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

March 12, 2021

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. VHD_WIMBOOT - Capture WimBoot LZX and Apply in Compact LZX mode in Fixed VHD 10 GB - Offline Windows

3. Mount VHD with double-click and use Win_Reduce_Trusted on Offline Windows - Reduce in 1 minute - Mini 10x64 VHD UsedSize = 2 GB

- Capture WimBoot LZX WIM = 1.7 GB and Apply Compact LZX in 3.9 GB Fixed VHD with MBR 2 Partitions - More Info - Mini 10x64 VHD

4. Boot with 3.9 GB VHD as FILEDISK using Windows Boot Manager menu

- Always use the supplied Firewall App Blocker and Enable WhiteList to Allow Internet Browser only

- This is the easiest way to block unwanted internet traffic including Windows Update and prevents the growth of Used Size inside VHD

5. Install signed SVBus driver in running Windows of 3.9 GB VHD - later needed for UEFI booting from RAMDISK

- Install SVBus EVRootCA Registry Fix in runnung Windows - use SVBus-signed_2 folder

- Install SVBus Driver as Admin - use R-mouse on instx64.exe in SVBus-signed_2 folder

- Reboot VHD first as FILEDISK from Windows Boot Manager to make Install of SVBus driver effective

- Reboot with your normal Win 10x64 operating System

6. USB_FORMAT - make portable USB SSD with MBR and 2 partitions (FAT32 + NTFS) booting with Windows Boot Manager menu

7. Copy 3.9 GB VHD to NTFS drive of USB prepared with USB_FORMAT

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 3.9 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 entry Or UEFI Grub4dos entry

- Select to Boot Mini 10x64 VHD 3.9 GB from RAMDISK in UEFI mode using SVBus driver - Or chainload other menu's

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 are integrated in VHD_WIMBOOT and USB_FORMAT and UEFI_MULTI
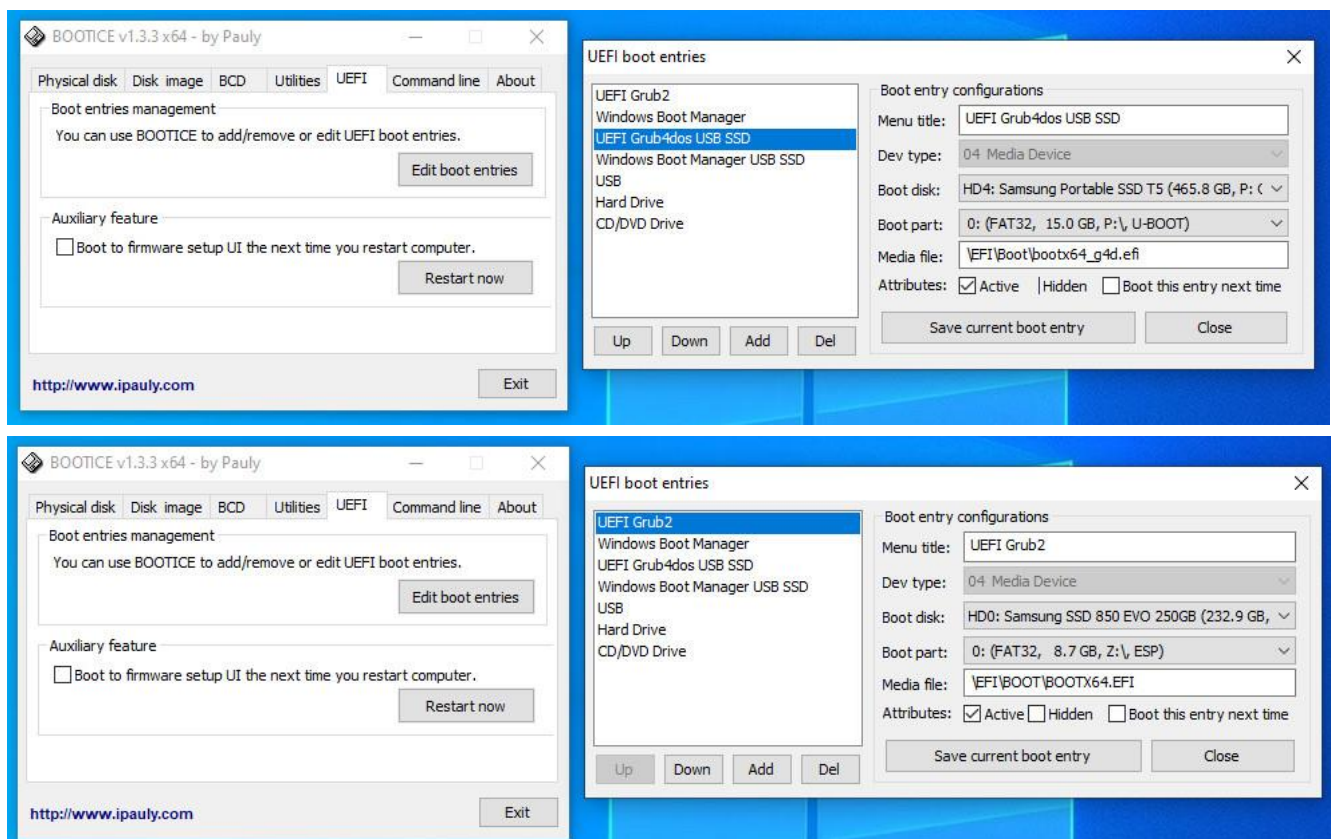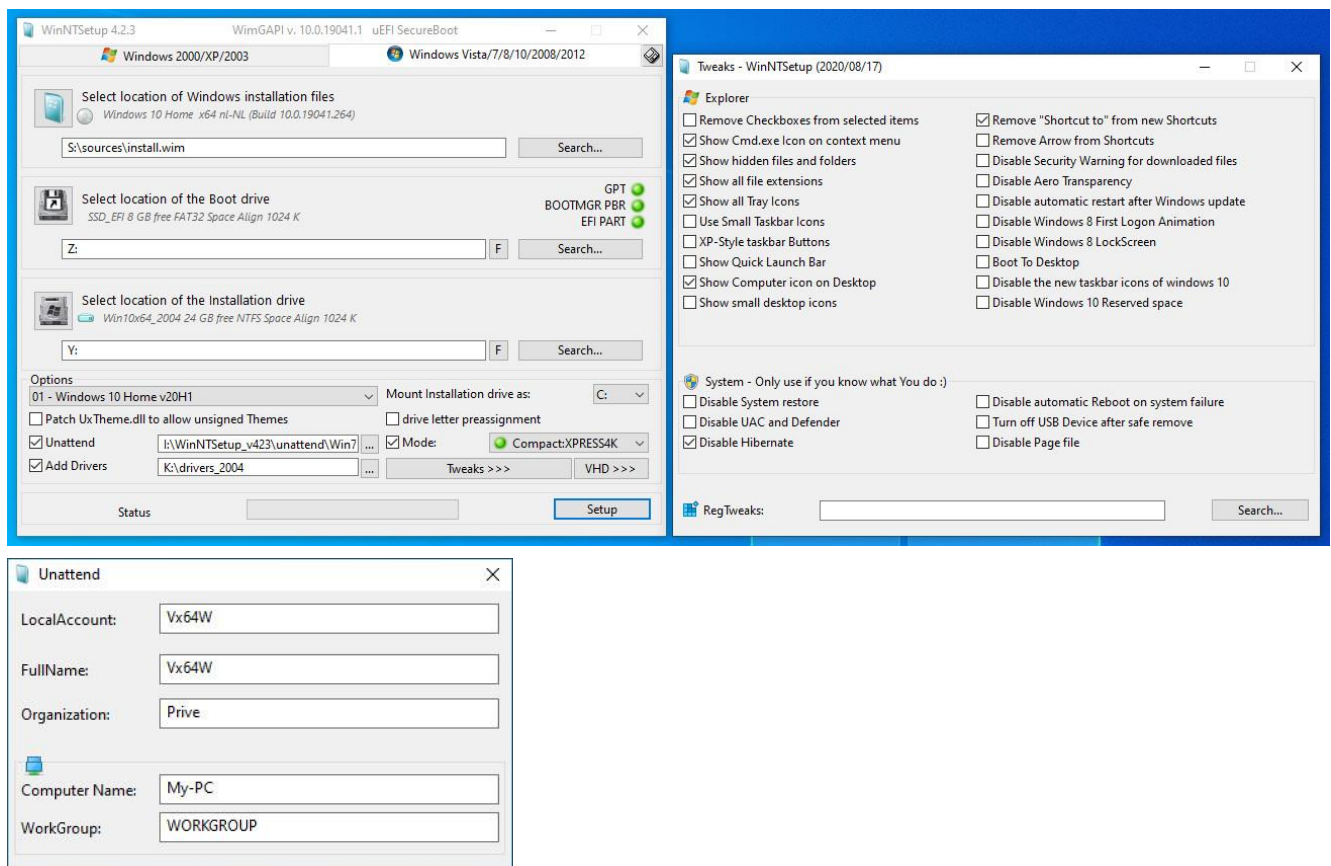
Step 1 is use WinNTSetup to do Fresh Install of Win10x64 in VHD located on Internal System Drive C:

