contains BootIt UEFI. An exFAT partition is created in the remaining space. This type of drive may not boot on Legacy BIOS (non-UEFI) systems. Additionally, the partition may not be accessible normally via a drive letter. If this layout already exists, MakeDisk can update the BootIt UEFI partition and leave the exFAT partition unchanged.
Multi-Partition GPT UEFI System Partition (+exFAT)	The UFD is configured as a GPT drive that contains a small EFI System Partition that contains BootIt UEFI. An exFAT partition is created in the remaining space. This type of drive will only boot on UEFI systems in UEFI mode. Additionally, the partition may not be accessible normally via a drive letter. If this layout already exists, MakeDisk can update the BootIt UEFI partition and leave the exFAT partition unchanged.

The **Geometry Calculation Method** options control how the drive geometry is calculated for the USB/SD device. It is recommended to try the **Default** option first. If the device fails to boot properly (e.g. black screen, boot failure, device not found, etc.), the other options can be tried. Make note of which option works properly for future use.

By default, for data safety reasons, MakeDisk does not support UFD devices that are larger than 64 GB in size. For that reason, devices larger than 64 GB will not appear in MakeDisk. You can allow MakeDisk to support larger devices by clicking the **USB+** button or by specifying the `/nousblimit` parameter when it's run (e.g. `makedisk /nousblimit`).

More information on UFD boot media can be found in the following KB article:

<https://kb.terabyteunlimited.com/kb-articles/using-a-ufd-usb-flash-drive-as-installation-boot-media-for-terabyte-unlimited-products/>

- Click **Finish**, and respond to subsequent prompts as necessary. MakeDisk will then create your bootable media or ISO image. When it is done, the success screen should appear.
Note: *If you created a boot CD/DVD the disc will appear blank, but it is still bootable.*
- If you opted to create bootable media in Step 9, you are done with Step A, proceed to [Step B: Installing BootIt UEFI on Your Hard Disk](#). If you selected the **ISO File** option instead, you will first have to use other CD/DVD authoring software, such as BurnCDCC, to create a bootable BootIt UEFI installation disc from the ISO file. Once you have done that, proceed to [Step B: Installing BootIt UEFI on Your Hard Disk](#).

Step A: Create USB Flash Drive (UFD) Boot Media Manually (Linux users)

1. Download the BootIt Collection zip file from your TeraByte account (or the BootIt Downloads page if using the trial version).
 - Full version file: `bootit_collection_en_v2.zip`
 - Trial version file: `bootit_collection_en_trial.zip`
2. Extract the downloaded zip file to a folder for easy access to the files using your file manager.
3. If you are updating the BIU files on an existing BIU UFD, mount the UFD so it can be accessed in your file manager and skip to Step 7.
4. Format a USB Flash Drive (UFD) to FAT32. This can be done using the disk management utility included with your Linux distro.
5. Mount the UFD so it can be accessed in your file manager.
6. Create the following directories on the UFD:
 - a. `/efi`
 - b. `/efi/boot`
 - c. `/efi/bootit`
7. Copy the following items from the extracted zip file to the specified locations on the UFD:
 - a. Copy `common/license.txt` to the root of the UFD.
 - b. Copy the `common/*.tbs` files to `/efi/bootit` folder on the UFD.
 - c. Copy everything except `fat32.bin` from `biu` to `/efi/bootit` on the UFD (if you copy `fat32.bin` it's fine, just not needed).
 - d. Copy `shimx64.dat` from `biu` to `/efi/boot` on the UFD.
 - e. If using the Microsoft Secure Boot Certificate:
 - i. Copy `bootx64.efi` from `biu/Microsoft` to `/efi/boot` on the UFD.
 - ii. Copy `uefiboot.ifu` from `biu/Microsoft` to `/efi/bootit` on the UFD and rename to `uefiboot.dat`.
 - f. If using the TeraByte Secure Boot Certificate (requires installation of the TeraByte DB Certificate):
 - i. Copy `bootx64.efi` from `biu/TeraByte` to `/efi/boot` on the UFD.
 - ii. Copy `uefiboot.ifu` from `biu/TeraByte` to `/efi/bootit` on the UFD and rename to `uefiboot.dat`.
8. If you want (or need) any special options that happen with installation you can create and configure the `/efi/bootit/bootit.ini` file on the UFD. Otherwise, the program will create the file itself as you configure options or enter the product key.

Step B: Installing BootIt UEFI on Your Hard Disk

In this step, you will install BootIt UEFI onto your hard drive using the installation media that you created in Step A.

Warning to Windows 8.x/10/11 Users

You must disable the Windows **Fast startup** option or you risk corruption of your partitions and data. This option can be disabled by viewing the Windows partition's properties in Partition Work and clicking the **Disable Fast Start** button. This can be done after the installation of BootIt UEFI has completed.

Step B: Boot from the CD/DVD or USB flash drive

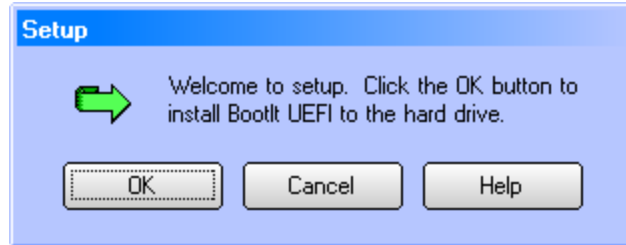
1. Consider doing the following:
 - From within BIOS (basic input/output system) setup, verify that your system boot up sequence (boot order) is correct. Most newer computers display either a list of devices containing all boot devices or separate lists for each type of device. Make sure to place the drive or device from which you will be booting the BootIt UEFI Setup media *before* the internal hard drive.
 - Instead of changing the boot order, you could boot the media using the BIOS Boot Menu. This can be accessed on startup by pressing the appropriate key (e.g. F8, F12, etc.). Some systems will display on-screen which key accesses the boot menu, which may be labeled BBS (BIOS Boot Specifications). Select the BootIt UEFI media to boot it (select the UEFI entry for the device if given the choice between UEFI and Legacy modes).
 - Disable the Boot-Sector/MBR virus protection option (if it exists in the BIOS). If you leave the virus protection option enabled, it may cause issues.
2. Insert the BootIt UEFI Setup media in the correct drive or, if using a USB flash drive, plug it into a USB port.
3. Restart or reboot the computer.
 - BootIt UEFI should begin loading from the CD/DVD or USB flash drive.
 - If BootIt UEFI doesn't seem to load and your system starts as it normally does, double-check that you configured the BIOS boot order correctly.

Note

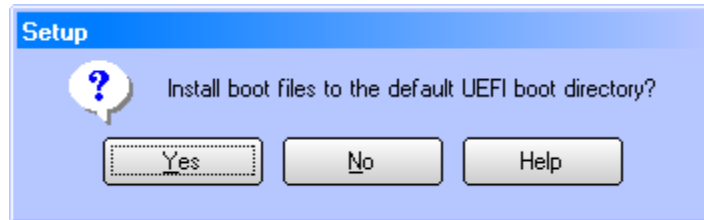
- If you are installing BootIt UEFI for the first time, refer to [Install BootIt UEFI for the first time](#).
- If you are upgrading from an existing BootIt UEFI installation, refer to [Upgrade from an earlier version of BootIt UEFI](#).
- If you are upgrading an installation of the trial version of BootIt UEFI, recreate the BootIt UEFI Setup media using the full version and enter your name and key when prompted. Then refer to [Upgrade from an earlier version of BootIt UEFI](#).

Install BootIt UEFI for the first time

1. After you boot from the **BootIt UEFI Setup** media, at the **Welcome to setup** prompt, click **OK**.



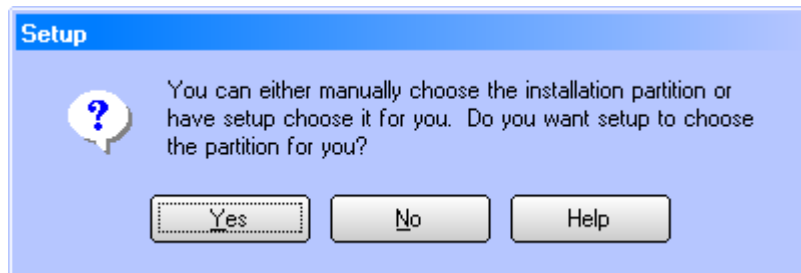
2. You are then asked if you want to install the boot files to the default UEFI boot directory. Some systems may require the boot files in the default folder.



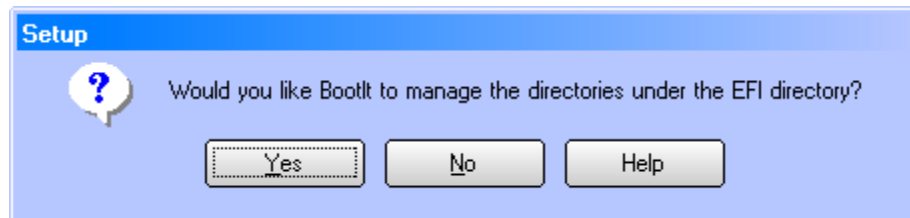
Click **Yes** to install the boot files to the \EFI\Boot folder of the EFI System partition.

Click **No** to install the boot files to the \EFI\BootIt folder of the EFI System partition.

3. When asked how you want the partition chosen, click **Yes** to have Setup choose the partition for you or click **No** to choose the partition manually as described on page 23.



4. You are then asked if you want BootIt to manage the directories under the EFI directory.



BootIt UEFI can manage the booting files of multiple operating systems from the same EFI directory. When managed, folders can additionally be renamed as necessary for the boot items so the booted OS sees its booting files as it normally would. If the directories are not managed the folders will not be renamed, which will cause booting file conflicts if multiple versions of the same operating system are installed.

Click **Yes** to have BootIt UEFI manage the directories (recommended).

Click **No** to have BootIt UEFI not manage the directories.

5. When Setup indicates that it has all of the needed information, click **OK** to begin copying files to your hard disk, and then refer to [Complete the installation](#) on page 23.

If Setup is unable to find or create the installation partition, Setup will switch to manual mode where you can select or create an EFI System partition for installation.

Upgrade from an earlier version of BootIt UEFI

1. After you boot from the BootIt UEFI Setup media, on the **Installation & Recovery Boot Menu**, click **Upgrade BootIt UEFI**, and then click **OK**.
2. At the **Welcome to setup** prompt, click **OK**.
3. When asked how you want the partition chosen, click **Yes** to have Setup choose the partition for you or click **No** to choose the partition manually as described in [Choose the partition manually](#).
4. When Setup indicates that it has all of the needed information, click **OK** to begin copying files to your hard drive, and then refer to [Complete the installation](#) on page 23.

If Setup is unable to find the BootIt UEFI partition, a message will be displayed and you will need to reinstall BootIt UEFI.

Choose the partition manually

When installing BootIt UEFI for the first time (page 21) or upgrading an earlier version of BootIt UEFI (page 23), when asked how you want the partition chosen, if you click **No** and decide *not* to have Setup choose the partition for you, then you must manually complete this procedure to prepare and choose the partition.

1. Read the displayed message indicating that you must ensure that an EFI System partition is selected for installation and that you need to enable the BIU Managed bit on the partition to have BootIt manage the directories under \EFI, and then click **OK**.
2. In the **Work with Partitions** dialog box that appears, in the **Actions** section, you'll see the **Setup** button which only appears in this dialog box when accessed during installation.
3. Select the booting drive (usually **HD0**), if not already selected. If the text above the partitions does not read **GPT Partitions**, the drive is not GPT. You may have the wrong drive selected or need to convert it to GPT (BootIt UEFI can only be installed to a GPT drive). To convert to GPT, click the **Change Disk Type** button and then click the **GPT** button. It is not recommended to convert a drive unless you are aware of the effect the conversion will have on the drive's contents (e.g. converting an MBR drive with Windows installed on it will prevent Windows from booting).
4. With the appropriate hard drive selected, click the **EFI system partition** for installation.
If one does not exist, you can create and format it at this time. A minimum size of 400MB is recommended to allow sufficient space for the booting files of the operating systems that will be installed (consider a larger size if planning to install many operating systems that will share the partition). If there is no Free Space (unpartitioned space) to create the partition, you can resize one of the existing partitions smaller by the amount of space needed.
Ensure the desired EFI System partition is highlighted before continuing with the next step.
5. If you want BootIt UEFI to manage the \EFI directories (recommended), click the **Properties** button and enable bit 55 (**BIU Managed**) in the **Flags** listbox. Click **OK** to save the change.
6. Click **Setup** to continue. Setup will notify you if something still needs to be configured.
If the **Setup** button is grayed out and unavailable, then the partition that you highlighted is not valid for the installation.
7. When Setup indicates that it has all of the needed information, click **OK** to begin copying files to your hard disk and then refer to [Complete the installation](#).

Complete the installation

1. Once the installation has finished you will be prompted to remove the BootIt UEFI boot media and restart the system. Keep the boot media available to use for reactivating or upgrading BootIt UEFI.

2. Check the BIOS boot sequence and configure it to boot the BootIt UEFI item first (or after the CD/DVD drive if it's used for booting). Be aware that some Windows operations may change the UEFI boot order so you may occasionally need to enter the BIOS and change BootIt UEFI back to first position. If the system allows it, you may find it helpful to disable all the other BIOS boot entries so only the BootIt UEFI item is enabled.

Uninstalling BootIt UEFI

1. If you *do not* have primaries limited on EMBR drives, then the first step to uninstalling BootIt UEFI is to make sure that you have no more than four primary partitions per EMBR drive (this is not necessary if the EMBR partitions will be managed manually with the BootIt UEFI or BootIt BM boot media or with an installed BootIt BM).

Use the **Work with Partitions** dialog box to delete any extra primary partitions as described in [Working with Partitions](#) on page 34.

2. On the **Utilities** menu, click **Uninstall**.
3. In the **Uninstall** dialog box, select the **Remove BootIt UEFI** checkbox.
4. Click **OK**.

Note

The uninstall option is only available when using a copy of BootIt UEFI that has been installed to the hard drive. If your system boots the incorrect operating system or won't boot at all after uninstalling, you may need to enter the BIOS and update the boot order or perform some manual boot repairs.

The Installation & Recovery Boot Menu

The **Installation & Recovery Boot Menu** dialog box appears when you boot with the BootIt UEFI boot media after BootIt UEFI has been installed (it is displayed if booting a CD/DVD or USB flash drive).



The following options are available:

Reactivate BootIt UEFI

Select to reactivate BootIt UEFI if it was deactivated after installing a new operating system (such as Windows) or by using the **Deactivate** option on the uninstall dialog.

Reinstall BootIt UEFI

Select to start the BootIt UEFI setup to reinstall the existing installation.

Upgrade BootIt UEFI

Select to start the BootIt UEFI setup to upgrade the existing installation.

Using Image for UEFI

BootIt UEFI includes TeraByte's Image for UEFI program, supporting imaging entire drives as well as single partitions and providing full compatibility with TeraByte's V3 imaging programs.

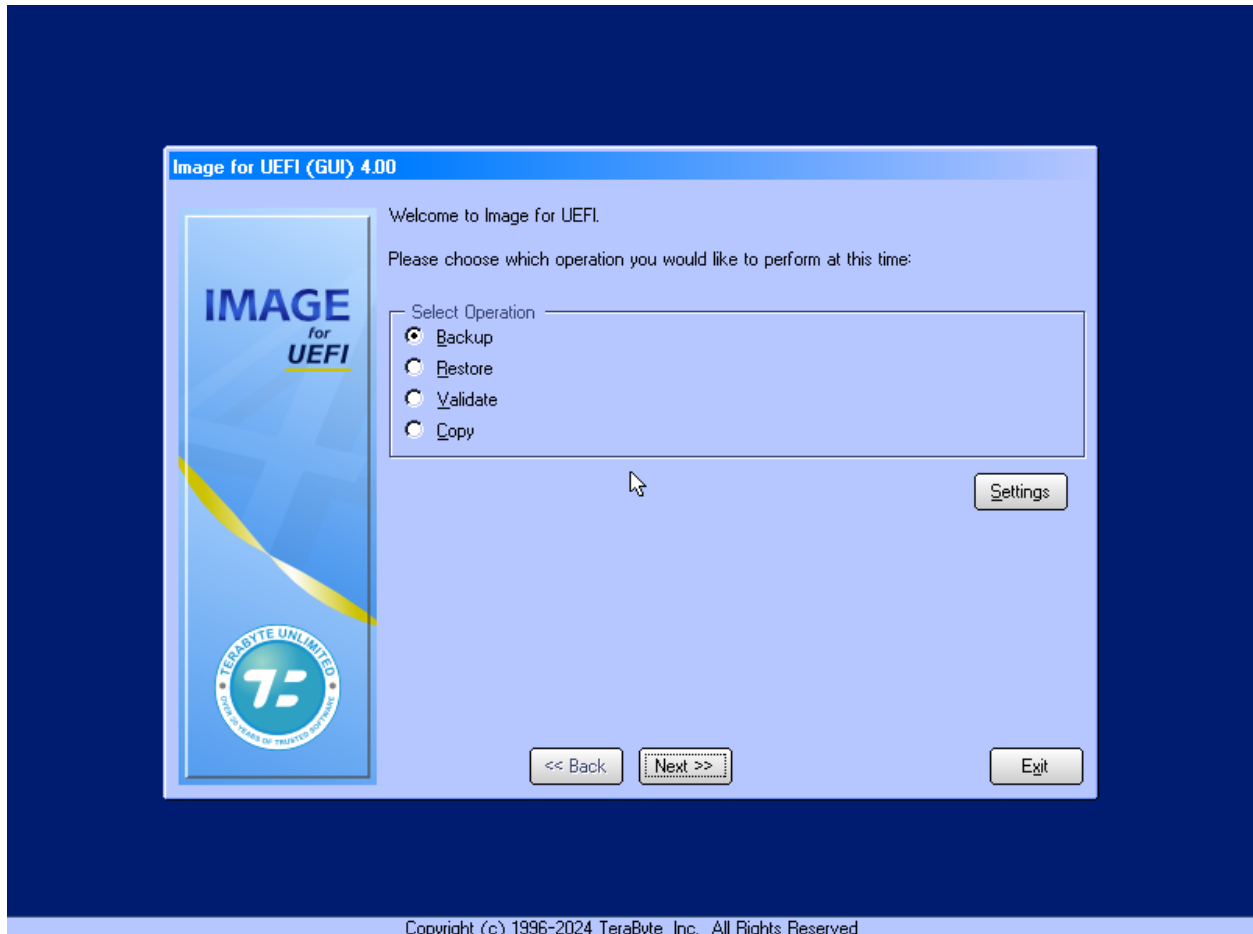


Image for UEFI is automatically installed with BootIt UEFI if it was included on the Setup media.

To run Image for UEFI, click the **Disk Imaging** icon on the desktop or select **Disk Imaging** from the **Utilities** menu.

Image for UEFI usage is similar to Image for DOS. For details refer to the Image for DOS manual.

Using BootIt UEFI

BootIt UEFI can be used with a mouse and keyboard or just a keyboard. The following shortcut keys work with most dialog boxes in BootIt UEFI:

Press	To
Esc	Cancel
F1	Help
F10	OK, Close, or Apply
Ins	Add, Create, or Fill
Del	Delete or Clear
Tab	Next control
Shift+Tab	Previous control
Arrow keys	Move highlight, Increment/Decrement
Spacebar	Activate, Toggle checkbox, Open drop-down box

Several special shortcut keys are also available:

Press	To
Alt+0 (zero)	Turn off most computers at the Boot Menu or main desktop. <i>You cannot use this shortcut when editing a Boot Menu.</i>
Ctrl+Alt+Del	Reboot the computer.

