Clarification of what clover is and how this method works!  
  
Clover is an efi bootloader designed for hachintosh's which we are going to leverage the nvme driver capabilities of to call the windows bootloader and ultimately boot windows from your nvme drive.  
BIOS/UEFI->Clover-EFI->NvmExpressDxe-driver->bootpartition@NVMe-drive->OS (boot partition being where the windows os bootloader is stored and run from)  
  
  
If you are trying to clone Windows please ensure to sysprep the os before trying to clone it.  
  
  
Prerequisites  
  
- you may need a pcie nvme m2 adapter card if you haven't got an onboard m2 port  
  
- Your PCIe SSD should be installed into your machine. (partition table must be gpt type. the nvme drive won't show in clover unless it has had the partition table set to gpt and blankly formatted in Windows first. The tip is to use diskpart to see if the drive is set to gpt not mbr)  
  
-IMPORTANT! the clover BDU must be run on the computer you intend to boot via clover as it will automatically generate a config.plist based on your computer's hardware.  
  
  
  
3a Part one ( -Updated Step from the original guide)  
(NOTE: users may not have All of these directories currently present in their installation and may need to create them, Users that are using older versions of clover seem to also have x64 variants of these in which case the driver copying procedure below will need be replicated with the EFI\CLOVER\drivers64 path aswell )  
  
The newer Clover Drivers Directory structure is as follows below. ( This is the same for both 32bit and 64bit in newer versions of clover )  
  
Efi\CLOVER\drivers  
BIOS  
Off  
UEFI  
  
Copy the NvmExpressDxe driver in the Off directory to **BOTH** the BIOS and UEFI directories mentioned above. (Note the Off directory simply contains a heap of unused drivers)  
  
3a Part two  
You will also need to create the following directory(s) (unless you already have one or both) and copy the NvmExpressDxe driver to them aswell.  
Efi\CLOVER\drivers32uefi  
  
(If using a 64bit system i recommend also creating this directory and placing the driver here aswell)  
Efi\CLOVER\drivers64uefi  
  
Since there is no harm in just putting the driver in all four (or up to six in older versions) locations anyway i strongly recommend doing this just to be safe. (if you have trouble the first thing i will ask is have you put the driver in all 4 locations)  
  
There are hundreds if not thousands of pages on various forums on the Web about how to configure clover's config.plist but the best resource I can link to is the wiki  
<https://sourceforge.net/p/cloverefiboot/wiki/Home/>  
  
ASK FOR HELP!  
If you have trouble beyond this however please ask questions in the forum and i will respond when i can, I am no expert but i have done many of these installs with success now and i will do my best to help.

I got my inspirion 580s to boot via NVME. (PCIE X 1; slower than the onboard SATAII but it is not about the speed now, it is about whether can I; 2nd post and is already not a question but an answer) I noticed the stickies does not cover certain critical parts i.e GPT format only AND having the BDU to be on the same PC as the NVME prior installing. So I recompiled the various threads after my toying of 2 days before my findings of GREAT SUCCESS (In Borat voice)  
  
  
\*\*Mine is tested via legacy bios with a cheap Non Major branded NVME, no drivers available\*\*  
  
\*\*For new install of windows 10, cannot be cloned over from current HDD/SSD and expect to boot up via NVME. I tried, it gave red words of death\*\*  
  
  
NVME needs to be in GPT format, use diskpart then format to NTFS ; <https://www.diskpart.com/diskpart/convert-gpt-4125.html> Don't need to partition the NVME drive into smaller bits, just one whole chunk of goodness.  
  
  
After that  
  
You can follow the thread; [[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method)](https://www.win-raid.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method.html)  
  
download and extract BDU and make into (MUST Be on same PC that you plan to install NVME when doing the bootable USB); <http://cvad-mac.narod.ru/index/bootdiskutility_exe/0-5>  
  
follow the installation instructions:  
  
1.  
Insert the USB flash drive or SD-card into your machine.  
  
2.  
Open up BDU. (Boot Disk Utility)  
  
2a.  
Select your flash drive/harddisk. (For internal SATA-Devices, you need to go to Options > Configuration ; I managed to boot up via BDU 4411 and not latest version 5XXX > Enable Fixed Disks > OK.)  
  