Download Win10_20xx_English_x64.iso Or Win10 x64 Setup ISO in 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

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

6. Select **Setup** and select **Legacy** Boot Menu Style and OK to Install Win10x64 in VHD - choose OK and not Reboot

7. BOOTICEx64.exe from Upper Right Icon - BCD of current system file Z:\efi\microsoft\boot - Professional mode - BootMenuPolicy = Legacy

8. Option needed for RAMDISK SVBus driver - In BootIce Use R-mouse to create New element - AllowPrereleaseSignatures - Yes

9. Reboot and install Win10x64 in VHD with Offline Local Account - Connect to LAN or WLAN for Install of missing Drivers and Activation

10. use Firewall App Blocker and **Enable WhiteList** with Allow Internet Browser to block Windows Update and prevent the growth of Used Size

11. Install 7-zip - VLC player and Office and registry_backup_portable and Reboot

12. Open Admin Command Window and use **wmic UserAccount where Name='Vx64W' set PasswordExpires=False** - More Info

13. If not done with Tweaks - set **Hibernate Off** - in admin command window type: **powercfg -h off**

14. After 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

15. Firewall App Blocker - File > Netsh Commands - Allow Local Subnet - Connect Printer and after auto Installation Set as Default Printer

16. Disable LAN Network Adapter and Disable Connect Automatically WiFi for protection and Reboot computer

17. Start > Windows System > Configuration > System > Advanced system > Settings > Startup

　　 Select as **Standardsystem** your normal Windows 10 and **Reboot** computer

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

0. USB_FORMAT Tool - Option: Make Bootable USB Drive with MBR and 2 Partitions - active FAT32 Boot Drive + NTFS System Drive

1. 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

2. Boot with Win10XPE Or other Win10x64 and Switch off Defender - Start VHD_WIMBOOT - select System Drive and the 25 GB VHD file

3. VHD_WIMBOOT - **Capture** with WimBoot mode and Copy the Captured WIM File to **Wimboot** folder on NTFS System Drive of Portable SSD

4. VHD_WIMBOOT - FILEDISK - **Apply** WIM with Compact LZX mode in Fixed VHD 25 GB located on NTFS System Drive of USB SSD

5. VHD_WIMBOOT - RAMDISK - **Apply** WIM with WimBoot mode in Expandable VHD 3.9 GB located on NTFS System Drive of USB SSD