Most controls can be access directly by using their shortcut key (underlined letter or number) with the **Alt** key. For example, on the **Boot Menu**, if you press and hold the **Alt** key and then press the **M** key, you will enter Maintenance Mode (**Alt+M**).

Shortcut keys specific to an area of BootIt UEFI will be listed in the appropriate section.

The Boot Menu

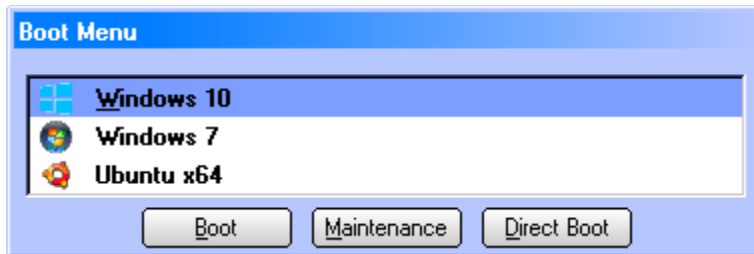
BootIt UEFI has the following two types of boot menus:

- The **Normal Boot Menu** displays the specific boot items configured for it as described in [The Normal Boot Menu](#) (below).
- The **Direct Boot Menu** displays the list of UEFI boot items (by default, those that haven't been hidden or disabled) as described in [The Direct Boot Menu](#) on page 31.

You'll use the Normal Boot Menu most frequently, especially if you have configured hiding of GPT partitions or enabled support for more than four primary partitions on EMBR drives.

The Normal Boot Menu

The Normal Boot Menu (**Boot Menu**) displays the specific boot items configured for it. Click to select an item or use the keyboard arrow keys.



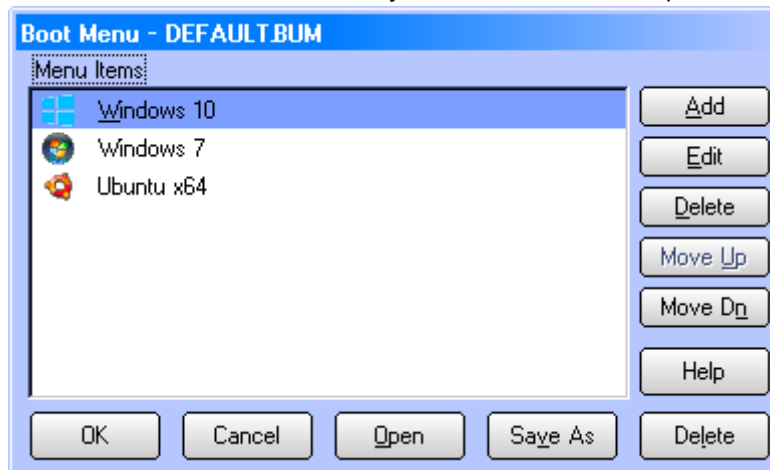
You can boot an item using this menu in the following ways:

- Double click the item.
- Select the item and then press **Enter**.
- Select the item and then click **Boot**.
- Press the associated shortcut key for the item (such as **W** for Windows 10).
- Select the item and then press and hold down the **left Shift** key while selecting **Boot** to perform a *simulated boot* that only updates the partition settings for the boot item. You'll hear a beep when performing this option (if the computer's internal speakers work). This option is useful when you need to have the partitions in the state configured for the boot item, but booting into the OS is not required (preparing to install an OS, for example). Note that the Shift key state doesn't always register correctly in EFI when used with the mouse (a normal boot would occur). You can also hold down the **left Shift** and press **Enter** to perform a simulated boot via the keyboard.

You can position the Boot Menu window to an alternate location by dragging it with the mouse. To save the position press **F11**. To return the menu to the default location (center of screen) press **Shift-F11**.

Set up the Normal Boot Menu

1. On the **Edit** menu, click **Boot Menu**. Alternatively, from the main desktop screen, click **Boot Edit**.



2. In the **Boot Menu** dialog box, do any of the following:
 - To rearrange the order of the items, select an item, and then click **Move Up** or **Move Down** as appropriate.
 - To delete an item, select the item that you want to delete, and then click **Delete**.

Warning: If the boot file directory is being managed and the **Delete Managed Dirs** option is enabled, a prompt will be displayed asking if you would also like to delete the item's boot file

directory. This directory is part of the operating system and should NOT be deleted if you want to keep using the operating system(s) it belongs to.

If you select to delete the directory, it will be deleted immediately and cannot be undone.

However, for Windows installations the files can be recreated by using Scripting and running the fixboot.tbs script.

- To create a menu item, click **Add**, and then refer to the following screen capture and [Add or edit a normal boot menu item](#).
- To edit a menu item, select the item that you want to modify, click **Edit**, and then refer to the following screen capture and [Add or edit a normal boot menu item](#).
- To save the current Boot Menu to a file, click the **Save As** button. The saved menu can then be used when setting up users.
- To load a previously saved Boot Menu, click the **Open** button.

Add or edit a normal boot menu item

1. On the **Edit** menu, click **Boot Menu**. Alternatively, from the main desktop screen, click **Boot Edit**.
2. In the **Boot Menu** dialog box (as displayed in [The Boot Menu](#) on page 26), do one of the following:
 - To add a menu item, click **Add**.
 - To edit a menu item, select the menu item and then click **Edit**.
3. The **Add Menu Item** or **Edit Menu Item** dialog box will be displayed (depending on your selection in Step 2). The options for both are the same and are detailed below.

Edit Menu Item

Boot Details

Identity: &\Windows 10

Memg:

HD: 0 OS: 0 Icon: [Windows Logo]

Boot: EFI system partition

Boot File: osoft.001\boot\bootmgfw.efi [Browse]

Script: [Browse]

Options

☐ Use UEFI BM ☒ Rename Directory

☐ Default ☐ Remove MS GPT Gaps

Password

Keyword:

MBR Details

[HD 0]

0) GPT Reserved

1)

2)

3)

[HD 1]

0) GPT Reserved

1)

2)

3)

GPT Details

[HD 0]

000 + EFI system partition

001 + Microsoft reserved partition

002 Win10

003 + WinRE

[HD 1]

000 Microsoft reserved partition

Buttons: OK, Cancel, Help, Properties

The **Menu Item** dialog contains all the settings for the menu item. These settings are categorized below by section for easy reference.

Boot Details

Identity	Type the name to be displayed in the boot menu. You can type & before any letter in the name that you want to become a shortcut key on the Boot Menu .
Memo	Enter descriptive text for the menu item. This text will be displayed on the boot menu.
HD	Click the up or down arrows to enter the hard drive number (starting at zero) of the hard drive containing the partition to boot. In most cases, this should be set to the drive containing the EFI System partition for the operating system.
OSI	The OS Loader Item Index to make the default when booted. This option only works with Windows Vista or later. The value is a one-based index. Zero disables the option and prevents any attempt to change the default.
Icon	Select the desired icon to be displayed for this entry in the Boot Menu .
Boot	Select the name of the partition to boot. In most cases, this should be set to the EFI System partition for the operating system being booted by this menu item.
Boot File	<p>Enter the path to the EFI booting file for the operating system being booted. You can also use the Browse button to browse and select the file. For example, Windows installations will use \EFI\Microsoft\Boot\bootmgfw.efi.</p> <p>If you are setting up the boot item before the OS is installed you can specify an .efi file that doesn't exist. This allows you to configure the boot item so it can be booted (or simulated) to set the partitions as needed for the OS install.</p>
Script	<p>Enter the file name of the Script (.tbs or .run) to run when this item is booted by clicking Browse and choosing the desired script. When this menu item is selected to boot the script will run prior to the OS booting. The script can abort booting the OS by removing the ResumeB value from the Options section of the bootit.ini file located in the BootIt installation folder. An example TBS script is shown below. The script runs a validation and then waits five seconds before continuing to boot. Pressing ESC will abort the boot and return to the menu.</p> <pre> sub main() exec("C:\EFI\BOOT\IT\IMAGEU.EFI /v /f:2@0x6:^^\Win10x64^", 1) cls() printl("Script completed.") printl("") key = getkey("Press ESC within 5 seconds to return to the BootIt menu...",5) if key=27 then ext("set ini bootit.ini Options ResumeB") end if end sub </pre>
Use UEFI BM	Select to boot the operating system through the BIOS instead of direct to file. This is required if BitLocker is used and may be required for some systems to boot properly.

Rename Directory	Select to have BootIt!t UEFI rename the operating system's booting files folder back to its original name when booted. This is recommended for operating systems that lose functionality when booting files can't be found (such as Windows). This option requires the EFI System partition's BIOS Managed flag is set (bit 55).
Default	Select to designate the menu item that you are adding or editing to be the default menu item (the one that is always selected to boot on the next reboot).
Remove MS GPT Gaps	Select to reorder the partitions in the GPT partition table so there are no gaps (partitions will be in consecutive slots). Only Microsoft specific partitions will be moved.

Password

Keyword	Enter a password/keyword that will be required to boot this item. Note that a password protected boot item cannot be booted with BootNow.
----------------	---

MBR Details

In this section, each entry represents an entry in the standard MBR for a given MBR/EMBR hard drive. When this boot item is booted, the MBR of each drive will be updated to reflect the view you see here. To allow editing MBR entries on a GPT drive, enable the **MBR Boot Ctrl on GPT** option in Settings.

To edit or adjust the entries, select a partition or blank entry, and then do any of the following:

Fill	<p>Select a blank space (or a partition to be replaced) and then click Fill (or press Ins). For MBR/EMBR drives, if the Limit Primaries setting is enabled or the drive is configured as MBR, then all partitions are already listed. If the partition being booted is on an MBR/EMBR drive, then, at the very least, the boot partition for the operating system must be loaded to the MBR.</p> <p>This option can be used on GPT drives if the MBR Boot Ctrl on GPT option is enabled.</p>
Clear	<p>Removes the selected partition from the MBR. For MBR/EMBR drives, this option is disabled if the Limit Primaries setting is enabled or the drive is configured as MBR.</p> <p>This option can be used on GPT drives if the MBR Boot Ctrl on GPT option is enabled. The <i>GPT Reserved</i> partition cannot be removed.</p>
Hide / Unhide	<p>If the selected partition is currently unhidden (default), the partition is marked as hidden. If the selected partition is currently hidden, the partition is set as unhidden. For MBR/EMBR drives, the Spacebar can also be used to toggle hidden status.</p> <p>This option can be used on GPT drives if the MBR Boot Ctrl on GPT option is enabled. The <i>GPT Reserved</i> partition cannot be hidden.</p>
Volumes / Set Active	To hide individual volumes (logical partitions) on MBR/EMBR drives, select an extended partition and then click Volumes .

	For GPT drives, this option will change to Set Active if the MBR Boot Ctrl on GPT option is enabled (the Spacebar can also be used to toggle the active status). The GPT Reserved partition cannot be set active.
Move Up	Moves the selected partition or volume one slot up in the partition table. This option can be used on GPT drives if the MBR Boot Ctrl on GPT option is enabled.
Move Dn	Moves the selected partition or volume one slot down in the partition table. This option can be used on GPT drives if the MBR Boot Ctrl on GPT option is enabled.
Retain	This setting applies to drives only. The selected drive will retain the items in the MBR at the time of booting instead of using the items in the MBR Details section of the boot item. This special use option is of value to those swapping in EMBR enabled drives with Limited Primaries disabled.
Ignore	This setting applies to drives only. The selected drive will be ignored by BootIt UEFI. This is necessary when using a non-standard drive. An example would be a drive that is fully encrypted (including the MBR) and appears to have no valid partition table. If this option is not used, when BootIt UEFI checks the drive it may write a valid empty partition table to the drive, corrupting the encrypted data.

GPT Details

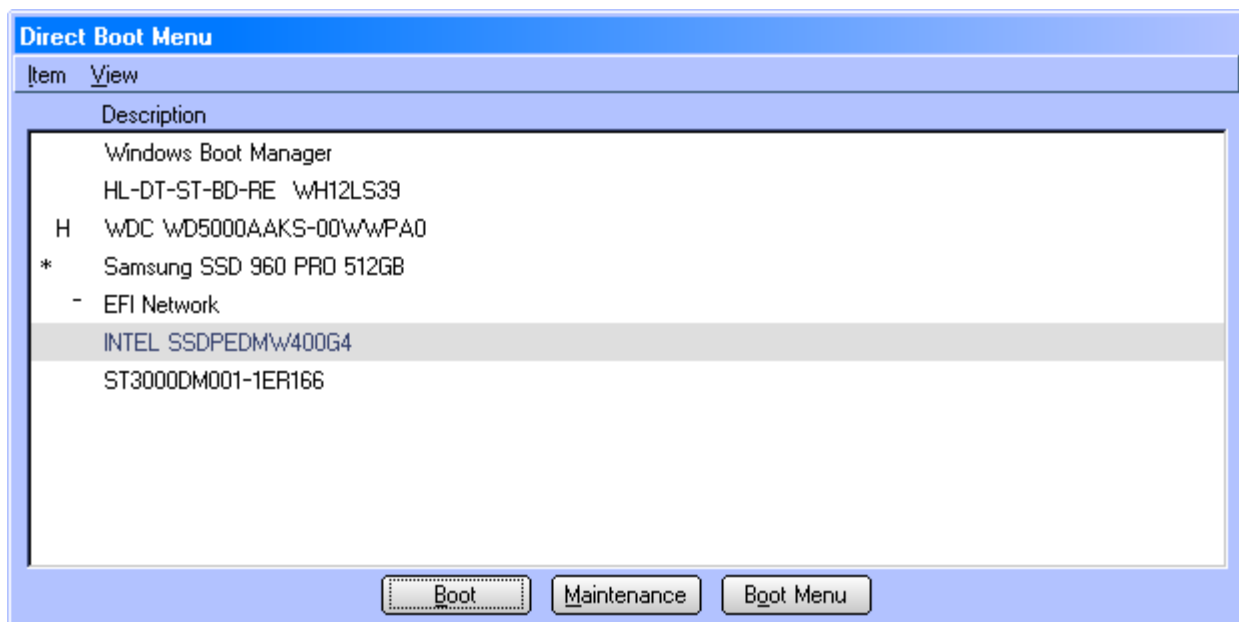
In this section, each entry represents a partition on a GPT drive. When this boot item is booted, the partitions of each GPT drive will be updated to reflect the settings configured here. When a partition is selected you can press **Spacebar** to toggle hiding the partition or use the **Properties** button to open a dialog with following settings:

Hide	Enable to hide the partition.
Set Flags	Enable to allow changing the GPT partition's bit flags. Note that if any flags are set for a partition that you would likely want those same flags set for each boot entry.
Lock to Entry Num	Set the partition to use a specific partition table slot. This is helpful if the booted OS expects certain partitions to be in specific slots. Note that when a boot item is auto-created that non-Microsoft partitions will be locked to their respective slots. The partition slot number in the GPT Details listing will be enclosed in brackets if the partition is locked to the slot (e.g. [003]).

Valid options for drive and partition items can also be accessed by right-clicking the item and selecting the desired option from the pop-up menu.

The Direct Boot Menu

The **Direct Boot Menu** dialog box displays the list of UEFI boot items (by default, those that haven't been hidden or disabled). From the **Direct Boot Menu**, just double-click an entry to boot it.



Boot an item using the Direct Boot Menu

1. If the **Direct Boot Menu** is not configured as the default menu, then, on the **Normal Boot Menu**, click **Direct Boot**.
2. In the **Direct Boot Menu** dialog box (as seen in [The Direct Boot Menu](#)), you can configure the settings for each entry as desired. If an entry has a special status it's indicated to the left of the entry's description (**H** = hidden, **-** = disabled, ***** = default).
3. Click an entry to select it and then click **Boot**. Alternatively, you can double-click an entry to boot it.

Item Menu

The **Item** menu commands are listed below:

Hide/Unhide	Toggles the status of the selected entry between hidden and unhidden. The View menu controls which entries are displayed. If hidden entries aren't being displayed, hiding an entry will remove it from the list. An H appears before the Description in the list if the entry is hidden.
Set/Clear Default	Sets or clears the selected entry as the default selected item when the Direct Boot Menu is displayed. An asterisk (*) appears before the Description in the list if the entry is set as default.
Enable/Disable	Toggles the status of the selected entry between <i>enabled</i> and <i>disabled</i> . The View menu controls which entries are displayed. If only enabled entries are being displayed, disabling an entry will remove it from the list. A hyphen (-) appears before the Description in the list if the entry is disabled.
Help	Displays help information for the Direct Boot Menu .

View Menu

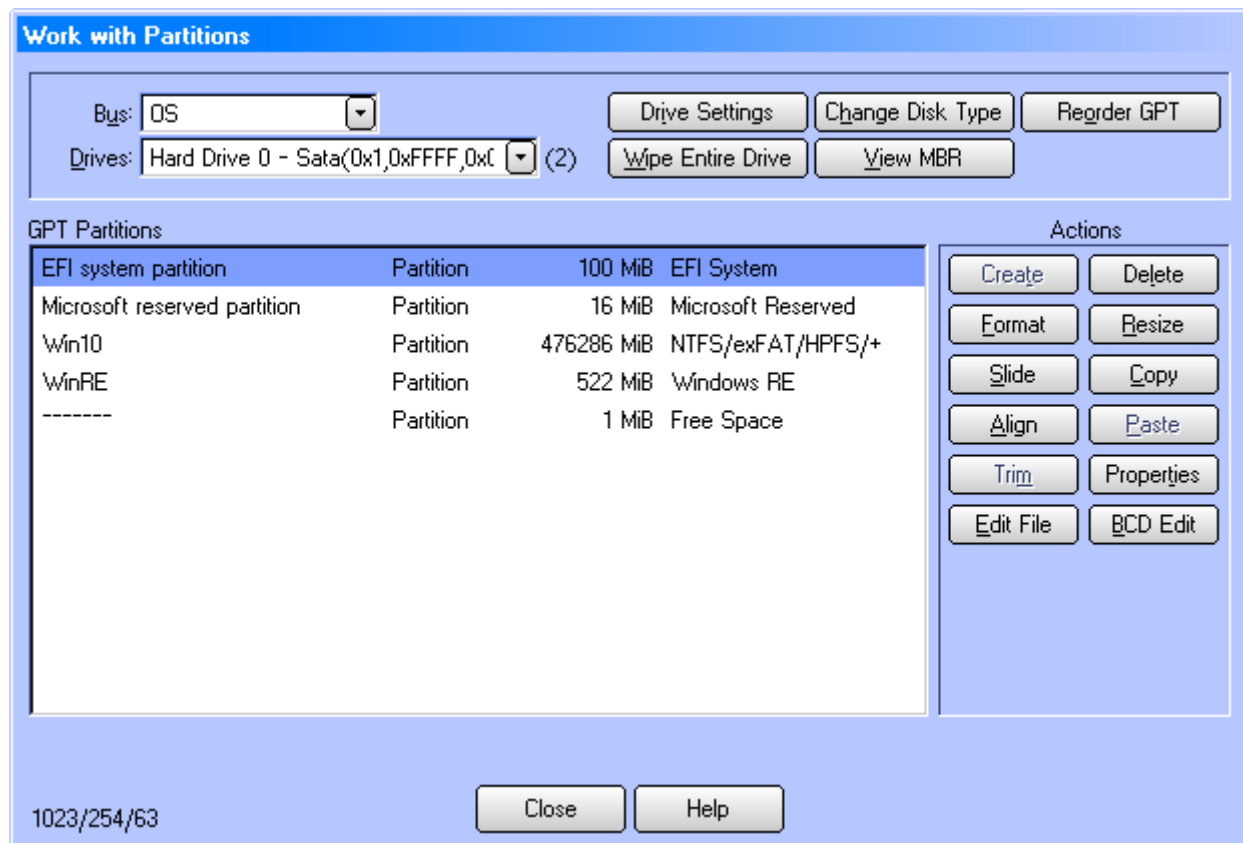
The **View** menu controls which entries are visible in the **Direct Boot Menu** dialog.