2b.  
Smash the left click on "Format Disk" and wait for it.  
  
2c.  
When it's done, check if you can see a 200MB Partition in your Windows Explorer with files in it. If that's not the case, BDU failed. (This happened to me sometimes, when fooling around with different bootloader/filesystem-settings. Just boot a linuxbased distribution with (g)parted and wipe all partitions + create a ntfs filesystem on it. Else Windows f%#&s around.)  
  
3.  
Access your Cloverstick via Explorer.  
  
  
3a. \*\*I do abit differently here, download the zip and extract; nvm.efi  
download from [[Guide+Video] How to install windows on NVME SSD 960 EVO without clover on a board without NVMe support.](https://www.win-raid.com/t2802f50-Guide-Video-How-to-install-windows-on-NVME-SSD-EVO-without-clover-on-a-board-without-NVMe-support.html)  
  
  
Copy the nvm.efi to:  
  
\EFI\CLOVER\drivers64  
  
I placed one more copy; nvm.efi onto top of directory of the flash drive  
  
Once done, shut down, Remove your original bootable disk; SSD or HDD, your nvme should be already on the adaptor on your pcie slot.  
  
Plug in both USB Bootable BDU and Windows 10 installation media; <https://www.microsoft.com/en-au/software-download/windows10> or your preferred Rufus-ed Bootable Windows installation USB. (I have not tried DVD)  
  
Go to your Bios, the rest all disable and boot via USB (You must be able to differentiate between your BDU USB and Windows Bootable USB)  
  
After this you should boot into Clover.  
  
  
  
Clover > exit clover > Boot Manager > Boot File from > Clover (Header of a huge chunk of directory); NVM.EFI (top of directory as i mentioned before, I think if you can't see this nvm.efi or further into \EFI\CLOVER\drivers64, there is something wrong, maybe you had played with the EFI shell at earlier stage; fs0; load nvm.efi , map -r, etc.... which I had tried as well but remapped until screwed up)  
  
After that go back to....  
  
Boot Manager > Boot File from > Windows 10 (Header of a huge chunk of directory) > EFI > bootx64.efi  
  
it should bring you to the windows 10 installation. Once here you are THERE. Your NVME partition will be part of the selection. Play around and you will bypass the greyed out NEXT and proceed to install onto the NVME

#1

**EDIT by Fernando:  
@all visitors of this thread:  
Since the thread opener Nyctophilia hasn't been online for a very long time and his guide may not be up-to-date anymore, I recommend to read**[**>this<**](https://www.win-raid.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method-32.html#msg107724)**additional statement written by our Forum member sibliss. Users, who have any problems or questions regarding the guide, may post them directly**[**@sibliss**](https://www.win-raid.com/u19162_sibliss.html)**until Nyctophilia is back.**

**#1**

**Advantages:**  
  
+ Theoretically, it should work on every BIOS and UEFI. Not restricted in terms by the BIOS/UEFI-vendor. (Yes, by BIOS I mean even legacy BIOS)  
+ No BIOS/UEFI-Modding needed (I used this method for a Fujitsu Workstation with Aptio V UEFI, which is currently not NVMe moddable)  
+ Easy updateable EFI. Changes to the configs can be made out of your favorite OS via text-editor.  
(+) You can have a Hackintosh (Don't ask me for support on this, I never intended to have one, I'm just using the EFI-Loader + NVMExpress.efi driver.  
  
**Disadvantages:**  
  
- Slightly longer boot times (This can be decreased by changing values inside the config.plst  
  
**NOTE to Legacy BIOS users: I didn't try a Legacy BIOS installation yet, so the steps for you are just theoretical. Feedback is welcome and needed!**  
  
  
  
**How does it work?:**  
  
**BIOS/UEFI->Clover-EFI->NvmExpressDxe-driver->bootpartition@NVMe-drive->OS**  
  
  
  
