



USBBoot

Instructions

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Introduction & Requirements

UsbBoot is a TBOSDT script used to copy a supported Windows installation (or equivalent) to a USB drive and then modify it to be USB-bootable. The USB drive can be a flash drive (UFD) or a standard USB hard drive.

UsbBoot can also be used to modify a supported Windows installation that already exists on a USB drive to be bootable. This is especially useful if you restore an image backup to the drive instead of copying an existing installation.

Supported versions of Windows include Windows 2000, Windows XP, Windows Vista, Windows 7, and Windows 8.

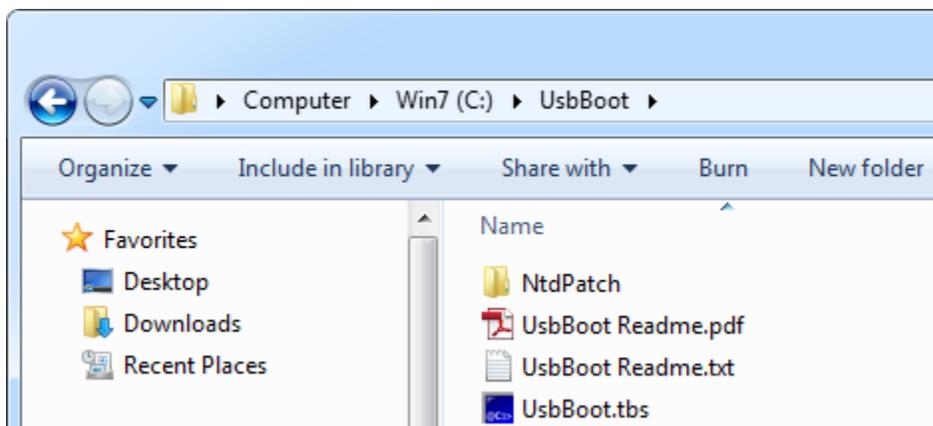
Requirements

- DOS / Windows XP or later
- A fully licensed copy of the TeraByte OS Deployment Tool (TBOSDT) Professional
- Image for DOS or Image for Windows (if UsbBoot needs to copy a Windows installation)
- A USB Flash Drive (UFD) or USB hard drive large enough to hold the Windows installation
- A computer running Windows 2000 or later and capable of booting from a USB drive

Due to the nature of this script and the possible issues that may arise, it's recommended to review the **Important Notes & Limitations** section before running the script.

Using UsbBoot

After downloading the UsbBoot zip file, extract the contents to the folder of your choice. In these instructions, the files have been extracted to the **C:\UsbBoot** folder. This folder contains the **UsbBoot.tbs** script file and the **ntdpatch** folder.



The UsbBoot script has to be run from the TeraByte OS Deployment Tool (TBOSDT). If you are unfamiliar with this procedure, please reference the **Using TBOSDT Professional** section for instructions before proceeding.

NOTE: If necessary, see the **Running UsbBoot in Windows Vista, Windows 7, or Windows 8** section.

When the script starts, you will be presented with two options:

Copy a Windows installation to a USB drive
Enable Windows already installed on a USB drive to boot

Each operation is covered below:

Copy a Windows Installation to a USB Drive

The “Copy...” operation will use Image for DOS or Image for Windows to copy the selected Windows installation to the USB drive and then make it USB-bootable.

Image for DOS or Image for Windows (depending on the OS) must be installed for the script to perform the copy. If it’s not found, you’ll need to browse and select it manually when prompted.

```
[ Required file imagew.exe not found ]
> Locate it manually
Cancel operation
```

UsbBoot will display a list of all found Windows installations. Select the one you want to copy.

```
[ Select Windows Installation to copy ]
HD0: Win? Partition <02> 37.9 GiB HPFS/NTFS <C:>
```

UsbBoot will display a list of all found USB drives. You can select to use the entire drive, an existing partition, or free space.