6. Internet Off (disconnect LAN cable) - Boot MBR BIOS mode from USB use F8 HotKey Menu - Boot Manager Select 3.9 GB VHD as FILEDISK

7. Install of SVBus driver - use R-mouse menu to Run as admin file **instx64.exe** of SVBus bin folder - Driver for booting from RAMDISK

8. Reboot in MBR BIOS mode from USB and select in Grub4dos Menu your 3.9 GB VHD on USB for booting from RAMDISK

9. Reboot in UEFI Or MBR BIOS mode from USB and select in Boot Manager Menu 25 GB VHD on USB for booting as FILEDISK

10. Always use Firewall App Blocker and **Enable WhiteList** with Allow Internet Browser and Netsh Commands – Allow Local Subnet (Printer)

   This is the easiest way to block unwanted internet traffic including Windows Update and prevents the growth of Used Size inside VHD

11. Option - Boot with 10XPE Or other Win10x64 - use Win_Reduce_Trusted in 30 seconds to Reduce Offline Windows e.g. use Mounted VHD

12. 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
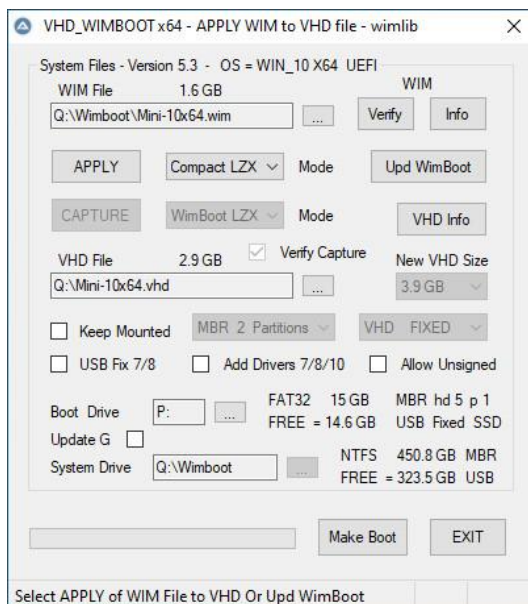
In VHD_WIMBOOT the First Selection is the **System Drive**.

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
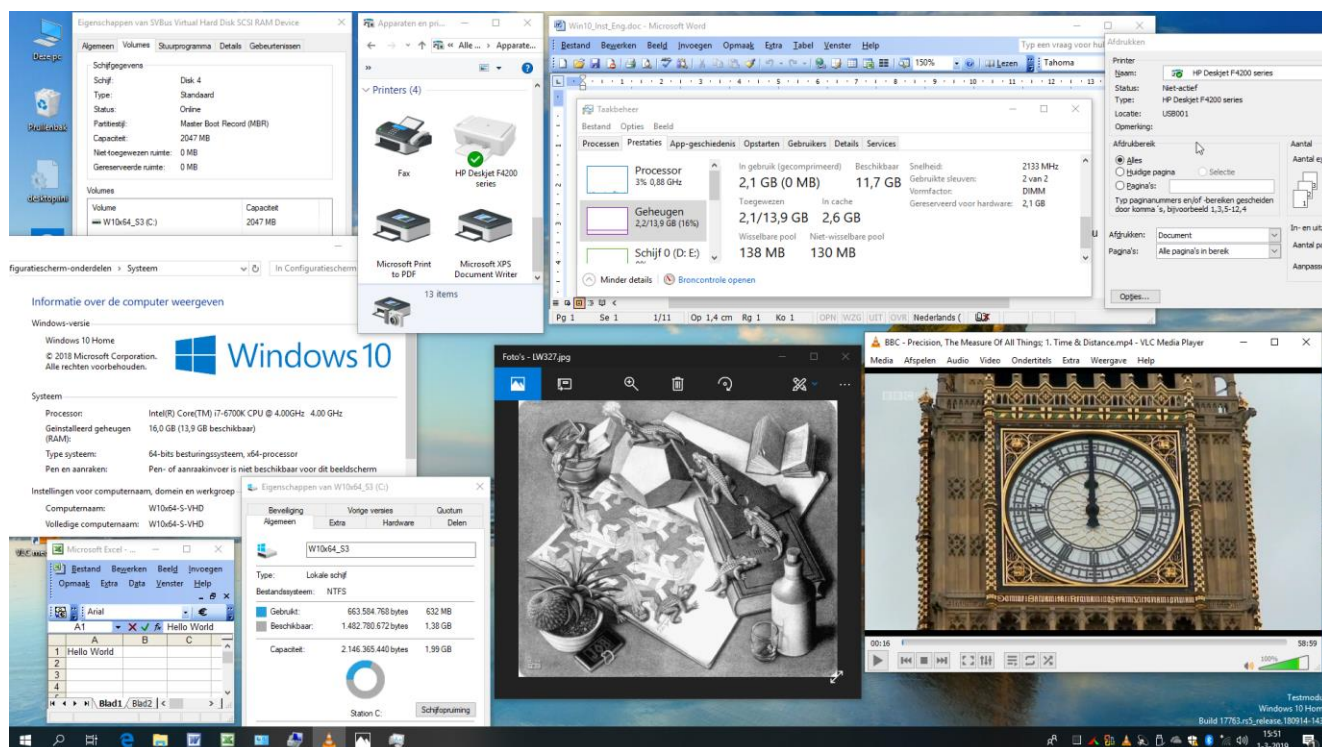
How to make Win10XPE WIM file for booting from RAMDISK

Download: Win10XPE Builder Or Win10XPE at GitHub and Unpack with 7-Zip x64 - More Info: MSFN

