**Quick Summary (By Francisco Novoa)**

1. **First boot Mac OS install using your opencore usb stick**
2. **At MacOS Install you need to configure hardisk to be ready to install Windows.**
3. **Do not install yet MacOS**
4. **Restart to Windows Install with your USB (you can make one on Windows with Microsoft Tool)**
5. **Insteas of install windows throug gui press Shift+F10 to entender Shell**
6. **Follow instructions on this guide to use diskpart and create needed partitions**
7. **Install Windows following this guide (not gui install)**
8. **Reboot to Windows and setup it normally**
9. **Reboot using your opencore + install macos usb stick**
10. **Install mac os on MacOS partition that you have created on the first step**
11. **Configure normally your MacOS**
12. **Reboot with your usb to be ensure that windos and mac shows at opencore menú**
13. **If you select Windows, probably you'll get a nice blue screen, so dont worry**
14. **Start your MacOS with your usb**
15. **Download Refind from this link https://sourceforge.net/projects/refind/**
16. **Unzip it**
17. **Install "Refind-install"**
18. **Mount your hardisk efi folder (use mountefi https://github.com/corpnewt/MountEFI)**
19. **Your efi folder Will not be empty (Windows files Will be there)**
20. **Copy your OC folder from your opencore usb drive to your hardisk efi folder**
21. **Look for your bootx64.efi file inside your efi/boot folder and copy it into your EFI/OC folder inside your hardisk efi partition.**
22. **Copy your downloaded "Refind" folder to your EFI Disk**
23. **OPTIONAL → you can install refind from Windows following this page https://www.rodsbooks.com/refind/installing.html#windows**
24. **Start Windows with your bios boot selector**
25. **Download http://www.easyuefi.com/index-us.html (Paid Version you can find alternatives)**
26. **Open Easyufi and select the left option "Manage EFI BOOT OPTION"**
27. **On the left box, select the second button to create new table**
28. **On type select "Linux or other os"**
29. **Description: The name you want to your new Boot**
30. **Select target partitions (EFI on your hard disk)**
31. **On file path you'll to choose your Refind_x64.efi file (main was on Efi\refind\refind_x64.efi)**
32. **Leave optional data empty**
33. **Now move your refind boot to the first place**
34. **Close EasyUEFI**
35. **Restart and select Refind at your bios boot options**
36. **Boot into your mac os (Will sent you to opencore)**
37. **On MacOS, mount your hard disk efi**
38. **Go to \EFI\Refind and open refind.conf with text editor**

39. **You can now configure your links to the icons on your refind app**
40. **To do that go to the end of the file and look for “menuentry”**
41. **Edit MacOS one and on loader link to your opencore’s bootx64.efi on your EFI/OC/Bootx64.efi**
42. **Delete “DISABLED” Word to actívate option**
43. **Edit Windows one and link it to EFI\Microsoft\Boot\bootmgfw.efi**
44. **Save file**
45. **Now reboot into Refind and press Delete on the older icons to hide them, and you can keep the ones that you modify on Refind.conf**
46. **If you want to Opencore to start automatically with your mac os, you have to go to System Preferences → Startup Disk and select your mac os disk(partition)**

# Full Guide (Extracted from Reddit, not mine)

**INTRODUCTION**

Installing Windows onto a GPT Hackintosh drive using the installer has always been a royal pain or worse. I documented this technique for Windows 8 years ago somewhere on InsanelyMac (I think). Windows 10 uses a similar technique. I'll try to fully explain it here. This technique will be relatively easy to accomplish on the same drive with Mac OS using APFS. I appoligize in advance for the poor quality photos. I'm working with a cell phone camera… Also, I used an old 120GB Apple SSD for the examples. It's a little tight, but it worked!

Ideally, I prefer to setup the drive for Dual Booting before installing Mac OS, reserving the space for Windows between the EFI Partition and the APFS Container used by Mac OS. When Windows is installed later, space is only available following the APFS Container. This works just as well but can be a little confusing when examining the drive layout later.

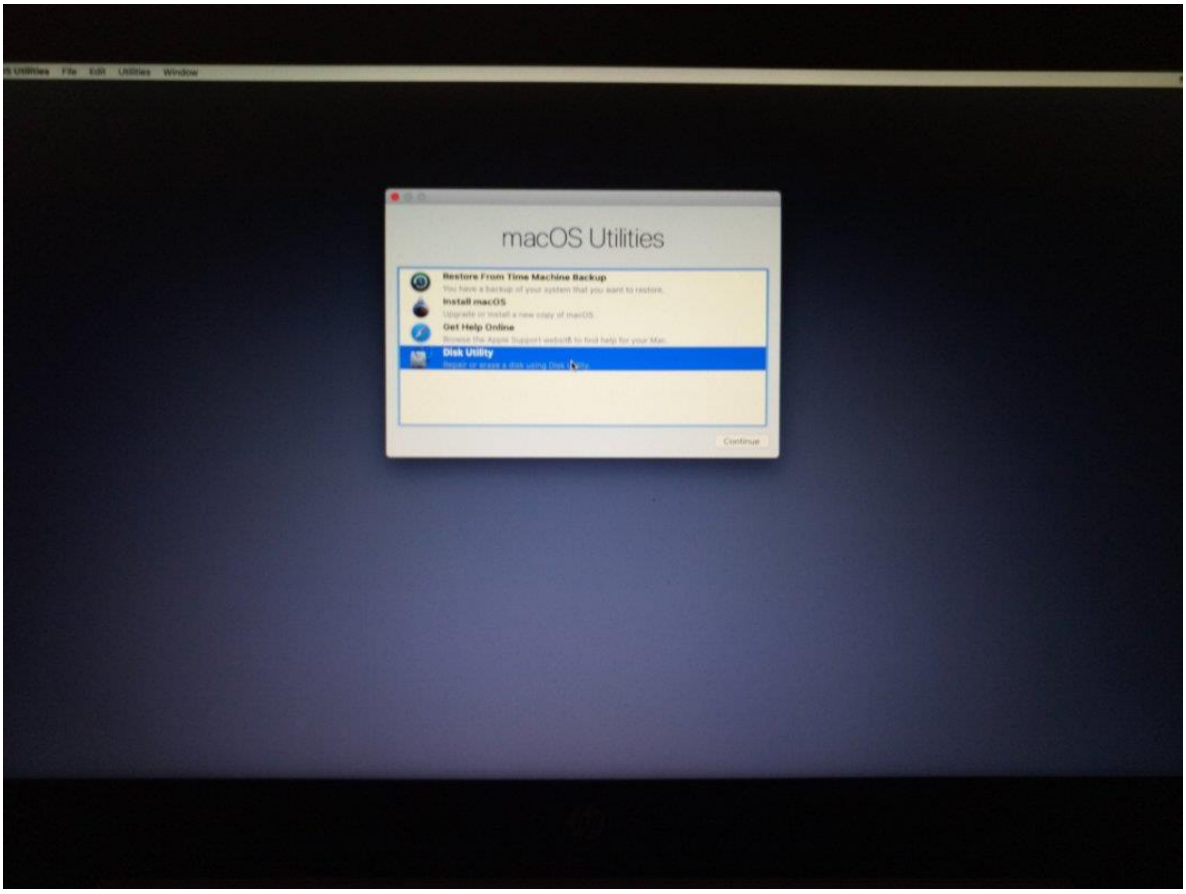
Building the Windows Install USB from Mac OS consists of simply erasing an 8GB or larger drive using MBR and formatted in Fat32. Name it WINSTALL. Double-click the Windows Install ISO file to mount it. From Terminal enter the following command:

```
sudo cp -r /Volumes/<ISO Drive Name>/* /Volumes/WINSTALL/
```

