

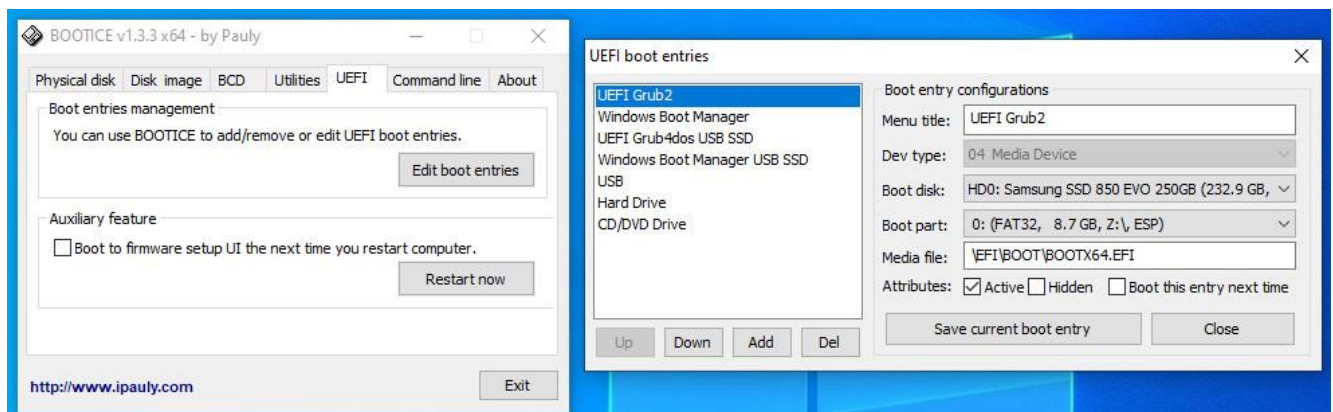
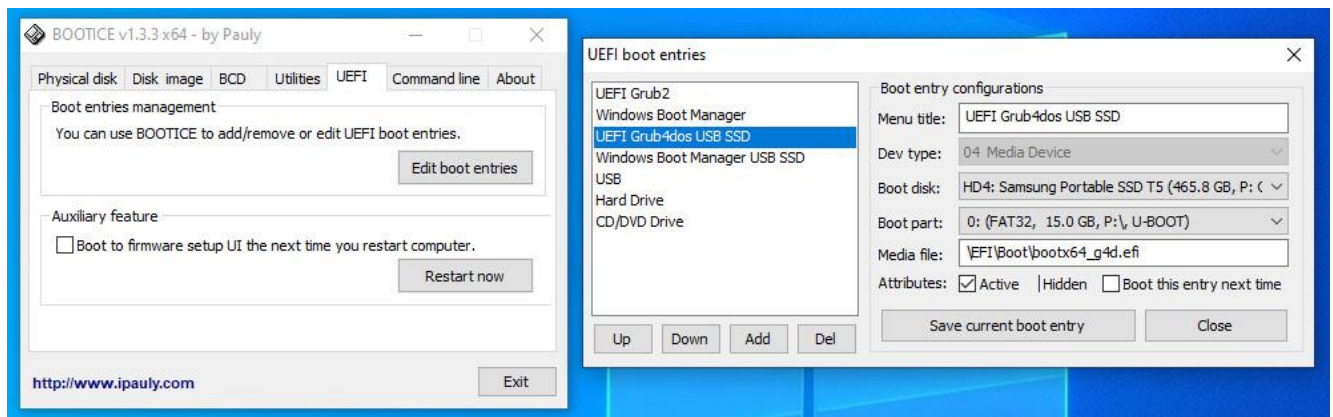
How to Boot Mini 10x64 VHD with UEFI Grub2 and with UEFI Grub4dos from RAMDISK using signed SVBus driver

December 26, 2021

Preferred is to use Win10x64 or Win11x64 as Normal Operating System - Allows Easy Mount / UnMount of VHD by mouseclick

- AV Software and [Defender](#) must be **Disabled** to prevent Attacks on SVBus Driver - Or in Defender Make Exception for svbusx64.sys Driver
- Otherwise use Win10XPE as Normal working OS so that there is no problem with Defender attacking SVBus driver
- In [WinNTSetup](#) > Local Windows Installations > Drivers > **Export Drivers** folder of your Fresh Installed Win10_21H2_x64 - See page 2

1. [WinNTSetup](#) - **Fresh** Install in 25 GB Fixed VHD located on internal SSD / Harddisk using Win10x64 ISO from [TechBench](#) - use page 2
 - Select Boot drive (usually EFI drive Z:) and VHD is mounted as Drive Y: - Unattended Install - for Local Account - select to Add Drivers folder
2. After Reboot with Normal Win10x64 OS then Mount VHD with double-click - VHD has Win 10/11 x64 earlier Installed by WinNTSetup
3. use [Win Reduce Trusted](#) on Offline Windows in VHD - Reduce in 1 minute - Mini 10x64 VHD UsedSize < 2 GB - UnMount VHD by Eject
4. Reboot VHD from Win Boot Manager - Requires **F8** on VHD entry to Disable driver signature enforcement - Tweak and Test Mini-10x64
 - Copy Win_reduce\Add_to_USB_Y folder with tagfile **Drive.y** to your Drive for Portable Apps e.g. USB System Drive - See page 3
 - **Set Drive-Y** Icon Run as Admin searches for Drive.y tagfile - Drive Y with Portable Apps - Set Standard Apps for Photo Viewer and VLC Player
5. Reboot with Normal Win10x64 OS - [Defender](#) Disabled - Use [VHD_WIMBOOT](#) to Select VHD on System Drive
 - Capture WimBoot LZX WIM and Apply Compact LZX in 2.5 GB Fixed VHD with MBR 2 Partitions gives Mini-10x64.vhd file
6. [USB FORMAT](#) - make portable USB SSD with MBR and 2 partitions (FAT32 + NTFS) booting with Windows Boot Manager menu
7. Copy Mini-10x64.vhd file to NTFS System Drive of USB - Instead of Step 6-8 you can Apply in Step 5 straight to Mini-10x64.vhd on exist USB
8. [UEFI MULTI](#) plus UEFI_MULTI-addon-glim-agFM - Use R-mouse 7-zip menu to Extract here to Add Super UEFI Secure Grub2
 - Select FAT32 Boot Drive and NTFS System Drive of [SAMSUNG Portable SSD T5 500 GB](#)
 - Select **Super UEFI** Secure Grub2 as Boot Manager and Select the Mini 10x64 2.5 GB VHD copied to NTFS System Drive of USB
 - use GO to Add VHD for booting with [UEFI Grub2](#) and [UEFI Grub4dos](#) and Windows Boot Manager (MBR Boot and UEFI) and MBR Grub4dos
9. [BOOTICE](#) - UEFI Edit boot entries to Add Super UEFI Secure Grub2 entry Or UEFI Grub4dos entry (needs to disable UEFI Secure)
10. Boot from USB - after beep use F8 [HotKey Boot Menu](#) - Select UEFI Secure Grub2 - Load [EfiGuard](#) and then UEFI Grub4dos x64 entry
 - In UEFI Grub4dos Menu Select to Boot Mini-10x64.vhd from **RAMDISK** in UEFI mode using SVBus driver - Or chainload other menu's
 - SVBus driver needs Load [EfiGuard](#) - Disable Windows Driver Signature Enforcement - Or on Boot Entry press F8 for Advanced and Select DSE



Step 1 is use WinNTSetup to do Fresh Install of Win10x64 in VHD located on Internal System Drive C:

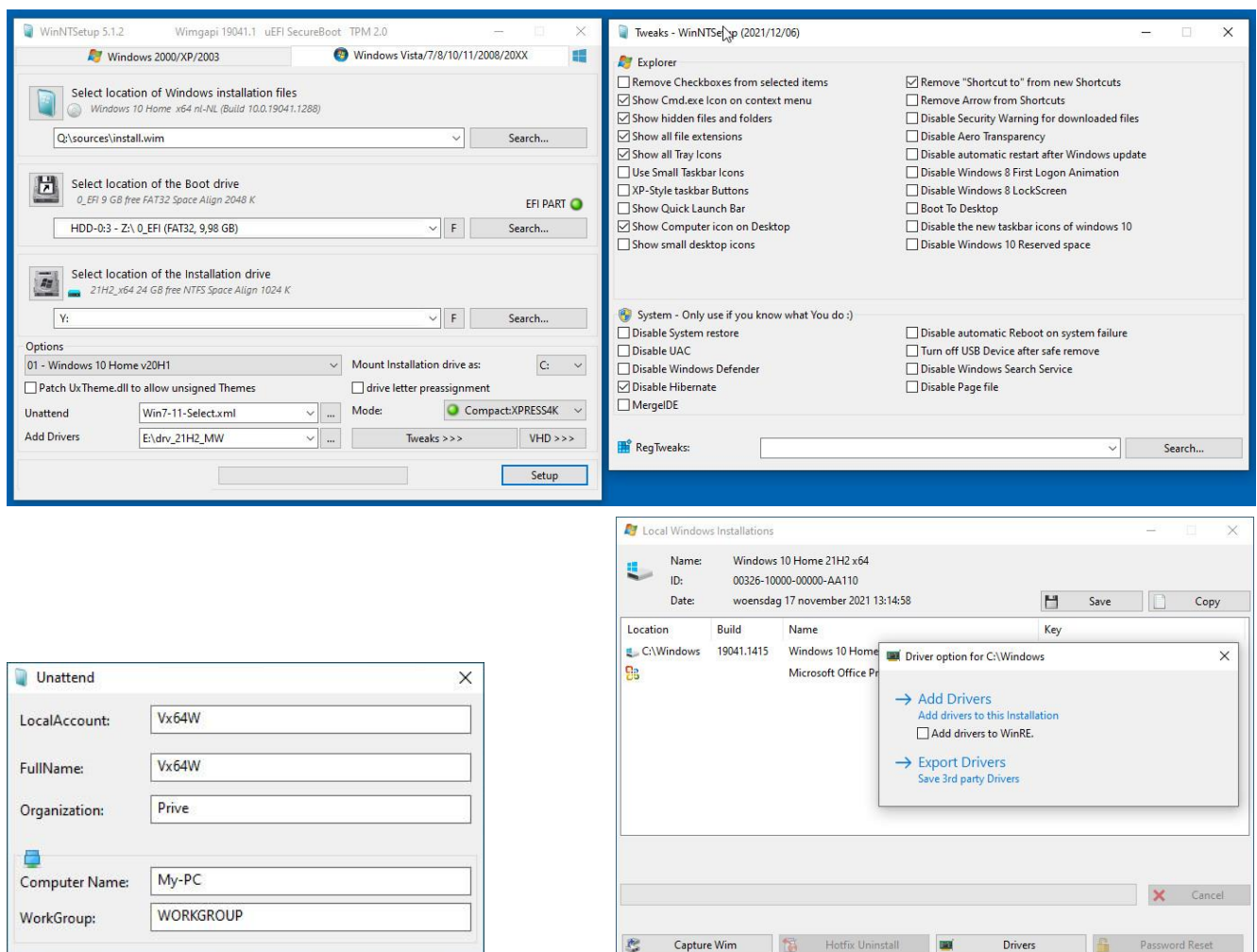
Download [Win10 21H2 English x64.iso](#) Or [Win11 English x64.iso](#) Or your language from [TechBench](#) Or using [Windows-ISO-Downloader](#) Tool
Download [WinNTSetup](#) and run WinNTSetup_x64.exe for the first time to collect some Tools - [BOOTICE](#) v1.3.3.2 is included already

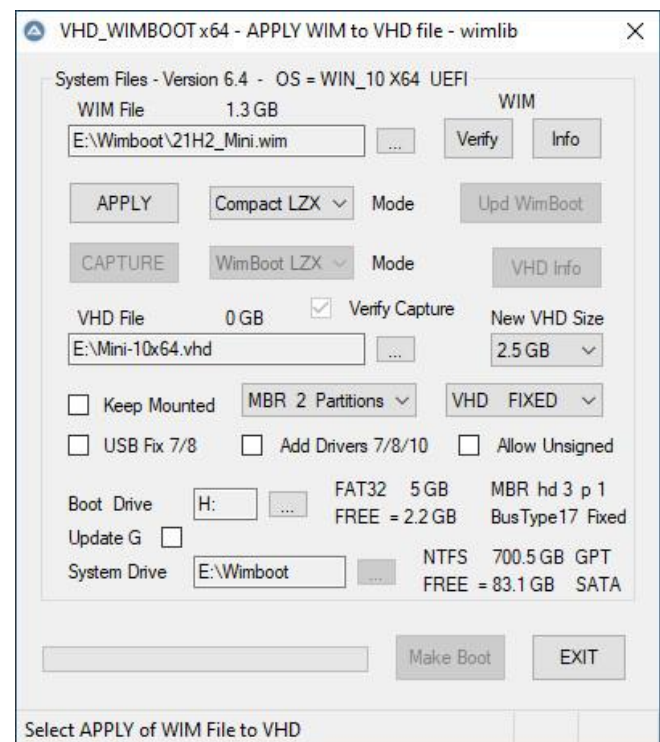
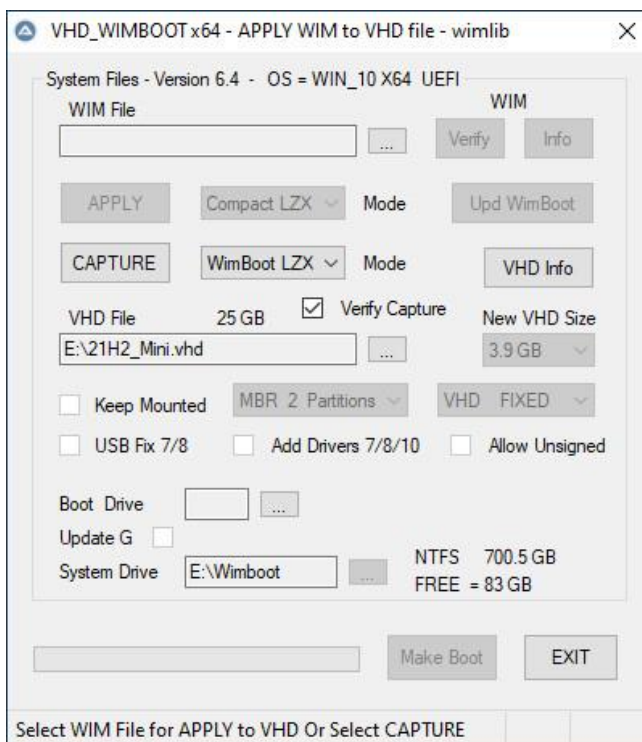
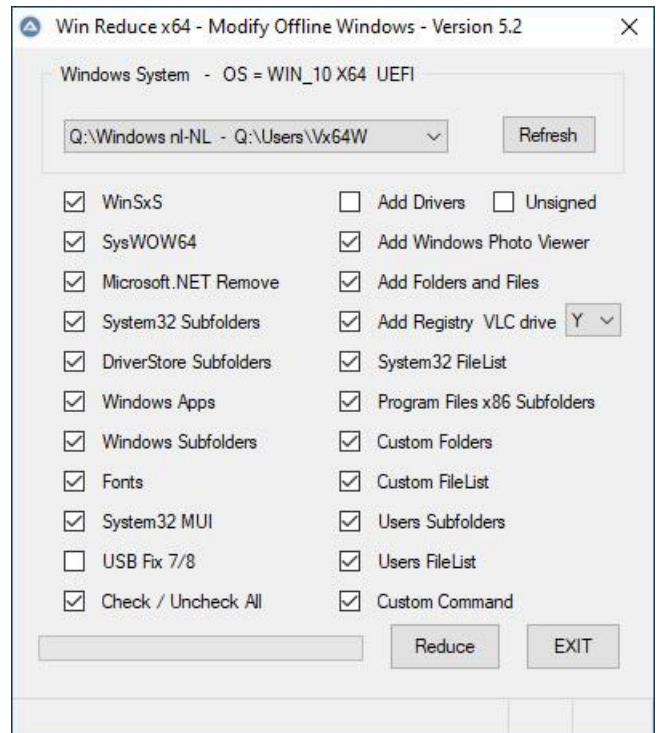
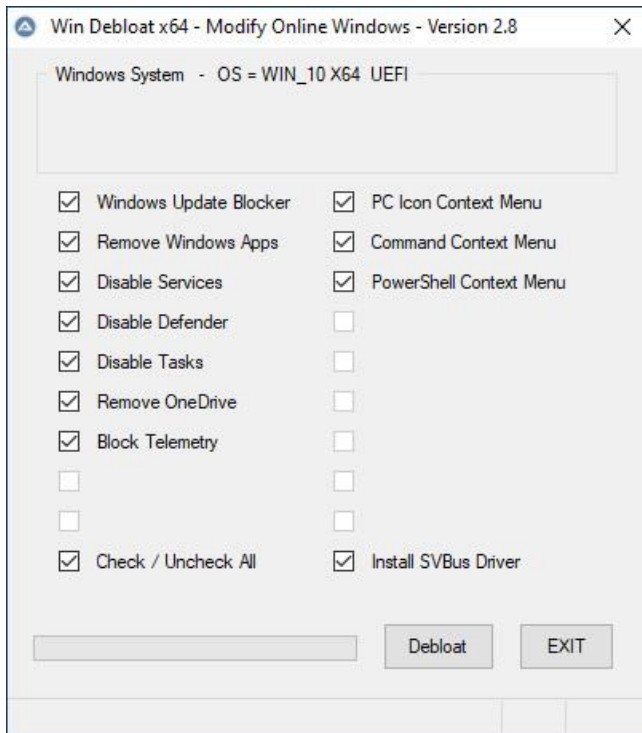
Create Win10x64.vhd using WinNTSetup x64 for Install of Win10 x64 in 25 GB Fixed VHD