Download Win10_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

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
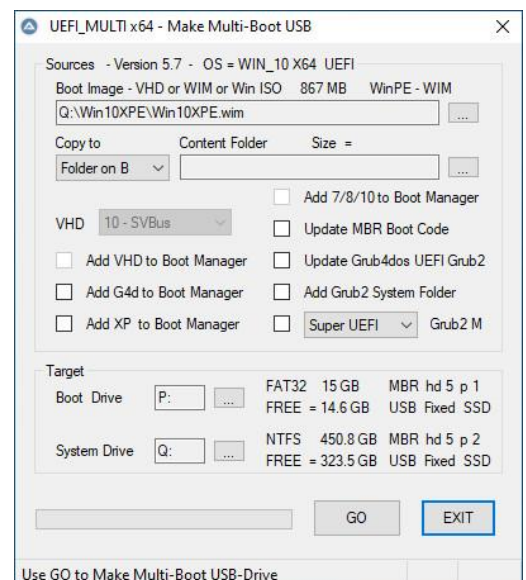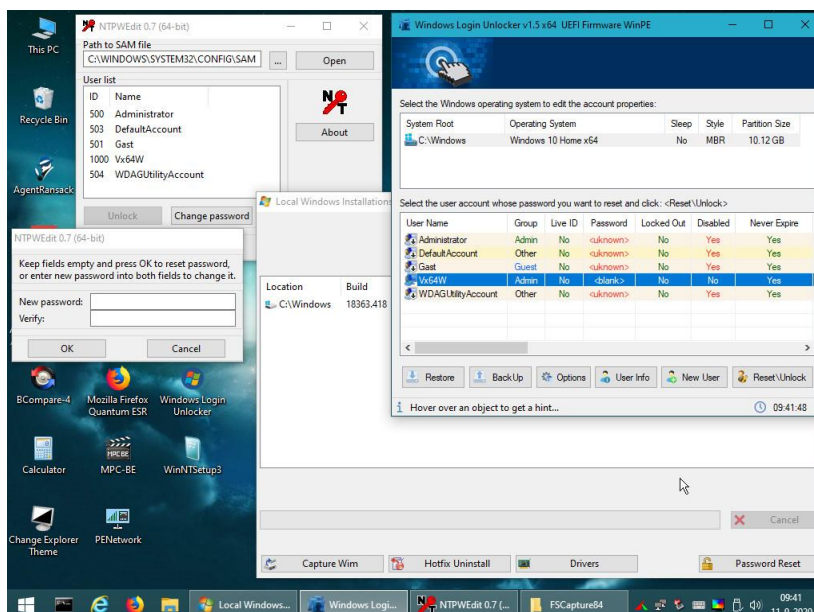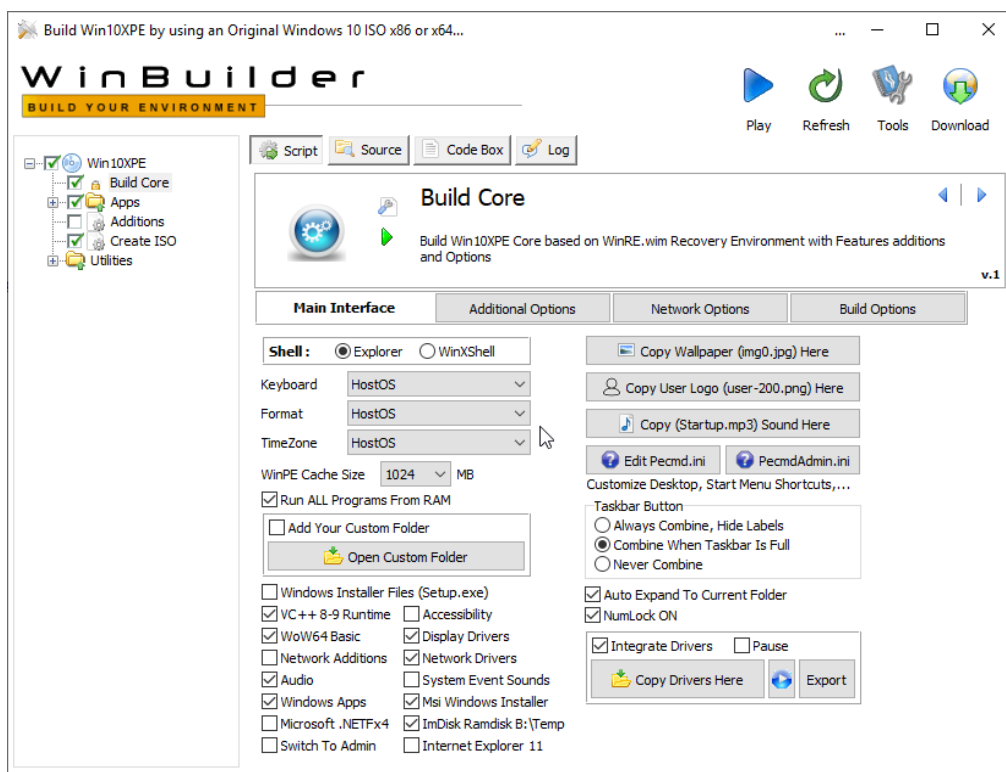
How to make Compact and Mini 7/8/10 VHD

1. WinNTSetup - Fresh Install in 25 GB Fixed VHD located on internal SSD / Harddisk using Win10x64 ISO from TechBench - use page 2

2. VHD_WIMBOOT - Capture WimBoot LZX and Apply in Compact LZX mode in Fixed VHD 10 GB - Offline Windows

3. Mount VHD with double-click and use Win_Reduce_Trusted on Offline Windows - Reduce in 1 minute - Mini 10x64 VHD UsedSize = 2 GB

- Capture WimBoot LZX WIM = 1.7 GB and Apply Compact LZX in 3.9 GB Fixed VHD MBR 2 Partitions - More Info - Mini 10x64 VHD - page 1

4. Boot from Menu with 3.9 GB VHD - Always use the supplied Firewall App Blocker and Enable WhiteList to Allow Internet Browser only