NOTE: If you select the drive or an existing partition, any data on the drive/partition will be lost. Be careful to select the correct drive/partition.

```
[ Select destination ]
> HD2 - ST380013AS <76319 MiB>
(E:) Temp Data <40960 MiB> Partition <01> HPFS/NTFS
First free area of space large enough on HD2
```

This example shows the USB drive, a 40GB NTFS partition (labeled “Temp Data”), and the remaining free space.

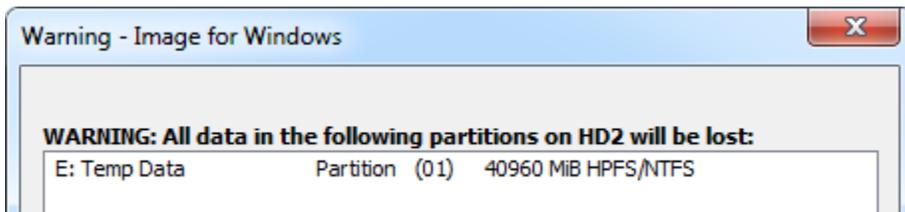
Select the desired target for the copied Windows installation. To avoid an error when the copy process begins, make sure the selected USB drive, partition, or free space is large enough to hold the source partition(s).

Next, you will be asked if you want to remove the installed drivers or keep them.



It's recommended to keep the existing drivers if you are going to be booting the USB drive on the original computer. Removing the installed drivers forces Windows to redetect devices upon booting. Pressing **ESC** on this menu will proceed without removing drivers.

Since this is being run in Windows, Image for Windows is being used. If any partitions will be deleted, Image for Windows will warn you. In this example, the drive (HD2) was selected, which will result in the "Temp Data" partition being deleted. Click **Yes** to continue.



Depending on the speed of the USB drive and the size of the source partition, the copy may take a while. In most cases, copying to a USB drive will be faster than copying to a UFD.

Skip to the **Updating the USB Drive** section.

Enable Windows Already Installed on a USB Drive to Boot

The "**Enable e...**" operation will configure an existing Windows installation on the selected USB drive to be USB-bootable.

NOTE: When using the "**Enable e...**" option, it is the responsibility to the user to have the USB drive bootable. If the drive isn't bootable, it won't be able to boot Windows even if UsbBoot finishes successfully.

This option allows you to easily use an existing Windows image or existing installation. You may wish to restore a "clean" installation to the USB drive and use it instead of copying a "live" partition, for example. Or, you may have a drive that was previously installed in the computer and now resides in a USB enclosure.

Once the USB drive is ready, make sure it's connected to the computer, run UsbBoot and select the "**Enable e...**" option.

UsbBoot will display a list of detected USB drives. Details are provided to make selecting the correct drive/partition easy.



Select the desired USB drive from the list.

Next, you will be asked if you want to remove the installed drivers or keep them.



It's recommended to keep the existing drivers if you are going to be booting the USB drive on the original computer. Removing the installed drivers forces Windows to redetect devices upon booting. Pressing **ESC** on this menu will proceed without removing drivers.

If the selected partition is not set active, UsbBoot will ask if you want it changed. Select the “**Set partition ... active**” option.

NOTE: If the Windows system partition is not active and should be, Windows will not be able to boot from it.

UsbBoot will display a warning that the system on the USB drive will be modified. Select “**Continue**” to proceed.



Updating the USB Drive

Progress will be displayed as UsbBoot modifies the Windows system. This process will usually finish quickly (in several seconds). However, in some cases, the process may take several minutes.

NOTE: If an “AutoPlay” window opens for the USB drive, you can safely cancel or close it.

