

M.2 NVMe Hardware RAID Adapters

ARC-1686-2NOD/4NOD/6NOD



Adapter Architecture

- Dual Core RAID-on-Chip (ROC) 1.6GHz processor
- PCIe Gen 4.0 x8 lane host interface
- Device interface PCIe Gen4 NVMe/6Gbps SATA per M.2 slot
- Support both 2280 and 22110 form factor M.2 drives

Step 1: Unpack

Inspect ARC-1686 M.2 RAID adapter from the package. If it appears damaged, or if any items of the contents listed below are missing or damaged, please contact your dealer or distributor.

Checklist

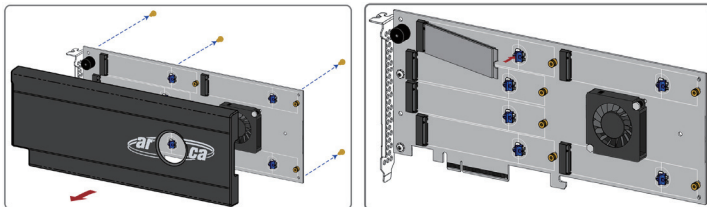
- 1 x RAID adapter in an ESD-protective bag
- 1 x ARC-1686 quick installation guide

Step 2: Mount the M.2 NVMe SSD

(1) Remove four screws that secure unit's front panel

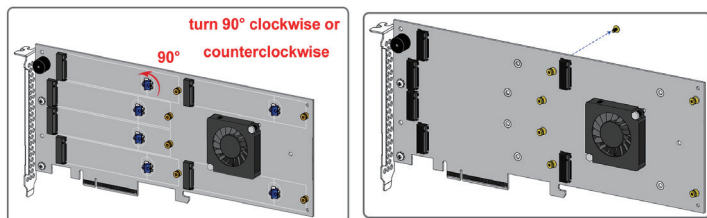
If you use 2280 M.2 NVMe SSD...

- (2) Gently insert the SSD into slot and fasten SSD with the board latch
- (3) Repeat steps 2 to 3 to install the remaining SSDs

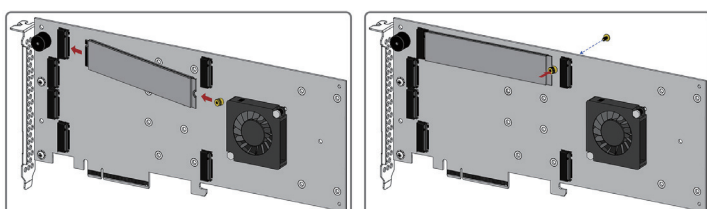


If you use 22110 M.2 NVMe SSD...

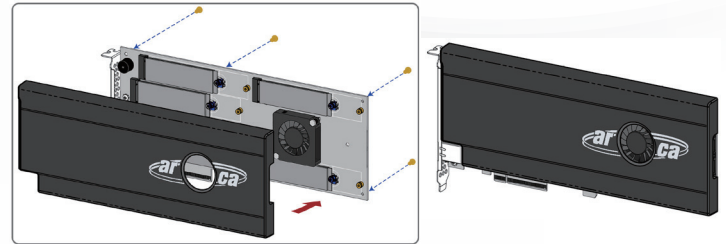
- (※2) Turn the latch 90° clockwise or counterclockwise to remove it and also remove six screws on the board



- (※3) Gently insert the SSD into slot, meanwhile put the screw into the groove and fasten the screw to secure SSD
- (※4) Repeat steps ※2 to ※3 to install the remaining SSDs



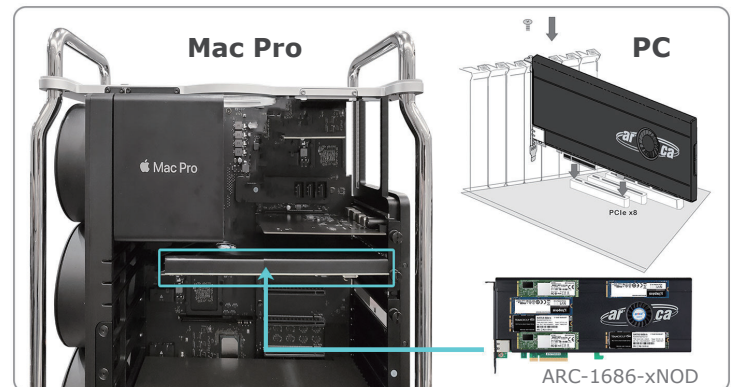
(5) Refasten four screws to secure unit's front panel



