SSD7101A-1 – Configuring a Single, Bootable NVMe SSD with macOS

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Overview

The following guide is intended for users who wish to set up a Single NVME SSD Boot Drive using the SSD7101A-1 NVMe RAID controller with macOS. This guide outlines two procedures – One procedure for Mac systems with a T2 Chip, and another procedure for Mac systems without a T2 Chip.

Installation Procedure (Mac systems With T2 Chips)

- 1) Remove all other HPT controllers, leaving only one SSD7101A-1 and one single disk.
- 2) If the original macOS installation contains the HighPoint NVMe Driver, please uninstall it first (Refer to the driver installation documentation).
- 3) Restart the Mac and hold down the 'Command + R' key combination to enter Recovery Mode. Click 'Start Security Utility':

i macOS Utilities File	Edit Utilities Window
	Startup Security Utility
	MacOS Utilities More a backup of your system that you want to restore. You have a backup of your system that you want to restore.
	Reinstall mac COS Reinstall mac COS Reinstall and COS Set Help Dolline Brenset ark holps Support website to find help for your Mac. Disk Utility Repart or ensure a disk using Disk Utility.
	Contrue

4) Select 'No Security' and 'Allow booting from external or removable media' and then restart the Mac

	Startup Security Utility
0	Firmware password protection is off.
1	Turn on a firmware password to prevent this computer from starting up from a different hard disk, CD, or DVD without the password.
	Turn On Firmware Password
Secure Bo	ot
Full Sec	urity
Ensures	that only your current OS, or signed operating system software currently y Apple, can run. This mode requires a network connection at software
	Security ny version of signed operating system software ever trusted by Apple to run.
No Secu Does not	urity enforce any requirements on the bootable OS.
Allowed Be	pot Media
Restricts	v booting from external or removable media the ability to boot from any device not protected by the T2 such as USB and bolt drives or internally connected PCIe or SATA drives.
	poting from external or removable media trestrict the ability to boot from any devices.

5) Open Disk Utility. Format the single disk partition: Format: APFS Scheme: GUID Partition (for this example, the single NVMe SSD was named "Legacy"):

	Samsung SSD 970 PRO 512GB Media" v ored on it. You can't undo this action.	vill permanent
Name:	Leagcy	
Format:	APFS	0
		0

- 6) Download 'Carbon Copy Cloner 5' (<u>https://bombich.com/software/download_ccc.php?v=latest</u>)
- 7) Open 'Carbon Copy Cloner 5' For 'SOURCE', select the system disk. For 'DESTINATION', select the NVMe SSD, and click 'Clone':



8) After the Clone procedure has completed, select 'Legacy' as the default system startup disk in **Startup Disk** and click **Restart**:

•			Startup Disk		Q Search
	Select the system you wa	nt to use to star	rt up your compu	ter	
	10136 macOS, 10.13.6 mac	10154 :OS, 10.15.4	BOOTCAMP Windows	Leagcy macOS, 10.15.5	Macintosh HD macOS, 10.15.5
	You have selected macOS, 10. on the disk "Leagcy."	15.5		E	Restart
	Click to restart this comput After you restart this computer another computer using a Thun hard disk.	in target disk mode	e, you can connect it		Target Disk Mode
	Click the lock to preve	ent further chang	jes.		

9) Restart the Mac and hold down the 'option' key to enter the Startup Manager window. Select the startup disk to boot the system ("Legacy", shown below):



10) After booting the system, make sure the correct boot disk was used:

Overview Displays St	orage PCI Cards Memory Support Service
	Version 10.15.5 (19F96) Mac Pro (2019)
	Processor 3.5 GHz 8-Core Intel Xeon W Memory 32 GB 2666 MHz DDR4 Startup Disk Leagcy
	Graphics AMD Radeon Pro 580X 8 GB Serial Number C02ZV0ZWK7GF
	System Report Software Update
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- 11) Install the HighPoint NVMe driver and the WebGUI (Refer to the driver installation documentation).
- 12) You can now shutdown the system and reinstall the other NVMe devices/controllers. Power on the system and boot macOS using the NVMe SSD ('Legacy'). Make sure the HighPoint NVMe driver is loading:

Mac Pro				
~ Ver	rsion	Last Modified	Notarized	Loaded
4.4	4.1	2018/5/4, 6:31 AM	Yes	No
1.1	.10	2020/1/2, 4:38 PM	Yes	Yes
4.1	13.6	2017/12/5, 5:48 PM	Yes	No
48	9.120.1	2019/11/21, 12:05 PM	Yes	No
2.7	7.2	2019/11/9, 8:11 PM	Yes	No
12.	.0	2019/11/21, 12:29 PM	Yes	No
12.	.0	2019/11/21, 12:05 PM	Yes	Yes
12.	.0	2019/11/21, 12:06 PM	Yes	No
int-tech.kext.HighPo eveloper ensions/HighPointN 21889240000	VMe.kext			
	High	HighPoint Techr	HighPoint Technologies, Inc (DX6G69M	HighPoint Technologies, Inc (DX6G69M9N2), Develop

Installation Procedure (Mac systems Without T2 Chips)

- 1) Remove all other HPT controllers, leaving only one SSD7101A-1 and one single disk.
- 2) If the original macOS installation contains the HighPoint NVMe Driver, please uninstall it first (Refer to the driver installation documentation).
- 3) Open Disk Utility. Format the single disk partition: Format: APFS Scheme: GUID Partition (for this example, the single NVMe SSD was named "Legacy"):

	Samsung SSD 970 PRO 512GB Media ored on it. You can't undo this actior	
Name:	Leagcy	
Format:	APFS	\$
Scheme:	GUID Partition Map	0

- 4) Download 'Carbon Copy Cloner 5' (<u>https://bombich.com/software/download_ccc.php?v=latest</u>)
- 5) Open 'Carbon Copy Cloner 5' For 'SOURCE', select the system disk. For 'DESTINATION', select the NVMe SSD, and click 'Clone':

Show Sidebar Preferences New Task	Carbon Copy Cloner	
Task Plan		Task History
	nly items that have been modified since the las ms, the destination volume should be bootal k the "Clone" button.	
SOURCE	DESTINATION	SCHEDULE
× 10152 - Data 34.79 GB used	Legacy 463.02 C6 free	No schedule specified
Copy All Files	© SafetyNet Off C Files unique to the destination will be deleted.	Oon't send email
ADVANCED SETTINGS		Clone

6) After the Clone procedure has completed, select 'Legacy' as the default system startup disk in **Startup Disk** and click **Restart**:



7) Restart the Mac and hold down the **'option**' key to enter the **Startup Manager** window. Select the startup disk to boot the system ("Legacy", shown below):



8) After booting the system, make sure the correct boot disk was used:



9) Install the HighPoint NVMe driver and the WebGUI (Refer to the driver installation documentation).

10) You can now shutdown the system and reinstall the other NVMe devices/controllers. Power on the system and boot macOS using the NVMe SSD ('Legacy'). Make sure the HighPoint NVMe driver is loading:

		Mac	Pro			
▶ Hardware	Extension Name		~ Version	Last Modified	Notarized	Loaded
▶ Network	HighPointIOP		4.4.1	2018/5/4, 6:31 AM	Yes	No
Software	HighPointNVMe		1.1.10	2020/1/2, 4:38 PM	Yes	Yes
Accessibility	HighPointRR		4.13.6	2017/12/5, 5:48 PM	Yes	No
Applications	initioFWBridge		489.120.1	2019/11/21, 12:05 PM	Yes	No
Developer	Intel82574L		2.7.2	2019/11/9, 8:11 PM	Yes	No
Disabled Software	IO80211Family		12.0	2019/11/21, 12:29 PM	Yes	No
Extensions	IO80211FamilyV2		12.0	2019/11/21, 12:05 PM	Yes	Yes
Fonts Frameworks	IO80211NetBooter		12.0	2019/11/21, 12:06 PM	Yes	No
Language & Region Legacy Software Logs Managed Client Preference Panes Printer Software Profiles Raw Support SmartCards Startup Items Sync Services	Version: Last Modified: Bundie ID: Notarized: Loaded: Obtained from: Kext Version: Load Address: Load Address: Load Address: Signed by:	1.110 2020/1/2 4:38 PM com.highpoint-tech.kex Yes Yes identified Developer Intel x86.64 Yes (Library/Extensions/Hig 1.110 Satisfied Developer ID Applicatio Certification authority.	hPointNVMe.kext 00 n: HighPoint Tec		9N2), Develop	er ID