  
**What do we need?**  
  
**- Bootable Windows 7 - 10 installationmedia (USB or a plain optical disc)**  
**Note to Windows 7 / Server 2008 users:**  
**You need to insert the Windows 7 / Server 2008 NVMe driver before installing or insert the appropriate "F6-driver" by your vendor while choosing your installation disk in the Windows Installation Setup**. Detailed guide here: [**[Guide] Installing Windows 7 on an NVME SSD (from a USB 3.0 thumbdrive)**](http://forum.notebookreview.com/threads/guide-installing-windows-7-on-an-nvme-ssd-from-a-usb-3-0-thumbdrive.783921/) - I will use Windows 10 in this guide)  
  
**- a plain USB flash drive or SD-card** if a cardreader is present  
- Alternatively you can also use a SATA-device, but I won't cover the installation to a internal harddisk/SSD in this guide, as I like the concept of a seperate USB-flash for the Clover-EFI bootloader. It's easily replaceable and fastforward to install. You also don't have to worry about data-loss when updating it. If your legacy BIOS does not support USB-boot, then you shouldn't stick in a PCIe SSD into your machine anyways... A good reason to install it to a SATA-device might be, that you don't have any USB-ports left or if you are using a notebook (I don't consider sticking out USB-drives as a permanent and convenient solution). But check first if you have a cardreader, especially when you own a notebook. In BDU, you still have to enable the listing of internal, fixed disks first. Keep in mind that this installer will wipe the selected disk completely, so backup your data beforehand. If you find another way to install it without endangering the whole disk, just tell me. I will add it as an alternative option to my guide.  
  
  
  
  
**What to download:**  
  
**For Windows 7 / Server 2008:**[**- Windows 7 and Server 2008 NVMe Hotfix**](https://support.microsoft.com/de-de/kb/2990941)  
  
[**- "BDU" (Boot Disk Utility by Cvad)**](http://cvad-mac.narod.ru/index/bootdiskutility_exe/0-5)  
  
  
  
  
**Prerequesites:**  
  
- Your PCIe SSD should be installed into your machine.  
- Extract BDU.  
  
  
  
  
**Installation:**  
  
**1.**  
Insert the **USB flash drive or SD-card** into your machine.  
  
**2.**  
Open up BDU. (Boot Disk Utility)  
  
**2a.**  
Select your flash drive/harddisk. (For internal SATA-Devices, you need to go to Options > Configuration > Enable Fixed Disks > OK.)  
  
**2b.**  
Softly click on "Format Disk" and wait for the magic.  
  
**2c.**  
When it's done, check if you can see a 200MB Partition in your Windows Explorer with files in it. If that's not the case, BDU failed. (This happened to me sometimes, when fooling around with different bootloader/filesystem-settings. Just boot a linuxbased distribution with (g)parted and wipe all partitions + create a ntfs filesystem on it. Else Windows f%#&s around.)  
  
**3.**  
Access your Cloverstick via Explorer.  
  
**3a.**  
Copy **\EFI\CLOVER\drivers-Off\drivers64\NvmExpressDxe-64.efi...**  
  
...Legacy BIOS: to**\EFI\CLOVER\drivers64\**  
...UEFI: to**\EFI\CLOVER\drivers64UEFI\**  
NOTE to Legacy BIOS users: In case that it won't work like this, copy it to both folders. I can't tell you if it will work like described. You can check if the driver is loaded properly by opening the Clover-EFI-Shell and just typing "drivers". It should be listed at the very end.  
  
**3b.**  
Additional:  
Edit **\EFI\CLOVER\config.plist** with your favorite Editor.  
  
Change the value:  
  
**<key>Timeout</key>  
<integer>5</integer>**  
  
to something lower, like 1-3 seconds. Just change the number.  
  
Example:  
  
**<key>Timeout</key>  
<integer>3</integer>**  
  
**4.**  
Reboot your machine and enter your BIOS/UEFI.  
  
**4a.**  
Legacy BIOS: Change your bootorder. Setup the freshly created stick as primary boot device.  
UEFI: If possible, disable CSM or change the Storage Oprom to "UEFI only". Change your bootorder. Setup the freshly created stick as primary boot device.  
  
**4b.**  
Exit and Save Changes.  
  
**5.**  
Attach your Windowsinstallation media.  
  
**6.**  
Boot into the Clover-EFI bootloader.  
  
**6a.**  
Pick your Windowsinstallation media via EFI-Boot. (Windows 7 / Server 2008 users, please read the notes at the start of this guide under **"What do we need?"**)  
  
**7.**  
Continue with your Windows setup and delete all partitions on your NVMe-drive. Install Windows to your drive as usual. Wait for the installer to finish.  
  