Hidden	Hidden entries are displayed.
Disabled	Disabled entries are displayed.

Working with Partitions

You can gain access to the **Work with Partitions** dialog box in two ways:

- On the desktop, click **Partition Work**.
- On the **Edit** menu, click **Partitions**.



Selecting a Drive

The drive is selected using the **Drives** drop-down box. The list shown may have generic drive names or it may include model numbers, depending on the access method in use and the details BootIt UEFI is able to obtain.

The **Bus** option is available, but limited to the OS option in the UEFI environment.

Below the **Drives** drop-down box, the Disk Type (MBR, EMBR, and GPT) is displayed, followed by the partitions and Free Space on the drive. The C H S values are displayed in the lower-left of the dialog.

If errors are detected in the partition structures or layout, *** Errors Exist *** will be displayed above the top-right corner of the partitions box. The affected partitions will be marked with an **E**. Note that only one error is displayed at a time. Once the error is corrected, the next error (if any) will be displayed.

Partition Operations

The following sections detail the supported partition operations. Please note that there is an inherent risk in making partitioning changes. It is recommended to create a backup image if the data on the drive is of value.

Tip: Pressing **F5** will return the keyboard focus to the list of partitions.

Create a partition or volume

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select a **Free Space** entry and then click **Create** under **Actions**.
3. In the **Create** dialog box under **Partition Information**, type the **Name** of the partition that you want to create. Note that the name will not be saved unless the partition is formatted or the drive type is EMBR.
4. Select the appropriate **File System** from the drop-down list. If the desired file system does not appear in the list, type it in decimal (or hex by starting with **0x** [zero x] or octal starting with a **0** [zero]).
5. Increase or decrease the **Size** of the new partition (in MB) using the keyboard or up or down arrows, respectively.
6. Optional:
 - To allow a specific amount of free space either before or after the new partition, enter the values using the **Free Space Before** and **Free Space After** controls. The default is for the partition to start at the beginning of the free space.
 - Under Options, select the **Format** checkbox if you want the partition formatted after it is created. If the **Format** checkbox is grayed out and unavailable, formatting is not supported for the selected file system.
 - If you want the option of having multiple operating systems boot from the new partition when using BootIt BM, select the **Multi-OS** checkbox. This does not mean that you are going to have multiple operating systems on the system itself. For more information on the Multi-OS option, please refer to *Using the Multi-OS Feature* in the BootIt BM manual.
7. Click **OK**.
8. If the **File System** specified for the new partition is FAT, FAT32 or NTFS and the **Format** option is selected, you can suggest a cluster size. See [Format a partition or volume](#) for details.
9. The new partition is displayed in the list of partitions.

Create - 477183 MiB Block

Partition Information

Name

File System

Size - MiB

Location

Free Space Before

Free Space After

Options

☒ Format

☐ Multi-OS

Delete a partition or volume

1. On the desktop, click **Partition Work**.

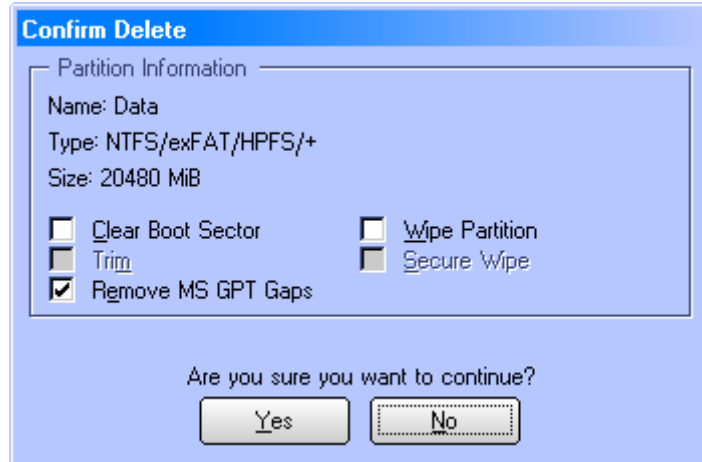
2. In the **Partitions** list, select the partition or volume that you want to delete and then click **Delete** under **Actions**.
3. In the **Confirm Delete** dialog box, you may complete these optional tasks (some tasks *cannot* be undeleted or reversed):

- To clear several boot sectors at the beginning of the partition, select the **Clear Boot Sector** checkbox.

Caution: *The partition will not be able to be undeleted if this option is used.*

- To clear all sectors in the partition with zeros, select the **Wipe Partition** checkbox. To use one of the standard wipe patterns or specify one of your own, select the **Secure Wipe** checkbox (see [Wipe Entire Drive](#) on page 47 for details).
- If the BIOS and the drive support TRIM you can select the **Trim** option. TRIM will be applied after all other specified options (e.g. wipe).
- If deleting a partition from a GPT drive, select the **Remove MS GPT Gaps** option to reorder the partitions in the GPT partition table so there are no gaps (partitions will be in consecutive slots). Only Microsoft specific partitions will be moved.

4. After reviewing the Partition Information to verify that you are about to delete the correct partition, click **Yes**.
5. The partition is removed from the drive and the list of partitions.



Undelete a partition or volume

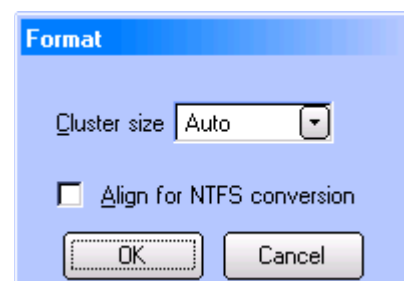
1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the Free Space entry that you want to undelete and then click **Undelete** under **Actions**.
3. In the **Undelete** dialog box that appears, click **OK** to recover missing FAT, HPFS, NTFS, Ext2fs, ReiserFS, and Extended partitions or volumes.

Note

If the partition or volume recovered is not correct, select it in the **Partition** list, click **Delete**, select the **Clear Boot Sector** checkbox, click **Yes**, and then repeat Steps 2 and 3.

Format a partition or volume

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition or volume that you want to format, and then click **Format** under **Actions**. If the **Format** button is grayed out and unavailable, formatting is not supported for the selected partition's file system.



3. For FAT, FAT32, and NTFS partitions, you can suggest a cluster size. However, BootIt UEFI determines the final size necessary to keep the partition valid.
For FAT and FAT32, you can also select the **Align for NTFS conversion** option to have the partition aligned optimally when later converted to the NTFS file system.
4. Click **OK**. The partition is formatted, scanned for errors (FAT/FAT32 only – scan can be canceled), and the **Format Summary** dialog is displayed.

Resize a partition or volume

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition or volume that you want to resize, and then click **Resize** under **Actions**.
3. In the **Resize** dialog box, click **OK** to error check the file system.

The error-checking process can take a long time. If the hard disk indicator light continues flickering, the error check is progressing.

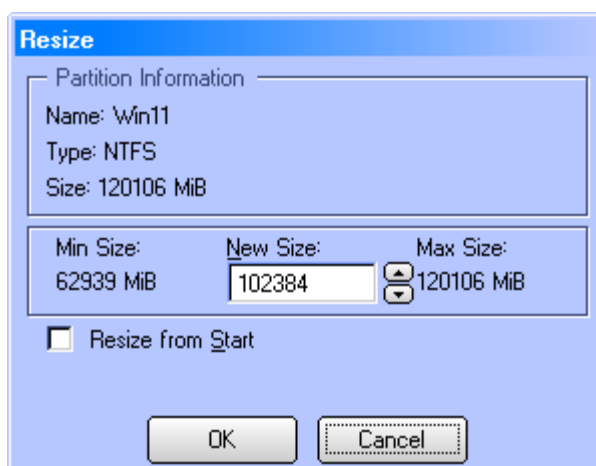
When the error check is complete, in the **Resize** dialog box you may review the **Partition Information** (such as **Name**, **Type**, and **Size**) to verify that you are resizing the correct partition.

4. Review the **Min Size** and **Max Size**, then increase or decrease the **New Size** of the selected partition using the up or down arrows, respectively. The size can also be typed in. To resize a partition from the start (for supported file systems), enable the **Resize from Start** option.
5. Click **OK**, and then (if you have already backed up your hard drive) click **Continue**.

The **Resize** status bar indicates progress. This process can take a long time when BootIt UEFI needs to move your existing data in order to resize the partition.

BootIt UEFI checks for errors once again, after which the **Resize** dialog box displays a message that the resize is complete.

6. Click **Close**.



Tip

- To expand a partition there must be a Free Space block adjacent to the partition on the edge you wish to expand. For file systems that are not supported for resize from the start, the **Slide** feature can be used, if necessary (see [Slide a partition or volume](#) on page 39).
- If BootIt UEFI displays a message that it cannot use the size or that free space has run out, select a smaller size first and then try the final size. In some cases, even just increasing the size by 20 to 50 MB can allow the final resize to succeed.
- You can suggest a cluster size for FAT/FAT32. However, BootIt UEFI determines the final size necessary to keep the partition valid.
- If the option is available, to convert to or from a FAT/FAT32 file system, select the desired file systems radio button.

- When resizing old MS/PC DOS FAT partitions from the start is required, **Slide** should be used instead of **Resize** since the requirements of the DOS system files (IO.SYS/MSDOS.SYS) being in the first clusters is not adjusted by the resize from start routine.

Copy a partition or volume

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition or volume that you want to copy and then click **Copy** under **Actions**.

At the bottom of the **Work with Partitions** window, BootIt UEFI displays the **Paste Pending for Copy** message.

3. In the **Partitions** list, click the Free Space entry where you want to paste the copied partition information and then click **Paste** under **Actions**. The **Copy** dialog box is displayed.

4. Enter the name for the copied partition in the **Name** box.
5. Optional:
 - Under **Options**, if copying the partition to the same MBR/EMBR drive and you already have four primary partitions (and **Limit Primaries** is enabled), you will need to *move* the partition by selecting the **Delete Source** checkbox.
 - To allow a specific amount of free space either before or after the copied partition, enter the values using the **Free Space Before** and **Free Space After** controls. The default is for the partition to start at the beginning of the free space.
 - If you are copying a GPT Windows partition and want the new partition added to the boot menu you can use the **Add to Boot Menu** option to have the source partition's booting files copied and a new boot item created and configured.
 - To copy just the used areas of the file system rather than copying every sector (including unused sectors) and thereby improve speed (unless the partition is almost full and has a lot of fragmentation), select the **Data Only** checkbox.
6. Click **OK**.

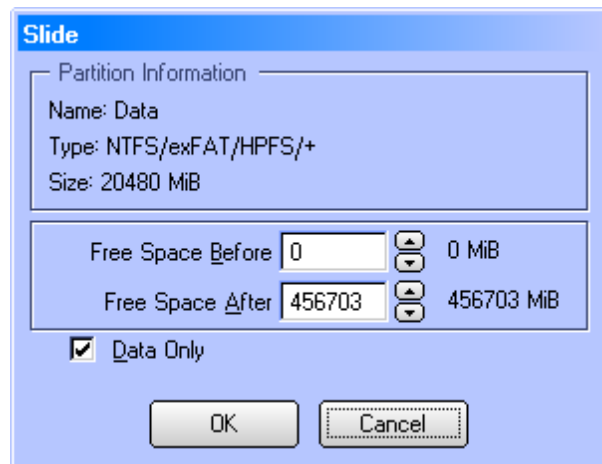
Note

A new boot entry will not be created for the copied partition (unless the **Add to Boot Menu** option is used) and references will not be updated in the old entry (if any). These actions would need to be performed manually.

Partitions can also be copied using Image for UEFI (accessible from the BootIt UEFI desktop if installed with BootIt UEFI), which provides more options for the procedure (e.g. data verification). For details refer to the Image for DOS manual.

Slide a partition or volume

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition that you want to slide (or move in an adjacent Free Space), and then click **Slide** under **Actions**.
In the **Slide** dialog box, review the **Partition Information** to verify that you are about to slide the correct partition.
3. Click the up or down arrows to increase or decrease the megabytes of **Free Space Before** and **Free Space After**, as necessary. The values can also be entered directly, if desired.
4. Optional:
 - To move just the used areas of the file system rather than moving every sector (including unused sectors) and thereby improve speed (unless the partition is almost full and has a lot of fragmentation), select the **Data Only** checkbox.
5. Click **OK**.
6. A warning will be displayed. Click **Continue** to slide the partition or **Cancel** to abort.
7. When the operation has completed, click **Close**.



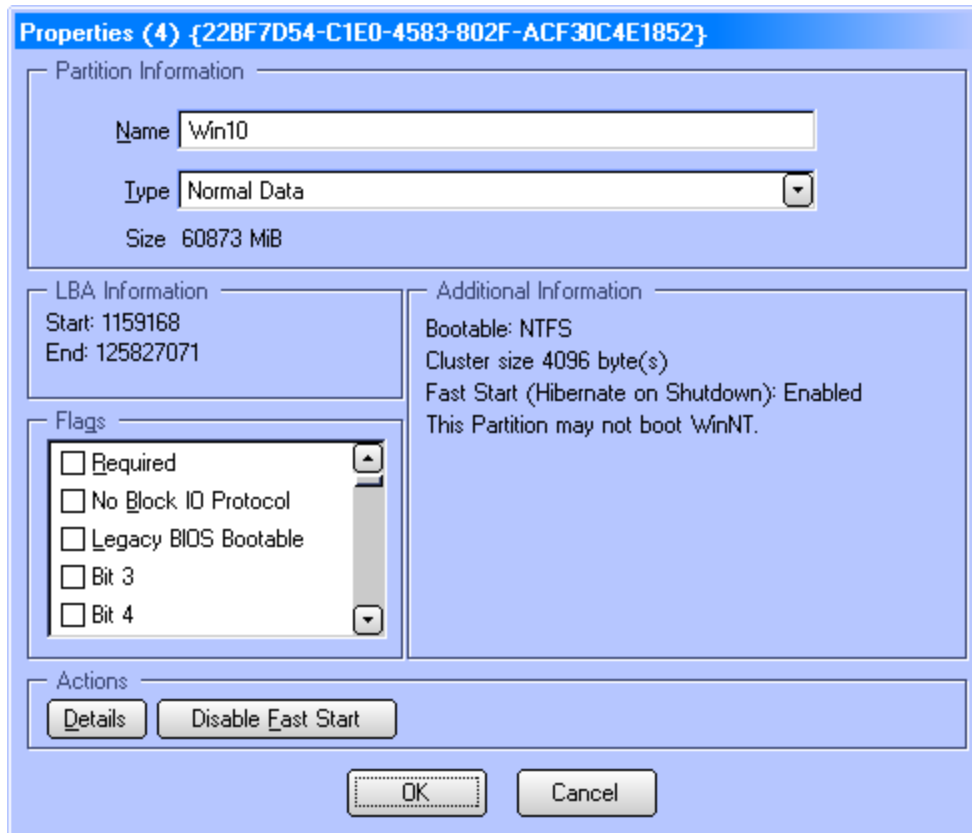
Align a FAT/FAT32 partition

The align operation is used to align the contents of a FAT/FAT32 partition so that conversion to NTFS results in cluster sizes that are more efficient.

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the FAT/FAT32 partition that you want to align and then click **Align** under **Actions**.
3. The Align information dialog will be displayed. Click **Continue**.

View partition properties

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition for which you want to see the properties and then click **Properties** under **Actions**.



Note that the process of viewing partition properties also checks for some common partition errors. If any errors are found, you are either prompted with an option to fix them or a warning is displayed in the **Properties** dialog box. The partition GUID, if any, is displayed in the dialog title.

3. The partition's properties are displayed, including the **Name**, **File System** type, **Size**, and **LBA** starting and ending sectors. The **Flags** section displays the partition's attributes and their current status. The attributes available vary depending on the disk type (MBR, EMBR, GPT). The **Additional Information** section includes other details such as the **Bootable** file system, **Cluster size**, and any other pertinent information.
4. Optional:
 - Enter a new **Name** for the partition.
 - The **File System** type (MBR/EMBR drives) or **Type** (GPT drives) can be changed. Note that this is an advanced option and can cause data loss or corruption if used incorrectly.
 - Click **Details** to display the free and used space on the partition.
 - For MBR/EMBR partitions that support a hidden type, click **Hide** to toggle the partition to the hidden state. Click **Unhide** to return to the normal state. **Unhide** can also be used to unhide GPT *BootIt Hidden* partitions.
 - Under **Flags**, if the disk type is EMBR and you want the option of having multiple operating systems boot from the selected partition using BootIt BM, select the **Multi-OS** checkbox. This option is not needed if you are going to have each operating system in its own dedicated bootable partition.
 - **Warning to Windows 8.x/10/11 Users**
If Windows 8.x/10/11 is installed on the partition and **Fast startup** (Hibernate on Shutdown) is

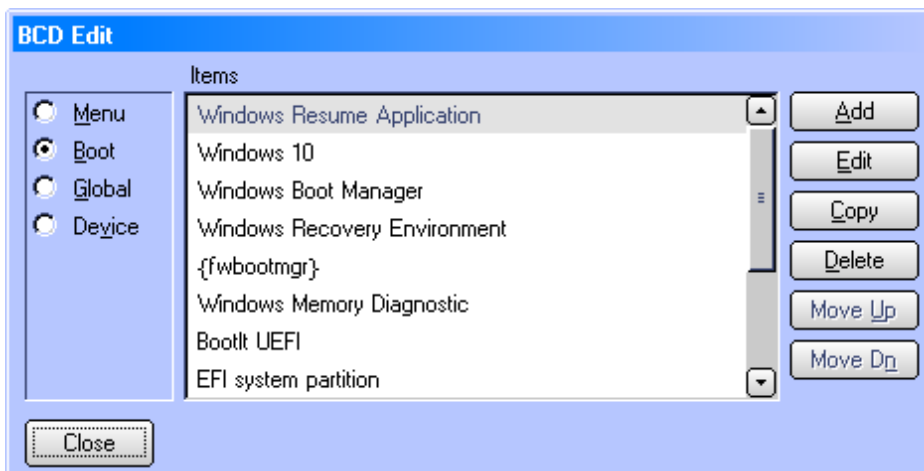
enabled, the **Disable Fast Start** button will be available. Fast startup must be disabled to prevent corruption of your partitions and data. Click the button to disable Fast startup and remove the current hibernated state. You will be prompted to confirm this action.

- *Advanced option:* If the **left Shift** key is held down when the **Properties** button is clicked, it will be possible to edit the LBA ending sector value. This can be helpful when the partition was not initialized or created correctly and requires manual adjustment.
5. Click **OK** to close the **Properties** dialog box and save any changes, or **Cancel** to close and retain the current settings.

BCD Edit

This option allows you to easily edit the Windows BCD store used for booting newer versions of Windows (including Windows 7/8.x/10). An example would be updating the BCD file to reference the correct partitions when the stored information is no longer valid and causes Windows to be unable to boot successfully.