1. Disconnect Internet LAN Ethernet cable - Start up with Windows 10 x64 Or 10XPE and Start WinNTSetup x64 - Load [WinNTSetup Inst-10.ini](#)
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 25 GB VHD located on internal SSD harddisk - VHD is mounted as Drive Y:
4. Choose Win10 **Edition** - Select desired **Tweaks** - Disable Hibernate - use Compact:XPRESS4K **Mode** to reduce the Used Size of Windows
5. Select Unattended Install - Select unattend\Win7-10-Select.xml - Local Account **Vx64W** - Select to Add Drivers from earlier Export folder
6. Select **Setup** and select **Legacy** Boot Menu Style and OK to Install Win10x64 in VHD - choose OK
7. Reboot and Install Win10x64 in VHD with Offline Local Account Vx64W
8. Only for Mini-10x64 - Run [Win Debloat x64.exe](#) - Debloat Online Windows and Install SVBus Driver needed for booting from RAMDISK
 - Install SVBus Driver as Admin - use R-mouse on instx64.exe in SVBus-signed_2 folder
 - Reboot VHD first from Win Boot Manager - make Install of SVBus driver effective - Requires **F8** Disable driver signature enforcement
9. Always use [Windows Update Blocker](#) to Disable Updates and Protect to prevent the growth of Used Size in VHD
10. Only Connect to LAN or WLAN if needed to Install missing Drivers - Not needed if WinNTSetup > Local Inst > Drivers Export folder was used
11. Open Admin Command Window and use **wmic UserAccount where Name='Vx64W' set PasswordExpires=False** - [More Info](#)
12. Install [7-zip](#) using file 7z1900-x64.exe - In 7-zip File Manager menu Tools > Options - select file associations, such as zip 7z rar wim
13. Only for Mini-10x64 - Install Microsoft Basic Display Adapter - Device Manager > Update Video driver from List on Computer
14. Disable LAN Network Adapter and Disable Connect Automatically WiFi for protection and Reboot computer
15. Start > Windows System > Configuration > System > Advanced system > Settings > Startup

Select as **Standardsystem** your normal Windows 10x64 and **Reboot** computer with your Normal Windows 10x64 OS

In Normal Win10x64 OS Disable [Defender](#) and AV Software to prevent Attacks on SVBus Driver - Continue with Step 2 on page 1





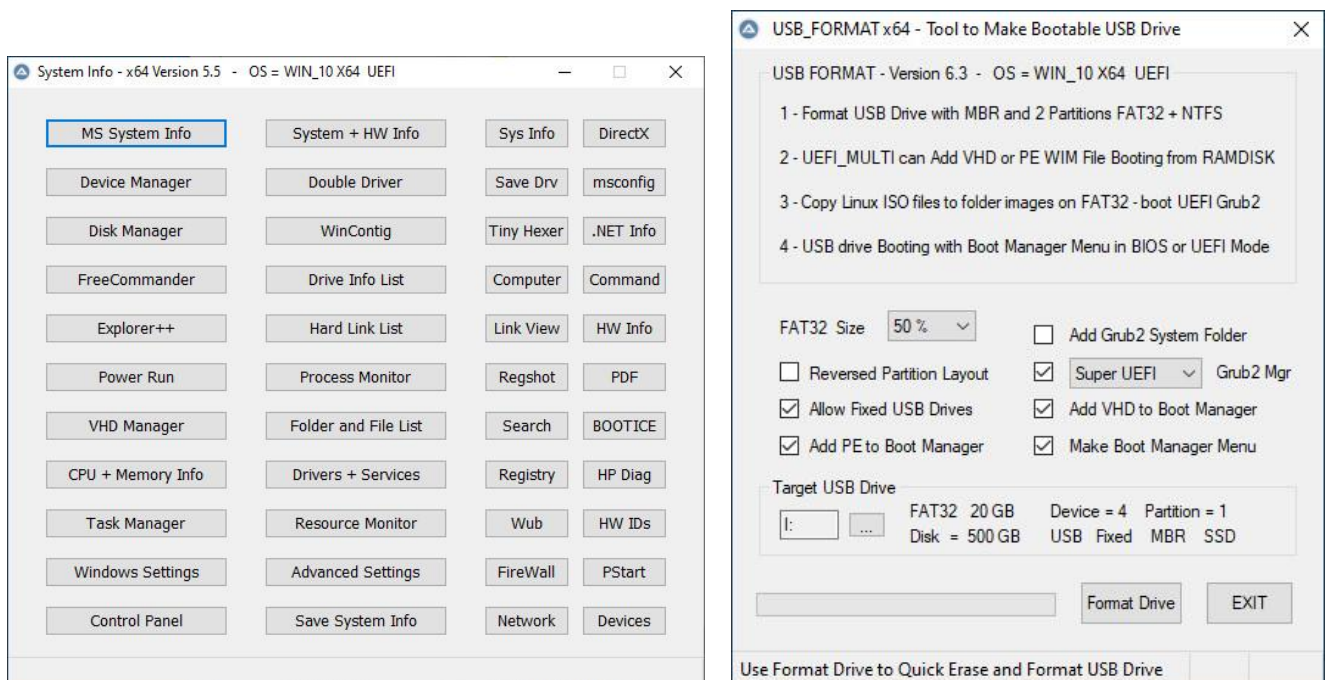
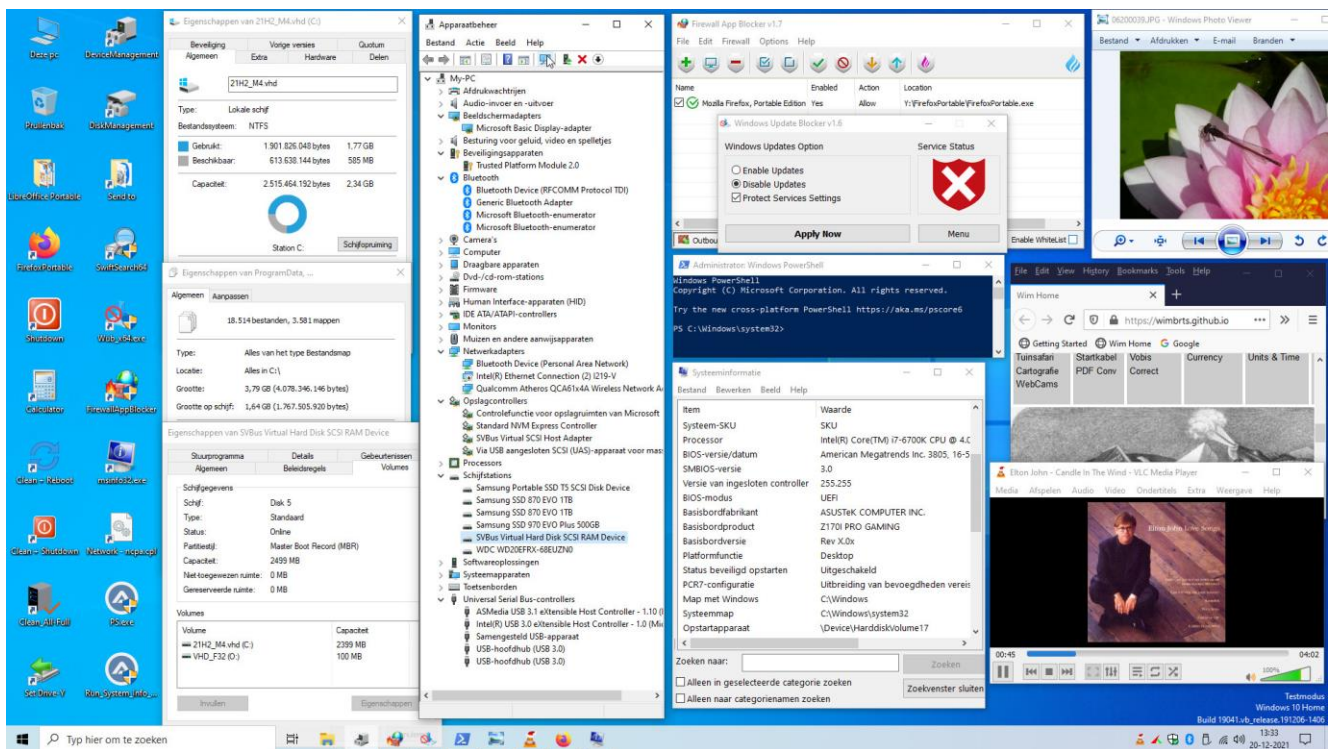
[More Info](#) - [Best Answer](#) - [VHD_WIMBOOT](#) - [UEFI MULTI](#) - [Mini 10x64 VHD](#) - [Win10XPE](#) - [WIMBOOT Topic](#) - [RAMBOOT Topic](#) - [Compact install UEFI Grub2](#) and [UEFI Grub4dos](#) and [signed SVBus driver](#) and [VHD_WIMBOOT](#) and [USB FORMAT](#) and [UEFI MULTI](#) - [Mini 10x64 VHD](#) [Win_Debloat](#) - [PowerShell scripts](#) - [PowerRun](#) - [Windows Update Blocker](#) - [Win_Reduce](#) - [Firewall App Blocker](#) - [Defender Control](#) - [EfiGuard](#)