Example output using the “**Keep drivers**” option is shown below:

```
Processing installation...
  TeraByte OSD Tool Script 4.00
Processing Installation E:\Windows...
System found: Windows 7 Home Premium Service Pack 1 AMD64
Installing IDE and AHCI drivers:
Backing-up System registry... Complete
Backing-up Software registry... Complete
Now processing mshdc.inf (with storage option)...
  Unlocking driver files... Complete
  Processing mshdc.inf...
  Operation successful
Now processing adpahci.inf (with storage option)...
  Operation successful
  Operation successful: IDE and AHCI drivers have been installed
Searching for file usbport.inf...
Now processing usbport.inf (with storage option)...
  Unlocking driver files... Complete
  Processing usbport.inf...
  Operation successful
```

```
Searching for file usbstor.inf...
Now processing usbstor.inf (with storage option)...
Unlocking driver files... Complete
Processing usbstor.inf...
Operation successful
```

Operation completed.

Press <Enter> to continue ...

Press ENTER.

If everything was processed correctly, “**Operation successful**” will be displayed. If there were problems and only part of the changes were made, “**Operation completed partially**” will be displayed.

Press ENTER to exit the UsbBoot script.

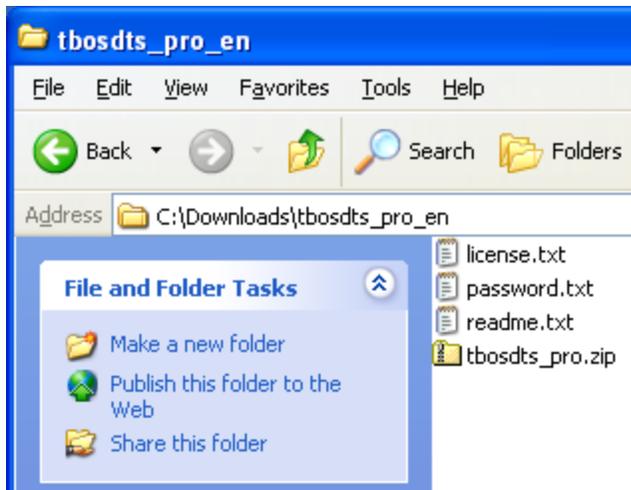
If you received any warnings or error messages, see the **Troubleshooting** section.

Using TBOSDT Professional

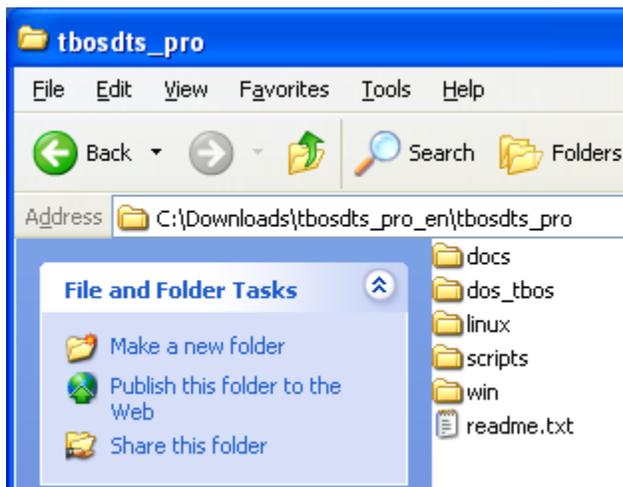
The Professional version of the TeraByte OS Deployment Tool (TBOSDT) is required to run the UsbBoot script. It can be purchased directly from the TeraByte Unlimited Website at <http://www.terabyteunlimited.com/purchase-tbosdt.htm>. It is also included free with any purchase of Image for Windows, Image for DOS, or Image for Linux.

NOTE: Starting with Image for Windows 2.60, TBOSDT is automatically installed with Image for Windows unless the option is deselected. For example, on a 32-bit version of Windows, it installs to **C:\Program Files\TeraByte Unlimited\TeraByte OSD Tool Suite Pro**

After you download the TBOSDT zip file (**tbosdts_pro_en.zip**) from the TeraByte website, extract the contents. You can use Explorer for this or any other standard file compression program.



The instructions for unzipping the extracted **tbosdts_pro.zip** file can be found in the **readme.txt** and **password.txt** files.