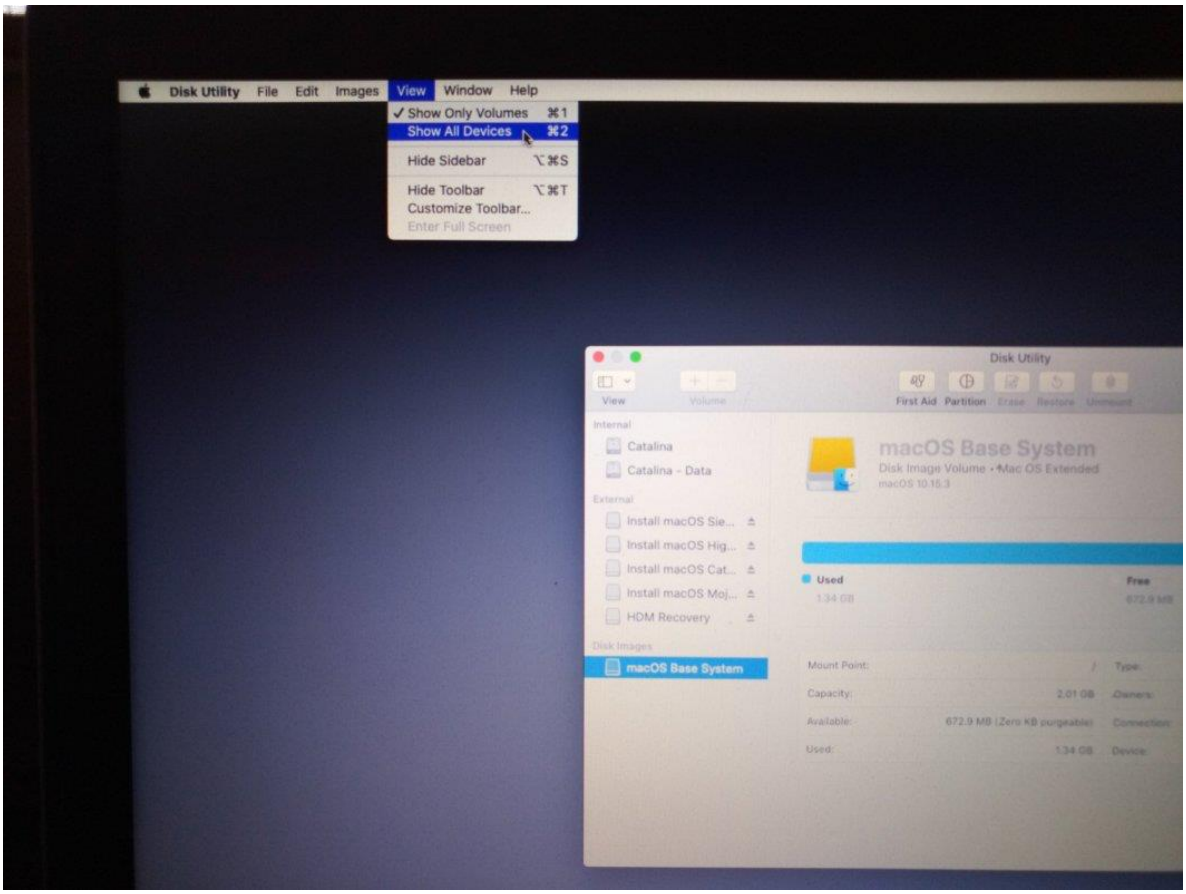
The first step is to clear some space after the APFS Container partition. I recommend a minimum of 64GB for installing Windows. Be sure to make a backup of your Macintosh before proceeding. Just in case…

**CREATING THE SPACE FOR WINDOWS**

Boot from your USB Installer since you're editing the Boot Drive. Once at the Installer window appears, select Disk Utility and click Continue.