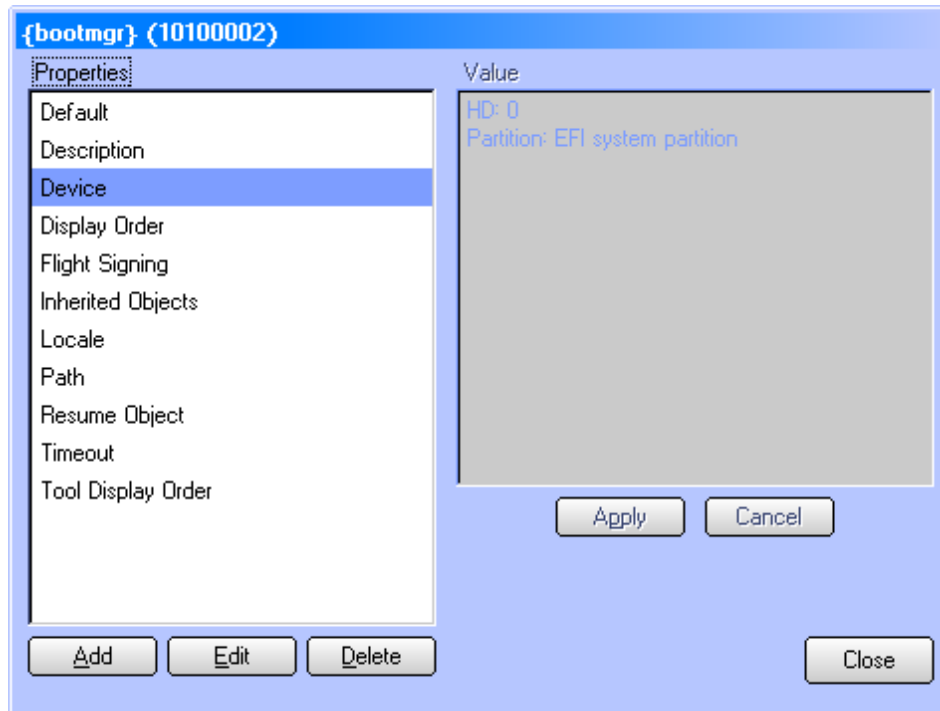
1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition containing the BCD file that requires editing and then click **BCD Edit** under **Actions**. If multiple BCD files exist on the partition (e.g. multi-booting Windows) you will be prompted to select the one to edit.



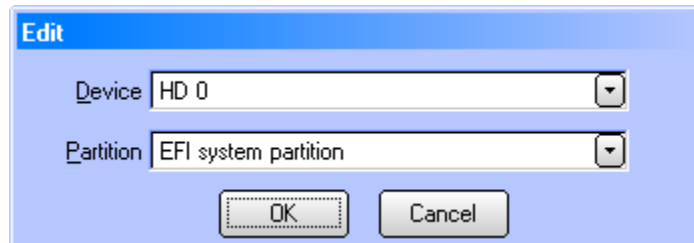
3. The categories (i.e. **Menu**, **Boot**, **Global**, **Device**) are listed on the left side of the dialog box, with the items for the selected category displayed in the center. Items can be manipulated using the buttons on the right.

Most repairs only require making changes to few items. For example, if it were necessary to repair the BCD file to reference the Windows 10 EFI System partition and the Windows 10 partition, you would proceed as follows:

- Select **Boot**.
- Select the **Windows Boot Manager** item.
- Click **Edit**.



- The **{bootmgr}** properties are displayed. Select the **Device** property and click **Edit**.



- Use the provided drop-down boxes to select the correct hard drive and partition. Click **OK** and **Close** to save the changes and return to the **BCD Edit** dialog box.
- Select the **Windows 10** item and click **Edit**.
- Select the **Device** property, click **Edit**, select the correct drive and partition (the Windows 10 partition, in this case), and then click **OK**.
- Select the **OS Device** property, click **Edit**, select the correct drive and partition (the Windows 10 partition, in this case), and then click **OK**.
- Click **Close** to return to the **BCD Edit** dialog box.

4. When finished making changes, click **Close**.

Editing a file

BootIt UEFI allows editing text files (up to 64K in size) on partitions using supported file systems. Using this option, it is easy to make corrections or modifications to files that may otherwise be inaccessible.

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition containing the text file that requires editing and then click **Edit File** under **Actions**.

3. Using the **Open** dialog box, browse to the file you wish to edit and then click **OK**.
4. When finished, click **OK** to save the file.

Additionally, to quickly access a file in the BootIt UEFI partition you can click the **Text Editor** icon on the desktop (or press **X**) and then click the **Open** button. Among other things, this allows you to easily create and edit script files (.RUN, .TBS, .CMD, and .BAT). These files can be run by clicking the **Run** icon on the desktop (or by selecting **Run** from the **Utilities** menu) and then selecting the file. (.CMD/.BAT files are assumed to be lists of files to run. Normal .CMD/.BAT script commands are not supported.)

Note

If the file opened for editing is too large or a binary (non-text) file is opened, the file will be truncated and a message will be displayed. If this file is then saved, the truncated data will be lost.

Applying TRIM

The TRIM operation is used to notify the SSD drive of unused sectors within the selected partition area that it can use for itself.

1. On the desktop, click **Partition Work**.
2. In the **Partitions** list, select the partition or free space to which you wish to apply TRIM, then click **Trim** under **Actions**.
3. Click **Continue** on the notice displayed and the TRIM procedure will be run (progress will be displayed). Click **Close** when finished.

Note

Both UEFI and the drive must support the functionality needed to perform the TRIM.

Drive Settings

These options are available for each drive, allowing you to apply Global Settings or custom settings on a per drive basis. These options only apply to MBR/EMBR drives (GPT partitions always use 1MiB alignment).

C H S

This option is helpful when you need to specify geometry values that differ from those assigned by the operating environment. For example, you use this option when you attach a hard drive from another machine to the USB port of another machine to restore the first machine's backup image.

Valid values:

C – Last Cylinder	0 to 1023
H – Last Head	0 to 254
S – Sectors per Track	1 to 63

Use MBR Geometry

Enable this option to prevent problems when a backup image of another system's drive is restored to a drive connected to a different system and drive will be put back into the original system.

This option uses drive geometry based on the MBR entry of the first partition in the backup image file.

For example, consider the following scenario:

- A backup image of PC-A's hard drive was previously created using PC-A.
- The drive in PC-A fails. A new drive is obtained to replace the failed drive.
- The decision is made to use PC-B to perform the restore since it will process it much more quickly.

	<ul style="list-style-type: none"> • The new drive is connected to PC-B and the image is restored to it. • The new drive is then installed in PC-A, replacing the failed drive. <p>Without this option enabled, the restoration would setup the partition on the new hard drive to boot properly for PC-B, which can sometimes (not always) be a problem when the hard drive is going back to PC-A. Using this option solves that problem.</p> <p>This option applies only when restoring a backup image.</p> <p>Default: Unselected</p>
Validate MBR Geometry	<p>The option is used to ensure that the geometry from the MBR on the original system is aligned to known standards before accepting it for use. It only applies when the Use MBR Geometry option is enabled. Note that you can only change the status of this option when the Use MBR Geometry option is enabled.</p> <p>If the validation fails, the geometry values used will be the same as if the option were disabled (Original or currently reported values).</p> <p>This option applies only when restoring a backup image.</p> <p>Default: Unselected and the control (checkbox) is disabled</p>
Use Original Geometry	<p>Enables the use of the drive geometry saved in the backup image that represents the geometry from the environment (Windows, Linux, DOS, or UEFI) used to create the backup file. The saved drive geometry is used for the restored partition(s) instead of the geometry in use on the current system (which may differ).</p> <p>Note that this option is quite similar to the Use MBR Geometry option (both are attempting to solve the same problem). It is generally recommended to try the Use MBR Geometry option first, which obtains the geometry from the MBR of the backup image.</p> <p>This option applies only when restoring a backup image.</p> <p>Default: Unselected</p>
Align on End	<p>Use this option to ensure partitions are aligned at the end of a cylinder boundary.</p> <p>This option should be disabled when the Align on 1MiB Boundaries option is enabled.</p> <p>Default: Selected (if global option Align on 1MiB Boundaries is not selected) – otherwise, unselected</p> <p><i>Advanced usage: If this option is enabled when Align on 1MiB Boundaries is enabled, partitions are aligned at a 1MiB boundary.</i></p>
Align End By Resizing	<p>Align both the beginning and end of a partition by resizing. If the partition being aligned is unable to be resized, this option has no affect. When disabled, the end of the partition is aligned normally.</p> <p>This option has no affect if Align on End is disabled.</p>

	<p><i>Advanced usage: If this option is enabled along with Align on End and Align on 1MiB Boundaries, both ends of the partition will be aligned to a 1MiB boundary.</i></p>								
Align on 1MiB Boundaries	<p>Align partitions based on 1MiB boundaries (drives with 512 byte sectors will be aligned on 2048 sectors; drives with 4096 byte sectors will be aligned on 256 sectors).</p> <p>When using this option, you will typically want to also set the following options:</p> <table> <tr> <td>Align on End</td><td>Disable</td></tr> <tr> <td>Align MBR Ending HS</td><td>Enable</td></tr> <tr> <td>Align MBR HS When Truncated</td><td>Enable</td></tr> <tr> <td>C H S</td><td>Clear any values (set to zero)</td></tr> </table> <p>Configured this way, the options enable partition alignment using the Windows Vista and Windows 7/8.x/10 standard (note that you can also use the global option Align on 1MiB Boundaries and enable the Use Global Settings option for the drive).</p> <p>Limitations: This only affects partitions being created, resized, slid, copied, etc. This option will not align existing partitions just by enabling it.</p>	Align on End	Disable	Align MBR Ending HS	Enable	Align MBR HS When Truncated	Enable	C H S	Clear any values (set to zero)
Align on End	Disable								
Align MBR Ending HS	Enable								
Align MBR HS When Truncated	Enable								
C H S	Clear any values (set to zero)								
Align MBR Ending HS	<p>Enable this option to force a partition's ending head and sector values in the MBR to match the current geometry (partition is created with the ending head and sectors set to the current geometry's max values).</p> <p>This option should be enabled when the Align on 1MiB Boundaries option is enabled or Align on End is disabled and the BIOS does not maintain LBA mode.</p> <p>Default: Unselected (if global option Align on 1MiB Boundaries is not selected) – otherwise, Selected</p>								
Align MBR HS When Truncated	<p>When enabled, sets a restored partition's head and sector values in the MBR to match the current geometry when it is located outside the range of the current geometry. When disabled, the actual ending head and sector values are used.</p> <p>This option should be enabled when the Align on 1MiB Boundaries option is enabled. This option applies only when restoring a backup image.</p> <p>Default: Unselected (if global option Align on 1MiB Boundaries is not selected) – otherwise, Selected</p>								
Use Global Settings	<p>Select this option to specify that the drive should use the Global Geometry and Alignment options. When selected, the displayed options are disabled and reflect the settings of the global options.</p> <p>Default: Selected</p>								
Save as Default	<p>Select this option to apply these settings for the drive. Otherwise, the changes are temporary for this session only (the original values will be used the next time BootIt UEFI boots).</p> <p>Default: Selected</p>								

Limit Primaries

For EMBR drives, this option provides an easy way to limit the number of primary partitions to four (when selected) or allow unlimited primary partitions (when unselected) for the selected drive.

Note that changing the main **Limit Primaries** option in **Settings** will override this option.

Default: Equals setting of main **Limit Primaries** option.

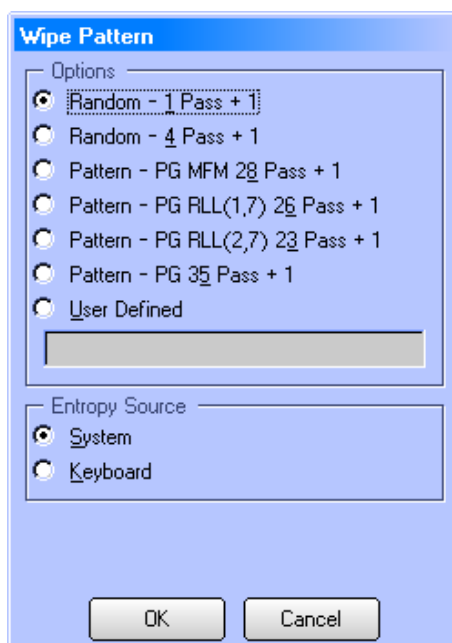
Wipe Entire Drive

When BootIt UEFI wipes a hard drive, it overwrites the entire contents of the hard drive, with the sole intent of making the original data unrecoverable by any practical means. BootIt UEFI provides a variety of options for wiping. Some of these options are designed to make the wipe operation proceed as quickly as possible; others are designed to take longer, but make it harder to recover the data that is overwritten. However, regardless of which wiping options you use, you should consider your data unrecoverable for your own purposes.

Wiping is not the same as formatting. Formatting a hard drive does not securely overwrite the previous content of the drive, often leaving data recoverable by special means. Rather, the only intent of formatting a drive is to prepare it for use by a particular file system.

Generally, the **Random – 1 Pass + 1** wipe option should be sufficient for making the overwritten contents of the hard drive unrecoverable by software, while the **Random – 4 Pass + 1** option may provide a higher level of security.

When using BootIt UEFI, the efficacy of the **System** entropy source option will vary by system. However, the **Keyboard** entropy source option should always provide a good source of entropy for random data generation.



After clicking the **Wipe Entire Drive** button, click the **Yes** button on the warning message to proceed.

The following wipe patterns are available for use:

Random – 1 Pass + 1	Overwrites with 1 pass of strong random data, followed by 1 pass of zeros.
Random – 4 Pass + 1	Overwrites with 4 passes of strong random data, followed by 1 pass of zeros.
Pattern – PG MFM 28 Pass + 1	Overwrites a total of 29 times, including specific patterns for MFM encoding: <ul style="list-style-type: none"> • 4 alternating passes of strong random data. • 20 passes using data designed specifically for MFM-encoded drives. • 4 alternating passes of strong random data. • 1 pass of zeros.
Pattern – PG RLL(1,7) 26 Pass + 1	Overwrites a total of 27 times, including specific patterns for RLL(1,7) encoding: <ul style="list-style-type: none"> • 4 alternating passes of strong random data. • 18 passes using data designed specifically for RLL(1,7)-encoded drives. • 4 alternating passes of strong random data. • 1 pass of zeros.
Pattern – PG RLL(2,7) 23 Pass + 1	Overwrites a total of 24 times, including specific patterns for RLL(2,7) encoding: <ul style="list-style-type: none"> • 4 alternating passes of strong random data. • 15 passes using data designed specifically for RLL(2,7)-encoded drives. • 4 alternating passes of strong random data. • 1 pass of zeros.
Pattern – PG 35 Pass + 1	Overwrites a total of 36 times, including specific patterns for MFM, RLL(1,7), and RLL(2,7) encoding: <ul style="list-style-type: none"> • 4 alternating passes of strong random data. • 27 passes using a variety of patterns designed specifically for RLL(1,7)-, RLL(2,7)-, and MFM encoded drives. • 4 alternating passes of strong random data. • 1 pass of zeros.
Hardware	Uses the Enhanced Secure Erase feature of the drive. This option is only shown when support exists in the firmware for BIU to issue the request, the drive supports enhanced secure erase, and the drive's secure erase feature hasn't been disabled by the firmware (called frozen mode).
User Defined	Specify the wipe pattern to use by entering the desired byte value(s). Multi-byte patterns can be specified by using the & character. To have multiple passes, separate the values with a space. Hexadecimal, octal, and decimal numbers can be used. Precede hexadecimal numbers with 0x (0x01, 0x0A, 0xA3, etc.), octal numbers with 0 (01, 012, 0243, etc.). Enter decimal numbers (1, 10, 163, etc.) as normal.

To specify random repeating data, use the **R** character. For random non-repeating data, use the **N** character. For super-random non-repeating data (continual stir with noise), use the **S** character. Note: You cannot use any of the random number characters (**R**, **N**, **S**) in a multi-byte pattern.

To validate the prior write pass, use the **V** character. Note: A super-random pass (**S**) can't be validated.

To specify a number to repeat for the remainder of the sector, use the **>** character. This option must be followed by a space or the end of the user defined string.

Several examples are shown below:

Pattern: **0x01&0x02**

Wipe using a two byte pattern of 1 and 2.

Pattern: **0x01 0xFF**

Wipe first pass using the value 1, followed by a second pass using the value 255.

Pattern: **0x01 0x0A R 0x00**

Wipe first pass using the value 1, a second pass using the value 10, a third pass using random numbers, and a fourth pass using the value 0.

Pattern: **23&32 010 0x7F**

Wipe first pass using a two byte pattern of 23 and 32, a second pass of value 8, and a third pass using the value 127.

Pattern: **0x55 0xAA R V**

DOD 5220.22-M compliant. Wipe first pass using the value 85, a second pass of value 170, a third pass using random numbers, and a fourth pass to validate the third pass.

Pattern: **0xFF 0 0x43**

DOD 5200.28-M compliant. Wipe first pass using the value 255, a second pass of value 0, and a third pass of value 67.

Pattern: **0xFF 0xFD&0xFF> N V**

NAVSO P-5239-26 (MFM) compliant. Wipe first pass using the value 255, a second pass using a multi-byte pattern (253, 255) with 255 repeating to end of each sector, a third pass using non-repeating random data, and a fourth pass to validate the third pass.

Pattern: **0xFF 0xE4&0xFF&0xFF&0xFF N V**

NAVSO P-5239-26 (RLL) compliant. Wipe first pass using the value 255, a second pass using a multi-byte pattern (228, 255, 255, 255), a third pass using non-repeating random data, and a fourth pass to validate the third pass.

The entropy source for the wipe can be either of the following:

System	BootIt UEFI will use the system to obtain the entropy source.
Keyboard	You will be prompted to press random keys on the keyboard in order to generate enough entropy (i.e. “randomness”) for the wipe operation.

After selecting the desired options, click **OK** to wipe the drive.

Note

Canceling the wipe operation will not recover any data that has been wiped up to that point!

Change Disk Type

BootIt UEFI supports three different Disk Types and allows you to convert between them, thus changing the partitioning scheme in use on a particular drive. Note that there are some conversion limitations imposed due to their differences.

MBR	This is the standard Disk Type used in most older systems. Each drive can contain a maximum of four primary partitions or less than four and any number of volumes (logical partitions).
EMBR	<p>EMBR partitioning allows over 200 primary partitions to be created on a drive. Up to four of these can be loaded into the MBR's partition table for use by standard operating systems.</p> <p>Special partition flags are not retained when converting to another type.</p>
GPT	<p>This is the standard Disk Type used in most current systems. Up to 128 primary partitions can be created.</p> <p>Special partition flags are not retained when converting to another type.</p>

After performing a conversion, make sure to verify the partitions are correct and adjust any settings/flags as necessary.

View MBR

To view the contents of the MBR partition table or to make changes to the MBR, click **View MBR**.

View MBR

Name		Starting			FS	Ending			LBA	Sectors
		C	H	S		C	H	S		
System Reserved	Active	0	32	33	7h	12	223	19	2048	204800
Win7		12	223	20	7h	1023	254	63	206848	83652608
BootIt EMBR		1023	230	3	DFh	1023	254	63	83873792	12288
		0	0	0	0h	0	0	0	0	0

0xFD2C4742

Set Active Insert Delete Move Up Move Down
Std MBR Win7 MBR Clear Sig Edit Sig Fill E-CHS
Apply Cancel

Partitions currently loaded into the MBR are listed along with their sector details. The active partition is also indicated. The Disk Signature of the drive is displayed in the lower-left of the dialog. The Disk GUID, if any, is displayed in the dialog title.

