

**USB Format Tool - Make Bootable USB Drive with MBR and 2 Partitions - active FAT32 + NTFS**

- Use [USB\\_FORMAT](#) with [SAMSUNG Portable SSD T5 500 GB](#) Or USB-Stick gives [UEFI/MBR Partitioning](#) with active FAT32 + NTFS Partition
- Copy your PE **boot.wim** file to USB FAT32 Boot Drive for booting from RAMDISK - USB\_FORMAT makes preconfigured entry for boot.wim
- Copy VHD and Rename as **Win10x64.vhd** file to USB NTFS Drive for booting as FILEDISK - USB\_FORMAT makes entry for Win10x64.vhd
- Or Use [UEFI\\_MULTI](#) to Add **WIM** file to make Portable SSD booting from RAMDISK - filename = Win10XPE.wim - See below
- Or Use [UEFI\\_MULTI](#) to Add **VHD** file to make Portable SSD booting with FILEDISK - W10x64 VHD
- Add Win10x64 **ISO** file from [TechBench](#) to NTFS Drive used by [WinNTSetup](#) for Install Win10x64 in VHD or partition of SSD hard disk
- Boot from USB - after beep use **F8** or other [HotKey Boot Menu](#) - Select **WIM** or **VHD** in Boot Manager Menu
- Use [WinNTSetup](#) x64 and **ISO** file for Install of Windows 10 x64 in **VHD** or partition of internal SSD hard disk - Details See below

For Compact Install of Win10x64 in 25 GB VHD booting as FILEDISK the steps taken are:

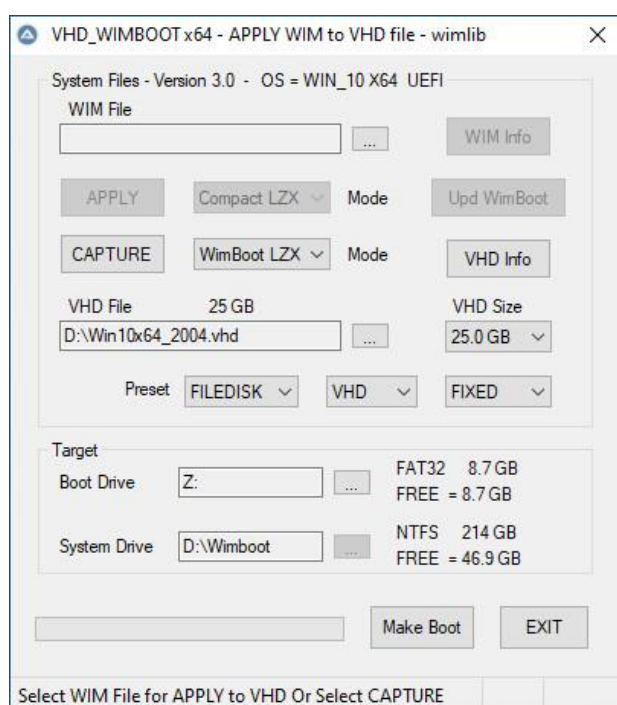
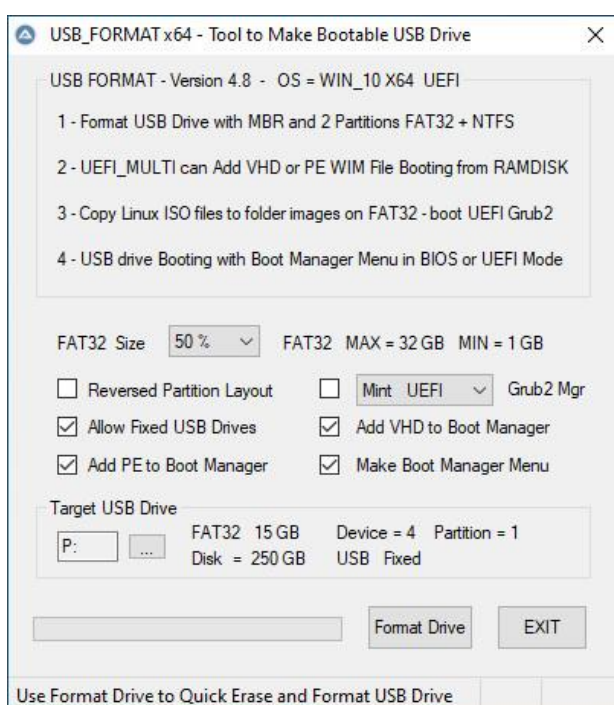
1. Disconnect Internet LAN Ethernet cable as to avoid automatic download of Windows Updates
2. [WinNTSetup](#) in 25 GB VHD Win10x64\_2004.vhd located on internal SSD  
using [2004 ISO](#) + Drivers + Unattend Local Account + Compact:XPRESS4K Mode
3. Reboot with VHD for Install of Win10x64 in VHD
4. After Install and on arrival at Win10x64 Desktop then Disable LAN Network adapter and Disable Windows Update for 35 days
5. Connect to WLAN to allow Install of missing Drivers and to allow Activation of Win10x64 - Disconnect WLAN
6. Option - Install [7-zip](#) - [VLC player](#) and Office and [registry backup portable](#)
7. Open Admin Command Window and use **wmic UserAccount where Name='Vx64W' set PasswordExpires=False** - [More Info](#)
8. Boot from USB Or Reboot with other OS and Switch off Defender - Start [VHD\\_WIMBOOT](#) - Select Win10x64\_2004.vhd
9. [VHD\\_WIMBOOT](#) Capture WimBoot LZX mode to make Win10x64\_2004\_LZX.wim - use wimlib Capture and Apply to reduce Win Used Size
10. VHD\_WIMBOOT Apply Compact LZX mode of WIM Win10x64\_2004\_LZX.wim in New VHD Win10x64.vhd on Portable SSD
11. Option - in Trusted Installer cmd window use [WinSxS\\_reduce](#) batchfile base\_winsxs.cmd applied to mounted VHD
12. Reboot from USB with Win10x64.vhd on Portable SSD - Windows Used Size Typical 5 GB and Minimal 3 GB