- This is the easiest way to block unwanted internet traffic including Windows Update and prevents the growth of Used Size inside VHD
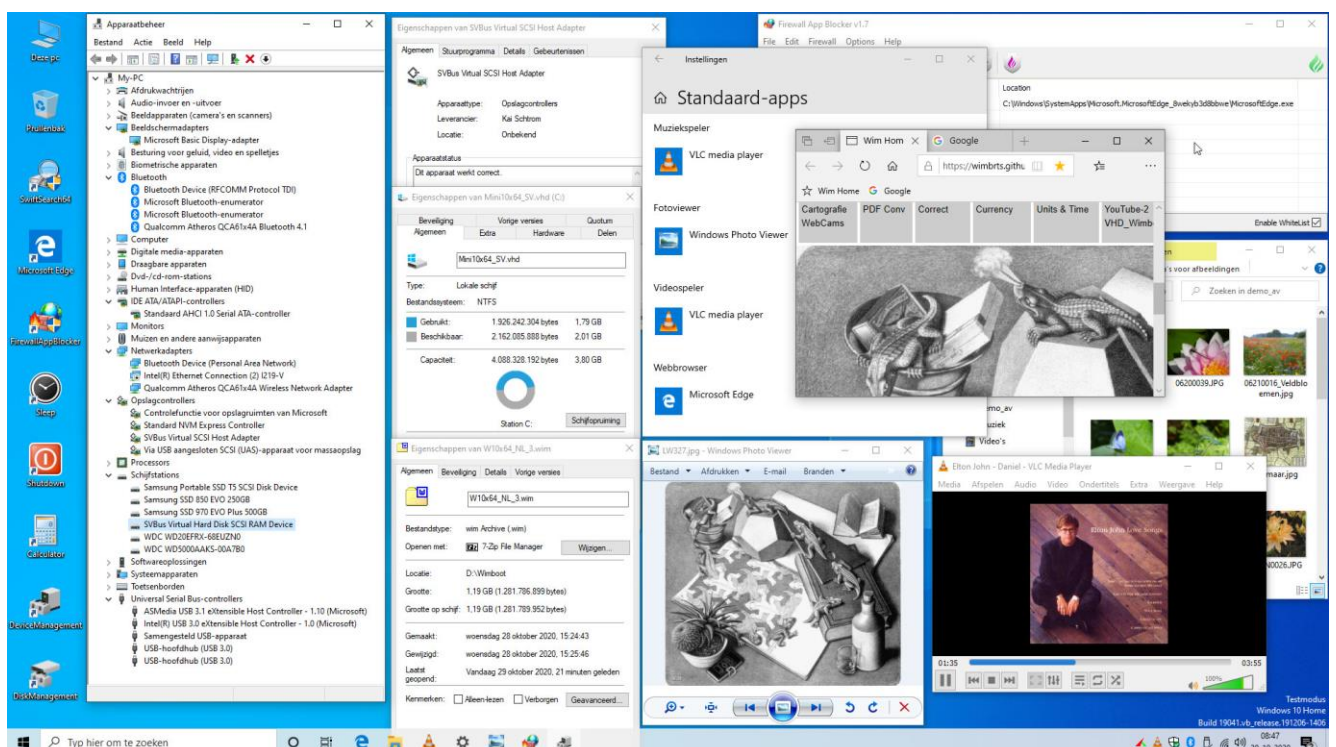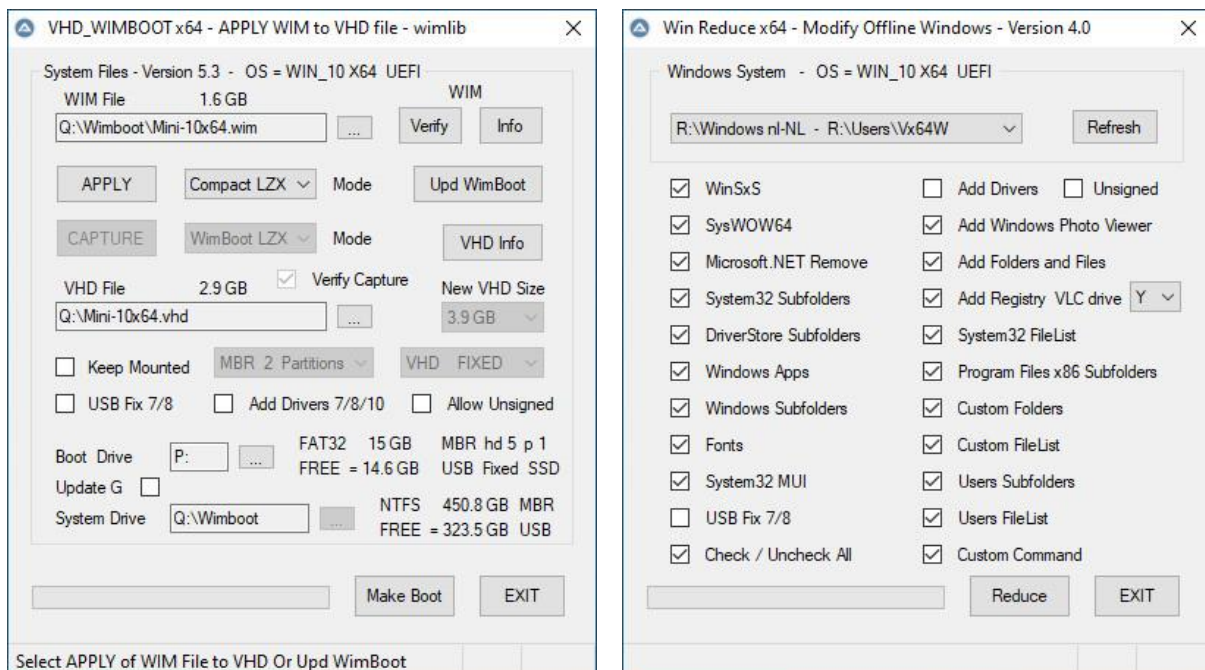
5. Copy Win_reduce\Add_to_USB_Y tagfile CDUsb. to your USB System Drive - USB **Programs** folder - notepad++ - WinContig - wimlib-clc