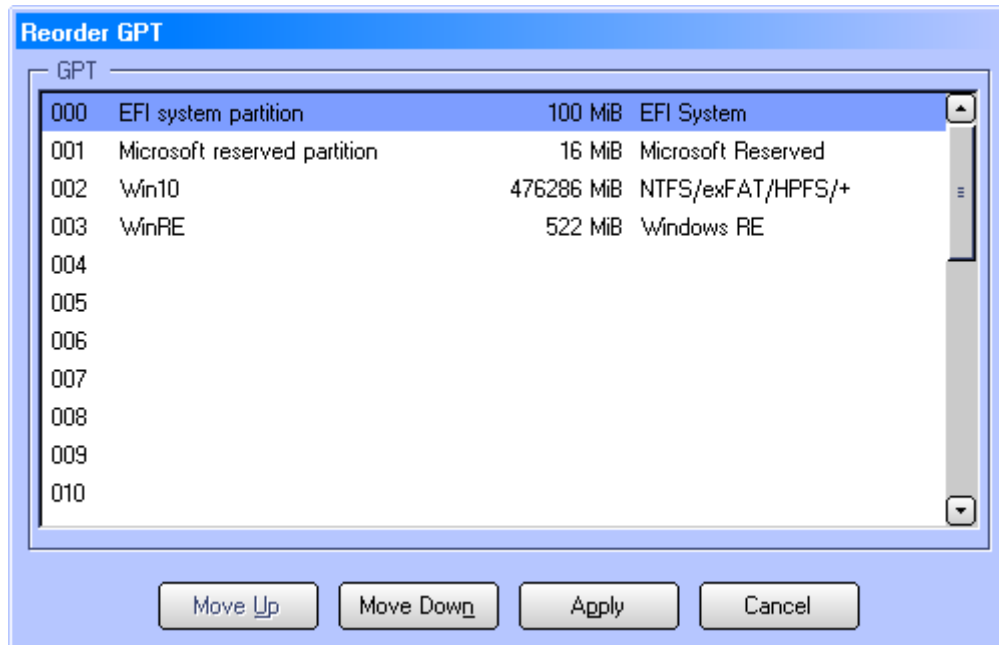
The following options are available:

Set Active	<p>Marks the selected partition (or slot) as active.</p> <p>To remove the active status (even though this is not something that most users want to do), press and hold down the left Shift key and then click Set Active to toggle the status.</p>
Insert	Allows you to select which partition on the drive is loaded into the selected slot.
Delete	<p>For MBR and GPT type drives, removes the selected partition from the partition table and the drive. The deletion takes place when Apply is clicked.</p> <p>For EMBR type drives, the partition is removed from the MBR, but not deleted from the drive.</p>
Move Up	Moves the selected partition one slot up in the partition table.
Move Down	Moves the selected partition one slot down in the partition table.
Std MBR	Writes standard MBR code to the MBR (basically a small program to boot the active partition). This is equivalent to using <i>fixmbr</i> from the XP Recovery Console or writing the MBR using FDISK.
Win7 MBR	Writes a Windows 7 specific version of the MBR, which may be required for Windows 7 to boot on certain systems.
Clear Sig	This option is used to clear the Windows NT Disk Signature (used by Windows 2000 and higher), which is needed for Windows to boot correctly under several circumstances. For KB articles with details about why you may need to use Clear Sig , visit the Windows NT/2K/XP/2003 section of the TeraByte Knowledge Base.
Edit Sig	Allows entering a Disk Signature manually, as may be directed by a tech support specialist.
Fill E-CHS	Fill E-CHS is used to force the ending CHS fields of all MBR partition table entries to their max values which is useful for a catch-22 situation when cylinder unaligned partitions exist and your BIOS does not properly implement or provide <i>LBA mode</i> support. This can help if you're getting an error booting BootIt BM that reads SPT < Minimum .

When finished making changes, click **Apply** to save them to the drive or **Cancel** to leave the MBR unchanged.

Reorder GPT

To view the contents of the GPT partition table or to make changes to the partition order, click **Reorder GPT**.



Partitions on the drive are listed, including the partition table slot number. You can reorder the partitions by selecting a partition and using the **Move Up** or **Move Down** buttons or by using the **Alt-Up Arrow/Alt-Down Arrow** keys. Reordering/moving the partitions is helpful when there is an empty slot (a gap in the sequence) that needs to be removed (the Windows boot loader errors if a gap exists prior to the Windows partition, for example).

Program Settings

You can gain access to the **Settings** dialog box to change program settings or maintain users in two ways:

- On the desktop, click **Settings**.
- On the **Edit** menu, click **Settings**.

Settings are categorized below for easy reference.

Startup

Timeout

Set this to the number of seconds to wait for user input before automatically booting the most recently selected (or default) Boot Menu item. If set to zero, then no timeout will occur. This option only functions when BootIt UEFI first boots to the Boot Menu.

Default: 0

Background

The background image file that will be displayed when the main Boot Menu screen is displayed. Only Paintbrush PCX graphic files are supported. Click the **Browse** button to select the file. For the best results, graphic should be sized to the resolution being used by BootIt UEFI as it will not be scaled. See [Creating Icons and Backgrounds](#) for more information on creating and using background images.

Default: No file selected

Direct Boot Menu

Check this box if you want the Direct Boot Menu to be the default menu displayed when BootIt UEFI is booted.

Default: Unselected

Display DB Button

Enable this option to allow access to the Direct Boot Menu by displaying a **Direct Boot** button on the Normal Boot Menu.

Default: Selected

General

Limit Primaries

Important: This option has a profound effect on how BootIt UEFI and BootIt BM handle EMBR drives.

Enabling this option limits your system to the normal maximum of four primary partitions per EMBR type drive. In this mode, you can continue to use other partitioning programs such as DISKPART, Windows Disk Management, FDISK, etc.

This option is grayed out and unavailable to enable if any of your existing hard drives have more than four primary partitions.

This is a global option and can be overridden in each drive's individual settings. Note that changing the state of this option may change the state of the option for the individual drives.

Limitations: This option does not affect GPT type drives.

Default: Unselected

Use Volume Label

Use the standard volume label of a FAT, FAT32, HPFS, or NTFS partition as the name of the partition when displayed in BootIt UEFI. With this option enabled, the volume label (as you would see in Windows) is used to identify the partition instead of the name saved in the EMBR, which may be different.

If you change the name of a FAT or FAT32 partition and this option is enabled, the volume label for the partition will also be changed.

Limitations: You can change an NTFS file system label, but you can't create a new one when one does not exist. Change the label in Windows to create it.

Default: Selected

Use Boot Item Disk IDs

Attempts to adjust the boot item configurations to match changes in drive order. Useful if you add or remove drives which change the BIOS drive order.

Default: Unselected

ISO8601 Date/Time

Displays the date and time using the ISO8601 format: **YYYY-MM-DD hh:mm** (24 hour time is used)

Example: Using ISO8601 format, 11/30/2017 3:50 pm would be displayed as: **2017-11-30 15:50**

Default: Unselected

Completion Alarm

Sounds an alarm at the completion of a Copy, Resize, Slide, or Format procedure.

Default: Unselected

BootNow Support	<p>Enables support for TeraByte Unlimited's BootNow™ freeware program. BootNow allows you to reboot to a selected OS from Microsoft Windows or Linux. It also allows you automatically boot back into a hibernated OS without displaying the boot menu (this is desirable when partitions are visible across different operating systems). For more information on using BootNow, please see the documentation included with the program.</p> <p>Default: Selected</p>
IT Mode	<p>In this mode, the graphical user interface (GUI) is not displayed and the system boots directly to the default boot item or last boot item, if no default is found. It should only be used with the Normal Boot Menu and not the Direct Boot Menu. Press the Spacebar during the startup of BootIt UEFI to display the Boot Menu.</p> <p>Default: Unselected</p>
MBR Boot Ctrl on GPT	<p>When enabled, you can configure MBR Details for GPT drives. This allows placing partitions into the MBR of a GPT drive for Boot Menu items. The Volumes button changes to Set Active for GPT drives, which allows making a specific entry active (only one may be set). The Spacebar hot-key also changes to toggle the active state.</p> <p>Warning: Some operating systems or tools/utilities may require the GPT Reserved partition to be the first entry or they will consider the drive to not contain a GPT and may corrupt the drive.</p> <p>Default: Unselected</p>
Auto Reactivate	<p>If enabled, when BootIt UEFI boots it will look at the boot order the BIOS has set for UEFI and if BootIt UEFI is not first it will set it first.</p> <p>Default: Unselected</p>
Delete Managed Dirs	<p>When enabled, the program will ask if you want to delete the boot file directory for a boot item being deleted. The message only shows if the boot file directory is one managed by the program and is not used by any other boot items (in the loaded boot menu).</p>
Full Partition List	<p>Displays the full list of partition types (file systems) when creating a new partition or volume and when viewing a partition's properties. If disabled, an abbreviated list of the most common types is displayed.</p> <p>Default: Unselected</p>
MBRs may be Encrypted	<p>Select this option to prevent BootIt UEFI from clearing garbage data from the MBR and replacing it with a normal empty MBR when the MBR contains garbage or otherwise appears invalid. Some operating systems require all drives to have a valid MBR in order to boot up properly. However, encrypted drives may have an encrypted MBR which appears to be garbage. In these cases, replacing the MBR data with a valid MBR is not desirable.</p> <p>Default: Selected</p>
Keep HD Active	<p>This special purpose option prevents the active flag from being turned off on hard drives not being booted. Active status on all hard drives remains active (you will not disable the active status on any hard drive).</p>

	<p>When disabled, BootIt UEFI would only set the active flag on the boot drive (all other drives would have it cleared). This may be undesirable if it is necessary to keep some other drive attached bootable.</p> <p>Applies to both Normal Boot and Direct boot.</p> <p>Default: Selected</p>
Use New Windows MBR	<p>Windows Vista and later tied the kernel loader to the MBR code such that using previous MBR code may not allow Windows Vista or later to boot on certain machines. Enable this option to use the code base compatible with Windows Vista or later any time the MBR code on a drive needs written or updated. The new MBR code will continue to boot older OSes with the exception of some (rare) configurations using Win9x on FAT32.</p> <p>Regardless of the setting of this option, you can write either the old standard MBR code or the new Vista and later compatible MBR code to a drive in the View MBR window in Partition Work.</p>
Volume Sequence as ID	<p>When enabled, the ID numbers for volumes (logical partitions) are based on position instead of a random number. The ID is created when the partition is created (or detected, if create outside of BootIt UEFI).</p> <p>If not enabled, BootIt UEFI ignores the ID that would otherwise be used and just uses an incremental number starting at 1.</p> <p>Default: Unselected</p>
Assume Original HD	<p>If you select this option, Image for UEFI will keep references to the source hard drive number intact within the partitions that have been restored to the target. If you do not select this option and the target drive number differs from that of the source drive, applicable drive references residing within the restored partitions will be updated to reflect the new hard drive number.</p> <p>This option has no effect if you are restoring to a target drive whose number matches that of the source drive. If you are restoring to a target drive whose number differs from that of the source drive, but you plan to subsequently move the target drive so that its number matches the source drive again, enabling this option can be beneficial.</p> <p>This option applies only when restoring a backup image.</p> <p>Default: Unselected</p>
Use HD0 in FAT BPB	<p>Forces the BPB (BIOS Parameter Block) drive number to HD0 even when it's on another drive.</p> <p>The BPB is a block of bytes located in the FATxx (FAT16, FAT32, etc.) boot sector (the first sector of a partition) and is created when the partition is formatted. One of those bytes is the BIOS drive number, which corresponds to the physical hard drive on which the partition is located. It would normally be 80h for HD0, 81h for HD1, 82h for HD2, etc. With this option enabled, BootIt UEFI will always make that byte 80h when copying or formatting a partition, regardless of which drive the partition is on. When that option is not selected, BootIt UEFI will always make that byte correspond to the drive it's on.</p>

	<p>Disable this option if you need to copy or format a FATxx partition located on a drive other than HD0 which will be placed into the HD0 position for normal booting.</p> <p>Default: Selected</p>
Resize with Caching	<p>Enable this option to reduce the time required to resize a partition by using a cache.</p> <p>Default: Selected</p>
Disable Fixups	<p>Disables additional processing that attempts to suppress the need to use Clear Sig after moving, sliding, or copying partitions used by Windows 2000 or later (includes XP, Vista, and Windows 7/8.x/10).</p> <p>Enable this option if you need to perform all Disk Signature and Windows drive letter assignments manually and require that BootIt UEFI not make any automatic corrections.</p> <p>Default: Unselected</p>

Device

Direct DASD IO	<p>Use direct IO to access hard drives instead of native UEFI IO. Will fall back to native IO if unable to use direct access.</p> <p>Default: Unselected</p>
Direct Optical IO	<p>Use direct IO to access optical media instead of native UEFI IO. Will fall back to native IO if unable to use direct access.</p> <p>Default: Unselected</p>

Unmanaged Directories

Directories names matching the names in this list will be ignored by BootIt UEFI when it's managing the directories under \EFI. Click the **Add** button to add a new directory name. To remove a name from the list, select it and click the **Delete** button.

Global Geometry and Alignment

These options will be the default for all drives in the system that have the **Use Global Settings** options selected in **Drive Settings**. You can unselect **Use Global Settings** for a drive if you need to apply different options. See **Drive Settings** for details. These geometry settings are only applicable to MBR/EMBR drives.

Disable	<p>Disables the global geometry settings. BootIt UEFI and Image for UEFI will revert to using program defaults or drive specific overrides (equivalent to those used by Image for DOS prior to version 2.52).</p> <p>For normal use, it is not recommended to disable Global Geometry, which provides an easy method of applying geometry settings system-wide.</p> <p>Default: Unselected</p>
----------------	--

Align on 1MiB Boundaries

This option provides a convenient way to enable 1MiB partition alignment for all drives (drives with 512 byte sectors will be aligned on 2048 sectors; drives with 4096 byte sectors will be aligned on 256 sectors). When this option is enabled, partition alignment will be configured using the Windows Vista and Windows 7/8.x/10 standard. This is popular with users of SSD type drives, which require this alignment for optimal performance.

Enabling this option is equivalent to using the following [Drive Settings | Geometry Override](#) options: enabling [Align on 1MiB Boundaries](#), [Align MBR Ending HS](#), and [Align MBR HS when Truncated](#); disabling [Align on End](#).

GPT drives are aligned at 1MiB boundaries regardless of this option's setting.

Also see the [Align on Cylinder](#) option (below) as it affects this option.

Default: Unselected

Align on Cylinder

This option is used in conjunction with [Align on 1MiB Boundaries](#) to provide an easy way to auto determine alignment and to default a blank drive to use either 1MiB alignment or cylinder alignment.

The actual alignment method used on a drive depends on [Align on 1MiB Boundaries](#) and [Align on Cylinder](#) as well as the alignment of any existing partitions on the drive.

Align on 1MiB Boundaries	Align on Cylinder	Alignment Method Used
Enabled	Enabled	Cylinder alignment if drive contains existing cylinder aligned partition(s), otherwise 1MiB alignment
Enabled	Disabled	1MiB alignment
Disabled	Enabled	Cylinder alignment
Disabled	Disabled	1MiB alignment if drive contains existing 1MiB aligned partition(s), otherwise cylinder alignment

GPT drives are aligned at 1MiB boundaries regardless of this option's setting.

Default: Unselected

Assume Same Target System

Enable this option to prevent problems when a backup image of another system's drive is restored to a drive connected to a different system and drive will be put back into the original system.

This option uses drive geometry based on the MBR entry of the first partition in the backup image file.

For example, consider the following scenario:

- A backup image of PC-A's hard drive was previously created using PC-A.
- The drive in PC-A fails. A new drive is obtained to replace the failed drive.

	<ul style="list-style-type: none"> • The decision is made to use PC-B to perform the restore since it will process it much more quickly. • The new drive is connected to PC-B and the image is restored to it. • The new drive is then installed in PC-A, replacing the failed drive. <p>Without this option enabled, the restoration would setup the partition on the new hard drive to boot properly for PC-B, which can sometimes (not always) be a problem when the hard drive is going back to PC-A. Using this option solves that problem.</p> <p>This option is equivalent to the individual drive's Use MBR Geometry override and applies only when restoring a backup image.</p> <p>Default: Unselected</p>
Validate Geometry Before Use	<p>The option is used to ensure that the geometry from the MBR on the original system is aligned to known standards before accepting it for use. It only applies when the Assume Same Target System option is enabled. Note that you can only change the status of this option when the Assume Same Target System option is enabled.</p> <p>If the validation fails, the geometry values used will be the same as if the option were disabled (Original or currently reported values).</p> <p>This option is equivalent to disabling the individual drive's Validate MBR Geometry override and applies only when restoring a backup image.</p> <p>Default: Selected and the control (checkbox) is disabled</p>
Align MBR for BIOS Auto Mode	<p>Enable this option to prevent problems with unaligned partitions on systems with their BIOS using Auto Mode. Many newer systems use Auto Mode by default, and some don't even have an option to turn it off. This is equivalent to enabling the individual overrides Align MBR Ending HS and Align MBR HS when Truncated in Drive Settings.</p> <p>Default: Selected</p>
Use Source Host Geometry	<p>Enables the use of the drive geometry saved in the backup image that represents the geometry from the environment (Windows, Linux, DOS, or UEFI) used to create the backup file. The saved drive geometry is used for the restored partition(s) instead of the geometry in use on the current system (which may differ).</p> <p>Note that this option is quite similar to the Use MBR Geometry option (both are attempting to solve the same problem). It is generally recommended to try the Use MBR Geometry option first, which obtains the geometry from the MBR of the backup image.</p> <p>This option is equivalent to the individual drive's Use Original Geometry override and applies only when restoring a backup image.</p> <p>Default: Unselected</p>
Drive Settings	<p>Click to select a hard drive and modify its individual settings. See Drive Settings for more information.</p>

Security

Maintenance Password

Enter the password required to exit a Boot Menu and enter Maintenance Mode (the desktop). The password must be entered into both boxes to verify it is input correctly.

Default: No password (both boxes empty)

Require Login

Enable this option to require that a user name and password must be entered when the system is booted.

This option has no affect if no users have been configured.

Default: Unselected

Users

Click the **Users** button to add, edit, or delete users in the **User Setup** dialog box.

See the [Users](#) section for details.

Default: No users configured

NX Strategy

This option specifies how BootIt UEFI handles binaries when the system is booted with full NX support. Note: When support is absent or incomplete, these options are ignored.

The available options are:

- **Disabled** – Ignore NX compatibility
- **Compatible** - Provide support for non-NX binaries
- **Deny** - Refuse to run non-NX binaries (default)

Secure Boot/NX Indicator

Select the type of warning to display when booting with Secure Boot disabled or when booting a non-NX-compatible binary in compatibility mode. For NX compatibility mode, an icon or red border will always be displayed.

Time Zone

Time Zone

Enter the Formatted Time Zone Identifier using the following format:

zzz [+/-] d[d] [111]

zzz	Three character time zone identifier.
d	Number opposite of the UTC offset. May be one or two digits.
111	Optional three character Daylight Savings time identifier.

For example: **PST8PDT**, **MST7MDT**, **CST6CDT**, **EST5EDT**

Please see this [TeraByte KB article](#) for more information.