Downloads: from [wimb GitHub](#) - [USB\\_FORMAT](#) - [UEFI\\_MULTI](#) - [System Info](#) - [VHD\\_WIMBOOT](#) - [MBR Backup](#) - [WOF Compress](#)

Downloads: [UEFI\\_MULTI](#) and [WinNTSetup](#) and Windows 10 x64 ISO from [TechBench](#) Or using [Windows-ISO-Downloader](#) Tool

More Info: [Info USB\\_FORMAT](#) - [UEFI\\_MULTI topic](#) and Forums [MSFN](#) and [Reboot.pro](#) and [VHD\\_WIMBOOT](#) and [BOOTICE](#) 1.3.3.2

More Info: [Compact mode installs](#) - [VHD\\_WIMBOOT](#)



## How to use WinNTSetup x64 and ISO file for Installation of Windows 10 x64 in VHD or partition of SSD harddisk

Option - For Minimal Used Size Disconnect Internet LAN Ethernet cable as to avoid automatic download of Windows Updates

0. Get Ready to have Microsoft Account, Win10 key + Computer name and Backup your User Data

Option - In Windows 10 x64 use [produkey-x64](#) and Save All keys and Backup Data with [SyncBack](#) Free and Save [System Info](#)

1. Boot from USB - after beep use **F8** menu - Select **Win10XPE-WIM** or Win10x64 **VHD** in Boot Manager Menu

2. In [WinNTSetup](#) x64 - location Windows Installation file sources\install.wim - use R-mouse to select Win10x64 ISO file from [TechBench](#)

3. Select Boot drive (usually EFI drive Z:) and Select VHD to Create 50 GB VHD located on internal SSD harddisk - VHD is mounted as Drive Y:

4. Choose Win10 **Edition** - Home or Professional and Select desired **Tweaks** - in case of SSD partition Format with NTFS

5. Select Compact:XPRESS4K Mode to reduce the Used Size of the Installed Windows

6. Option - select Unattended Install and to Add Drivers - for Local Account Select unattend\Win7-10-Select.xml and fill in the form

7. Select **Setup** and select **Legacy** Boot Menu Style and OK to Install Win10x64 in VHD or partition of internal SSD harddisk and Reboot

8. Option - After Install and on arrival at Win10x64 Desktop then Disable LAN Network adapter and Disable Windows Update for 35 days

9. Install missing Drivers and Update Win10x64 - Install [7-zip](#) - [VLC player](#) and Office and [registry backup portable](#) and Reboot