- CDUsb.y tag when found is used by Set Drive-Y Link on Mini-10x64 Desktop to Set Programs Drive as Drive Y:

- Add Portable VLC x64 vlc-3.0.12-win64.7z Unpack in VLC on USB and Download Firefox Portable and LibreOffice - More Portable Freeware

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

WinNTSetup 4.2.5 — WimGAPI v. 10.0.19041.1 — uEFI SecureBoot

Windows 2000/XP/2003 | Windows Vista/7/8/10/2008/2012

Select location of Windows installation files
Windows 7 Ultimate SP1 x64 nl-NL (Build 6.1.7601.17514)
J:\Wimboot\install_7.wim   [Search...]

Select location of the Boot drive   MBR ● BOOTMGR PBR ● BOOT PART ●
2_WERK 90 GB free NTFS Space Align 1024 K
G: [F] [Search...]

Select location of the Installation drive
W7x64_NL_1.vhd 8 GB free NTFS Space Align 1024 K
V: [F] [Search...]

Options
4 - Windows 7 Ultimate   Mount Installation drive as: C:
☐ Patch UxTheme.dll to allow unsigned Themes   ☐ drive letter preassignment
☑ Unattend   I:\WinNTSetup_v425\unattend\Win7   ☑ Mode: ● Compact:NONE
☑ Add Drivers   L:\drivers_w7x64   [Tweaks >>>] [VHD >>>]

Status   [Setup]

VHD_WIMBOOT x64 - APPLY WIM to VHD file - wimlib

System Files - Version 3.7 - OS = WIN_10 X64 UEFI
WIM File   2.4 GB
J:\Wimboot\W7x64_OK.wim   [...] [WIM Info]

[APPLY] Compact LZX ∨ Mode   [Upd WimBoot]
[CAPTURE] WimBoot 4K ∨ Mode   [VHD Info]

VHD File   14.6 GB   VHD Size
S:\W7x64_OK.vhd   [...]   25.0 GB ∨

☑ Keep Mounted FILEDISK ∨ VHD ∨ FIXED ∨
☑ USB Fix 7/8

Boot Drive   R: [...]   FAT32 20 GB   FREE = 19 GB
Target
System Drive   S:\Wimboot   [...]   NTFS 445.8 GB   FREE = 35.5 GB

[Make Boot] [EXIT]
Select APPLY of WIM File to VHD Or Upd WimBoot

WinNTSetup 4.2.5 — Ready?

Setup files: J:\Wimboot\install_7.wim
Boot drive: R:
Installation drive: Q:
Boot code: Use bootsect.exe to update the boot code ∨   BIOS ∨
Boot Menu: ☐ Find and add Windows version already installed on this PC
Boot Menu style: ☑ Use classic 'legacy' version boot menu
Shutdown: ☐ Automatically Reboot PC, if setup was successful.
OEM \sources\OEM
RunAfter: [   ]
USB Boot: ☑ Enable native USB Boot of Windows 7.

[OK] [Cancel]   CPU Win 8.1 x64 Ready ●

Win Reduce x64 - Offline Windows - Version 3.7

Windows System   -   OS = WIN_10 X64 UEFI
Q:\Windows nl-NL - Q:\Users\V7x64 ∨   [Refresh]

☑ WinSxS   ☑ Add Windows Photo Viewer
☑ SysWOW64   ☑ Add Folders and Files
☑ Microsoft.NET Remove   ☑ Add Registry VLC drive Y ∨
☑ System32 Subfolders   ☑ System32 FileList
☑ DriverStore Subfolders   ☑ Program Files x86 Subfolders
☑ Windows Apps   ☑ Custom Folders
☑ Windows Subfolders   ☑ Custom FileList
☑ Fonts   ☑ Users Subfolders
☑ System32 MUI   ☑ Users FileList
☑ USB Fix 7/8   ☑ Custom Command
☑ Check / Uncheck All

[Reduce] [EXIT]

Win_Reduce_Trusted allows to modify Offline Windows 7/8/10 in VHD - General Post Install Modifications - More Info - Mini 10x64 VHD

- Reduce UsedSize in VHD to about 2 GB

- make Mini 7/8/10 x64 in VHD booting as FILEDISK from USB / SSD and booting from RAMSDISK using SVBus driver

- Add Folders and Files and Registry Tweaks - e.g. Add FirewallAppBlocker and SwiftSearch