Default: Not set

Users

Using **User Setup**, you can assign each user their own **Normal Boot Menu** (page 26) and **Direct Boot Menu** (page 31) options. Access **User Setup** by clicking the **Users** button on the **Settings** dialog box.

When adding or editing a user, the following options are available:

The image shows a 'User Setup' dialog box with a blue title bar. It contains several input fields and checkboxes. The 'Name' field is labeled 'Name' and contains the text 'JOHN'. The 'Password' field is labeled 'Password' and contains a series of asterisks. The 'Boot Menu' field is labeled 'Boot Menu' and contains the text 'DEFAULT.BUM' with a dropdown arrow. Below these fields are three sections: 'Direct Boot' with checkboxes for 'At Startup' (unchecked) and 'Allowed' (checked); 'Password' with a checkbox for 'Allow Change' (checked); and 'Security' with a checkbox for 'Deny Maintenance' (unchecked). At the bottom are 'OK' and 'Cancel' buttons.

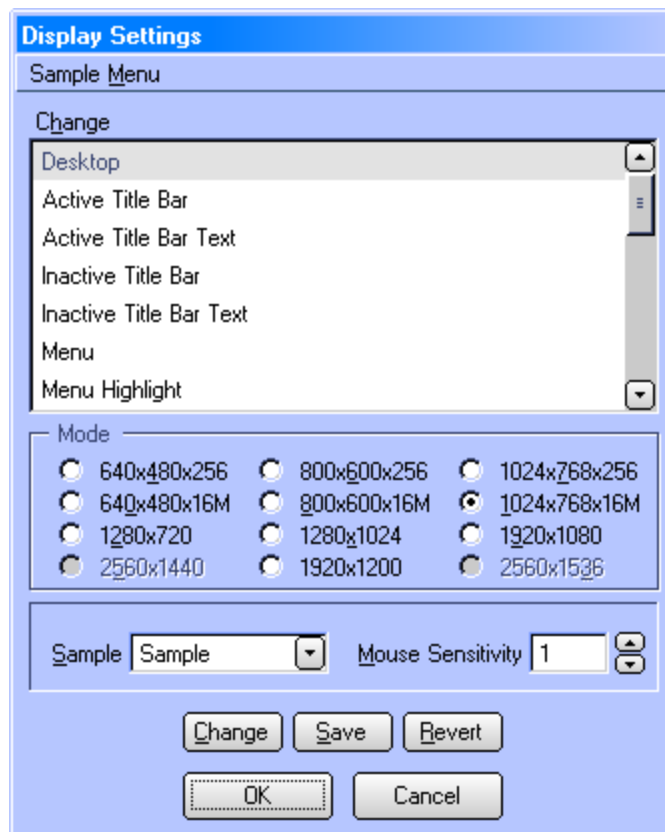
Name	Enter the user's name.
Password	Enter the password for the user.
Boot Menu	Select the Boot Menu for this user. See The Normal Boot Menu for details on creating a Boot Menu.
At Startup	Enable this option to have the Direct Boot Menu displayed when BootIt UEFI starts.
Allowed	Enable this option to allow access to the Direct Boot Menu .
Allow Change	This option allows the user to change their password by clicking the Password button on the Normal Boot Menu .
Deny Maintenance	When enabled, the Maintenance button is removed from the Boot Menu to prevent access to Maintenance Mode .

Note

If you add a user named **any** with no password, then that user will be logged on automatically when login is required unless you press the **Spacebar** during startup.

Display Settings

On the **Edit** menu, click **Display Settings** to change the colors and resolution used by BootIt UEFI. You will be able to change each item's color by selecting it in the list box and clicking **Change**.



To change the resolution and number of possible colors, click on the radio button in the **Mode** group. Note that when changing between resolutions with different color depths that the colors may change. This is normal; you will simply need to adjust the colors while in that mode. If changing a mode causes the screen to go black or scramble, press **Escape** or **Alt-R** to revert back to the last saved settings. Unsupported modes will be shown disabled.

To change the color for a specific item, select the item in the **Change** list and click **Change**. Items on the **Display Settings** dialog box will be updated to use the new color.

Once you get the colors and mode adjusted the way you like, you can click the **Save** or **OK** button to save the changes.

If you find that you don't like the color settings that you have chosen, you can click **Cancel** or the **Revert (Alt-R)** button to revert back to the last saved colors and mode.

Use the **Mouse Sensitivity** control to specify the mouse sensitivity. Valid range is **1** to **100**, with a default of **5**. Using a higher range can be helpful when a high display resolution is used. Click **Save** or **OK** to apply a new sensitivity value.

Creating Icons and Backgrounds

To create or contribute icons or backgrounds, please reference the contents of the [graphics.zip](#) file with the BootIt UEFI files.

Background images can be placed into the BootIt folder on the EFI System partition by using the TeraByte Explorer (tbexplo.tbs) script or by assigning a drive letter to the partition in Windows and copying the files. When using a 256 color mode, the background image does not need to be a 256 color image using a palette (a high color image will display properly since the 256 color mode is emulated).

Installing Operating Systems

This section provides the general procedure for installing an operating system when using BootIt UEFI as the boot manager.

Before reading this section, consider reading [Prepare for a BootIt UEFI setup](#) on page 9.

The instructions below detail creating a new boot item before installing an OS. This is really only necessary if you must hide partitions from the installation. Otherwise, the main thing is to make sure you boot back into BootIt UEFI before booting the OS installation media. This allows BootIt UEFI to rename files/directories back so it can install to a fresh directory.

Installing an Operating System (OS)

1. Install BootIt UEFI as described on page 9.
2. Use the **Work with Partitions** dialog box (as described on page 34) to create the GPT partition(s) for the OS being installed.
 - Each OS will boot from an EFI System partition. This partition is usually the partition that contains BootIt UEFI. If you want the new OS to boot from a different EFI System partition that doesn't exist you would need to create and configure it.
 - Windows: Create an NTFS partition for the Windows installation.
 - Linux: Create a Linux Swap partition and Linux Native partition for the installation. Additional Linux Native partitions can be created as desired for the installation.
3. To create a new menu item for booting the new OS, return to the desktop and click **Boot Edit**.
4. Click **Add** to add a new menu item. If necessary, please reference [Set up the Normal Boot Menu](#).
5. Select the EFI System partition as the boot partition. The booting files for the OS will be installed on this partition.
6. Enter the path to the EFI boot file for the OS. If the path is unknown you can enter an invalid name now and edit it after the OS has been installed. Normal paths for Windows and Ubuntu are shown below:
 - Windows: \EFI\Microsoft\boot\bootmgfw.efi
 - Linux: \EFI\ubuntu\grubx64.efi
7. Configure any partitions how you want for the boot item. This includes hiding partitions you don't want the OS to see and loading the MBR for EMBR drives. **Important:** It is recommended to hide all EFI System partitions except the one that will be used by the OS installation. If this is not done there may be errors or issues during the installation. Examples: The Windows installer will fail with an error and may create extra partitions; A Linux installer may ignore your boot loader destination and install the files to a different EFI System partition.
8. Click **OK** twice to save the new item and return to the desktop.
9. On the desktop, click **Resume**.
10. Boot the new boot item that you created in Step 3. This can be either a *simulated boot* (hold down the **left Shift** while selecting **Boot** or hold down the **left Shift** and press **Enter**) or an actual boot attempt (either type will configure the partitions as setup in the boot item). A simulated boot won't try to boot

the item, while an actual boot attempt will (if the boot file isn't found an error message will be displayed).

11. Boot to the OS installation media (usually a CD/DVD or USB flash drive). This can be done by restarting the system and using the BIOS boot menu by pressing the appropriate key during startup (e.g. F2, F8, F12). If the drive/device being booted is already available you can also boot it by switching to BootIt UEFI's **Direct Boot Menu** and selecting it.
12. The OS installation media is now booted and you can begin installation to the drive. If given the choice during the installation of where the booting files should go you would select the EFI System partition (e.g. when installing Linux). Note that, if available, using the advanced/custom install option is recommended so you have control over selecting which partition(s) to use.
13. After the installation is complete it may be necessary to reactivate BootIt UEFI or change the boot order so BootIt UEFI boots first.
14. Boot into BootIt UEFI and make any needed changes to the new boot menu item. You would need to set the boot file path and name if it was unknown prior to installing, for example. You may also want to check the bit flags for the EFI System partition used to verify the installer didn't make unwanted changes. Some operating systems may disable bit 55 (BIOS Managed). BootIt UEFI attempts to automatically fix this issue, but may not catch every case.

OS Installation Notes

- If you do not have partitions limited under settings and the OS you are installing will make changes to MBR/EMBR partitioning, you should usually use the advanced or custom installation choices to verify that the installation routine does not try to create a new partition. Because the OS and system tools only see the partitions that are in the MBR, if it creates or moves a partition, it may put it right on top of an existing one that is not currently in the MBR partition table. You can, however, create or move volumes in an extended partition provided that the actual extended partition does not get moved or expanded.
- Some operating systems deactivate BootIt UEFI when they are installed. If that is the case, all you need to do is boot to the BootIt UEFI Setup media and select the **Reactivate BootIt UEFI** option.

Advanced Program Options

Many of BootIt UEFI's options can be easily configured using [Settings](#). However, some are only available when creating the boot media and others have no GUI accessible equivalent. Editing the INI file directly allows any of these settings to be changed as required.

The INI file can be edited directly using BootIt UEFI or using any standard text editor (such as Windows Notepad) from a booted operating system (assuming the EFI System partition where BootIt UEFI is installed has been made available to the OS). For details, please see [Editing a file](#).

INI File Options

These options are found in the `bootit.ini` file located in the \EFI\BootIt folder of the EFI System partition. The file is divided into several sections using the standard INI file layout. Each section begins with its name in brackets followed by its options, one per line. For example, the `Video` section begins with `[Video]` and normally contains two options, `Method` and `Mode`.

```
[Video]
Method=1
Mode=42
```

As you can see, each option name is followed by the equals sign (=) and the current value. The value can be either a number or text, depending on the option.

Note

- Options currently set at their default value are usually not displayed in the INI file.
- Image for UEFI also uses the `bootit.ini` file for its options. Please refer to the Image for DOS manual for details on its options.

The options below are categorized by section for easy reference.

Video

The video access method, resolution, and color depth options are contained in the `[Video]` section.

Method

If this option is set to `0`, BootIt UEFI uses an alternate method, which is a bug workaround for video issues. It is not recommended to select this option unless you know for certain it is required (e.g. GOP video doesn't work or you're instructed to use it by TeraByte support).

If set to `1`, BootIt UEFI uses the GOP video standard for the display instead of the alternate method. Support is provided by the video card's BIOS. This is the recommended video method.

Note: If it's necessary to switch to the alternate method after BootIt UEFI is booted you can run TBOSDT and launch it with the `/b` parameter. For example:
`exec bootit.efi /b`

Mode

Sets the video resolution and color depth. Use the desired value from the chart below to determine the Mode number to specify.

Mode	Horz	Vert	Depth
40	640	480	16M
41	800	600	16M
42	1024	768	16M
43	1280	1024	16M
44	1280	720	16M
45	1920	1080	16M
46	2560	1440	16M
47	1920	1200	16M
48	2560	1536	16M
49 *	2048	1536	16M
50 *	3840	2160	16M
25	640	480	256
26	800	600	256
27	1024	768	256

If the selected resolution isn't supported a supported resolution will be used instead. Using modes other than those listed above may cause BootIt UEFI to crash or lock-up on startup.

These modes can only be set by editing the **bootit.ini file and setting the Mode value (they are not available in the GUI).*

Mouse

The **[Mouse]** section contains mouse settings.

Sensitivity

Specifies the mouse sensitivity. Valid range is **1** to **100**, with a default of **5**. Using a higher range can be helpful when a high display resolution is used.

Options

The **[Options]** section contains the majority of the program's options, many of which are located in **Settings**.

StartAt

0 = Display desktop at startup
2 = Display the **Work with Partitions** dialog at startup

Remove this option to return to the default of starting at the **Boot Menu**.

VolumeLabels

0 = Disabled; **1** = Enabled (default)

See [Settings | Use Volume Label](#) on page 54.

SeqVolID

0 = Disabled (default); **1** = Enabled

See [Settings | Use Volume Sequence in ID](#) on page 56.

KeepHDActive

0 = Disabled; **1** = Enabled (default)

See [Settings | Keep HD Active](#) on page 55.

MBREncryption	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings MBRs may be Encrypted on page 55.</p>
DirectBootAllowed	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings Display DB Button on page 53.</p>
DirectBoot	<p>0 = Disabled; 1 = Enabled</p> <p>See Settings Direct Boot Menu on page 53.</p>
UseHD0InBPB	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Use HD0 in FAT BPB on page 56.</p>
LimitPrimaries	<p>0 = Disabled; 1 = Enabled</p> <p>See Settings Limit Primaries on page 54.</p>
RequireUser	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Require Login on page 60.</p>
ITMode	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings IT Mode on page 55.</p>
MBRGPTCtl	<p>0 = Disabled (default); 1 = Enabled</p> <p>See MBR Boot Ctrl on GPT on page 55.</p>
BootNow	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings BootNow Support on page 55.</p>
AutoReactivate	<p>0 = Disabled (default); 1 = Enabled</p> <p>If enabled, when BootIt UEFI boots it will look at the boot order the BIOS has set for UEFI and if BootIt UEFI is not first it will set it first.</p>
DeleteManagedDirs	<p>0 = Disabled; 1 = Enabled (default)</p> <p>When enabled, the program will ask if you want to delete the boot file directory for a boot item being deleted. The message only shows if the boot file directory is one managed by the program and is not used by any other boot items (in the loaded boot menu).</p>
FullPartitionList	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Full Partition List on page 55.</p>
CompletionAlarm	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Completion Alarm on page 54.</p>
LimitWrites	<p>0 = Disabled (default); 1 = Do not track last boot item.</p>

	<p>2 = Do not write return information when launching external applications. 3 = Both 1 and 2 above.</p> <p>Use this option to reduce writes to the media. Note that using this option has an effect on how the program operates.</p>
SaveLastBootOnly	<p>0 = Disabled (default); 1 = Enabled</p> <p>When enabled, the last booted item will only be tracked when actually booted (i.e. not on simulated boot or boot of unbootable partition).</p>
BootMenuXY	<p>The Normal Boot Menu screen position (saved by pressing F11 when the boot menu is displayed). Removing the option will reset the position to the default location (center of screen).</p>
CacheResize	<p>0 = Disabled; 1 = Enabled (default)</p> <p>When enabled, a cache will be used to reduce the time required to resize a partition.</p>
CacheChunkSizeKB	<p>0, 4, 8, 16 (default), 32, 64</p> <p>Sets the chunk size in KB for the internal cache used for resizing and file system checks. Specifying an invalid value will disable the option.</p>
NoRegUpdate	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Disable Fixups on page 57.</p>
ISO8601	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings ISO8601 Date/Time on page 54.</p>
DisableMaintenance	<p>0 = Disabled (default); 1 = Enabled</p> <p>When enabled, the Maintenance button is not available on the Boot Menu. This prevents access to Maintenance Mode.</p>
UseOrgHDNum	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Assume Original HD on page 56.</p>
TimeOut	<p>See Settings Timeout on page 53. Default value is 0.</p>
DASDDirectIO	<p>0 = Disabled (default); 1 = Enabled</p> <p>When enabled, BootIt UEFI uses direct IO to access hard drives instead of native UEFI IO. Will fall back to native IO if unable to use direct access.</p>
OptDirectIO	<p>0 = Disabled (default); 1 = Enabled</p> <p>When enabled, BootIt UEFI uses direct IO to access optical media instead of native UEFI IO. Will fall back to native IO if unable to use direct access.</p>

GlobalGeoDisable	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Disable on page 57.</p>
GlobalGeoAlignHS	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings Align MBR for BIOS Auto Mode on page 59.</p>
GlobalGeoAlign2K	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Align on 1MiB Boundaries on page 58.</p>
GlobalGeoAlignVal	<p>This option allows you to specify a custom partition alignment value for all drives. For example, to align partitions on 2MiB boundaries, use GlobalGeoAlignVal=2M. Invalid sizes will be ignored. This option overrides the other global alignment options. By default, this option is not set (a custom alignment value will not be used).</p>
GlobalGeoAlignCylinder	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Align on Cylinder on page 58.</p>
GlobalGeoMBRGeo	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Assume Same Target System on page 58.</p>
GlobalGeoMBRGeoValidate	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings Validate Geometry Before Use on page 59.</p>
GlobalGeoOrgGeo	<p>0 = Disabled (default); 1 = Enabled</p> <p>See Settings Use Source Host Geometry on page 59.</p>
Win7MBR	<p>0 = Disabled; 1 = Enabled (default)</p> <p>See Settings Use New Windows MBR on page 56.</p>
TimeZone	<p>Set to the Formatted Time Zone Identifier. For example: PST8PDT</p> <p>See Settings Time Zone on page 60.</p>
BackGround	<p>Set to the file name of the background image to display on the Boot Menu. The file must exist in the BootIt installation folder.</p> <p>See Settings Background on page 53.</p>
MaintPW	<p>This option holds the encoded Maintenance Password, if one is set.</p> <p>See Settings Maintenance Password on page 60.</p>
AllowPWChange	<p>0 = Disabled; 1 = Enabled (default)</p> <p>This option is controlled automatically when Users are being used. It is not recommended to manually change this option.</p> <p>See User Setup Allow Change on page 61.</p>

NXCompat	<p>This option specifies how BootItt UEFI handles binaries when the system is booted with full NX support. Note: When support is absent or incomplete, these options are ignored</p> <p>The available options are:</p> <p>0 = Disabled - Ignore NX compatibility. 1 = Compatible - Provide support for non-NX binaries 2 = Deny - Refuse to run non-NX binaries (default)</p>
SBRB	<p>0 = Disabled; 1 = Enabled when no icon (default); 2 = Enabled</p> <p>Sets the red border warning option for Secure Boot. When Enabled it also affects the NX warning. The NX warning cannot be disabled.</p>
SBNXIcons	<p>0 = Disabled; 1 = Enabled (default)</p> <p>This option determines if icons are used for Secure Boot and NX warnings.</p>
Verbose	<p>0 = Disabled; 1 = Enabled (default)</p> <p>This option enables verbose startup on the text screen to print additional information (such as BootItt version, etc.).</p>
UEFIRenDirSafe	<p>0 = Disabled (default); 1 = Enabled</p> <p>When this option is enabled BootItt UEFI will use UEFI support to handle all file operations. Some systems do not properly support necessary file operations (e.g. renaming a directory results in it being removed) and require running chkdsk to repair. Enabling this option is not recommended unless it's known the system provides proper support.</p>
InstallToEFIBootDir	<p>0 = Disabled; 1 = Enabled (default)</p> <p>This option controls where the BootItt UEFI booting files are installed. By default they are installed to both the \EFI\Boot and \EFI\BootItt folders. Disabling this option will install the files only into the \EFI\BootItt folder. This option will apply on reactivations, but new installs will always ask where you want them installed.</p>
UEFINoRemount	<p>0 = Disabled (default); 1 = Enabled</p> <p>On systems where unmounted UEFI file systems are not remounted, using the Boot Menu to boot a menu item, switch to the Direct Boot menu, or enter maintenance mode results in an Unable to open BOOTIT.DAT error message. This issue is more likely to occur with UEFI implementations based on an older code base. If a BIOS update is not available to resolve the problem, using the UEFINoRemount option will allow basic usage of BootItt UEFI. If you need Image for UEFI in this mode you will need to switch to the CUI version. Refer to the following KB article for more details on enabling and using this option as well as the limitations involved: https://kb.terabyteunlimited.com/kb-articles/unable-to-open-bootit-dat-error-message/</p>
Mouse	<p>0 = Disabled; 1 = Enabled (default)</p>

	Use to disable mouse support in cases where it doesn't function correctly or to remove the mouse cursor from the screen when no support is available.
Touch	<p>0 = Disabled; 1 = Enabled (default)</p> <p>Use to disable UEFI touch screen support in cases where it doesn't function correctly.</p>

HDn

Individual drive settings are contained in the **[HDn]** section. Note that the *n* is replaced with the number of the drive (as displayed by BootIt UEFI). For example, **[HD2]** for the third drive. These sections usually do not exist unless you have configured non-default settings for an individual drive.