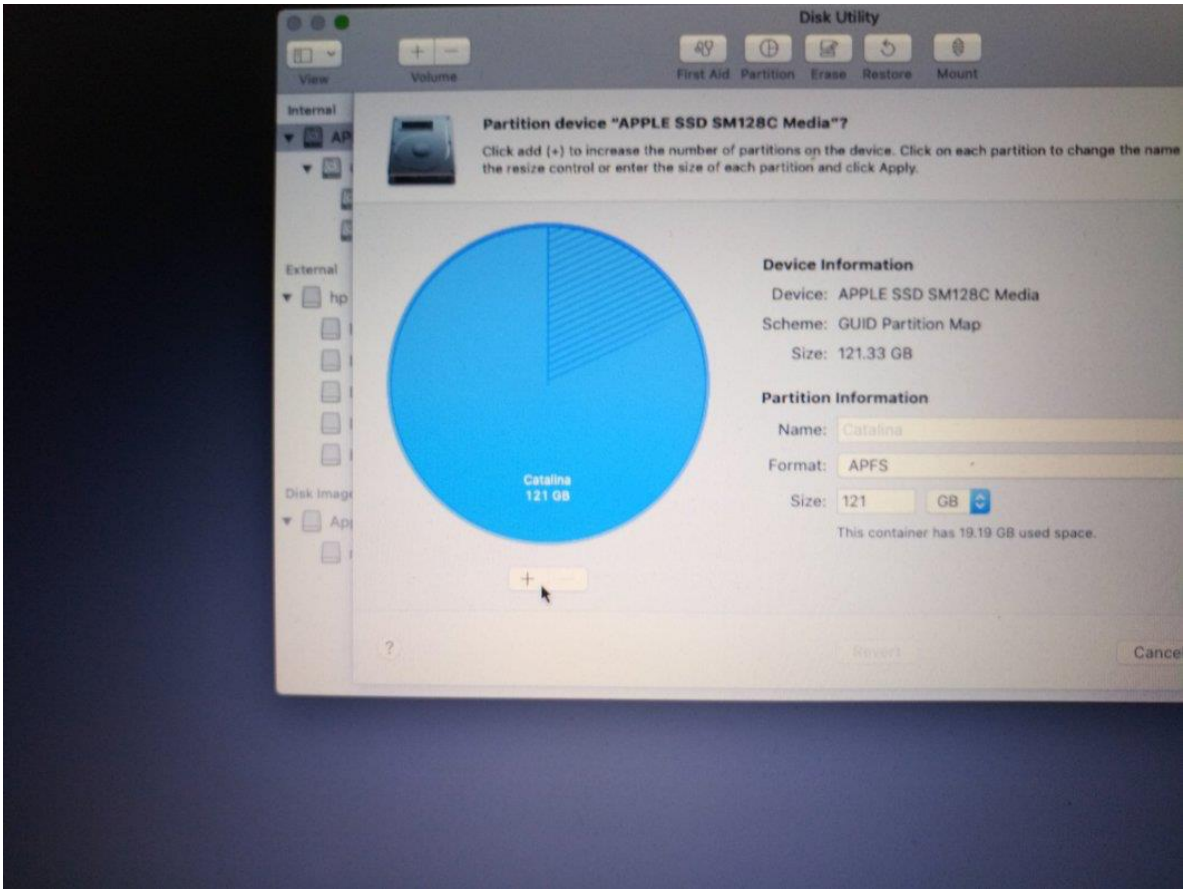

At the Disk Utility window, go to the View menu and select Show All Devices (Cmd-2).



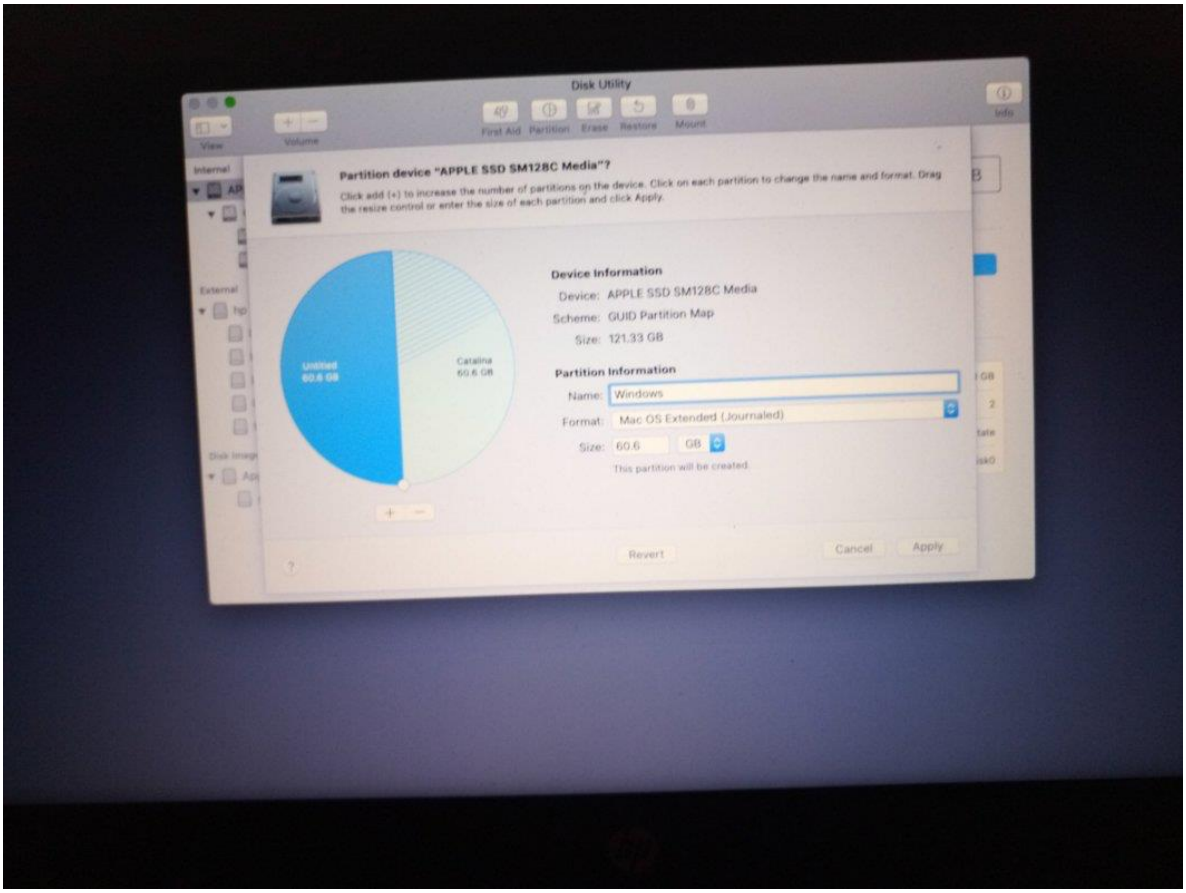

Select the drive name above your Mac OS Volume.

Click the Partition button at the top of the window (Shift-Cmd-P). Since this is an APFS volume, you will be presented with a message that you may want to add to the APFS volume instead. You don't want to do that, so confirm your intent by **clicking the Partition button**.

Press the Plus (+) button under the circular image of the drive. This will reduce your Mac volume to its minimum size based on the space used, or half the drive, whichever is larger.