If running under Windows, the required program file (**tbosdtw.exe**) can be found in the **win** folder. If running under DOS, the required program file (**TBOSDT.EXE**) can be found in the **dos_tbos** folder.

NOTE: Once extracted, you may wish to move (or copy) the contents of the sub-folder you'll be using to a location easier to access. For example: You might move the contents of **win** to the **C:\TBOSDT** folder.

Running the script can be done from the TBOSDT command line or from a shortcut.

Running a Script from the Command Line

Run the correct version of TBOSDT for your OS version. When the program starts, it will be at the command line prompt.

```
C:\Downloads\tbosdts_pro_en\tbosdts_pro\win\tbosdtw.exe
C:\Downloads\tbosdts_pro_en\tbosdts_pro\win>
```

Type the command to run the script and press ENTER. In this example, the **UsbBoot.tbs** script is in the **C:\UsbBoot** folder.

run tbs c:\usbboot\usbboot.tbs

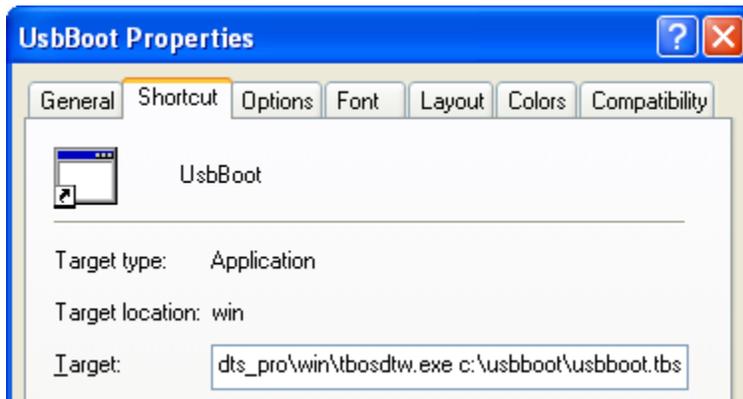
```
C:\Downloads\tbosdts_pro_en\tbosdts_pro\win\tbosdtw.exe
C:\Downloads\tbosdts_pro_en\tbosdts_pro\win>run tbs c:\usbboot\usbboot.tbs_
```

The script will run. When finished, the script will return to the command line prompt. To exit TBOSDT, type **exit** at the prompt and press ENTER.

Running a Script from a Shortcut

Create a standard Windows shortcut setup to run TBOSDT and the script. In this example, the **UsbBoot.tbs** script is in the **C:\UsbBoot** folder. The “Target” box contains the following (all on one line):

C:\Downloads\tbosdts_pro_en\tbosdts_pro\win\tbosdtw.exe c:\usbboot\usbboot.tbs



Launch the shortcut to run the script. When the script finishes, the TBOSDT window will close.

Important Notes & Limitations

When using UsbBoot, please keep the following in mind:

Partition Size on USB Drive

UsbBoot instructs Image for DOS / Image for Windows to expand the copied partition to use larger available space. If you select the USB drive, the entire drive will be used. If you select free space, the entire section of free space will be used.

Booting the USB Drive on Another Computer

UsbBoot is designed to configure a Windows installation on the USB drive to be USB-bootable. However, this doesn't mean it will boot into Windows successfully on another computer. The drivers for the storage system, video card, NIC, etc., will be those of the source Windows system. Booting the USB drive on another computer is the equivalent of removing the source drive, installing it in another computer, and expecting it to boot properly. Windows may crash (BSOD), lock-up, or reboot.

For the best results, it's recommended to use a Windows installation that is (or was) installed on the target computer.