UseOrgGeo	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Use Original Geometry on page 45.</p>
UseMBRGeo	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Use MBR Geometry on page 44.</p>
UseValidMBRGeoOnly	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Validate MBR Geometry on page 45.</p>
AlignOnEnd	<p>0 = Disabled; 1 = Enabled; 2 = Enabled + Align End By Resizing</p> <p>See Drive Settings Align on End on page 45. See Drive Settings Align End By Resizing on page 45.</p>
Align2048	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Align on 1MiB Boundaries on page 46.</p>
AlignVal	This option allows you to specify a custom partition alignment value for a drive. For example, to specify that partitions should be aligned on 2MiB boundaries, use AlignVal=2M . Invalid sizes will be ignored. This option overrides the other device alignment options. By default, this option is not set (a custom alignment value will not be used).
AlignEndHS	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Align MBR Ending HS on page 46.</p>
AlignHSONTrunc	<p>0 = Disabled; 1 = Enabled</p> <p>See Drive Settings Align MBR HS When Truncated on page 46.</p>
c	The c , h , and s options are helpful when you need to specify geometry values that differ from those assigned by the operating environment. For example, you use these options when you attach a hard drive from another machine to the USB port of another machine to restore the first machine's backup image.

	Valid values:						
	<table> <tr> <td>C – Last Cylinder</td><td>0 to 1023</td></tr> <tr> <td>H – Last Head</td><td>0 to 254</td></tr> <tr> <td>S – Sectors per Track</td><td>1 to 63</td></tr> </table>	C – Last Cylinder	0 to 1023	H – Last Head	0 to 254	S – Sectors per Track	1 to 63
C – Last Cylinder	0 to 1023						
H – Last Head	0 to 254						
S – Sectors per Track	1 to 63						
h	Valid values are 0 to 254. See c , above.						
s	Valid values are 1 to 63. See c , above.						
GeoCalc	0=Default, 1=LBA, 2=Large, 3=Normal, 4=Bit-Shift, 5=Device Bit-Shift. The Default and Device Bit-Shift use the device reported geometry, all others are calculated.						
UseGlobalGeoSettings	0 = Disabled; 1 = Enabled See Drive Settings Use Global Settings on page 46.						

License

The [\[License\]](#) section contains the BootIt UEFI license information.

User	The user name given with the product key when BootIt UEFI is purchased. If using the trial version, this option is not used.
ProductKey	The product key given with the user name when BootIt UEFI is purchased. If using the trial version, this will be set to a trial key.

SVGA/VGA

These sections contain the current color scheme for a given mode and usually do not exist unless you have made changes in [Display Settings](#). Each option controls the color of a specific item. The format is the RGB type (Red, Green, Blue), with each color having a value between 0 and 255. For example: 0,0,0 is Black; 255,0,0 is Red; 128,128,128 is Gray.

The following lists the options and their default color values:

```

ScrollBarBackground=205,202,205
ClientWindowTextLeftSelectedBG=230,226,230
ClientWindowTextLeftSelected=57,68,115
ClientWindowTextSelectedBG=123,157,255
ClientWindowTextSelected=0,0,0
ClientWindowText=0,0,0
ClientWindowOutline=0,0,0
ClientWindowShadow=123,157,255
ClientWindowHighlight=255,255,255
ClientWindow=255,255,255
ElementText=0,0,0
ElementOutline=0,0,0
ElementShadow=57,68,115

```

ElementHighlight=255,255,255
ElementFace=205,202,205
GroupText=0,0,0
GroupOutline=0,0,0
GroupShadow=123,157,255
GroupHighlight=255,255,255
GroupFace=180,198,255
MenuTextSelected=0,0,0
MenuFaceSelected=123,157,255
MenuText=0,0,0
MenuShadow=57,85,115
MenuHighlight=255,255,255
MenuFace=180,198,255
TitleBarTextInactive=172,170,172
TitleBarText=255,255,255
TitleBarInactive=82,80,82
TitleBar=0,125,255
Background=0,28,115

In most cases, colors can be set more easily using [Display Settings](#).

Using Scripting (TBOSDT Pro for BootIt)

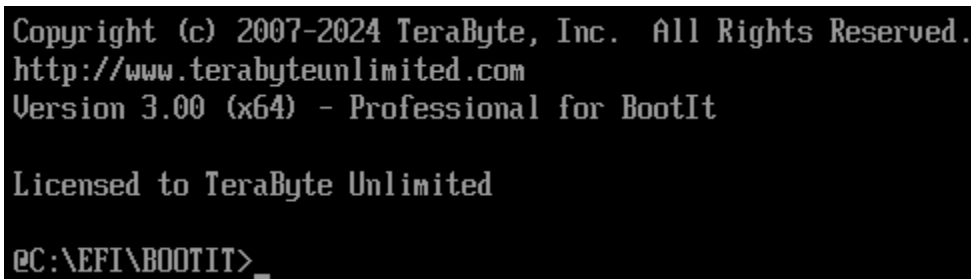
BootIt UEFI includes Terabyte OS Deployment Tool (TBOSDT) for BootIt. This special version (included only with the purchase of BootIt UEFI or BootIt BM) adds support for working with partitions while still providing the features of the regular Professional version.

TBOSDT for BootIt supports the following operations from either the prompt or a script (TBS file):

- Add partition
- Copy partition
- Resize partition
- Slide partition
- Delete partition

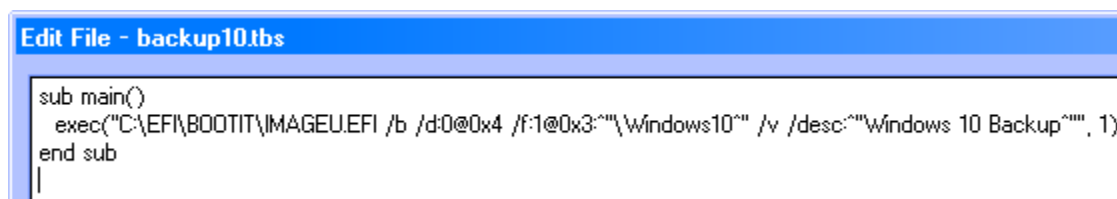
TBOSDT for BootIt is automatically installed with BootIt UEFI if **Scripting Support** was included when the setup media was created.

To run TBOSDT, simply click the **Scripting** icon on the BootIt UEFI desktop or press **P**.



```
Copyright (c) 2007-2024 TeraByte, Inc. All Rights Reserved.  
http://www.terabyteunlimited.com  
Version 3.00 (x64) - Professional for BootIt  
  
Licensed to TeraByte Unlimited  
  
@C:\EFI\BOOTIT>_
```

Script files can be accessed easily from the BootIt UEFI partition using the text editor available on the desktop (click the **Text Editor** icon or press **X**). A sample backup script saved from Image for UEFI is shown below:



```
Edit File - backup10.tbs  
  
sub main()  
  exec("C:\EFI\BOOTIT\IMAGEUEFI /b /d:0@0x4 /f:1@0x3~""\Windows10"" /v /desc:""Windows 10 Backup""", 1)  
end sub  
|
```

The script can be run from the prompt using the **runlbs** command:

```
runlbs backup10.tbs
```

Script files can also be run by clicking the **Run** icon on the BootIt UEFI desktop (or by selecting **Run** from the **Utilities** menu) and then selecting the file.

Additionally, scripts can also be run using BootNow™. For example, to run the above script from Windows, create a shortcut to BootNow with the following parameters: **1/run=backup10.tbs**

Running the shortcut will restart the computer, run the script file, and then boot to first menu item. See the README file included with BootNow for details and additional examples.

For more information on using TBOSDT for BootIt, please refer to the TBOSDT User Manual.

Obtaining Technical Support

The primary support communication method will be use of online services. The most recent versions of software and information will be available on the TeraByte Unlimited Web site:

www.terabyteunlimited.com

Registered users that require technical support should try to use the following email address as the primary communication method:

support@terabyteunlimited.com

Pre-sale information and technical support for unregistered users is available by email only.

In all cases, registered or not, TeraByte Unlimited reserves the right to refuse any communication method that would incur a cost.

Ordering and Licensing BootIt UEFI

If you are using the trial version of BootIt UEFI and then to continue using it past the 30-day trial period, you must purchase a full-use license. It is illegal to continue using the trail-use version beyond the trial period.

To purchase the full-use license, visit: <https://www.terabyteunlimited.com/purchase-bootit-collection/>

Trademarks

BootIt is a registered trademark of TeraByte, Inc.

BootNow, TBScript, and BurnCDCC are trademarks of TeraByte Unlimited.

Microsoft, MS, MS-DOS, and Windows are registered trademarks of Microsoft Corporation.

IBM, PC-DOS, and OS/2 are registered trademarks of the International Business Machines Corporation.

Linux is a registered trademark of Linus Torvalds.

All other trademarks and copyrights referred to are the property of their respective owners.

Definition of Shareware

Shareware distribution gives users a chance to try software before buying it. If you try a Shareware program and continue using it, you are expected to register or purchase a full-use license. Individual programs differ on details—some request registration or purchase of a full-use license while others require it; some specify a maximum trial period. With registration or purchase of a full-use license, you get anything from the simple right to continue using the software to an updated program with a printed manual.

Shareware is a distribution method, not a type of software. The Shareware system makes fitting your needs easier because you can try before you buy. Also, because the overhead is low, prices are low. Shareware has the ultimate money-back guarantee—if you don't use the product, you don't pay for it.

TeraByte Unlimited (Trial-Use) License Agreement

If you are using the software for evaluation or trial purposes then this License applies to you:

PLEASE READ THIS LICENSE AGREEMENT CAREFULLY

By using, copying, transmitting, distributing or installing all or any part of the TeraByte trial version computer software and documentation accompanying this License Agreement (the "Evaluation Software"), you agree to all of the terms and conditions of this License Agreement.

Please read the license terms and conditions below. **If you do not agree to all of the terms and conditions**, then do not use, copy, transmit, distribute, or install the trial version computer software and documentation accompanying this license Agreement.

TeraByte, Inc., dba TeraByte Unlimited ("TeraByte") and/or its suppliers own the Evaluation Software and its documentation, which are protected under applicable copyright, trade secrets, and other laws. Your rights and license to use the programs and the documentation are limited to the terms and subject to the conditions set forth below.

1. LICENSE:

(a) TRIAL USE IN YOUR OWN COMPUTER

- (i) **YOU MAY:** use the Evaluation Software for evaluation purposes in your own computer, for a period not to exceed thirty (30) days after your first installation or use of the Evaluation Software. You may not re-install or additionally install the Evaluation Software for additional evaluation periods.
- (ii) **Not "Free Software".** This Evaluation Software is not "free software", but a software copy with limited license rights, as set forth in this Agreement.
- (iii) **Temporary Evaluation Use Only.** You may use this Evaluation Software without charge for a limited time only, and solely to decide whether to purchase a paid license for the software from TeraByte. If you wish to use the Evaluation Software after the thirty (30) day evaluation period, then you must purchase a Full Use license for the software from TeraByte. You can visit TeraByte's web site at www.terabyteunlimited.com, for further information.
- (iv) **NO CONTINUED USE WITHOUT REGISTRATION.** Unregistered use of the Evaluation Software after the thirty (30) day trial period is an infringement of TeraByte's legal and equitable rights, including but not limited to copyright and trade secret rights, under U.S. and international laws.
- (v) **Notwithstanding the above,** should you use, install, copy, or download the Evaluation Software for a particular purpose, and should the Evaluation Software successfully accomplish that particular purpose, such use shall not be considered evaluation purposes. In such case, you shall immediately obtain the appropriate end user license.

(b) LIMITED DISTRIBUTION LICENSE

- (i) **IF YOU ARE AN INDIVIDUAL, YOU MAY:** distribute copies of the Evaluation Software to your friends or associates, provided that you charge no fees nor request any donations for this service, and that you convey only a complete and unaltered copy of the original Evaluation Software files, in the exact form that they were downloaded from www.terabyteunlimited.com.
- (ii) **ALL OTHER DISTRIBUTION** is allowed only under the terms set forth by TeraByte, if any at the www.terabyteunlimited.com web site. TeraByte may, at its sole discretion, append a data record to the distribution files for the Evaluation Software, in which event such data record shall be automatically incorporated by reference. Any distribution satisfying all of the distribution requirements expressed at the web site or in that data record, if any, is hereby authorized; all other distribution requires TeraByte's advance written approval.
- (iii) Each individual, and each vendor, wishing to distribute the Evaluation Software package must independently satisfy all terms of the limited distribution license.
- (iv) You may make as many copies of this Evaluation Software as you need, for purposes of the limited distribution permitted in this Agreement.
- (v) **TERABYTE RESERVES THE RIGHT TO RETRACT OR CHANGE ANY OR ALL OF THE ABOVE DISTRIBUTION RIGHTS AT ANY TIME, FOR ANY OR NO REASON.**

(c) YOU MAY NOT:

- (i) permit others to use the Evaluation Software unless they are properly licensed by TeraByte, either under this Agreement or another agreement from TeraByte;
- (ii) modify, translate, reverse engineer, decompile, disassemble, or create derivative works based on, the Evaluation Software;
- (iii) copy the Evaluation Software except as expressly permitted above;

- (iv) distribute the Evaluation Software, bundle it with other products, rent, lease, sell, grant a security interest in, or otherwise transfer rights to, or possession of, the Evaluation Software or any copy thereof, except as may be expressly provided in this Agreement;
 - (v) remove or alter any proprietary notices, labels or legends on any copy of the Evaluation Software; or
 - (vi) ship or transmit (directly or indirectly) any copies of the Evaluation Software or their media, or any direct product thereof, to any country or destination prohibited by the United States Government.
- (d) **RESERVATION OF RIGHTS.** All rights and licenses not expressly granted by TeraByte in this Agreement are entirely and exclusively reserved to TeraByte.
- 2. **TERM AND TERMINATION:** This Agreement shall remain effective until this Agreement is terminated, provided that in no event shall your evaluation rights hereunder extend beyond the thirty (30) day period set forth in Section 1 above. You may terminate it at any time by destroying the distribution media together with all of your copies of the Evaluation Software in any form. This Agreement will also automatically terminate, without notice, if you fail to comply fully with any term or condition of this Agreement, or if your normal business operations are disrupted or discontinued for more than thirty days by reason of insolvency, bankruptcy, receivership, or business termination. Upon termination of this Agreement, you must destroy all copies of the Evaluation Software in any form.
- 3. **OWNERSHIP AND CONFIDENTIAL INFORMATION:** TeraByte or its licensors own the Evaluation Software under copyright, trade secret and all other laws that may apply. All product names, designs, and logos associated with the Evaluation Software are trademarks of TeraByte. The source code of the Evaluation Software and all information regarding the design, structure or internal operation of the Evaluation Software are valuable trade secrets of TeraByte or third parties with which TeraByte has licensing arrangements ("Confidential Information"), provided however, that "Confidential Information" shall not include information which otherwise would be Confidential Information to the extent that such information was publicly known or otherwise known to you previously to the time of disclosure, which subsequently became known through no act or omission by you, or which otherwise became known to you other than through disclosure by TeraByte. You shall not sell, transfer, publish, disclose, display or otherwise permit access to any Confidential Information by any third party, nor may you use any of the Confidential Information, except strictly as part of the Evaluation Software in the form originally distributed by TeraByte.
- 4. **LIMITED WARRANTY: THE EVALUATION SOFTWARE IS PROVIDED ENTIRELY "AS-IS".** TERABYTE MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO THE EVALUATION SOFTWARE, ITS MERCHANTABILITY, OR ITS FITNESS FOR ANY PARTICULAR PURPOSE. TERABYTE DOES NOT WARRANT THAT THE EVALUATION SOFTWARE WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE EVALUATION SOFTWARE WILL BE UNINTERRUPTED OR ERROR FREE. YOU ASSUME FULL RESPONSIBILITY FOR SELECTING AND USING THE EVALUATION SOFTWARE, AND THAT IF YOU USE THE EVALUATION SOFTWARE IMPROPERLY OR AGAINST INSTRUCTIONS, YOU CAN CAUSE DAMAGE TO YOUR FILES, SOFTWARE, DATA OR BUSINESS. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE EVALUATION SOFTWARE IS BORNE BY YOU. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THE AGREEMENT. Some jurisdictions do not allow exclusions of an implied warranty, so this disclaimer may not apply to you and you may have other legal rights that vary by jurisdiction.
- 5. **LIMITATION OF LIABILITY.** ANY LIABILITY OF TERABYTE WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT OR REFUND OF PURCHASE PRICE. IN ADDITION, IN NO EVENT WILL TERABYTE, NOR ANY OTHER PERSON OR ENTITY INVOLVED IN THE CREATION, PRODUCTION, OR DELIVERY OF THE EVALUATION SOFTWARE, BE LIABLE FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WHATSOEVER, INCLUDING WITHOUT LIMITATION LOSS OF INCOME, USE OR INFORMATION, RELATING EITHER TO THE USE OF THE EVALUATION SOFTWARE, OR YOUR RELATIONSHIP WITH TERABYTE, EVEN IF TERABYTE HAS BEEN ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES OR CLAIMS. Any suit or other legal action relating in any way to this Agreement or to the Evaluation Software must be filed or commenced no later than one (1) year after it accrues. You may also have other rights which vary from state to state.
- 6. **HIGH RISK ACTIVITIES.** The Evaluation Software is not fault-tolerant and is not designed, manufactured or intended for use on equipment or software running in hazardous environments requiring fail-safe performance, including but not limited to the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the Evaluation Software could contribute to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). TERABYTE AND ITS SUPPLIERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS OF THE EVALUATION SOFTWARE FOR HIGH RISK ACTIVITIES. TERABYTE DOES NOT AUTHORIZE USE OF THE EVALUATION SOFTWARE FOR ANY HIGH RISK ACTIVITY. YOU AGREE TO DEFEND AND INDEMNIFY TERABYTE, AND HOLD TERABYTE HARMLESS, FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, LOSSES, COSTS JUDGMENTS AND DAMAGES OF ANY KIND IN CONNECTION WITH USE IN RELATION TO ANY HIGH RISK ACTIVITY OF ANY COPY OF THE EVALUATION SOFTWARE RELATING TO THIS LICENSE.
- 7. **RESTRICTED RIGHTS - COMMERCIAL COMPUTER SOFTWARE.** The parties acknowledge and agree that: (a) any and all products covered by this Agreement are, and shall be, deemed "commercial computer software" for all purposes in relation to U.S. government acquisition laws, rules and regulations, and (b) all use, duplication and disclosure by, for, or on behalf of the U.S. Government is subject to all conditions, limitations and restrictions applicable to "commercial computer software" as set forth in FAR section 12.212 and in DFAR sections 227.7202-1, 227.7202-3, and 227.7202-4.
- 8. **GENERAL.**
 - (a) **ENTIRE AGREEMENT.** This Agreement constitutes the entire agreement between you and TeraByte in regard to the subject matter herein, and supersedes all previous and contemporaneous agreements, proposals and communications,

written or oral between you and TeraByte. No amendment of this Agreement shall be effective unless it is in writing and signed by duly authorized representatives of both parties.