10. Open Admin Command Window and use **wmic UserAccount where Name='Vx64W' set PasswordExpires=False** - [More Info](#)

11. Boot from USB Or Reboot with other OS and Switch off Defender - Start [VHD\\_WIMBOOT](#) - Select your VHD e.g. Win10x64\_2004.vhd

12. [VHD\\_WIMBOOT](#) Capture WimBoot LZX mode to make Win10x64\_2004\_LZX.wim - use wimlib Capture and Apply to reduce Win Used Size

13. VHD\_WIMBOOT Apply Compact LZX mode of WIM Win10x64\_2004\_LZX.wim in Win10x64\_2004.vhd

14. Copy VHD to USB NTFS drive and use [UEFI MULTI](#) to Add VHD to Boot Manager menu for booting from USB with VHD

Option - Personalise your VHD located on internal SSD - change the User Data location and Switch to Microsoft Account

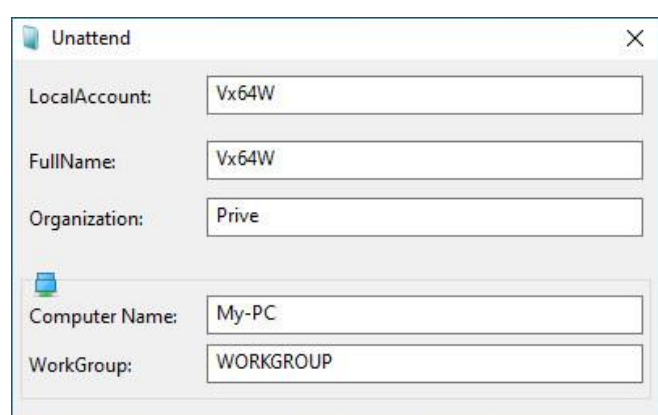
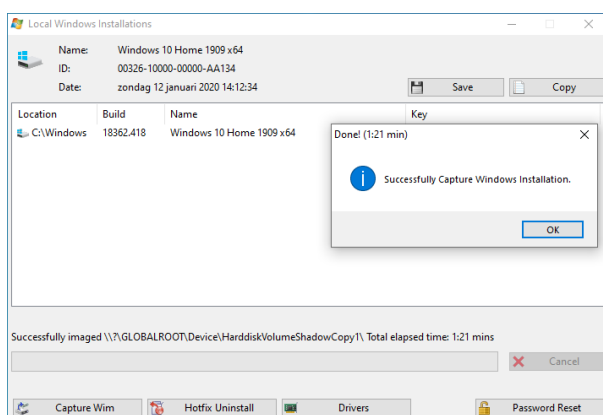
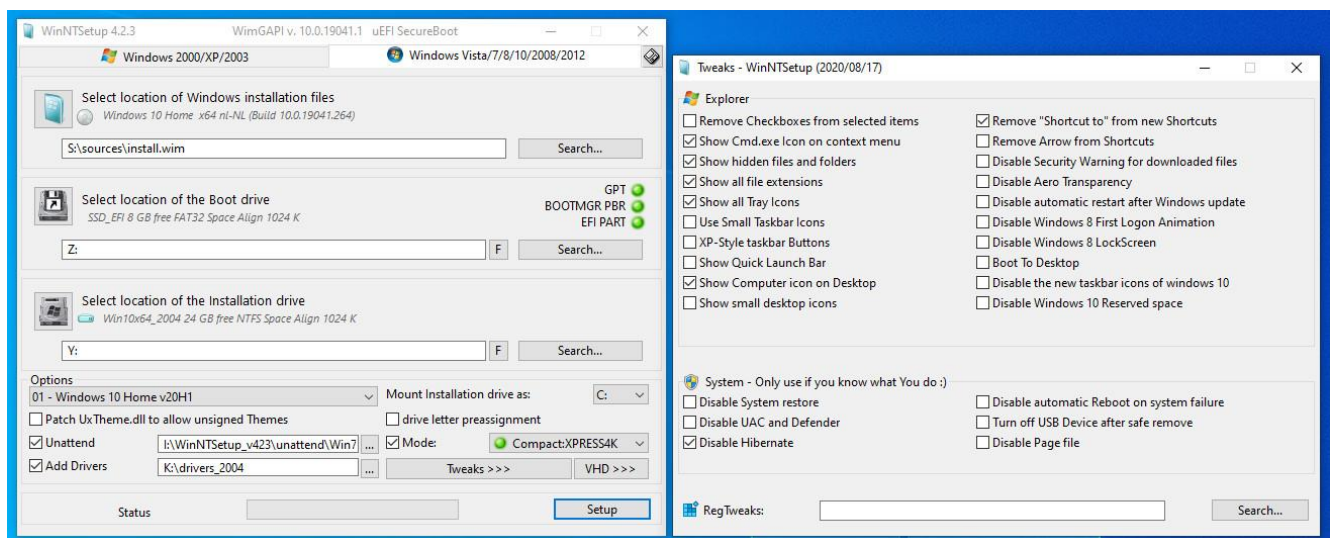
15. Option - Boot internal VHD - on separate Data partition Create 5x empty folder for Documents, Pictures, Downloads, Music and Videos