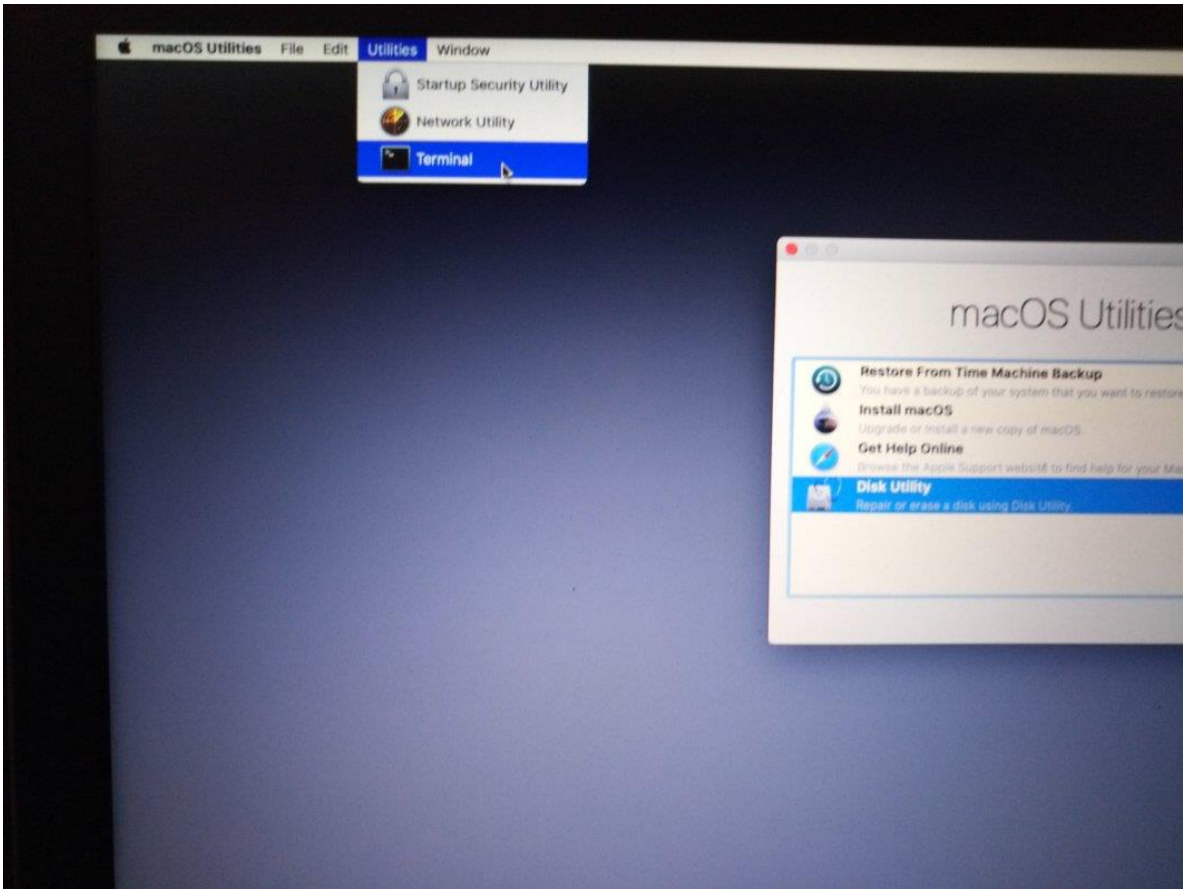


Select the new, Unnamed partition and enter the size you wish to reserve for Windows. Name it Windows and set the Format to Mac OS Extended (Journaled). Do not format it as APFS! Click the Apply button to create the new partition. When it's finished, exit Disk Utility by closing the window.



**FREE UP THE SPACE FOR WINDOWS**

Select Terminal under the Utilities menu. When the Terminal window appears, I prefer to enlarge the text to make it easier to read by pressing Cmd-Plus multiple times (Old Man Eyes).



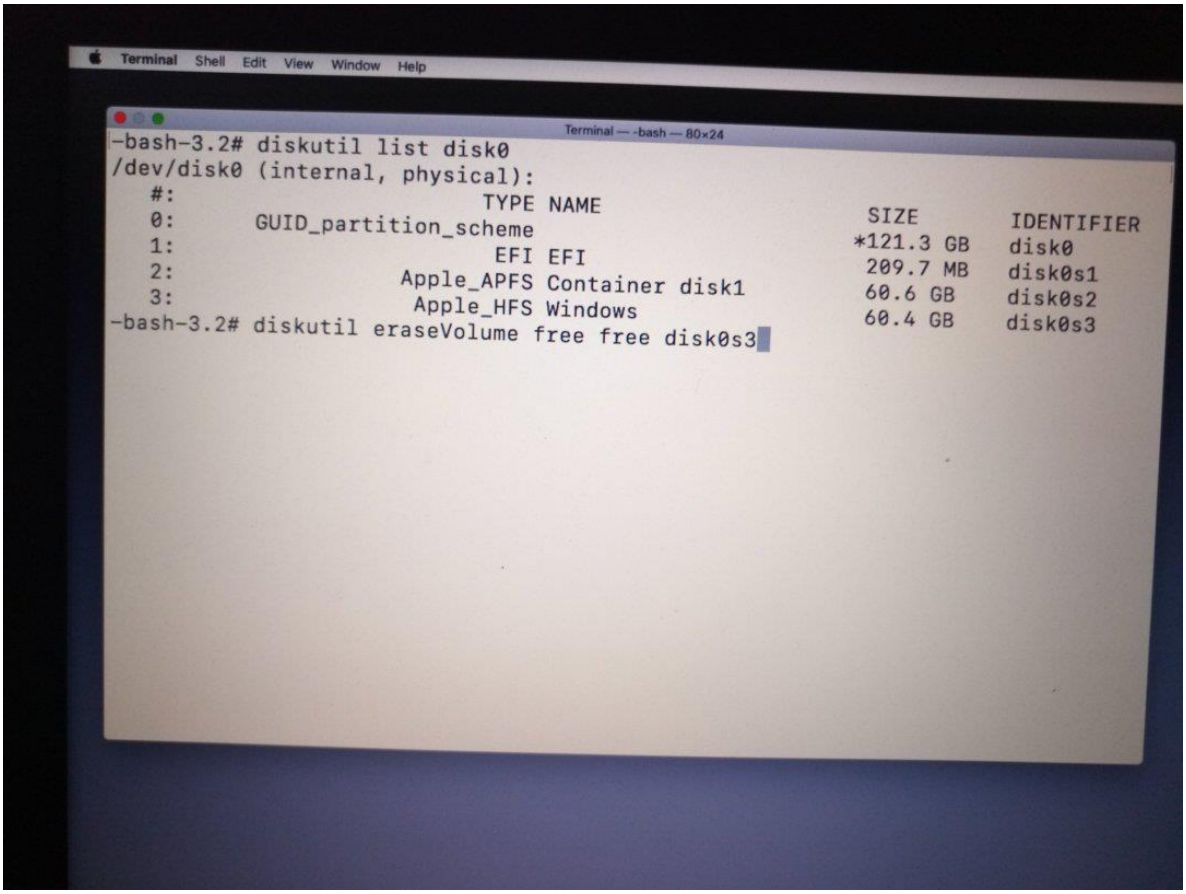

Type:

**diskutil list disk0**

If this is your primary drive, you will see 3 partitions: EFI, Container disk1 and Windows. If not, try disk1.