How to Make and Use Drive Y with Portable Apps

- Copy Win_reduce\Add_to_USB_Y folder with tagfile **Drive.y** to your Drive for Portable Apps e.g. USB System Drive
- **VLC** folder - Add [Portable VLC x64](#) vlc-3.0.12-win64.7z Unpack in **VLC** folder
- **FirefoxPortable** folder - [Firefox Portable](#) - Download and Run [LibreOffice](#) - More [Portable Freeware](#)
- **Programs** folder - [notepad++](#) - [WinContig](#) - [wimlib-clc](#)
- **Set Drive-Y** Icon Run as Admin on Mini-10x64 Desktop searches for Drive.y tagfile and makes this Drive Y: with Portable Apps

Manual describes making Mini-10x64.vhd - [Win10 21H2 English x64.iso](#) Or [Win11 English x64.iso](#) Or your language can be used as well

Mini 10x64 in VHD with UsedSize = 1.77 GB - Booting in UEFI Secure mode from RAMDISK using SVBus driver



Downloads: [WinNTSetup](#) ISO [TechBench](#) and [GetWaikTools](#) and [Firewall App Blocker](#) and [Win_Reduce Trusted](#) - [wimlib 64-bit](#)

Downloads: from [wimb GitHub](#) - [USB FORMAT](#) - [UEFI MULTI](#) - [System Info](#) - [VHD WIMBOOT](#) - [WOF Compress](#) - [MBR Backup](#) - [wimlib-clc](#)

More Info: [VHD WIMBOOT](#) and [UEFI MULTI](#) [Win10XPE](#) - [WIMBOOT Topic](#) - [RAMBOOT Topic](#) - [Compact install](#) - [WinSxS_Reduce Trusted](#)

More Info: [WinCmd](#) and [bcdedit](#) and [bcdboot](#) and [bootsect](#) and [DiskPart](#) en [DISM](#) and [WinDeploy](#) and [DevCon](#) and [VHDX](#) and [Native Boot](#)

How to Boot VHD in WimBoot mode from USB Portable SSD as FILEDISK and with Grub4dos from RAMDISK using SVBus driver

Download: [VHD_WIMBOOT](#) and [WinNTSetup](#) and [USB_FORMAT](#) and [wimb GitHub](#) - Info: [VHD_WIMBOOT](#) and [Win10XPE](#) and [UEFI_MULTI](#)

1. [USB_FORMAT](#) Tool - Option: Make Bootable USB Drive with MBR and 2 Partitions - active FAT32 Boot Drive + NTFS System Drive
2. [WinNTSetup](#) do Fresh Install Compact 4K mode of Win10x64 in 25 GB VHD located on Internal System Drive C: - use page 2 of this Manual
3. [Win10XPE](#) Or other Win10x64 and Switch off Defender - Start [VHD_WIMBOOT](#) - select System Drive and the 25 GB VHD file
4. [VHD_WIMBOOT](#) - **Capture** with WimBoot mode and Copy the Captured WIM File to **Wimboot** folder on NTFS System Drive of Portable SSD
5. [VHD_WIMBOOT](#) - **FILEDISK** - **Apply** WIM with Compact LZX mode in Fixed VHD 25 GB located on NTFS System Drive of USB SSD
6. [VHD_WIMBOOT](#) - **RAMDISK** - **Apply** WIM with WimBoot mode in Expandable VHD 3.9 GB located on NTFS System Drive of USB SSD
7. Internet Off (disconnect LAN cable) - Boot MBR BIOS mode from USB use F8 [HotKey Menu](#) - Boot Manager Select 3.9 GB VHD as FILEDISK
8. Install of [SVBus](#) driver - use R-mouse menu to Run as admin file **instx64.exe** of SVBus bin folder - Driver for booting from RAMDISK
9. Reboot in MBR BIOS mode from USB and select in Grub4dos Menu your 3.9 GB VHD on USB for booting from RAMDISK
10. Reboot in UEFI Or MBR BIOS mode from USB and select in Boot Manager Menu 25 GB VHD on USB for booting as FILEDISK
11. Always use [Windows Update Blocker](#) to Disable Updates and Protect to prevent the growth of Used Size in VHD
12. and use [Firewall App Blocker](#) with Allow Internet Browser and Netsh Commands – Allow Local Subnet (Printer)

13. Option - Boot with [10XPE](#) Or other Win10x64 - use [Win Reduce Trusted](#) in 30 seconds to Reduce Offline Windows e.g. use Mounted VHD
14. [VHD_WIMBOOT](#) - Capture WimBoot LZX mode and Apply Compact LZX mode in 3.9 GB VHD to boot Mini10x64 as FILEDISK or as RAMDISK

The Button **WIM Info** will give useful info about your WIM file - wimboot compatible WIM File contains only Index 1

The Button **Upd WimBOOT** can be used after copy of VHD + WIM set to other NTFS drive to make the WimBoot set bootable again

The Button **Make Boot** and **Apply** will make the boot entries on Target Boot Drive - FAT32 partition of USB Portable SSD as described below

- VHD boot entry in Boot Manager Menu for booting VHD as **FILEDISK** - in BIOS mode and in UEFI mode

- VHD boot entry in **Grub4dos** Menu for booting VHD from **RAMDISK** - in BIOS mode only - Make Boot needs installed [SVBus](#) driver

- Booting from USB with Portable SSD needs after BIOS beep F8 [HotKey Menu](#) to arrive at BIOS Boot Menu and then select your boot device

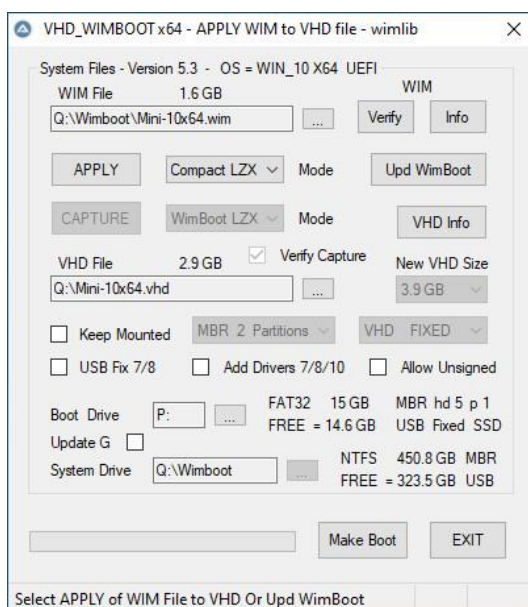
After Install of SVBus driver then UEFI booting requires in Boot Manager Menu to press F8 where you can allow unsigned drivers

When file **grldr.mbr** is Not found at Boot Drive, then **Make Boot** and **APPLY** will make Grub4dos entry in Boot Manager Menu on Boot Drive

WimBoot LZX Compression can be used in CAPTURE to make WIM files of smaller size - **Switch Defender Off** for Faster Capture

An **Expandable** VHD will load much faster into RAMDISK, since only the space occupied by files of 600 MB needs to be loaded

It Expands then to the maximum **VHD Size** of 3.9 GB and gives the RAMDISK of that size a lot of FREE Space



In [VHD_WIMBOOT](#) the First Selection is the **System Drive**.

System Drive is NTFS partition for VHD + WIM Operating System files.

VHD Capture WimBoot will make WIM file in Wimboot folder on System Drive.

WIM Apply WimBoot Mode will use WIM file to Install Windows on VHD file.

Boot Drive is FAT32 partition for Boot Manager and Grub4dos Boot files.

On Internal Harddisk the System Drive is Drive C: and the Boot drive is Hidden.

Run [VHD_WIMBOOT_x64](#) so that Hidden Boot partition is mounted as drive Z:

On USB Portable SSD the Boot and System Drive are made as described below.

[Win10XPE](#) environment is advised for faster Capture of WIM file from VHD.

[UEFI_MULTI](#) is used to Add Win10XPE as Boot Option to your Internal SSD Or USB.

[wimlib](#) is used for Capture and Apply of wimboot compatible WIM files.

VHD Capture involves replacing Windows\System32\WimBootCompress.ini

in Captured WIM file by the WimBootCompress.ini file supplied in makebt folder.