In My Computer use R-mouse on icon > Properties > tab Location > Move ... Select the Created folder to change the User Data location

16. Option - For your normal Windows 10 booting from internal SSD then Switch to Microsoft Account via Config > Accounts and Reboot

17. Option - Switch off Defender - In WinNTSetup Menu - Local Windows Installations - Ctrl+Shift +O and Capture Wim to make Backup WIM

After [Next Install of Win10x64](#) with Captured WIM file then often first booting via F8 in **Safe Mode** is required and then Reboot normal



## How to make Win10XPE WIM file for booting from RAMDISK

**Download:** [Win10XPE Builder](#) Or [Win10XPE at GitHub](#) and Unpack with [7-Zip x64](#) - More Info: [Win10XPE](#)

**Download** Win10\_1909\_English\_x64.iso or newer from [TechBench](#) Or using [Windows-ISO-Downloader](#) Tool

**Mount ISO** with double-click and Copy the Content of the ISO to Folder **Win10\_1909\_English\_x64** on your Harddisk

In WinBuilder > Build Core > Select **Run ALL Programs From RAM** to get WIM file with all Programs integrated

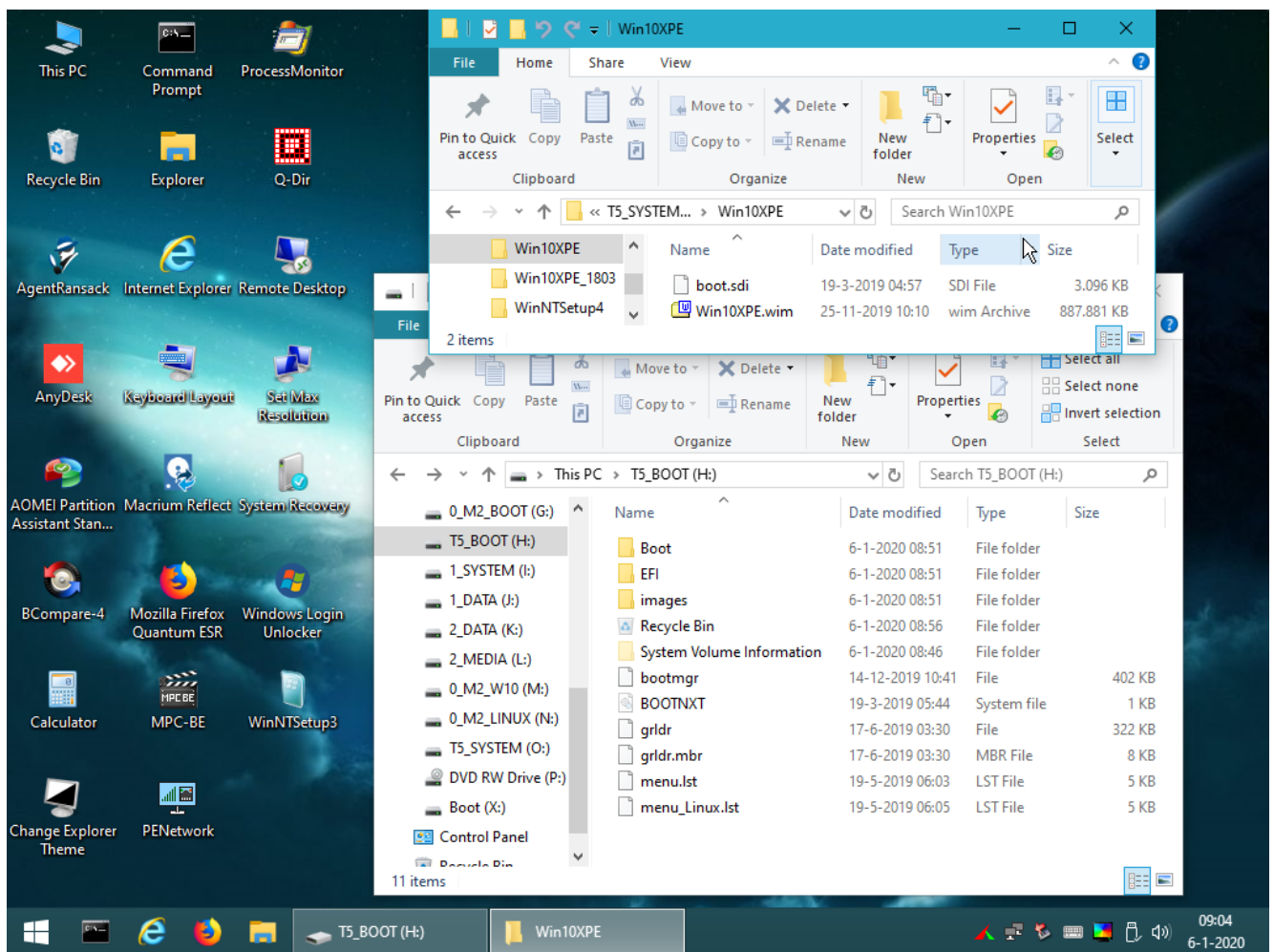
In WinBuilder > Apps > System Tools DeSelect XPE Startup (when Selected build fails)