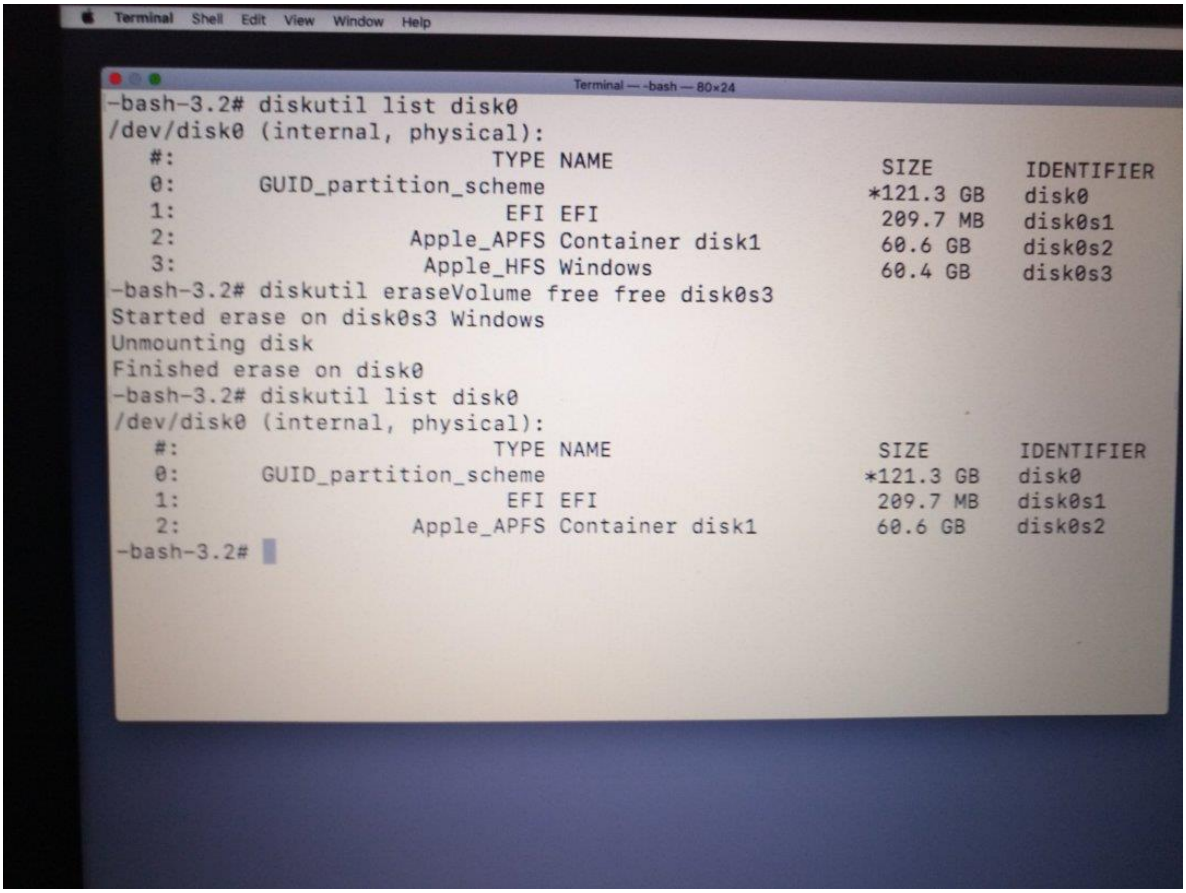
To clear the space for windows, enter:

**diskutil eraseVolume free free disk0s3**




**diskutil list disk0**

This will wipe the partition you just created. You need that space unused! The new listing will show the Windows partition is no longer present.




You are now finished with the Mac Installer. Select Shut Down from the Apple menu.

**NOW FOR THE FUN PART!**

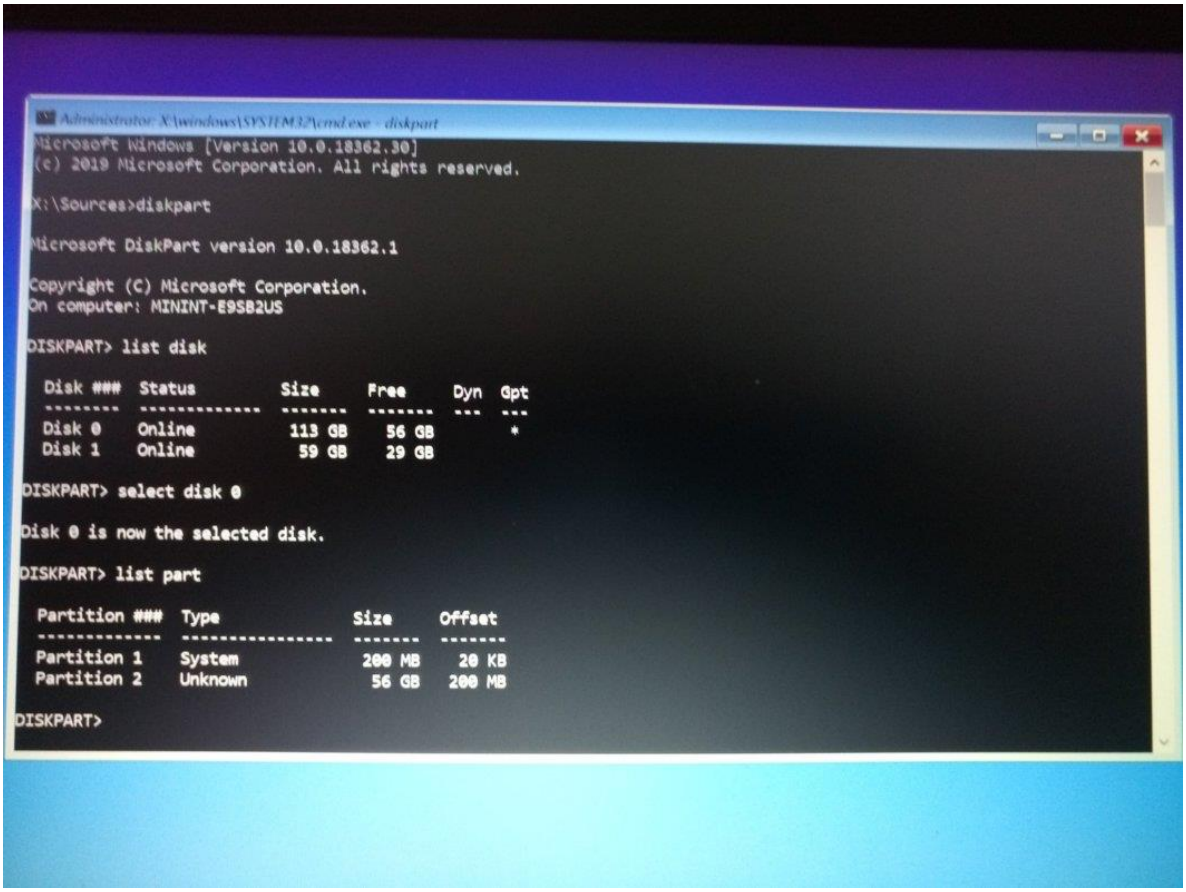
I'm going to assume you've already created your USB Windows Installer either through Apple's Boot Camp utility, or by other means. There are plenty of tutorials to do this. Google it, if need be.

Insert your USB Windows Installer and boot from it. Once the Language window appears, press Shift F10 to enter the Command Prompt window.

**At the X:\Sources> prompt enter diskpart and press enter to launch DiskPart.**

Now type list disk to locate your target drive based on its size.