[PrepopulateList] is used to Apply as real files in VHD instead of as WOF pointers.

Entries **\Boot\BCD** and **\bootmgr** in the [PrepopulateList] section are needed to allow Grub4dos booting VHD from RAMDISK and so to avoid Error 13.

Extra Options: **APPLY** WIM File in Normal or [WimBoot Mode](#) or [Compact Mode](#) with XPRESS4K 8K 16K or LZX Compression

Extra Options: **CAPTURE** WIM File in Normal Or WimBoot Mode with XPRESS4K or LZX Compression - See [wimlib](#)

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

- Use [USB_FORMAT](#) with [SAMSUNG Portable SSD T5 500 GB](#) Or USB-Stick gives [UEFI/MBR Partitioning](#) with active FAT32 + NTFS Partition

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

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

VHD_WIMBOOT - Apply and Capture of WIM Files for OS in VHD - WimBoot Mode Background Info and Details

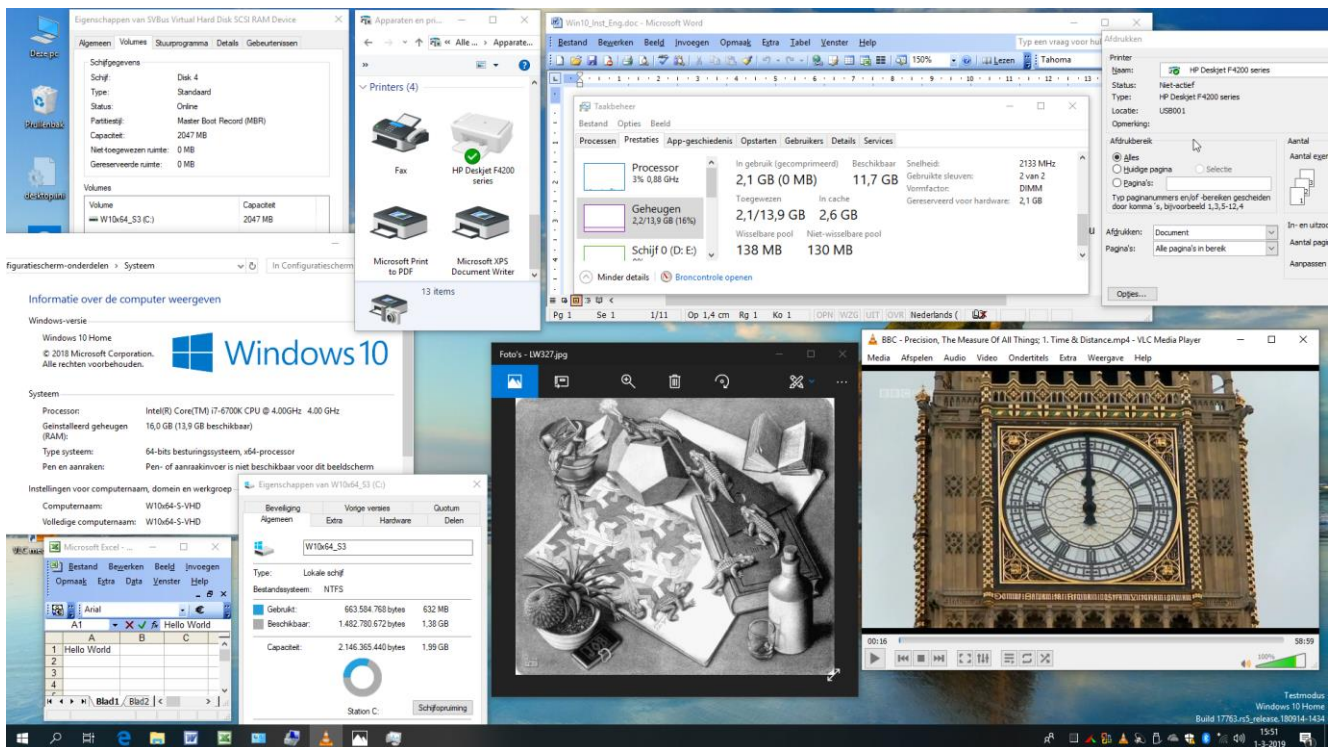
APPLY of WIM File in [wimboot mode](#) to VHD gives Operating System with only variable and boot essential files total about 1 GB in VHD. The VHD contains also pointers to the non variable files in the WIM archive, so that it seems that the complete OS is present in the VHD. The VHD content can be generated in 2 minutes from the WIM archive of about 9 GB, so that a backup of the system is always available. The VHD + WIM set can be copied to any drive so that we have a portable Operating System (needs to use supplied WimBootCompress.ini). The WIM file cannot be changed by viruses or other malware so that the system is reliable and if needed it is easy to generate new VHD. The VHD can boot as 25 GB FILEDISK from Portable SSD to allow changes, but also booting always Fresh from 3.9 GB RAMDISK is possible. Grub4dos booting from RAMDISK requires VHD file, since VHDX files are Not compatible with Grub4dos.

WIMBOOT and Compact needs wof.sys driver of Win 10 Or for 7/8 the wofadk.sys driver as installed by [WinNTSetup](#) mode Compact:NONE Boot Manager files of Windows 7 cannot be used for booting VHD as WIMBOOT and VHDX files cannot be used in Windows PE Or 7 OS. [WinNTSetup](#) Menu > Local Windows Installations allows to Capture WIM of a running Windows System using WIMLIB Engine. WimBootCompress.ini file cannot be modified in this case, which is needed for APPLY as Portable OS Or for Grub4dos booting from RAMDISK. [Microsoft WimGAPI tool cannot be used as Engine](#), since it will make mistakes in uncompressing drivers needed for Portable Operating System. VHD WIMBOOT has support for Office and Printer and any program can be installed, which is all not possible in case of WinPE In case of VHD WIMBOOT on each machine it takes extra boottime and space to adjust the drivers for that machine The VHD WIMBOOT solution is Portable, but not as flexible as Win10XPE, where boottime is not dependant on machine hardware File **makebt\WimBootCompress-W10X.ini** gives minimal used space for VHD, but Portable OS requires the supplied WimBootCompress.ini In WimBoot Capture file WimBootCompress.ini is copied to System32 and in Normal Mode WimBootCompress-Normal.ini is used but Not copied

Add 50 GB Fixed VHD as personalised UEFI VHD WIMBOOT Operating System to your Internal SSD

- In Windows 10 x64 Or 10XPE run VHD_WIMBOOT_x64 so that Hidden EFI partition is in VHD_WIMBOOT Selectable as Boot drive Z:
- Or use R-mouse to open **admin cmd** window and mount the EFI partition using **mountvol Z: /s**
- You can use R-mouse menu to **run as administrator** Explorer-x64.exe of [Explorer++](#) for file management on EFI partition
- Use VHD_WIMBOOT to **APPLY** Captured WIM File to New Created VHD Fixed Size 50 GB on NTFS System Drive of Internal SSD
- In case of UEFI VHD WIMBOOT it is better that SVBus driver is NOT installed, since otherwise F8 menu is needed to allow unsigned drivers
- Boot 50 GB VHD as Filedisk from UEFI Boot Manager Menu and Switch to Microsoft Account for personalisation
- Make Links for Documents, Downloads and Pictures to folders elsewhere on Harddisk partition

Final Result - Windows 10 x64 in VHD booting from RAMDISK by using Grub4dos menu and SVBus driver



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: [MSFN](#)

Download Win10_21H2_English_x64.iso Or your Language from [TechBench](#) Or using [Windows-ISO-Downloader](#) Tool

Mount ISO with double-click and Copy the Content of the ISO to Folder **Win10_21H2_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)