If you need to boot the USB drive on another computer, the following tips may be helpful:

- Make sure the correct Windows drivers are available for the system and have them ready.
- Try booting the USB drive after it's been updated normally by UsbBoot. In some cases, Windows is able to adjust well enough to allow this to be successful. If it fails, you can always start over.
- If possible, remove any unnecessary or incorrect drivers from the source system. This will prevent them from causing problems when booted on the target computer. UsbBoot includes an option to remove installed drivers.
- Use the **osdtool.tbs** script (included with TBOSDT) to remove existing drivers from the Windows installation on the USB drive, install new required drivers, change the HAL, change the Computer Name, and change Services. If you are unfamiliar with using the **osdtool.tbs** script, be aware that clearing drivers and/or making other changes may cause booting delays or errors that will require additional troubleshooting. More information on using TBOSDT and the **osdtool.tbs** script can be found in the TBOSDT documentation.
- **osdtool.tbs** can be run on the Windows installation on the USB drive either before or after running UsbBoot on it.

After booting Windows from the USB drive you may experience the following:

- Windows may crash (BSOD) if drivers are not configured correctly. This is often caused by an incorrect driver being installed or the correct driver not being installed.
- There may be a long delay (5-10 min.) on the "Welcome" screen, the log in screen, or the desktop background screen. This delay is longest on the first boot, but may remain for subsequent reboots. Check the Windows Event Log for any errors or problems. Changes may need to be made to drivers and/or services.

- “Windows Product Activation” may be triggered if using a version that requires activation.
- On the first boot-up, there may be a long delay before the USB mouse or keyboard are detected and drivers installed. If operating the computer through a KVM, it’s possible for one or more connected devices to remain inactive. This may require connecting a standard USB mouse and/or keyboard directly to the computer. Once the drivers are installed, the KVM devices should function normally.
- Log in may be different from the source system. Auto log in may be canceled, for example.
- “Found New Hardware” wizard may pop-up repeatedly due to the different hardware. Installing the correct drivers is recommended. Many of these may trigger a message that the driver has not passed Windows logo testing. Make sure to select the **Continue Anyway** option to install them. Please note that Windows may not automatically install the all drivers or not install them correctly. Some may require manual installation or the uninstallation of existing drivers before a successful install/redetection is possible.
- Disk Management may only show the USB drive. This can happen if the correct storage controller drivers are not installed.
- Screen resolution may be very low. Install the correct video drivers for the system.

Using the Standard (Free) Version of TBOSDT

The standard (free) version of TBOSDT does not support running scripts like UsbBoot. UsbBoot requires the Professional (purchased) version to run. TBOSDTs can be purchased directly from the TeraByte Unlimited Website: <http://www.terabyteunlimited.com/purchase-tbosdt.htm>

Running UsbBoot in Windows Vista, Windows 7, or Windows 8

UsbBoot will function under Windows Vista or later if run in Administrator Mode. This means you need to run **tbosdtw.exe** as an administrator. If run as a standard user, UsbBoot won’t be able to find any Windows installations on USB drives. In addition, Image for Windows requires administrator privileges.

Issues with USB Flash Drives (UFD)

When modifying a Windows system on a UFD you must run UsbBoot using the same version of Windows. For example, if the UFD contains (or will contain) Windows 7, you must run UsbBoot in Windows 7. Running in a different version of Windows will not allow the script to obtain the correct reference to the UFD.

If you experience very slow performance when booted to your UFD, you may need to use a UFD that has faster read/write throughput and/or faster access times. It may take 5-10 minutes after the Windows Desktop is displayed before Windows will become more responsive. Often, a USB hard drive will perform much better than a UFD.

Not all flash drives are USB-bootable. In those cases, the system won’t boot, leaving a message that the drive is not valid.

FAT32 Partition Labels

FAT32 partition labels may not be displayed correctly. The label displayed in UsbBoot is the same as that shown by Image for DOS and Image for Windows and may not be the same as that shown by Windows Disk Management or Explorer. For example: You create a FAT32 partition using Windows XP Disk Management and label it **XPUSB**. UsbBoot will display **NO NAME** as the partition's label. This is due to the fact that the volume label field in the boot sector is not correctly updated under Windows XP.

If selecting a FAT32 partition, make sure you select the correct partition.