In WinBuilder Select the Folder Win10\_1909\_English\_x64 on your Harddisk and Start building with **Play** button

Use Win10XPE\ISO\sources\boot.wim as your Boot Image file and use Win10XPE\ISO\Boot\boot.sdi for booting WIM file from RAMDISK

First copy both files to folder Win10XPE located on NTFS System Drive of Portable SSD and then use [UEFI MULTI](#) to make Boot Manager entry

**After booting from USB with Win10XPE.wim file located on Portable SSD in folder Win10XPE on USB NTFS System Drive**



Instead of [USB FORMAT](#) you can use Windows Disk Management to Partition and Format USB Drive

1. In **Disk Management** remove existing exFat Volume and Create new partitions
2. MBR partitioning with 1st partition 20 GB FAT32 Set Active used as Boot Drive and 2nd partition NTFS used as System Drive
3. In **admin command** window run **DiskPart**
4. In DiskPart type **list volume** and **select volume <FAT32 volume nr>** and **active** and **exit**

BIOS mode booting requires Active partition with BOOTMGR bootsector

UEFI mode booting requires FAT32 partition with x64 file efi\boot\bootx64.efi Or x86 file efi\boot\bootia32.efi

- 1st partition 20 GB FAT32 Set Active used for Boot Manager and Grub4dos Boot files
- 2nd partition NTFS used for VHD + PE WIM System files

## How to Inject Win10 VHD System to Fix Computer

In case of computer troubles it is often desired to have a quick fix available without disturbing existing configuration. We can decide to Inject from USB in 10 minutes a 50 GB VHD with New Windows 10 x64 System for local account. Windows 10 in VHD has the advantage that the VHD can be copied to any location. Windows 10 is Universal and will adjust automatically the drivers needed for the hardware in use.

- Prepare Portable SSD Bootable from USB with PE WIM and VHD file as described in this document [Win10\\_Install PDF](#)
- Disconnect Internet LAN Ethernet cable
- Boot from USB - after beep use F8 menu - Select in Boot Manager Menu Win10XPE WIM file located on Portable SSD
- Copy 50 GB VHD with New System for local account and located on USB Portable SSD to your internal SSD Drive C:
- [UEFI MULTI](#) is used to Add VHD in Boot Manager Menu for booting from internal SSD
- [BOOTICE](#) use tab BCD and Z:\efi\microsoft\boot\BCD Or Z:\Boot\BCD in Prof Mode to Set as Default the Added VHD
- For existing System Drive C: use Malware Removal Tool like [McAfee Stinger](#)
- Restore Registry use [Registry Backup Portable](#) - Copy folders from RegBackup\MY-PC\datetime\C to Drive C:
- Reboot from internal SSD by selecting in Boot Manager menu the Injected VHD with New Windows 10 x64 System
- On Data partition Create 5x empty folder for Documents, Pictures, Downloads, Music and Videos  
My Computer - R-mouse on icon > Properties > tab Location > Move ... Select folder to change the User Data location
- Switch to your Microsoft Account via Config > Accounts and Reboot
- Restore Backup of User Data earlier created with [SyncBack Free](#) on external USB and kept safely offline
- Connect Internet LAN Ethernet cable