**8.**  
If you followed the guide correctly, the Clover-EFI bootloader should detect your Windows installation and boot from it.  
  
**9.**  
Install your drivers and tweak your Windows as you wish and don't forget your vendors NVMe driver for highest performance!

#593

Hi i notice you have also tried the duet method,  
I hope you are using clover and have also read my pinned post.  
lets try to get legacy mode working for you. personally i don't even bother with uefi as it makes no difference once clover passes off to the windows bootloader anyway.  
so with the above said if legacy boot of clover cannot see your nvme there are 2 most likely reasons this happens, one is that you haven't copied the nvme driver to all of the locations required (up to 6 locations) you can do with just 3 locations in 32 bit mode.(i use 32bit myself because again it makes no difference once it passes off to windows). please ensure to copy the nvme driver dxe file to atleast the following 3 locations  
1. Efi\CLOVER\drivers\bios  
2. Efi\CLOVER\drivers\uefi  
3. Efi\CLOVER\drivers32uefi  
  
This ensures the driver is loaded in clover regardless of bios or uefi boot mode.  
The second reason it may not display is that the disk has not been initialized yet ( I suggest web searching disk initialization).  
  
I hope this information helps, and if it still doesn't work by all means report back here.

#823

I am not sure what you mean by “Clover does not see the .....…. drive”.  
From my experience, Clover does not show drives, but OS installations. So, if you do not have any OS installed on your SSD at present, as I presume, you should not bother about this.  
  
So you have gone through:  
Exit Clover → Boot Maintenance Manager → Boot from file → Windows 10 USB drive → <efi> → <boot> → bootx64.efi  
This is exactly what I did to install Windows. You’re on the right track !  
  
By the way, after you created your Clover key, did you copy the 'EFI/CLOVER/drivers-Off/drivers64UFI/NvmExpressDxe-64.efi' driver to:  
'EFI/CLOVER/drivers64' and to:  
'EFI/CLOVER/drivers64UEFI' ?  
This is essential !  
  
I see 2 possible reasons why Clover then crashes.  
1. Problem with the Clover key  
2. Problem with the Windows Installation USB drive.  
  
You may like to rule out #2 first.  
Which options did you use in Rufus when you created your Windows Installation USB drive ?  
For me, I selected: GPT – UEFI (non CSM) – FAT 32.  
With any other options, the USB drive may be successfully created, but the installation with Clover will fail.  
  
If you think that your Windows Installation USB drive is fine, then you may like to look at reason #1 (Problem with the Clover key).  
  
To create my Clover key, I used:  
- BootDisk Utility v2.1.2018.023b  
- Clover version 4961 (CloverISO-4961.tar.lzma)  
With any other combination of BDU or Clover versions, I failed : either I was unsuccessful in creating a Clover key, or I managed to create a Clover key, but it did not work (I did not succeed in installing an OS then).  
In particular, the latest version of BDU (v.2.1.2020.028) never worked for me.  
And I never succeeded in creating a working Clover key without BDU !  
  
See if that helps, and pls report any progress.

#820 - private(I think)

This is incorrect clover is a full bootloader and was designed for osx, it can see any partition format including ext4 I have dual booted with Ubuntu via clover myself. Please ensure you add the partition guid to the config.plist file. If I recall you need to add it under the boot section.

# 613

I got my inspirion 580s to boot via NVME. (PCIE X 1; slower than the onboard SATAII but it is not about the speed now, it is about whether can I; 2nd post and is already not a question but an answer) I noticed the stickies does not cover certain critical parts i.e GPT format only AND having the BDU to be on the same PC as the NVME prior installing. So I recompiled the various threads after my toying of 2 days before my findings of GREAT SUCCESS (In Borat voice)  
  
  
\*\*Mine is tested via legacy bios with a cheap Non Major branded NVME, no drivers available\*\*  
  
\*\*For new install of windows 10, cannot be cloned over from current HDD/SSD and expect to boot up via NVME. I tried, it gave red words of death\*\*  
  
  
NVME needs to be in GPT format, use diskpart then format to NTFS ; <https://www.diskpart.com/diskpart/convert-gpt-4125.html> Don't need to partition the NVME drive into smaller bits, just one whole chunk of goodness.  
  