“New Hardware Found” Message After Booting USB Drive

Upon booting the USB drive, Windows may display a message that new hardware has been found. In addition, the following (or similar) message may be displayed:

System Settings Change

Windows has finished installing new devices. The software that supports your device requires that you restart your computer. You must restart your computer before the new settings will take effect.

In most cases, rebooting is not required as the drivers were already installed in the source Windows system. Click **No** on the message window to cancel the reboot or **Yes** to allow it.

This message is generally more common with USB hard drives than USB flash drives.

Source Partition too Large for USB Drive

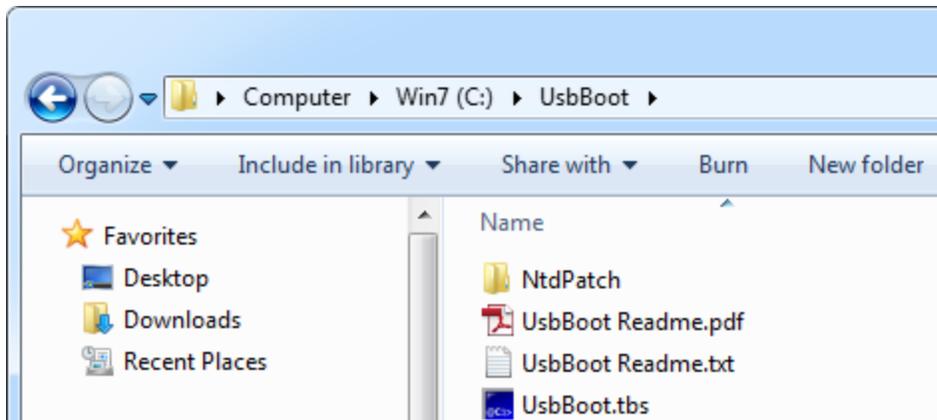
If the Windows partition you want to setup on the USB drive is too large to fit on the USB drive, solutions include:

- Using a larger USB drive
- Using Image for Windows, Image for DOS, or Image for Linux to compact the partition(s)
- Running a defrag on the partition and moving used clusters closer to the start of the partition
- Resizing the partition smaller using a partitioning program (BootIt BM, for example)
- Deleting unnecessary files/programs

Troubleshooting

Error: “The ntdpatch folder is not available”

This error will be displayed if UsbBoot can't locate the **ntdpatch** folder in the folder containing the UsbBoot script. Make sure the **ntdpatch** folder is correctly placed in the folder with the script and then rerun the script.



Error: “Wrong signature found” for UFD

If UsbBoot can't find the correct Disk Signature for the UFD, the following message will be displayed:

Assigning System drive ... Wrong signature found (script not running from [Windows version])

This problem is caused by not running UsbBoot in the correct version of Windows. DOS doesn't have access to the USB drive's signature and other versions of Windows use a different signature value for removable drives. As a result, UsbBoot can't obtain the correct value to assign to the Windows partition on the USB drive. The USB drive will not be able to boot correctly in this state. To fix the problem, run UsbBoot in the same version of Windows as the version on the USB drive being modified.

Image for Windows Fails to Copy Partition

Using a USB drive that's too small to contain the desired Windows partition will cause Image for Windows to fail. Selecting an existing partition or free space that's not large enough will cause Image for Windows to fail. Error messages include **Unable to find the desired partition entry** and **The selected destination is not large enough**.

At the point of the failure, Image for Windows has already cleared the USB drive or deleted the partition (depending on the option selected). This can leave Windows in a unknown state in regard to the USB drive. Disk Management and Explorer may still show the drive/partition as existing and available when it's really not.

It's recommended to disconnect the USB drive and reconnect it before using Windows to access it.

Error: “Unable to access new Windows Installation”

After Image for Windows copies the Windows partition to the USB drive, UsbBoot will display the following error message if it has problems accessing/finding the partition on the USB drive:

Unable to access new Windows Installation

In most cases, you can just press ENTER to return to the main menu and then select the **Enable Windows already installed on a USB drive to boot** option. Select the USB drive from displayed list and continue through the steps.