Type select disk X, where X is your drive number and list part to list its partitions. If you don't see, System (Your EFI Partition) and Unknown (Your Mac OS Partition), you didn't select the right disk. Try again…




Now you're going to create Windows' partitions starting with Recovery. Carefully enter the following lines:

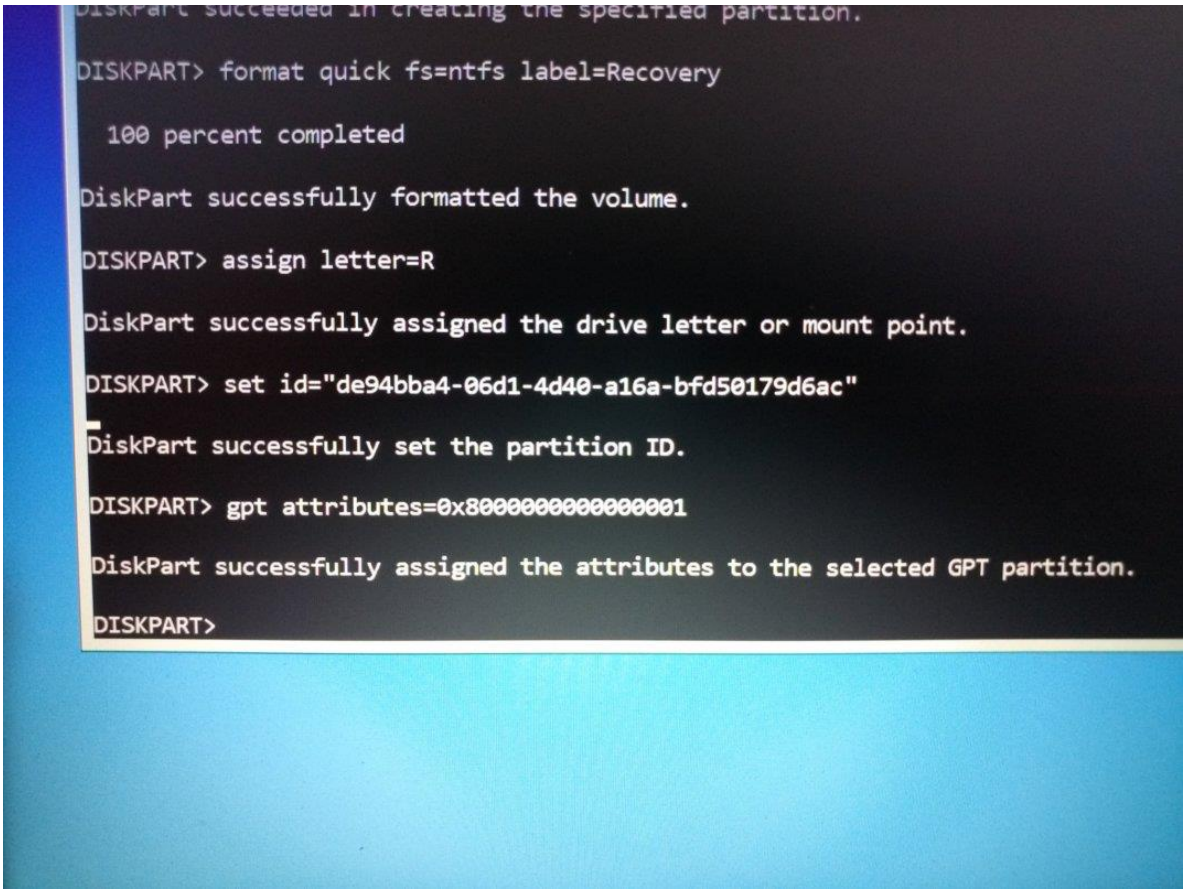
create part primary size=450

format quick fs=ntfs label=Recovery

assign letter=R

set id=de94bba4-06d1-4d40-a16a-bfd50179d6ac

gpt attributes=0x8000000000000001




Next create the “Reserved” partition. Windows expects it, so you should supply it. Don’t worry, it’s tiny.

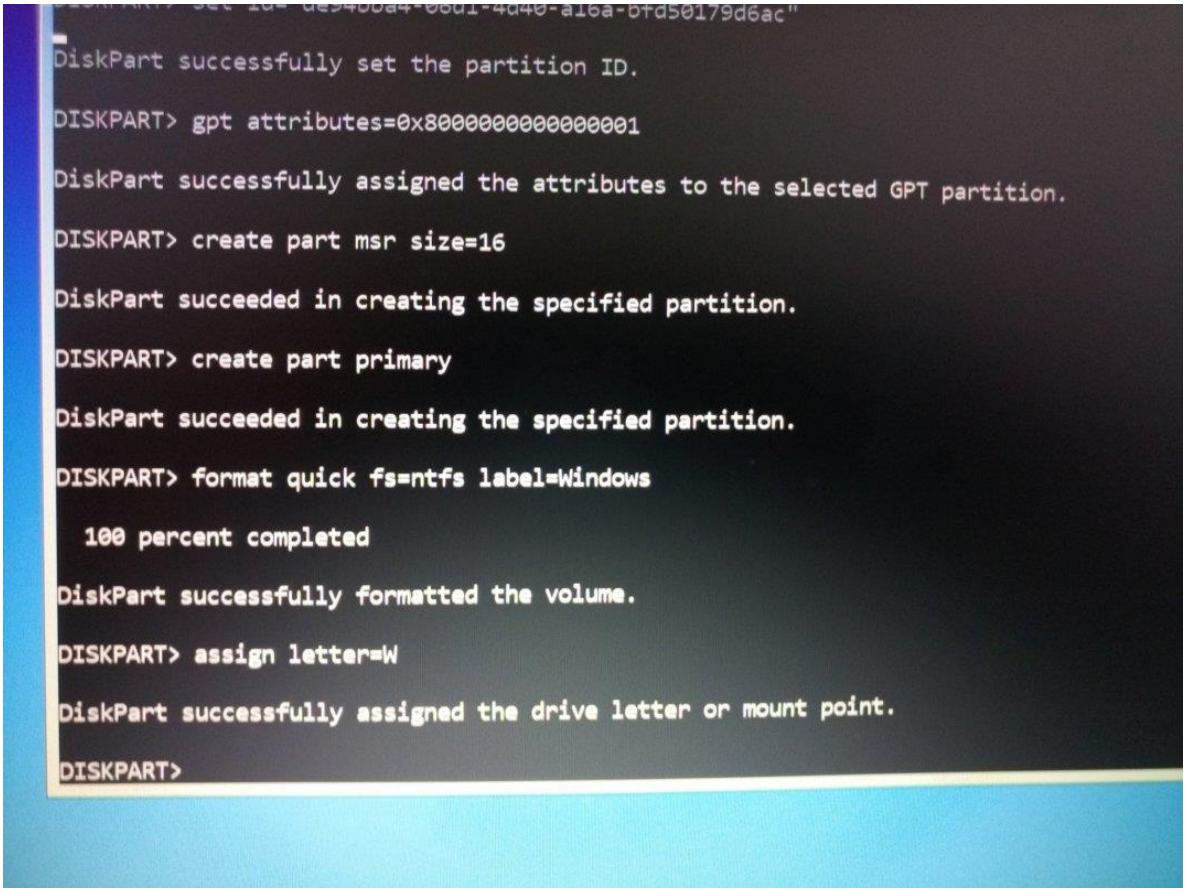
**create part msr size=16**

That’s it! Now create the “Windows” partition.