- USB Fix 7/8 for booting 7/8 VHD from USB

- run Custom Command for post install modifications

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
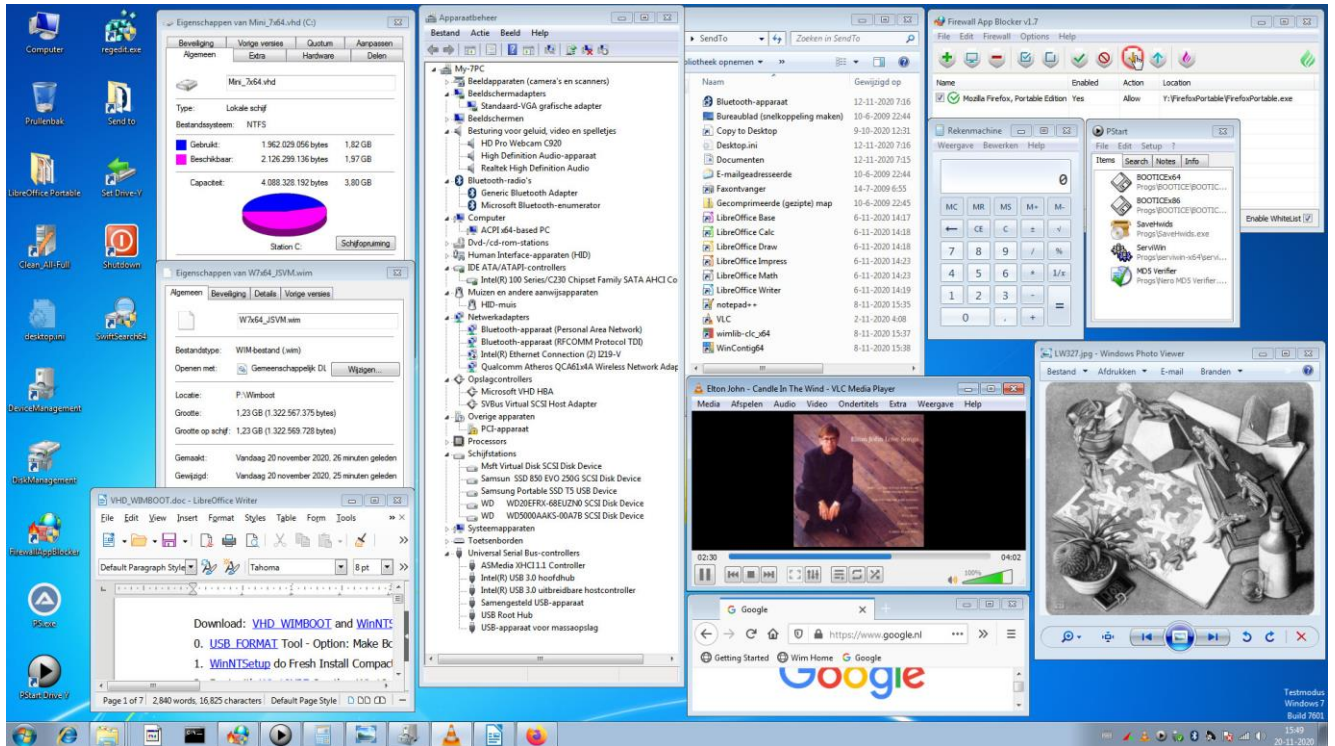
Mini 8x64 in VHD with UsedSize = 2.35 GB
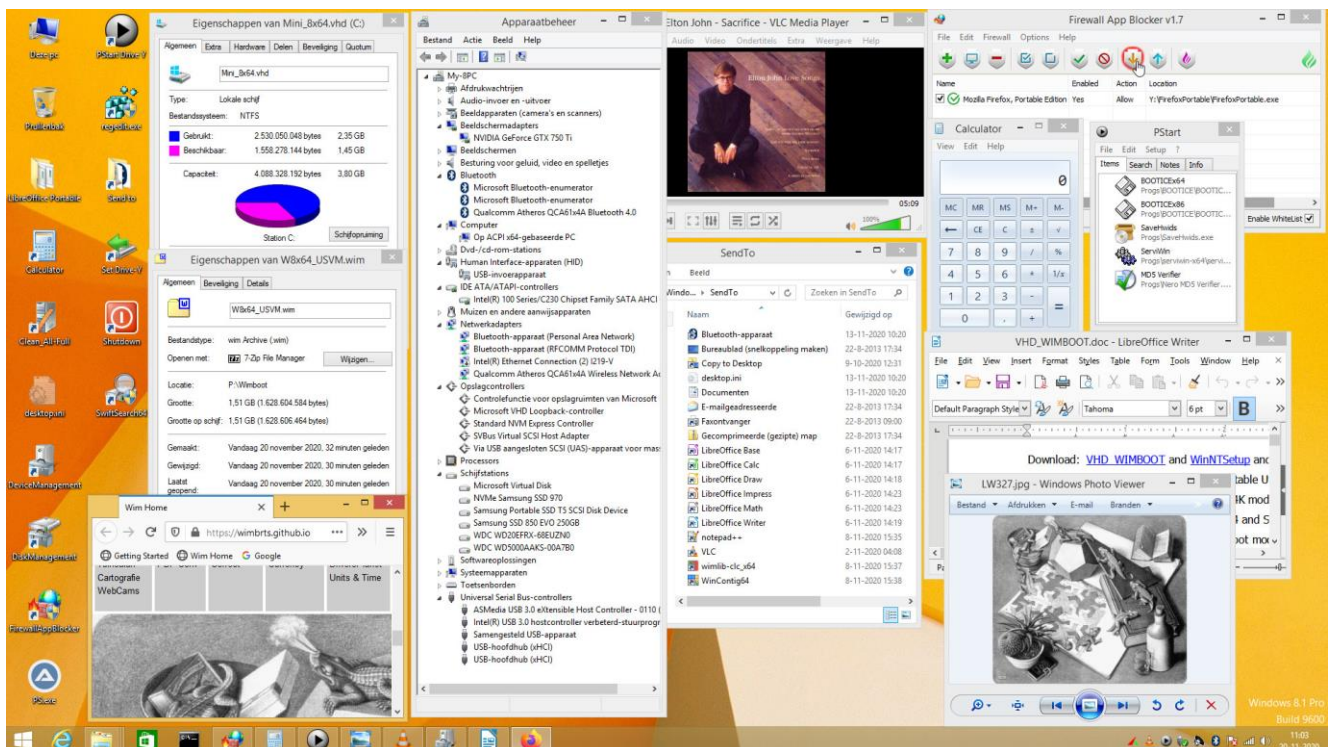
How to Inject Win10 VHD System to Fix Computer