  
After that  
  
You can follow the thread; [[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method)](https://www.win-raid.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method.html)  
  
download and extract BDU and make into (MUST Be on same PC that you plan to install NVME when doing the bootable USB); <http://cvad-mac.narod.ru/index/bootdiskutility_exe/0-5>  
  
follow the installation instructions:  
  
1.  
Insert the USB flash drive or SD-card into your machine.  
  
2.  
Open up BDU. (Boot Disk Utility)  
  
2a.  
Select your flash drive/harddisk. (For internal SATA-Devices, you need to go to Options > Configuration ; I managed to boot up via BDU 4411 and not latest version 5XXX > Enable Fixed Disks > OK.)  
  
2b.  
Smash the left click on "Format Disk" and wait for it.  
  
2c.  
When it's done, check if you can see a 200MB Partition in your Windows Explorer with files in it. If that's not the case, BDU failed. (This happened to me sometimes, when fooling around with different bootloader/filesystem-settings. Just boot a linuxbased distribution with (g)parted and wipe all partitions + create a ntfs filesystem on it. Else Windows f%#&s around.)  
  
3.  
Access your Cloverstick via Explorer.  
  
  
3a. \*\*I do abit differently here, download the zip and extract; nvm.efi  
download from [[Guide+Video] How to install windows on NVME SSD 960 EVO without clover on a board without NVMe support.](https://www.win-raid.com/t2802f50-Guide-Video-How-to-install-windows-on-NVME-SSD-EVO-without-clover-on-a-board-without-NVMe-support.html)  
  
  
Copy the nvm.efi to:  
  
\EFI\CLOVER\drivers64  
  
I placed one more copy; nvm.efi onto top of directory of the flash drive  
  
Once done, shut down, Remove your original bootable disk; SSD or HDD, your nvme should be already on the adaptor on your pcie slot.  
  
Plug in both USB Bootable BDU and Windows 10 installation media; <https://www.microsoft.com/en-au/software-download/windows10> or your preferred Rufus-ed Bootable Windows installation USB. (I have not tried DVD)  
  
Go to your Bios, the rest all disable and boot via USB (You must be able to differentiate between your BDU USB and Windows Bootable USB)  
  
After this you should boot into Clover.  
  
  
  
Clover > exit clover > Boot Manager > Boot File from > Clover (Header of a huge chunk of directory); NVM.EFI (top of directory as i mentioned before, I think if you can't see this nvm.efi or further into \EFI\CLOVER\drivers64, there is something wrong, maybe you had played with the EFI shell at earlier stage; fs0; load nvm.efi , map -r, etc.... which I had tried as well but remapped until screwed up)  
  
After that go back to....  
  
Boot Manager > Boot File from > Windows 10 (Header of a huge chunk of directory) > EFI > bootx64.efi  
  
it should bring you to the windows 10 installation. Once here you are THERE. Your NVME partition will be part of the selection. Play around and you will bypass the greyed out NEXT and proceed to install onto the NVME  
  
  
  
I copied certain portion from other threads/posts and I give credits to the original posters.  
  
Hope the rest who couldn't will be able to achieve now. Let me know ya?

POST #245

[**MikeyLikesiT**](https://winraid.level1techs.com/u/MikeyLikesiT)

[Dec '18](https://winraid.level1techs.com/t/guide-nvme-boot-without-modding-your-uefi-bios-clover-efi-bootloader-method/31665/245?u=cutiejelly)

https://winraid.level1techs.com/letter_avatar_proxy/v4/letter/r/13edae/40.png RedEyeNinja:

I joined this forum to thank OP, this post and all the contributors. Though my questions and inquiries were not addressed by any single post, I was able to piece together enough information to get this working on my HP Z800. I had a summary written here first but lost it. I ended up writing it out on steemit but I’ll paste it here.  
  