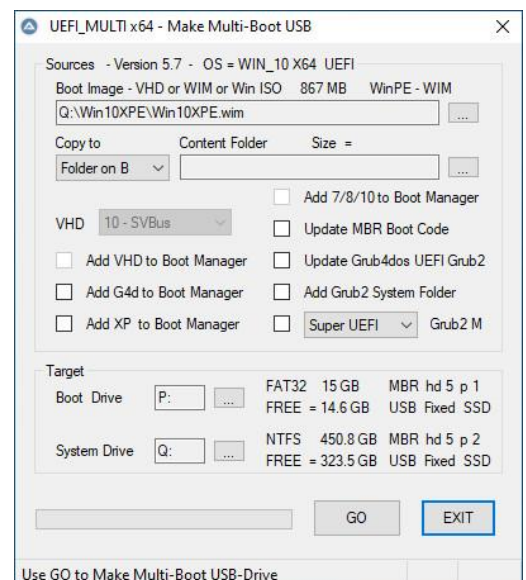
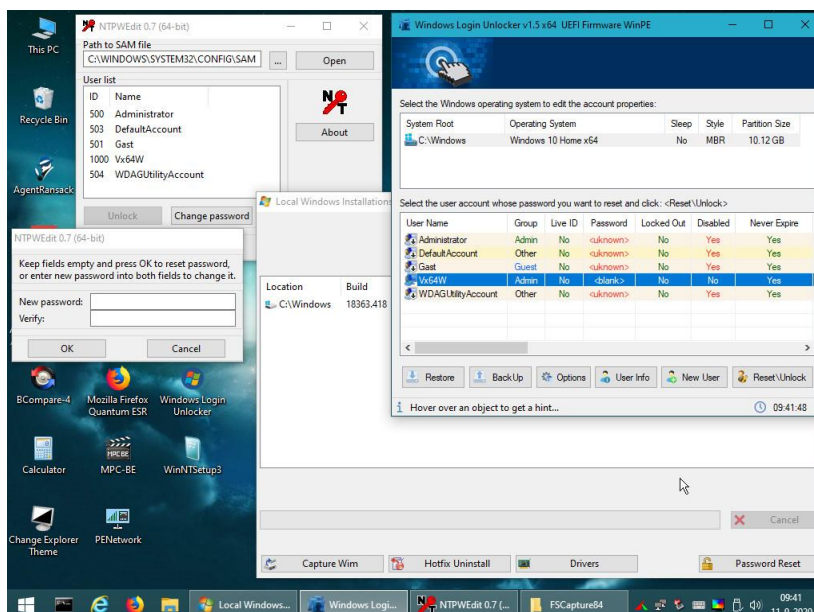
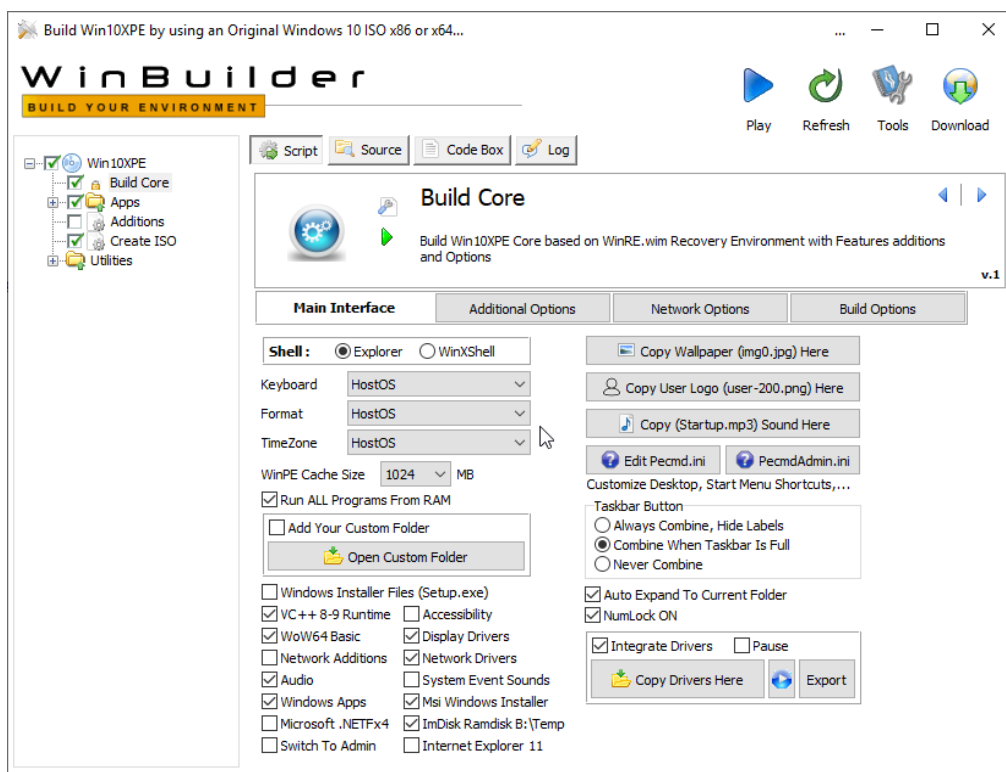
In WinBuilder Select the Folder Win10_21H2_English_x64 on your Harddisk and Start building with **Play** button

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

More Info: in Forums [MSFN](#) and [Reboot.pro](#) and [UEFI MULTI](#)

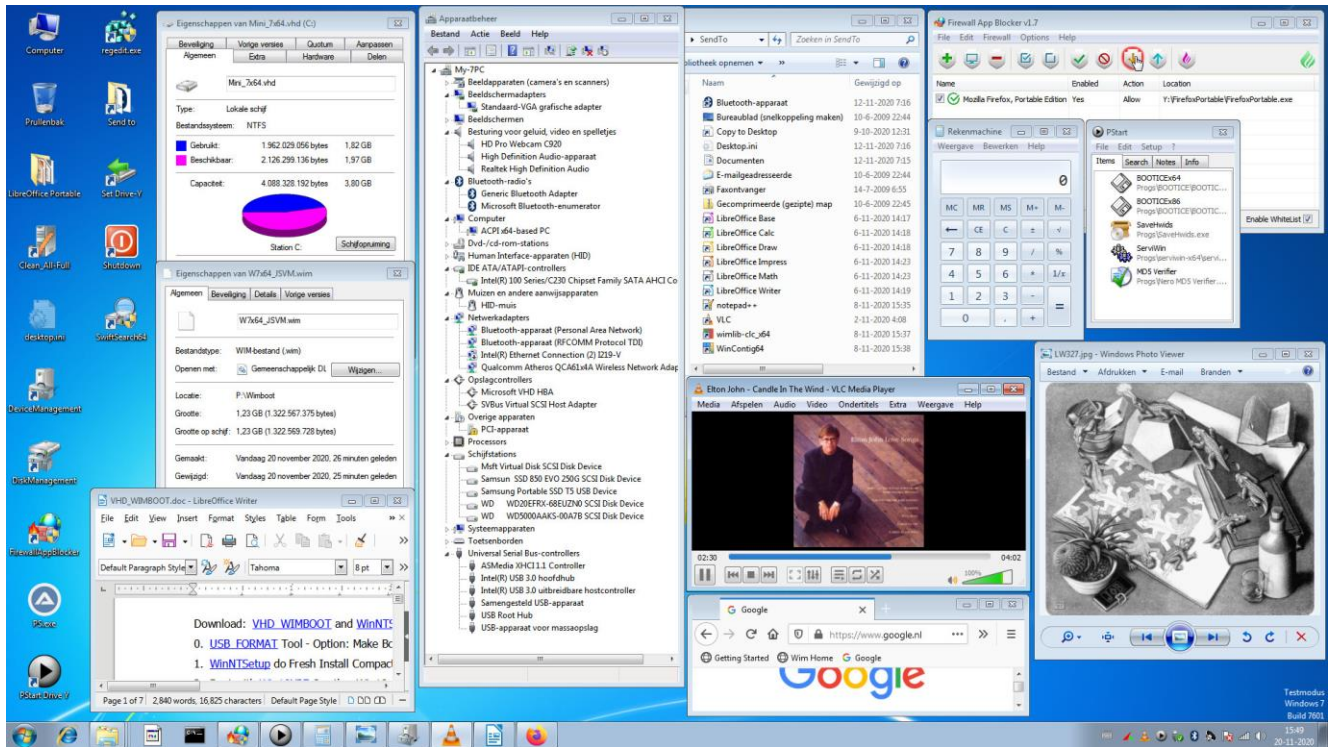
Downloads: from [wimb GitHub](#) - [USB FORMAT](#) - [UEFI MULTI](#) - [System Info](#) - [VHD WIMBOOT](#) - [WOF Compress](#) - [MBR Backup](#)