Alternatively you can use:

## How to Fix Booting of Windows 10 using bcdboot

Use [bcdboot](#) to Fix on the hidden FAT32 drive the EFI\Microsoft\Boot\BCD entry Or Boot\BCD entry

- Boot from USB - after beep use F8 menu - In Win10XPE use R-mouse menu to **Open Admin Command Window**
- Use [bcdboot](#) to Fix the hidden FAT32 drive mounted by [WinNTSetup](#) x64 as Drive Z:  
**bcdboot C:\Windows /s Z: /f ALL**

## How to Re-Install Windows 10

If you want to Re-Install Windows 10 x64 while completely disturbing existing configuration then

- Boot with Win10XPE from USB - after beep use F8 menu - In Win10XPE then
- Backup to external USB drive your User Data from C:\Users\YourName
- In [WinNTSetup](#) x64 use as Windows Installation file your **Capture Wim** file Or use Win10x64 ISO file from [TechBench](#)
- Select as Installation drive your Attached VHD mounted as Drive Y: Or your internal SSD drive C: and Use NTFS Format
- Select **Setup** and **Legacy** Boot Menu Style and OK to Install Win10x64 in VHD or partition of internal SSD and Reboot

## How to Backup your Computer

### A. System Backup

- Switch off Defender - [WinNTSetup](#) - R-mouse menu - Local Windows Inst. - Capture Wim to make Backup WIM file - Time = 5 min  
The Captured WIM file of your System can be used for fast Re-Install of Win10 including all Programs and Settings
- [Registry Backup Portable](#) can make a Backup in folder C:\RegBackup of the Windows Registry useful for System Restore - Time = 5 sec
- [MBR Backup](#) can make Backup of Partition Table and Bootsectors of all Local Harddisks Fixed + Removable - Time = 10 sec  
Use TinyHexer to study and Restore Bootsectors - Hopefully Never Needed

### B. Data Backup

- [SyncBack Free](#) - Make Backup of User Data on external USB and kept safely Offline - Time = initially few hours - update in 10 min
- [Backup using File History](#) - available in Windows 10 - [More Info](#) - Time = initially few hours - autoupdate running in the background
- [Backup your Data in OneDrive](#) in the Cloud - Backup kept safely on Remote Location - Time = initially few hours - autoupdate



## How to make USB Drive booting with Linux ISO files in MBR BIOS mode and in UEFI Secure mode

In [USB FORMAT](#) and [UEFI MULTI](#) select Mint UEFI Or Super UEFI as Grub2 Manager - Install of Grub2 in MBR optionally for MBR BIOS mode - Super UEFI and MBR BIOS Grub2 options require **addon-glim-agFM** and needed to add BIOS mode Grub2 using grub\core.img and i386-pc - Use R-mouse 7-zip menu to **Extract here** will Add the content of addon to existing USB\_FORMAT or UEFI\_MULTI folder- [More Info](#)