Load & Boot from Win10 on NVME/PCI-e on HP Z800  
[https://steemit.com/hp/@fobio/load-win10…ci-e-on-hp-z800](https://steemit.com/hp/@fobio/load-win10-on-nvme-pci-e-on-hp-z800)  
  
This will be part one of a multi-part series [fingers crossed] covering my attempt to modify a HP Z800 workstation into file, plex and web server housed in a XL-ATX full size tower with 14 drives. I have been dabbling in hardware and software mods for around 20 yrs and I know this is by no means difficult but as a DIY’er this is one of the more daunting yet doable mods at a low price and I believe the bang-for-buck is right up there for an hobbyist looking for something to do over the winter.  
  
A little more background. I have a home lab server running a AMD FX8320 w/ 32GB ram, a M1015 crossflashed to LSI 9211-8i HBA IT mode hosting 13 drives for around 36TB or 24TB usable under Parity mode. This is all managed under Win10 Pro and Windows Storage Spaces. I’ve spent quite a bit of time reading about it over the past couple of years and despite its slow write speeds, it serves its purpose as a Plex Media Server and NextCloud host. After the recent Win10 1809 update, I started to notice the system starting to hiccup and I noticed a lot of errors within Event Viewer. Some I fixed thru tutorials and regedit, but others just won’t go away…namely, IO and write errors to my array which is being updated with Seagate 8TB backup/SMR drives that are cheap TB-per-$ but slow as hell in write performance. Again this is not an issue for my media library mainly for Plex. So I started looking at upgrades.  
  
I always wanted to try server grade equipment but was always put off by their price and footprint; you don’t get much room to install racks in a condo. Anyway, I came upon these HP workstations that have server innards but in workstation form factor. The Z600 and Z800 offers dual Xeon’s and room for lotsa ram and there’s a batch on sale locally. Initially, I only needed a Z600 in its small form factor to play with but I kept reading about the slightly sexier Z800. Being blinded by the prospect of playing with new hardware, I didn’t consider some important specifics, like UEFI vs legacy BIOS on these systems. But by this time, my mind was already going a mile a second and I’ve already plunged into this project.  
  
First off, I was inspired by this post to attempt this.  
  
Hacking the HP Z800 Xeon motherboard into a standard case  
<http://andybrown.me.uk/2intergrate014/11/01/z800/>  
  
Much smarter guys have done this awhile back and I’m just catching up. But not being an IT professional, I don’t get access to this level of equipment until they come cheap on the used market. I ended up with a full system with its OEM case for around $600 CDN:  
  
HP Z800  
Dual Xeon X5680 @ 3.33 GHz [12 cores/24 threads total, 130w TDP each]  
48GB DDR3 ECC 10600 RAM [upgradeable]  
  
I got a barebones system and needed to add my own GPU and drives. I added a GTX 1060 3GB and a WD 256 NVME SSD on a PCI-e adapter. This is where it gets …interesting. As the updated BIOS doesn’t support NVME storage, I had to get creative with my kiddy-scripting, read: combining best practices and trial and error them into a workable solution. The following is after around 10 to 12 hrs of research:  
  
Step 1:

After much searching, I finally chanced upon this site and this post that talks about using Clover, a Hackintosh tool to provide UEFI boot. I downloaded the tool, burned a USB and fumbled around with it and was able to read the transplanted WD NVME on the first try…sweet! But it was the Win10 install from the AMD rig and I want the system to be fully activated so I attempted to get Clover to read my USB Win10 UEFI install media. After many hours of trial and error, Iwas not and still am not able to get Clover to read my USB Win10 install.  
  
[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method)  
[[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method)](https://winraid.level1techs.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method.html)  
  
[Looking back now, I imagine that Clover is either missing drivers to read a GPT USB in UEFI or that the USB key isn’t formatted correctly as GPT for Clover to see it. We re-visit this down below]  
  
There are 2 posts in this thread that I need to acknowledge.  
  
First, this post by Charlie confirming that it can be done:  
  
[[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method) (11)](https://winraid.level1techs.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method-10.html#msg47359)  
  
Second, circling back, we have this post by Plawerth that actually summarizes how to structure the Clover USB:  
  
[[Guide] NVMe-boot without modding your UEFI/BIOS (Clover-EFI bootloader method) (10)](https://winraid.level1techs.com/t2375f50-Guide-NVMe-boot-without-modding-your-UEFI-BIOS-Clover-EFI-bootloader-method-9.html#msg44263)  
  
I encourage anyone reading this to read and read Plawerth’s post as using his file structure helped me narrow down where to copy the NvmExpressDxe-64.efi file. I originally got my transplanted NVME working by just copying NvmExpressDxe-64.efi from \EFI\CLOVER\drivers-Off\drivers64\drivers64UEFI\ to \EFI\CLOVER\drivers64\ and \EFI\CLOVER\drivers64UEFI.