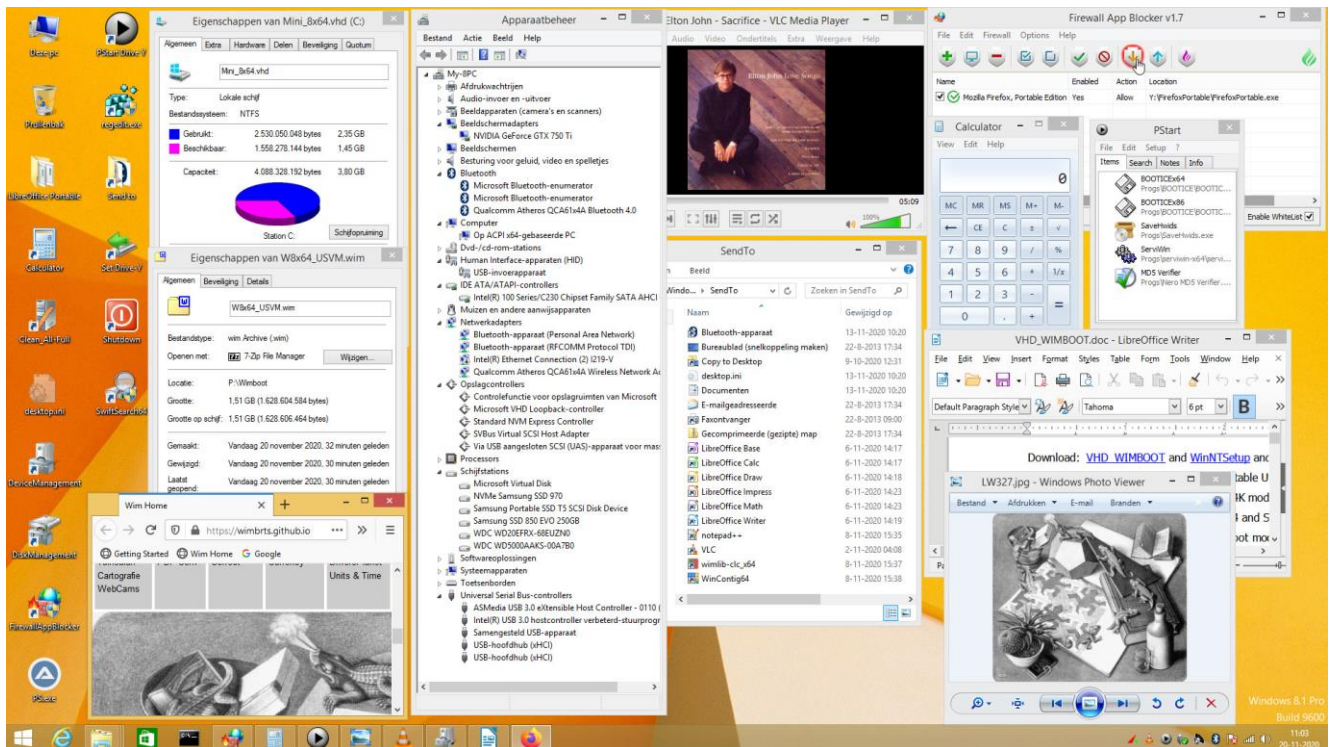
How to make Compact and Mini 7/8 VHD

Win 7/8 requires to install wofadk.sys driver as done by [WinNTSetup](#) using mode Compact:NONE - Win7 use [Enable native USB Boot](#)
Boot - USB Fix 7/8 in makebt\registry_tweaks gives USB Controller Service setting Start=0 and BootFlags=4 and Group=Boot Bus Extender
WinNTSetup - Add missing Windows 7 USB Controller Services in Tools\Win7USBBoot.ini - [Integrate USB 3.0 Drivers](#) - [More Info](#) - [Best Answer](#)

Mini 7x64 in VHD with UsedSize = 1.82 GB



Mini 8x64 in VHD with UsedSize = 2.35 GB



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 can be copied and is Universal and will adjust automatically the drivers needed for the hardware in use.

- Disconnect Internet LAN Ethernet cable
- Boot from USB - after beep use F8 [HotKey Boot 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

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 [HotKey Boot 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: Use **bcdboot C:\Windows /s Z: /f ALL**

How to Re-Install Windows 10 - completely disturbing existing configuration

- Download and Run [MediaCreationTool](#) and Make USB-stick 32 GB for Installing Win10x64 and Win10x86 (choose option both)
 - Boot USB - F8 [HotKey Boot Menu](#) - Install 10x64 - Shift F10 Command for Repair - notepad - File Open - All files - [WinNTSetup](#) as Admin
- Info: [WinCmd](#) and [bcdedit](#) and [bcdboot](#) and [bootsect](#) and [DiskPart](#) and [DISM](#) and [WinDeploy](#) and [DevCon](#) and [EFI partition](#) and [GUID](#) and [MBR](#)
- Or Boot with Win10XPE from USB - after beep use F8 [HotKey Boot 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

- Cleanup - Remove content of Update Windows\servicing\LCU and Windows\SoftwareDistribution\Download - Empty Trash
- Cleanup - Config > System > Storage Cleanup Windows Update will keep only latest folders in WinSxS and System32\DriverStore
- Switch off Defender - [WinNTSetup](#) - Menu Local Windows Inst. - Capture WIM - LZX WimLib to make Backup WIM file - Time = 10 min
- WinNTSetup - Local Windows Inst. - Drivers to make Backup of Non Microsoft Drivers useful for Re-Install of Windows 10
- [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 - [produkey-x64](#)
- [VHD WIMBOOT](#) - Capture LZX and Apply LZX mode of Captured WIM file for fast Re-Install of Win10 including all Programs and Settings

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

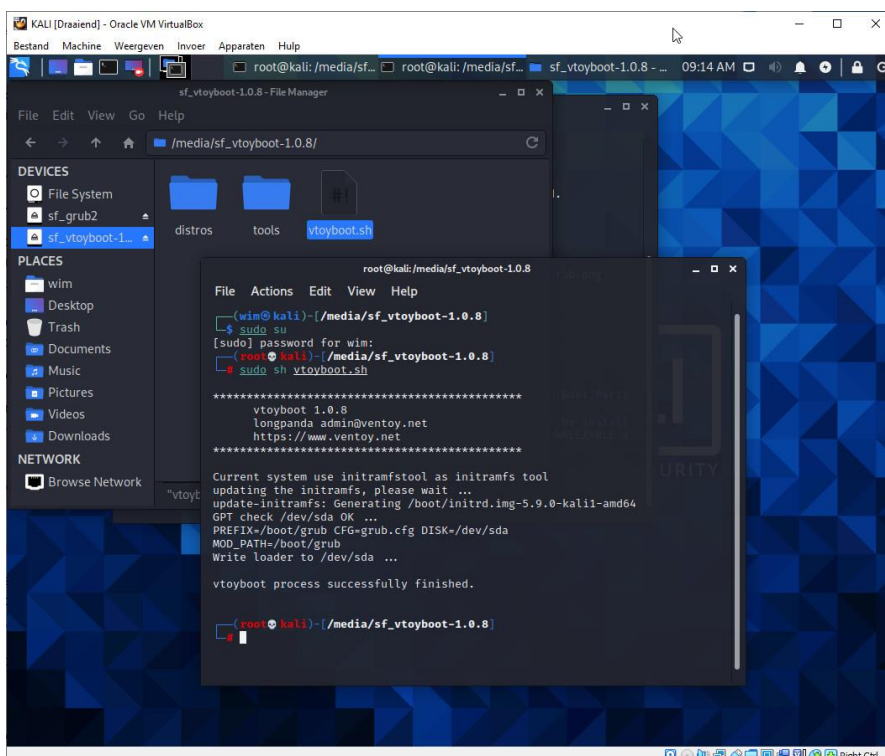
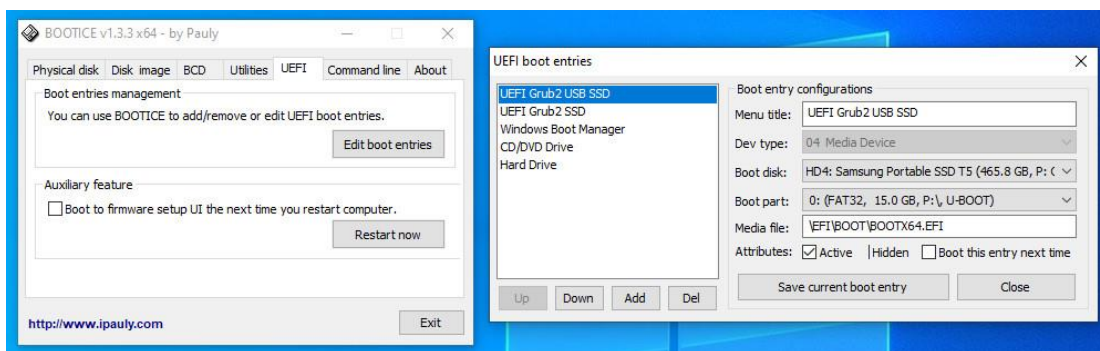
Info: [PStart](#) and [notepad++](#) and [FastStone Capture](#) and [ImgBurn](#) and [WebBrowserPassView](#) and [WirelessKeyView](#) and [Microsoft Docs](#)

Info: [CCleaner](#) and [Defraggler](#) and [Speccy](#) and [Recuva](#) and [CPU-Z](#) and [FreeCommander](#) and [HDTune](#) and [imdiskinst](#) and [WinContig](#)

Info: [DiskPart](#) and [UEFI/GPT partitions](#) and [BIOS/MBR partitions](#) and [Techware Uninfector](#) and [Gotcha Data Backup](#) and [produkey-x64](#)