**create part primary**

**format quick fs=ntfs label=Windows**

**assign letter=W**



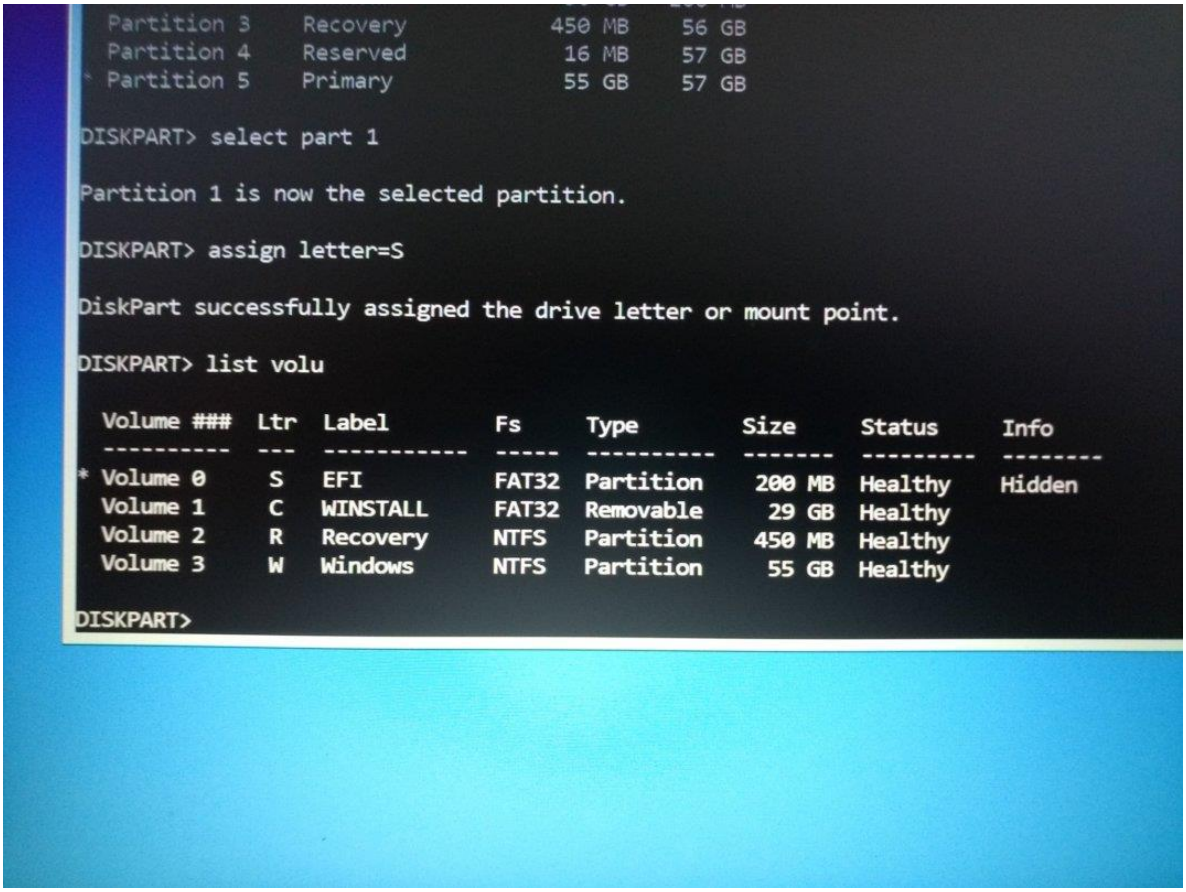

Type list part to see the end result.

You still need to give the EFI/System partition a letter.

**select part 1**

**assign letter=S**

**list volu**




The last line will show all mounted volumes with their associated drive letters. Now you can exit DiskPart and proceed with the install.

**exit**

**DOING THE INSTALL**

Now the fun part! You're finally going to install Windows 10! First, you need to determine the package you need to install. Depending on the license you have or is in your firmware, you may need the Pro, Home or another install. Carefully enter the following line to determine what your package contains. Take note of the package number, you will use that for the Index in the next command:

**dism /Get-WimInfo /WimFIle:C:\sources\Install.esd (If not work try with Install.Wim)**

Now, carefully enter the following commands:

**dism /Apply-Image /ImageFile:C:\sources\Install.esd /Index:1 /ApplyDir:W:\ /Compact /EA**

**if not work try replacing Install.esd with Install.Wim**

Note that setting /Index:1 will install first package. Set this number to the package you chose from the previous command.

Now install the boot files:

**W:\Windows\System32\bcdboot W:\Windows /s S:**

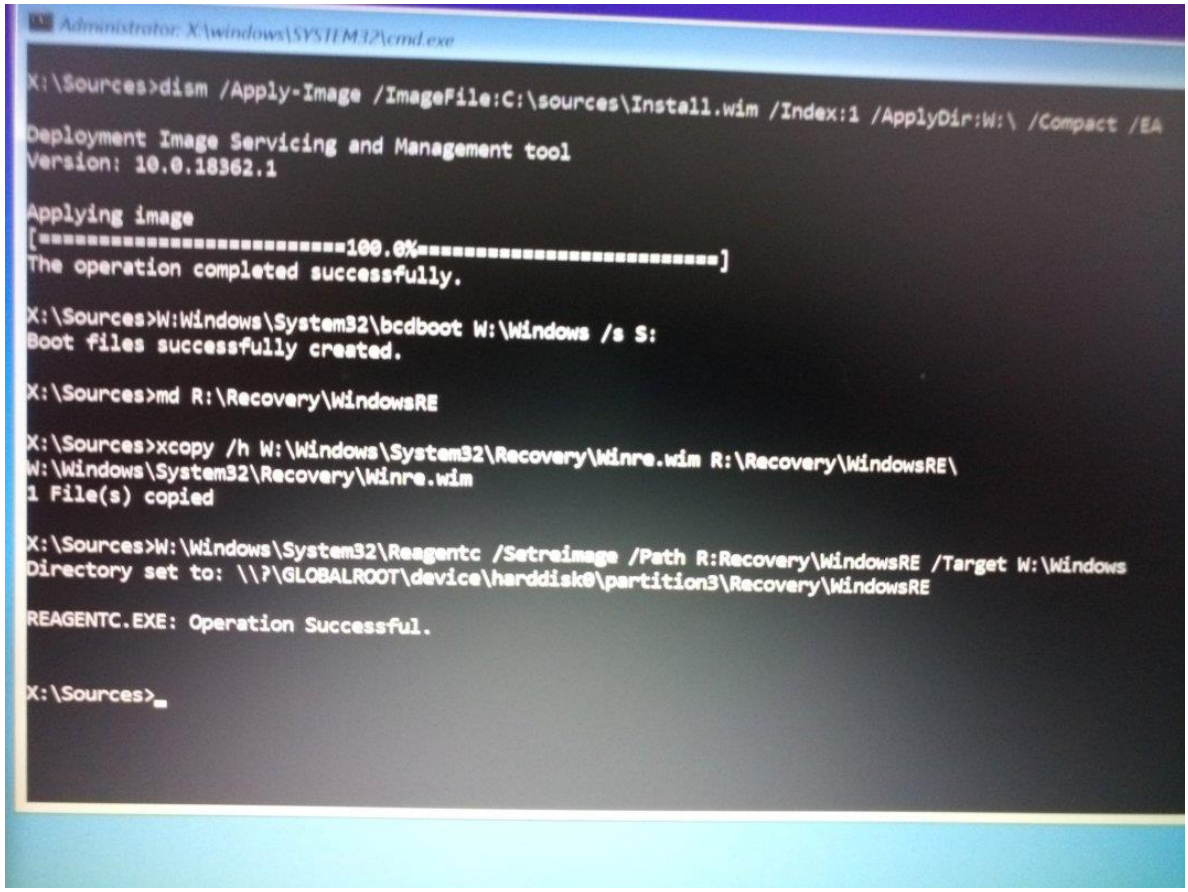
Save that line for later! It will fix Windows' Blue Screen most of the time…

Finally, build the Recovery partition.