Step 2:

Since a clean install won’t work, I went back to a tried and true method of doing this a few yrs back…install Win7 first. This was painless once I dug out a Win7 install and flashed it onto a USB for legacy BIOS boot. I realized this from this post:  
  
[https://support.microsoft.com/en-ca/help…indows-7-and-wi](https://support.microsoft.com/en-ca/help/2990941/update-to-add-native-driver-support-in-nvm-express-in-windows-7-and-wi)  
  
Specifically:  
  
"Method 2  
Restart from media, and install Windows 7 from media to a disk that attaches other storage controllers (such as SATA).  
Press Ctrl+Shift+F3 to enter audit mode during the Out-of-box experience (OOBE) process.  
Install the hotfix package, and then restart the computer.  
Reseal the system by using the sysprep - generalize - shutdown options.  
Capture and move the generalized image to the disk that attaches the NVMe controller."  
  
I realized that I might as well clone the WinX install over to the NVME, like what had happened originally with the transplanted NVME from the AMD rig. But Win7 doesn’t support NVME natively.

Step 3:

After Win7 is installed on a SSD and activated, I proceeded with upgrading it to Win10 1809. A sidenote about 1809, it’s buggy as hell, but my server updated automatically and the Storage Spaces got upgraded as well and it can no longer be recognized or read by earlier versions. You can easily get this media off of Microsoft’s Media Creation Tool. However, since 1809 is so buggy, it’s actiually been pulled by M$ as of this writing, so I had to figure out how to get it to download. I found this:  
  
How to download Windows 10 version 1809 right now  
[https://www.ghacks.net/2018/09/26/how-to…1809-right-now/](https://www.ghacks.net/2018/09/26/how-to-download-windows-10-version-1809-right-now/)  
  
After the download, I flashed the ISO using Rufus onto a USB key and inplace installed within Win7.

Step 4:

After Win10 is installed, I can now see the NVME drive. Using a preferred disk cloner, I cloned the SSD over the NVME.

Step 5:

At this point, Clover will not boot into the NVME as it’s a clone of a Win10 install in MBR. Again, I just wanted to plow over this with a clean install but I still can’t. Good thing is that unlike years ago, you can now convert Win10 in-place from MBR to GPT for UEFI boot:  
  
Shifting from BIOS to UEFI with the Windows 10 Creators Update MBR2GPT disk conversion tool  
[https://techcommunity.microsoft.com/t5/W…date/td-p/60064](https://techcommunity.microsoft.com/t5/Windows-10/Shifting-from-BIOS-to-UEFI-with-the-Windows-10-Creators-Update/td-p/60064)  
  
I got the original tip from here:  
  
[https://audiocricket.com/2016/12/31/boot…ment-3550482711](https://audiocricket.com/2016/12/31/booting-samsung-sm961-on-asus-p6t-se-mainboard/#comment-3550482711)  
  
"takis Audio Cricket • a year ago  
I managed to boot after cloning.  
You need to:  
  
clone windows with your favourite tool  
convert your CLONED drive to UEFI using the new windows 10 command:  
mbr2gpt /convert /disk:2 /allowfullos  
—PLEASE REPLACE DISK NUMBER WITH THE CLONED PARTITION!!!  
boot as normal using your instructions."  
However, this is not all of it.