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
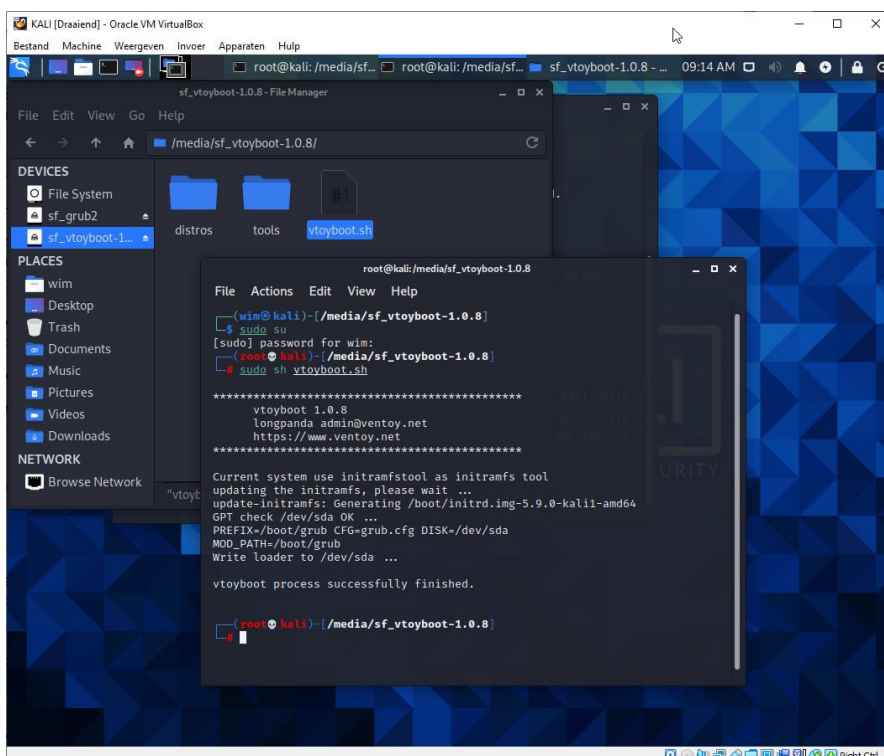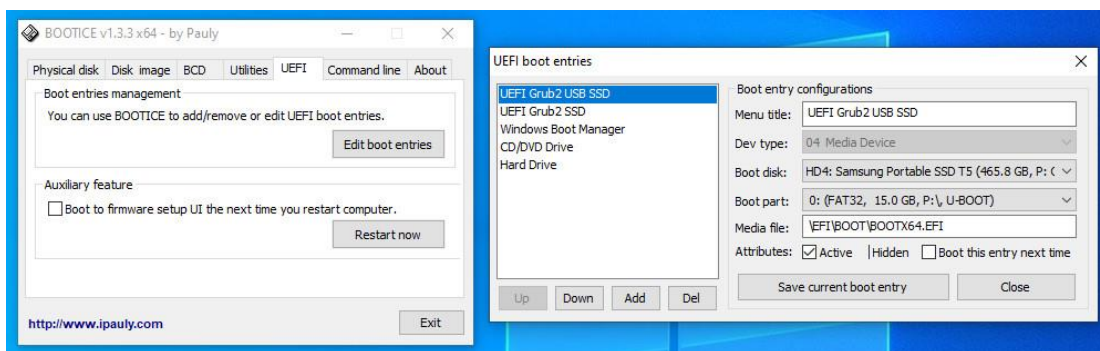
UEFI Secure Grub2 booting in \grub\grub.cfg
Enabled by using commands of sbpolicy.mod

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 - runtimelivecd.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
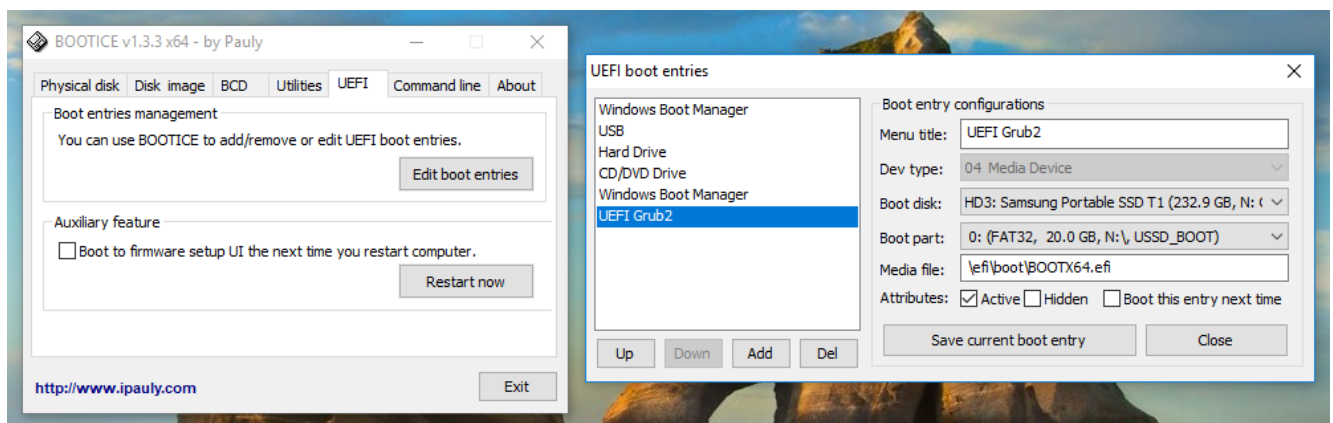
How to Boot from USB with AIO Boot - AIO Boot - AIO Info
- Download AIOBoot-v0.9.9.18.7z - Unpack and Copy content of folder AIOBoot-v0.9.9.18 to USB FAT32 and overwrite existing UEFI Boot files
- On USB run **AIOCreator.exe** - Select Integration Linux OS and your Linux ISO - Linux Mint - Knoppix Live - 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