**md R:\Recovery\WindowsRE**

**xcopy /h W:\Windows\System32\Recovery\Winre.wim R:\Recovery\WindowsRE**

**W:\Windows\System32\Reagentc /Setreimage /Path R:\Recovery\WindowsRE /Target W:\Windows**



**INSTALL COMPLETE**

You can now close the Command window and restart your computer, removing the USB Installer. Windows will launch and have you set it up. Go ahead and do your setup and updates if needed.

GETTiNG BACK TO OPENCORE

Using the keyboard shortcut for your computer to select the boot drive, select the option to Launch File. Navigate to your EFI Partition, locate and select \EFI\BOOT\BOOTx64.efi.

In OpenCore, press to spacebar to reveal ResetNVRam and select it.

You should now be presented with the choice between Mac OS or Windows! Both should work. If not, you will need to edit your config.plist to add a custom Windows entry.

That's it! In both Clover and OpenCore, you can now use System Preferences -> Startup Disk to set your Default boot.

**TROUBLESHOOTING**

Getting your system to cooperate with the dual-booting arrangement can be challenging. With some firmware, Windows will insist on being the default bootloader every time you launch Windows. Also, with both Clover and OpenCore, the default Windows selection will fail to boot Windows. This is how I resolve these problems.

Windows Wants To Be First:

OpenCore:

Follow the instructions above to get into OpenCore. At the OpenCore picker press the spacebar to launch OpenShell.

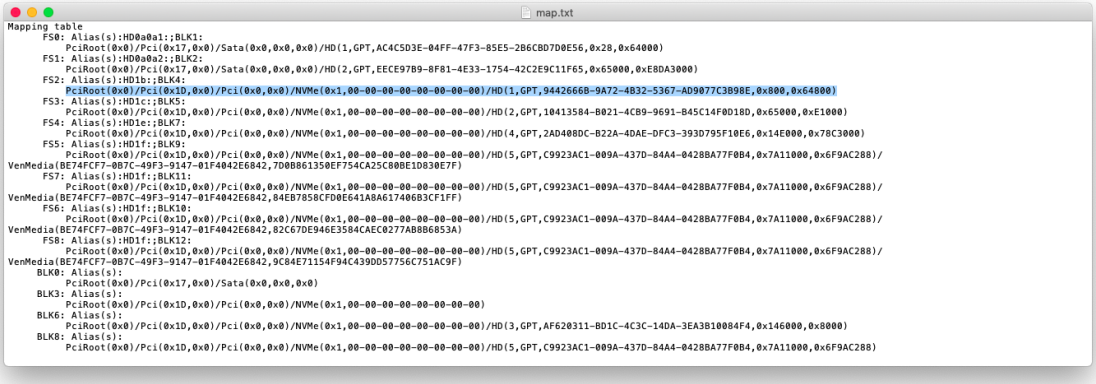
Select your EFI Partition (The first entry of your boot drive. In my case it FS2:, the first NVMe entry)

```
UEFI Interactive Shell v2.2
EDK II
UEFI v2.50 (HP, 0x00010901)
Mapping table
      FS0: Alias(s):HD0a0a1::BLK1:
          PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x0,0x0,0x0)/HD(1,GPT,AC4C5D3E-04FF-47F3-85E5-2B6CBD7D0E56,0x28,0x64000)
      FS1: Alias(s):HD0a0a2::BLK2:
          PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x0,0x0,0x0)/HD(2,GPT,EECE97B9-8F81-4E33-1754-42C2E9C11F65,0x65000,0xE8DA30
      FS2: Alias(s):HD1b::BLK4:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(1,GPT,9442666B-9A72-4B32-5367-
      FS3: Alias(s):HD1c::BLK5:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(2,GPT,10413584-B021-4CB9-9691-
      FS4: Alias(s):HD1e::BLK7:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(4,GPT,2AD408DC-B22A-4DAE-DFC3-
      FS5: Alias(s):HD1f::BLK9:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(5,GPT,C9923AC1-009A-437D-84A4-
      FS7: Alias(s):HD1f::BLK11:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(5,GPT,C9923AC1-009A-437D-84A4-
      FS6: Alias(s):HD1f::BLK10:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(5,GPT,C9923AC1-009A-437D-84A4-
      FS8: Alias(s):HD1f::BLK12:
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(5,GPT,C9923AC1-009A-437D-84A4-
     BLK0: Alias(s):
          PciRoot(0x0)/Pci(0x17,0x0)/Sata(0x0,0x0,0x0)
     BLK3: Alias(s):
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)
     BLK6: Alias(s):
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(3,GPT,AF620311-BD1C-4C3C-14DA-
     BLK8: Alias(s):
          PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(5,GPT,C9923AC1-009A-437D-84A4-
Press ESC in 1 seconds to skip startup.nsh or any other key to continue.
Shell> FS2:
FS2:\> map > \map.txt
```

Enter map > \map.txt to save your drive map data. Remember which FS drive your EFI is!

Now exit from OpenShell and boot Mac OS.

Get into your EFI drive (I'm assuming you're old hat at this by now) and open map.txt Note the device string that identifies your EFI drive.



Edit your config.plist file with the following changes:

At Misc -> Entries create a new item with the following:

Comment String Windows 10 Entry

Name String Windows

Enabled Boolean YES

Auxiliary Boolean NO

Arguments String

Path String <Your EFI Device String>/\EFI\Microsoft\Boot\bootmgfw.efi

As an example, this is my Path string:

PciRoot(0x0)/Pci(0x1D,0x0)/Pci(0x0,0x0)/NVMe(0x1,00-00-00-00-00-00-00-00)/HD(1,GPT,9442666B-9A72-4B32-5367-AD9077C3B98E,0x800,0x64800)/\EFI\Microsoft\Boot\bootmgfw.efi

At Misc -> Security -> BootProtect, enter Bootstrap to force OpenCore priority over Firmware.

At Misc -> Security -> ScanPolicy set to 19,857,667. This will stop the default Windows and EFI from appearing in your Picker Window.