Step 6:

Using a Clover USB modified according to the Clover/NVME thread, I was able to boot into the NVME thru UEFI. The above commands did the bulk of the conversion, but left me without a Recovery Partition on the NVME after the conversion. I got stressed a bit but found this:  
  
Windows 10: Windows Recovery Environment  
[https://www.tenforums.com/installation-u…nvironment.html](https://www.tenforums.com/installation-upgrade/108486-windows-recovery-environment.html)

https://www.tenforums.com/installation-upgrade/108486-windows-recovery-environment.html  
  
I ran these commands and was able to confirm in DiskPart that the ~500mb partition is now set as recovery:  
  
reagentc /disable  
reagentc /setreimage /path R:\Recovery\WindowsRE [this line might have errored out for me]  
reagentc /enable  
reagentc /info  
  
This set of commands in an admin CMD window created the Recovery Partition. You can confirm this thru DiskPart:  
  
diskpart  
list disk  
select disk #  
list partition

Step 7:

I want Win10 to boot on the NVME like normal without me confirming the boot disk thru Clover everytime. I modified the config.plist at the following:  
  
[key]DefaultVolume[/key]  
[string]EFI[/string]  
  
and  
  
[key]Timeout[/key]  
[integer]2[/integer]  
  
This boots into Clover and gives me 2 seconds to choose or stop Win10 boot. However, I followed Plawerth’s post and pared the config.plist file down to its bare essentials for Windows boot using the above substitutions and now it boots almost immediately into windows after POST.

Great success!  
  
If you’ve read this far, I thank you. If I’ve missed something please let me know. The next step is to replicate the functions of the old server and migrating cards over. I’m already running into the next set of issues! And this is all before I test fit the mobo to the case I chose. Stay tuned!  
  
tl;dr  
  
1. Follow NVME/Clover thread to set up Clover USB.  
2. Install Win7 on SSD thru legacy BIOS.  
3. Upgrade Win7 to Win10, in-place within Win7.  
4. Install cloner and clone Win10 SSD to NVME  
5. Log into Win10 on SSD and convert NVME from MBR to GPT.  
6. Use Clover USB to boot into Clover and choose, start Windows EFI to boot into NVME.  
7. Use reagentc.exe commands to rebuild Recovery Partition on Win10 NVME.  
8. Clean up Clover boot USB files and leave the USB key in for every boot.  
  
I hope this helps someone like myself.  
  
EDIT by Fernando: To save space and for a better readability I have put the steps of your guide into “spoilers”.

Step by step what I did.

1. have windows on HDD and only use this machine
2. make sure NVMe drive is GPT and formatted NTFS (entire drive) - rebooted
3. Using BDU 2.1.2018.023b and CloverISO v4961 I formatted the drive.

ERROR- extract run lastest clover data set

1. Instead of using BDU 2.1.2018.023b I used 024b but the same ISO
2. checked first partition size of clover USB
3. copied (and created new directories) the first three of the following drivers into each of the 5 folders [I also added in four extra drivers I thought might be important:
   1. Efi\CLOVER\drivers\bios
   2. Efi\CLOVER\drivers\uefi
   3. EFI\CLOVER\dirvers64
   4. EFI\CLOVER\drivers32uefi
   5. EFI\CLOVER\dirvers64uefi
      1. nvm.efi
      2. NvmExpressDxe.efi
      3. NvmExpressDxe-64.efi
      4. GrubEXFAT-64.efi
      5. GrubISO9660-64.efi
      6. GrubNTFS-64.efi
      7. GrubLDF-64.efi
4. altered config.plist under boot section timeout argument to 3 seconds
5. \*DEVIATION\* using unaltered ubuntu boot media, FORMATED TO GPT with Rufus, I inserted both clover USB and ubuntu boot media. (Everyone says to use windows with hot fix)
6. opened ubuntu boot media through clover. installed on NVMe and restarted (I did not have to change the name of the file named boot6 to boot 7 on root of clover USBguest)

SUCCESS - now time to tweak it by altering the config.plist file

1. Now, I didn't see the acutaly ubuntu boot media USB drive. I'm assuming you have to manually find it though shell then instaguestll that way.

FAIL (after boot, NVMe ubuntu installation is not visiable to be booted.)

1. reboot - enter Clover shell - manually loaded driver and executed switch: map -r exited NVMe ubuntu installation still not found.

FAIL

1. found EFI partition GUID of the NVMe drive volume. added these lines under boot section of config.plist, thereby, replacing the original value, which was "LastBootedVolume", with GUID
   1. <key>DefaultVolume</key>

<string> guid of volume </string>

FAIL

1. changed timeout value to 0 - rebooted

FAIL(boots into clover GUI)