- (b) **NON-WAIVER.** Waiver by TeraByte of any violation of any provision of this License shall not be deemed to waive any further or future violation of the same or any other provision.
- (c) **LAW AND JURISDICTION.** This License and any dispute relating to the Evaluation Software or to this License shall be governed by the laws of the United States and the laws of the State of Nevada, without regard to U.S. or Nevada choice of law rules. You agree and consent that jurisdiction and proper venue for all claims, actions and proceedings of any kind relating to TeraByte or the matters in this License shall be exclusively in courts located in Las Vegas, Nevada. If a court with the necessary subject matter jurisdiction over a given matter cannot be found in Las Vegas, then jurisdiction for that matter shall be exclusively in a court with the proper jurisdiction as close to Las Vegas as possible, and within Nevada if possible.
- (d) **SEVERABILITY.** If any part or provision of this License is held to be unenforceable for any purpose, including but not limited to public policy grounds, then you agree that the remainder of the License shall be fully enforceable as if the unenforceable part or provision never existed.
- (e) **NON-ASSIGNMENT.** You may not assign this License without the prior written consent of TeraByte, except as part of a sale of all or substantially all of the assets of your business.
- (f) **NO THIRD PARTY BENEFICIARIES.** There are no third party beneficiaries of any promises, obligations or representations made by TeraByte herein.
- (g) **HEIRS AND ASSIGNS.** This Agreement shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto, but nothing in this paragraph shall be construed as a consent by TeraByte to any assignment of this agreement except as provided hereinabove.
- (h) **SURVIVAL.** The provisions of paragraphs 1(a)(iv), 1(c)(ii) and 3 of this Agreement shall survive any termination or expiration of this Agreement.

TeraByte Unlimited (Full-Use) License Agreement

End User License Agreement (Revised May 24, 2017)

PLEASE READ THIS LICENSE AGREEMENT CAREFULLY BEFORE UPGRADING, COPYING, INSTALLING OR USING THE ACCOMPANYING SOFTWARE PROGRAM (the "Software").

THIS AGREEMENT SETS FORTH THE STANDARD FULL-USE LICENSE FOR USE OF THE SOFTWARE ON YOUR COMPUTER SYSTEM. IN ORDER TO USE THE SOFTWARE UNDER THIS FULL-USE LICENSE, YOU MUST PURCHASE, OR HAVE PURCHASED, EITHER:

- a) ONE OR MORE COPIES OF THE SOFTWARE WITH FULL-USE LICENSE RIGHTS, FROM TERA BYTE OR A TERA BYTE-AUTHORIZED LICENSING AGENT, OR
- b) FULL-USE LICENSE RIGHTS FROM TERA BYTE OR A TERA BYTE-AUTHORIZED LICENSING AGENT FOR ONE OR MORE TIME-LIMITED "EVALUATION VERSION" COPIES OF THE SOFTWARE ALREADY IN YOUR POSSESSION.

THERE MAY BE AN ACTIVATION PROCESS DESCRIBED IN THE SOFTWARE, PURCHASE RECEIPT OR IN TERA BYTE DOCUMENTATION THAT MUST BE FOLLOWED OR YOUR USE OF THE SOFTWARE MAY BE LIMITED OR PREVENTED.

If you do not agree to all of the terms and conditions of this License Agreement as set forth below, then: (a) do not install, upgrade, copy or use the Software, (b) if you received any registration codes or serial numbers, do not copy, use, retain or disclose any of those registration codes or serial numbers, and (c) if you purchased packaged copies of the Software with full-use rights, you may return the complete package, unused, to your place of purchase within fifteen (15) days after purchase for a refund. **The exercise of any or all of the rights set forth below constitutes acceptance of all of the terms and conditions of the Agreement.** Where you have received a signed Agreement directly from TeraByte, any discrepancy between that signed Agreement and an unsigned Agreement shall be controlled by the signed Agreement.

As further set forth below, TeraByte Inc., dba TeraByte Unlimited ("TeraByte") and/or its suppliers own the Software and its documentation, which are protected under applicable copyright, trade secrets, and other laws. The Software is licensed, not sold. Your rights and license to use the Software and the documentation are limited to the terms and subject to the conditions set forth in this Agreement.

1. **LICENSE:**

(a) **YOU MAY:**

- (i) **(Single Copy License)** if you paid for a single copy license, use the Software on a single computer that you or your organization owns or controls ("Computer System"), as further described in 1(c) below;
- (ii) **(Multiple Copy License)** if you paid for a multiple copy license, make and use the number of Software copies for which you paid, provided that you may only use each copy of the Software as described in (i) above;
- (iii) **(Transfer of Installation)** physically transfer any installed, licensed copy of the Software from one Computer System (the "Old System") to another Computer System (the "New System"), provided that that copy may be installed on only one Computer System at a time, and further provided that when you make the transfer, you must uninstall and remove any and all copies of the Software from the Computer System from which the programs are transferred. Where uninstalling from the Old System is impossible due to such Old System being damaged or otherwise non-functional, the requirement for such uninstall and removal shall be waived unless and until such Old System becomes functional. Such transfer shall be permitted (a) when the New System is a replacement for the Old System, or (b) with written approval from TeraByte. Unless otherwise authorized by TeraByte, in writing, each licensed copy of the Software shall be licensed for one and only one Computer System. Such shall be the case whether or not the Software is installed on a disk drive permanently attached to the Computer System for which the Software may be licensed. Specifically, installation upon portable media including without limitation flash drives and CDs shall not circumvent the requirement of maintaining a license for the Software on each Computer System on which the Software may be used, although it is permissible for Software installed upon a portable drive or other drive accessible from multiple Computer Systems to be executed upon more than one such system, provided that licenses are maintained for each Computer System on which such Software may be executed;
- (iv) **(Backup Copy)** make a copy of each licensed copy of the Software solely for purposes of backup;
- (v) **(Images)** create and keep "per computer" Images, as described in paragraph 1(e)(i) below, if the Software product, as licensed, provides imaging functionality; and
- (vi) **(Image Deployment)** if you paid for additional "Image Deployment" license rights, create and distribute additional Images as described in paragraph 1(e)(ii) below.

PROVIDED IN ALL CASES THAT all copyright and other proprietary and Federal acquisition notices, as included by TeraByte with the Software, be fully and accurately reproduced by you on any and all copies of the Software.

- (b) **YOU MAY NOT:** (i) permit others to use the Software unless they are properly licensed by TeraByte, either under this Agreement or another agreement from TeraByte, nor install or use the Software on any computer or computer-related device except Computer Systems as authorized in (a) above; (ii) under a single use license, install a copy of the Software on one Computer System and also use it on one or more other Computer Systems (no less than a two (2) copy license would be required for such use); (iii) permit concurrent use of any copy of the Software; (iv) modify, translate, reverse engineer, decompile, disassemble, or create derivative works based on, the Software; (v) copy the Software except as expressly permitted above; (vi) rent, lease, grant a security interest in, or otherwise transfer rights to, or possession of, the Software or any copy thereof, unless properly licensed by TeraByte, under another agreement that specifically permits such action; (vii) remove or alter any proprietary notices, labels or legends on any copy of the Software; (viii) ship or transmit (directly or indirectly) any copies of the Software or their media, or any direct product thereof, to any country or destination prohibited by the United States Government; or (ix) disclose serial numbers or registration codes to others, unless they are properly licensed to receive such information, either under this Agreement or another agreement from TeraByte.

(c) **PERMITTED END USERS AND COMPUTER SYSTEMS.**

- (i) **Commercial or Organizational Use.** If you are a corporation, LLC, or other commercial entity, whether public or private, for profit or not-for-profit, or a government entity, or if the Software is ever used for purposes related to any such commercial or government entity, the permitted Software end users and Computer Systems under this license are, as applicable:
- (1) Your own employees and in-house contractors, and your in-house Computer Systems owned or controlled by you,
 - (2) A parent organization that has majority ownership or control of your organization (if any), its employees and in-house contractors, and that organization's in-house Computer Systems owned or controlled by that organization,
 - (3) Your subsidiary organization or organizations (if any), those organizations' employees and in-house contractors, and those organization's in-house Computer Systems owned or controlled by those organizations, and
 - (4) Your affiliated organizations (if any; "affiliated organization" means any organization which is under majority control or ownership by the same parent that majority owns or majority controls you), those organizations' employees and in-house contractors, and those organization's in-house Computer Systems owned or controlled by those organizations.
- (ii) **Personal or Home Users.** If you are a real person, and if all Software under this license is used exclusively for personal non-commercial use only, then each licensed copy may be installed on four additional Computer Systems owned or controlled by you, or a member of your immediate family in the same household.

"Control": For purposes of this Agreement, a person or entity "controls" a Computer System when he, she or it has actual control over the day-to-day use of that Computer System.

- (d) **RESERVATION OF RIGHTS.** All rights and licenses not expressly granted by TeraByte in this Agreement are entirely and exclusively reserved to TeraByte.
- (e) **IMAGE LICENSES.** If the Software's functionality, as licensed, includes the ability to create one or more disk partition images or otherwise copy one or more partitions ("Images") then the use of each Image is subject to all of the conditions and restrictions of this Agreement.

Your rights to create and distribute Images are based on the Software licensed and the type of license you purchased (as may be indicated on your sales receipt or comparable sales documentation received by you from TeraByte):

(i) **"PER COMPUTER" IMAGE LICENSE:** Each licensed copy of the Software includes, without extra charge, a "per computer" license to create and keep Images for the same Computer System(s) on which you are licensed to use the Software itself; those Images may not be distributed to, or used in any manner with, any other computers (except for direct replacements for such systems as provided in subsection 1(a)(iii) above), nor may you create or retain images for additional Computer Systems unless the previously created images are destroyed, or you purchased additional licenses to cover such Computer Systems. You may create and keep an unlimited number of Images for each licensed Computer System. For example, if you purchased a license for five (5) copies of the Software, then you may create and keep an unlimited number of Images for up to five Computer Systems with which you properly use those 5 Software copies as described in 1(a)(i) and 1(a)(ii) above, but you may not distribute those Images to, or use them with, any other Computer System.

(ii) **"IMAGE DEPLOYMENT" LICENSE.** If, in addition to the standard Software license, you purchased an "Image Deployment" license (as indicated on your sales receipt from TeraByte), then: (A) you may make an unlimited number of Images on any Computer System on which you may use the Software under this license, and (B) you may deploy each Image to other Computer Systems, referred to as "deployment computers," each such deployment computer having been provided an Image Deployment license. Image Deployment licenses remain allocated to such deployment computers until and unless such deployment computer is taken out of service and replaced. In such case, said Image Deployment license may be transferred to such replacement system subject to limitations as provided in subsection 1(a)(iii) above. For the right to distribute Images to additional computers, you will need to purchase additional Image Deployment License rights from TeraByte. Images deployed as described herein may only be restored or referenced on Computer Systems

having been licensed with at least an Image Deployment license, and once restored, may not be moved to any Computer System not so licensed without prior authorization from TeraByte.

- (f) **PARTITION MANAGEMENT LICENSING.** If the Software's functionality, as licensed, includes the ability to create, resize, slide or otherwise manage partitions on a hard drive, or otherwise to control or repair system boot parameters, then the use of each such reparation or partition management change is likewise subject to all of the conditions and restrictions of this Agreement, including without limitation, restriction of use of such reparation or partition management change to Computer Systems licensed hereunder.
- 2. **TERM AND TERMINATION:** This Agreement, and your license rights hereunder, remain effective until this Agreement is terminated.
 - (a) Termination by You. You may terminate it at any time by destroying the distribution media together with all of your copies of the Software in any form.
 - (b) Termination for Breach. This Agreement may be terminated by TeraByte upon notice, at its sole discretion, if you fail to completely remedy any breach by you of any term or condition herein within ten (10) days after notice of such breach is delivered by TeraByte to you,
 - (c) Automatic Termination. This Agreement will automatically terminate without notice if your normal business operations are disrupted or discontinued for more than thirty days by reason of insolvency, bankruptcy, receivership, or business termination. Upon termination of this Agreement, you must destroy all copies of the Software in any form.
 - 3. **OWNERSHIP AND CONFIDENTIAL INFORMATION:** TeraByte or its licensors own the Software under copyright, trade secret and all other laws that may apply. All product names, designs, and logos associated with the Software are trademarks of TeraByte. The source code of the Software and all information regarding the design, structure or internal operation of the Software are valuable trade secrets of TeraByte or third parties with which TeraByte has licensing arrangements ("Confidential Information"), provided however, that "Confidential Information" shall not include information which otherwise would be Confidential Information to the extent that such information was publicly known or otherwise known to you previously to the time of disclosure, which subsequently became known through no act or omission by you, or which otherwise became known to you other than through disclosure by TeraByte without violation of any party's obligations to TeraByte. You shall not sell, transfer, publish, disclose, display or otherwise permit access to any Confidential Information by any third party, nor may you use any of the Confidential Information, except strictly as part of the Software in the form originally distributed by TeraByte.
 - 4. **LIMITED WARRANTY:** TeraByte Unlimited warrants that for a period of thirty (30) days from the date of purchase, the Software will perform in conformity with the user documentation supplied by TeraByte, provided that your EXCLUSIVE REMEDY under this warranty shall be to return the Software to TeraByte in exchange for repair, replacement, or a full refund of your purchase price (at TeraByte's option) within forty-five (45) days after the date of purchase. In addition, the above warranty does not apply to the extent that any failure of the Software to perform as warranted is caused by the Software being (a) not used in accordance with the user documentation, or (b) modified by any person other than authorized TeraByte personnel. EXCEPT FOR THE EXPRESS WARRANTY GRANTED IMMEDIATELY ABOVE, TERABYTE MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO THE SOFTWARE, ITS MERCHANTABILITY, OR ITS FITNESS FOR ANY PARTICULAR PURPOSE. YOU ACKNOWLEDGE AND AGREE THAT YOU HAD FULL OPPORTUNITY TO USE AND TEST THE SOFTWARE BEFORE PURCHASE. TERABYTE DOES NOT WARRANT THAT THE SOFTWARE WILL MEET YOUR REQUIREMENTS OR THAT THE OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR FREE. YOU ASSUME FULL RESPONSIBILITY FOR SELECTING AND USING THE SOFTWARE, AND THAT IF YOU USE THE SOFTWARE IMPROPERLY OR AGAINST INSTRUCTIONS, YOU CAN CAUSE DAMAGE TO YOUR FILES, SOFTWARE, DATA OR BUSINESS. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE SOFTWARE IS BORNE BY YOU. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THE AGREEMENT. Some jurisdictions do not allow exclusions of an implied warranty, so this disclaimer may not apply to you and you may have other legal rights that vary by jurisdiction.
 - 5. **LIMITATION OF LIABILITY.** ANY LIABILITY OF TERABYTE WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT OR REFUND OF PURCHASE PRICE. IN ADDITION, IN NO EVENT WILL TERABYTE, NOR ANY OTHER PERSON OR ENTITY INVOLVED IN THE CREATION, PRODUCTION, OR DELIVERY OF THE SOFTWARE, BE LIABLE FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WHATSOEVER, INCLUDING WITHOUT LIMITATION LOSS OF INCOME, USE OR INFORMATION, RELATING EITHER TO THE USE OF THE SOFTWARE, OR YOUR RELATIONSHIP WITH TERABYTE, EVEN IF TERABYTE HAS BEEN ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES OR CLAIMS. Any suit or other legal action relating in any way to this Agreement or to the Software must be filed or commenced no later than one (1) year after it accrues. You may also have other rights which vary from state to state.
 - 6. **HIGH RISK ACTIVITIES.** The Software is not fault-tolerant and is not designed, manufactured or intended for use on equipment or software running in hazardous environments requiring fail-safe performance, including but not limited to the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the Software could contribute to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). TERABYTE AND ITS SUPPLIERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS OF THE SOFTWARE FOR HIGH RISK ACTIVITIES. TERABYTE DOES NOT AUTHORIZE USE OF THE SOFTWARE FOR ANY HIGH RISK ACTIVITY. YOU AGREE TO DEFEND AND INDEMNIFY

TERABYTE, AND HOLD TERABYTE HARMLESS, FROM AND AGAINST ANY AND ALL CLAIMS, ACTIONS, LOSSES, COSTS JUDGMENTS AND DAMAGES OF ANY KIND IN CONNECTION WITH USE IN RELATION TO ANY HIGH RISK ACTIVITY OF ANY COPY OF THE SOFTWARE RELATING TO THIS LICENSE.

7. **RESTRICTED RIGHTS - COMMERCIAL COMPUTER SOFTWARE.** The parties acknowledge and agree that: (a) any and all products covered by this Agreement are, and shall be, deemed "commercial computer software" for all purposes in relation to U.S. government acquisition laws, rules and regulations, and (b) all use, duplication and disclosure by, for, or on behalf of the U.S. Government is subject to all conditions, limitations and restrictions applicable to "commercial computer software" as set forth in FAR section 12.212 and in DFAR sections 227.7202-1, 227.7202-3, and 227.7202-4.
8. **GENERAL.**
 - (a) **ENTIRE AGREEMENT.** This Agreement constitutes the entire agreement between you and TeraByte in regard to the subject matter herein, and supersedes all previous and contemporaneous agreements, proposals and communications, written or oral between you and TeraByte. No amendment of this Agreement shall be effective unless it is in writing and signed by duly authorized representatives of both parties.
 - (b) **NON-WAIVER.** Waiver by TeraByte of any violation of any provision of this License shall not be deemed to waive any further or future violation of the same or any other provision.
 - (c) **LAW AND JURISDICTION.** This License and any dispute relating to the Software or to this License shall be governed by the laws of the United States and the laws of the State of Nevada, without regard to U.S. or Nevada choice of law rules. You agree and consent that jurisdiction and proper venue for all claims, actions and proceedings of any kind relating to TeraByte or the matters in this License shall be exclusively in courts located in Las Vegas, Nevada. If a court with the necessary subject matter jurisdiction over a given matter cannot be found in Las Vegas, then jurisdiction for that matter shall be exclusively in a court with the proper jurisdiction as close to Las Vegas as possible, and within Nevada if possible.
 - (d) **SEVERABILITY.** If any part or provision of this License is held to be unenforceable for any purpose, including but not limited to public policy grounds, then you agree that the remainder of the License shall be fully enforceable as if the unenforceable part or provision never existed.
 - (e) **NON-ASSIGNMENT.** You may not assign this License without the prior written consent of TeraByte, except as part of a sale of all or substantially all of the assets of your business.
 - (f) **NO THIRD PARTY BENEFICIARIES.** There are no third party beneficiaries of any promises, obligations or representations made by TeraByte herein.
 - (g) **HEIRS AND ASSIGNS.** This Agreement shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto, but nothing in this paragraph shall be construed as a consent by TeraByte to any assignment of this agreement except as provided hereinabove.
 - (h) **SURVIVAL.** The provisions of paragraphs 1(b)(iv), 1(b)(vii), 1(b)(ix), 2, 3 and 6 of this Agreement shall survive any termination or expiration of this Agreement.