How to make Linux VHD for Multi-Boot with Windows using Grub2 and vdiskchain

1. Download and Install [VirtualBox](#) - use [Ventoy description for vtoyboot plugin](#) - Download latest [vtoyboot](#)
2. Download [Ubuntu Desktop](#) ubuntu-20.04-desktop-amd64.iso and [KALI Linux 64-bit Installer](#) kali-linux-2020.4-installer-amd64.iso
3. In VirtualBox Create Fixed **KALI.vdi** 16 GB located in VirtualBox\KALI folder on SSD
4. In VirtualBox Settings > System - Select EFI checkbox and Disk Select ISO file kali-linux-2020.4-installer-amd64.iso
5. In VirtualBox Start Installation and Reboot with KALI
6. In Windows double-click on kali-linux-2020.4-installer-amd64.iso e.g. as Drive R:
7. In VirtualBox KALI on taskbar select Shared folder R:\pool\main\g\grub2 autoconnect e.g. as drive G:
8. In VirtualBox KALI File System select sf_grub2 - R-mouse on grub-pc-bin_2.04-8kali1_amd64.deb - Open Terminal here
9. In Terminal type **sudo su** and give password to be SuperUser - Next Step Install of grub-pc-bin Package not needed for Ubuntu
10. In Terminal type **sudo dpkg -i grub-pc-bin_2.04-8kali1_amd64.deb** to Install Package for booting vhd/vdi in Legacy BIOS mode
11. In VirtualBox KALI on taskbar select as Shared folder the in Windows Downloaded folder vtoyboot autoconnect e.g. as drive H:
12. In VirtualBox KALI File System select sf_vtoyboot - R-mouse on vtoyboot.sh - Open Terminal here
13. In Terminal type **sudo su** and give password to be SuperUser
14. In Terminal type **sudo sh vtoyboot.sh** to install vtoyboot - close Terminal and File System windows
15. In VirtualBox Restart KALI - Shut down KALI - Close VirtualBox
16. In Windows Copy file VirtualBox\KALI\KALI.vdi to NTFS drive of USB SSD - Rename as **KALI.vdi.vtoy**
17. Download [vdiskchain](#) is already integrated in UEFI_MAN\grub folder of [USB FORMAT](#) - [UEFI MULTI](#) - Select **Super UEFI** Grub2 Manager
18. File grub\grub.cfg and menu.lst contain preconfigured [menu entries](#) for Ubuntu.vhd.vtoy and Ubuntu.vdi.vtoy and KALI.vdi.vtoy
19. [BOOTICE](#) - tab UEFI Edit boot entries to Add Super UEFI Grub2 USB entry for file \EFI\Boot\BOOTX64.EFI on USB
20. Boot from USB - after beep use F8 [HotKey Boot Menu](#) - Select UEFI Grub2 USB entry and Select KALI.vdi.vtoy - /grub/vdiskchain



[UEFI Secure Grub2 booting](#) in \grub\grub.cfg
Enabled by using commands of sbpolicy.mod

fucksb -i
fucksb -n

Or use [vdiskchain option](#) as
vdiskchain vdisk=/KALI.vdi.vtoy secureboot=off

[UEFI MULTI](#) - Select **Super UEFI** Grub2 Mgr
for support of vdiskchain and UEFI Grub4dos
which are Not supported by Mint UEFI

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

1. Use [USB_FORMAT](#) - Make FAT32 USB Drive (Max = 32 GB) booting with Microsoft Boot Manager Menu and with [Grub4dos](#) in BIOS mode
2. In [USB_FORMAT](#) and [UEFI_MULTI](#) to select **Super UEFI** as [Grub2 Manager](#) for booting with Grub2 in UEFI Secure mode
addon-agFM is needed - Use R-mouse 7-zip menu to **Extract here** to Add the content of addon to USB_FORMAT or UEFI_MULTI folder
3. In USB folder **images** Add your Linux ISO file
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**
Folder **images** contains subfolders with 7-zip compr. files with ext3 filesystem - Expand to 500 MB writable file for [persistence](#) support
4. Boot from USB via F8 [HotKey Boot Menu](#) in BIOS mode with Grub4dos Or in UEFI Secure mode with Grub2 menu and select Linux ISO

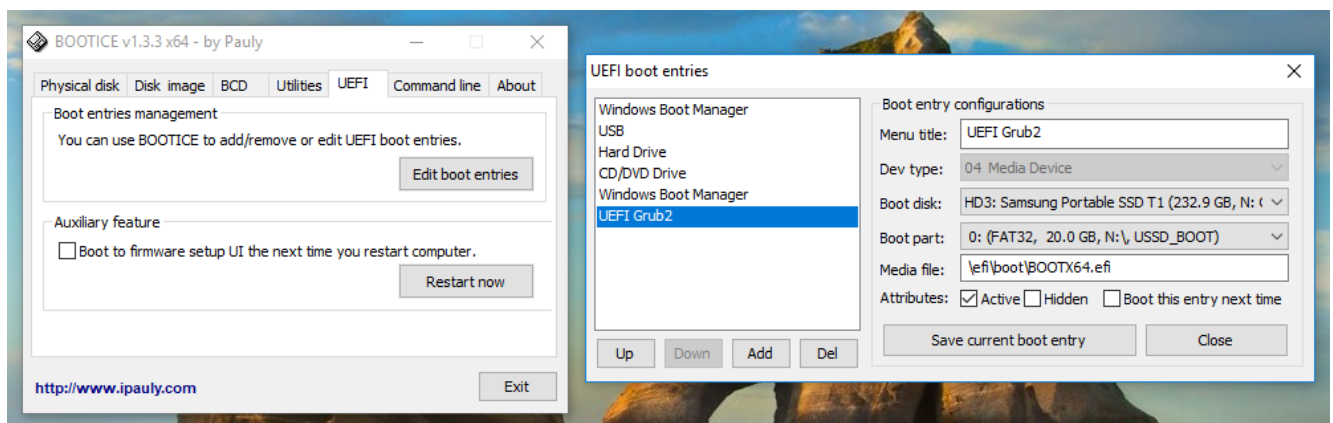
Grub4dos entries can be modified in **menu.lst** or **menu_Linux.lst** for booting in BIOS mode - menu_distro.lst for [integrated distro](#)

Grub2 entries can be modified in **grub\grub.cfg** or **grub_Linux.cfg** for booting in UEFI Secure mode - grub_distro.cfg for [integrated distro](#)

In case UEFI Grub2 is not available as Boot option in your F8 [HotKey Boot Menu](#) then you need to use [BOOTICE](#) to Add UEFI entry

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

[More info](#) on [Super-UEFIinSecureBoot-Disk v3](#) and [a1ive Grub2 File Manager](#) and [GRUB2 Live ISO Multiboot](#) for Linux in subfolder of **iso** folder



How to Boot from USB with AIO Boot - [AIO Boot](#) - [AIO Info](#)

- Download [AIOBoot-v0.9.9.18.7z](#) - Unpack and Copy content of folder AIOBoot-v0.9.9.18 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

Experts Only if you know what you are doing

A. UEFI Secure Multi-Boot Computer booting with Linux and Windows (New Computer > 2012) - use [vdiskchain](#) - See Page 10

- In Windows 10 x64 run [WinNTSetup](#) x64 so that EFI partition is mounted as drive Z:
- Or use R-mouse to open **admin cmd** window and mount the EFI partition using **mountvol Z: /s**
- Use R-mouse menu to **run as administrator** Explorer-x64.exe of [Explorer++](#)
- Rename Microsoft file **bootx64.efi** in folder Z:\EFI as file **org-bootx64.efi**
- Copy USB folders EFI\Boot and EFI\grub and root folder grub to your EFI drive Z: so that computer can boot with Grub2 in UEFI Secure mode
- File grub\grub.cfg contains preconfigured [menu entries](#) for Ubuntu.vhd.vtoy and Ubuntu.vdi.vtoy and KALI.vdi.vtoy on NTFS System Drive
- Edit if needed disk number and partition type and number in file **grub\grub.cfg** e.g. use (hd0,gpt3) or (hd1,msdos1)
- [BOOTICE](#) - tab UEFI Edit boot entries to Add **UEFI Grub2** entry for UEFI Secur Boot file \EFI\Boot\BOOTx64.EFI
- Boot and Select **UEFI Grub2** entry and in Grub2 Menu Select KALI.vdi.vtoy - /grub/vdiskchain

B. BIOS Multi-Boot Computer booting with Linux and Windows (Old Computer < 2012) - use [vdiskchain](#) - See Page 10

- Use [UEFI_MULTI](#) to Add Grub4dos to Windows Boot Manager menu for booting with (Hidden FAT32) Boot Drive
- File menu.lst contains preconfigured [menu entries](#) for Ubuntu.vhd.vtoy and Ubuntu.vdi.vtoy and KALI.vdi.vtoy on NTFS System Drive
- Edit if needed disk and partition number in file **menu.lst** and **grub\grub.cfg**
- Boot and in Windows Boot Manager Menu Select **Grub4dos** and then in Grub4dos Menu Select KALI.vdi.vtoy - /grub/vdiskchain