File System Errors on Source Partition

File system errors that exist in the source Windows partition may cause problems when running UsbBoot or Image for Windows. These errors will most likely not appear until after Image for Windows has completed the copy. The script may be able to correctly display an appropriate error and abort. Otherwise, you may receive a more cryptic message directly from TBOSDT (e.g. **“Drive 0: is not mounted”**). An error message may also be recorded in the Windows Event Log (e.g. **Event 55, NTFS**).

If this happens, it's recommended to check the source Windows partition for any file system errors prior to running UsbBoot. This can be done by running **chkdsk /f** on the partition.

Completion Message: “Operation completed partially”

If you receive this message when UsbBoot finishes configuring the USB drive, UsbBoot was unable to properly make all necessary changes. Check the output displayed and look for any warnings or error messages.

In most cases, a partially configured USB drive will not be able to boot successfully into Windows.

“Disk Error” Message or Flashing Text Cursor When Booting USB Drive

This happens when the drive geometry doesn't match the BIOS geometry. An message may be displayed or the screen may be all black with just a flashing text cursor in the top left corner. The problem can be fixed by using any of the imaging geometry options (forcing the geometry) when copying or restoring the partition. More information on using the geometry options can be found in the Image for Windows manual.

NOTE: UsbBoot is not able to specify the geometry options to Image for Windows for the copy. You will need to perform the copy or restore operation manually and specify the correct options.

Another solution is available if BootIt BM (BIBM) is installed on the computer. With the USB drive connected, boot into BIBM and select the **Partition Work** option. Select the USB drive and then the Windows partition. Click the **Properties** button. BIBM will report that invalid bpb values exist and offer to fix it.

Error: “NTLDR: Couldn't open drive...”

There are many different types of USB drives. Examples include, powered, USB powered, brand-name, enclosures, docks, etc. Due to this (and the many different BIOS versions used in computers), some drives may have different requirements as to what works and what doesn't. If the drive isn't ready or not detected correctly when Windows tries to load from it, you may see various errors. For example, Windows XP may display:

**Couldn't open drive multi(0)disk(0)rdisk(0)partition(1)
NTLDR: Couldn't open drive multi(0)disk(0)rdisk(0)partition(1)**

Before trying to recreate the USB drive, try doing a normal reboot (press Ctrl-Alt-Del). This may allow the USB drive to boot properly.

Another option is to try a cold boot (computer off, connect USB drive, power on USB drive, power on computer).

“Chkdsk” Runs When USB Drive is Booted

When Windows XP boots from the USB Drive, the blue-screen mode is displayed and there's a message stating that a drive needs checked. The drive may be C: or some other letter. This can happen if UsbBoot wasn't able to correctly set the Disk Signature for the USB drive. Since Windows XP wasn't able to correctly “link” its partition to the correct drive letter, you may want to cancel the chkdsk scan.

Wrong Drive Letter Assignments

In cases where the Windows source partition is visible/available when you boot the USB drive and UsbBoot was unable to correctly set the Disk Signature to reference the Windows partition on the USB drive, the original drive letter assigned to the source partition will be retained and the partition on the USB drive will be assigned an alternate letter. This type of setup will boot, but is not correct.

Here is an example: When booted into Windows XP, C: is assigned to the partition. UsbBoot is run and the Windows XP partition is copied to the UFD. The UFD is then booted. C: is still assigned to the original source partition and E: is assigned to the partition on the UFD.

Running with this type of setup is not recommended. Any changes made may affect the original partition and/or the copy. In addition, since the booting is not independent of the source partition, if that partition is corrupted or unavailable, the USB drive won't boot.

If this happens, check the UsbBoot process for any warnings or errors and recreate the USB drive as necessary to correct the problem.

Using USB 3.0

Most systems should boot properly from USB 3.0 ports if the USB 3.0 drivers were installed in the Windows system. However, some systems may crash (BSOD) and/or reboot. If this happens, try booting from a USB 2.0 port.

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