### A. Linux Mint UEFI Manager - Addon is Not needed - Only for some Linux ISO files Renamed in folder **images**

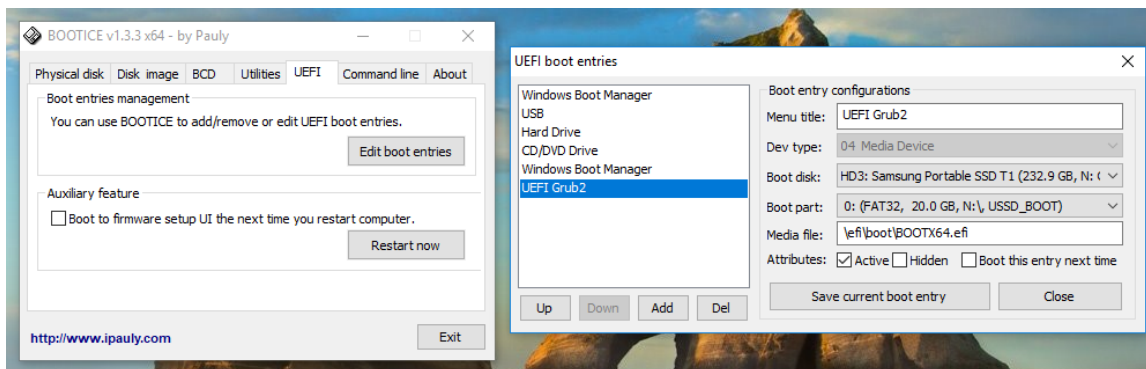
Download ISO: [Linux Mint Cinnamon](#) - [Knoppix Runtime Live CD](#) - [Ubuntu Desktop](#) - [Porteus x86\\_64](#) PassWord=toor - [Kali Linux 64-bit Live](#)  
Rename as linuxmint.iso - runtime-livecd.iso - knoppix.iso - ubuntu.iso - Porteus.iso - kali-linux.iso in folder **images**  
UEFI Secure - Grub2 Menu from \Boot\grub\grub.cfg and \Boot\grub\grub\_Linux.cfg - Linux Mint bootx64.efi and grubx64.efi of 15-05-2018  
BIOS mode - Grub4dos Menu from \menu.lst and menu\_Linux.lst

### B. Super UEFI Grub2 Manager - use **addon-glim-agFM** with [Super-UEFIinSecureBoot-Disk\\_v3](#) and [a1ive Grub2 Boot Manager](#)

Copy Your Linux ISO to folder **\iso\YourLinux** on FAT32 USB Boot drive U-BOOT- support for a lot of Linux ISO files in (glim) menu  
UEFI Secure - Grub2 Menu from \grub\grub.cfg and x86\_64-efi folder - [GRUB2 Live ISO Multiboot](#) (glim) menu and \grub\glim\main.cfg  
BIOS mode - MBR Or Grub4dos core.img > Grub2 Menu from grub\grub.cfg and i386-pc folder - [GRUB2 Live ISO Multiboot](#) in \grub\glim  
[a1ive Grub2 File Manager](#) from agFM Addon can be used in UEFI Secure Grub2 and BIOS Grub4dos Menu to select a lot of Linux ISO files  
After booting in UEFI Secure mode from USB then use the MokManager to Add ENROLL\_THIS\_KEY\_IN\_MOKMANAGER.cer to the firmware  
[More info](#) on UEFI Secure booting - [Super-UEFIinSecureBoot-Disk\\_v3.zip](#) Release Download and Extracted twice (zip and img) with 7z

In case UEFI Grub2 is not available as Boot option in your F8 [HotKey Boot Menu](#) then you need to use [BOOTICE](#) 1.3.3.2 to Add UEFI entry  
Unneeded for USB-Stick, but UEFI Grub2 boot entry is easily lost in case of Portable SSD

Select as UEFI Boot entry on USB the Linux Mint Grub2 file **\EFI\Boot\BOOTx64.EFI**



### Linux with Persistence - Keep the changes in writable file with ext3 filesystem

- Disable Windows Defender
- On Make\_Ext-E.zip use R-mouse 7-zip menu to Extract here using password=**bootwimb** gives folder Make\_Ext
- Use Make\_Ext.exe to make writable file with ext3 filesystem and size 500 MB located in subfolder of folder images

Linux Distro - images subfolder - File name - Volume Name

Linux Mint	- linuxmint	- writable	- writable
Ubuntu Desktop	- ubuntu	- writable	- writable
Porteus x86_64	- porteus	- data.img	- writable

AIO Creator can make the **persistence** file for folder images\kali-linux - file must contain persistence.conf file with text: /union  
Kali persistence See <https://www.kali.org/docs/usb/kali-linux-live-usb-persistence/>

### How to Boot from USB with AIO Boot - [AIO Boot](#) - [AIO Info](#) - More Info [Win10 Inst Eng.pdf](#)

- Download [AIOBoot-v0.9.9.10.7z](#) - Unpack and Copy content of folder AIOBoot-v0.9.9.10 to USB FAT32 and overwrite existing UEFI Boot files
- On USB run **AIOCreator.exe** - Select Integration Linux OS and your Linux ISO - [Linux Mint](#) - [Knoppix Live](#) - [Ubuntu](#) - [Kali Linux 64-bit Live](#)
- [UEFI MULTI](#) Super Grub2 keeps AIO UEFI files and Add a1ive Grub2 File Manager to AIO\grubfm and Add Boot entry \AIO\grub\grub2win