Step 3: Power PC/Server Off and Disconnect Power Cable

Step 4: Install the RAID Adapters

Remove the mounting screw and existing bracket from the rear panel behind the selected PCIe 4.0 slot. Align the gold-fingered edge on the card with the selected PCIe 4.0 slot. Press down gently but firmly to ensure that the card is properly seated in the slot. Then, screw the bracket into the computer chassis.



Step 5 : Power up the System

Step 6: Install the Adapter Driver

Please refer to Chapter 4 "Driver Installation" of the user manual for the detailed installation procedure.

Step 7: Install ArchHTTP Proxy Server

ArchHTTP has to be installed for GUI RAID console (MRAID storage manager) to run. It is used to launch the web browser MRAID storage manager. It also runs as a service or daemon in the background that allows capturing of events for mail and SNMP traps notification.

Follow the steps below to install the ArchHttp utility.

1. Download ArchHttp proxy server (or MRAID software) from Areca website: <https://www.areca.com.tw/support/downloads.html>
2. Follow the steps on the user manual to complete the installation

If you need additional information about installation and start-up of this function, see the ArchHTTP Proxy Server Installation section in Chapter 5 of the user manual. For SNMP agent function, please refer to Appendix C of the user manual.

Step 8: Configure RAID Set & Volume Set

You can create and configure a RAID adapter using any of these tools:

- McBIOS RAID Manager
 - BIOS-based menus and keyboard navigation.
- MRAID Storage Manager
 - Web browser firmware-based manager, which is accessible via the web browser installed on your operating system through ArchHttp utility.

※ Method 1: McBIOS RAID Manager (Not For Mac User)

The McBIOS RAID manager is a menu-driven program, residing in the firmware, which allows you to scroll through various menus and sub-menus and select among the predetermined configuration options.

1. Power on your computer. When prompted, press **Tab** or **F6**.
2. The McBIOS RAID manager window appears showing a selection dialog box listing the RAID adapters, select your adapter, then press **Enter** to show the McBIOS RAID manager message.

```
ARC-1686 PCIEx8/8G RAID Controller - DRAM: 0(MB) / #Channels: 16
BIOS: V1.31 / Date: 2021-02-22 - FW: V1.61 / Date: 2022-02-24

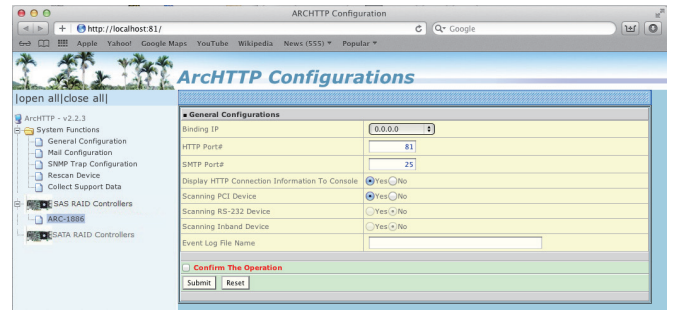
> Bus/Dev/Fun= 1/0/0, I/O-Port= F0100000h, IRQ=11, BIOS=D000 : 0h
>> ID-LUN=00-0, Vol="Areca ARC-1686-VOL#000R001", Size=4.6 (GB)
>> ID-LUN=00-1, Vol="Areca ARC-1686-VOL#001R001", Size=4.6 (GB)
>>> RAID controller BIOS installed!
>>> Press <Tab/F6> to enter SETUP menu. 9 second(s) left <ESC to Skip>..
```

3. Follow the McBIOS RAID manager to complete the configuration.

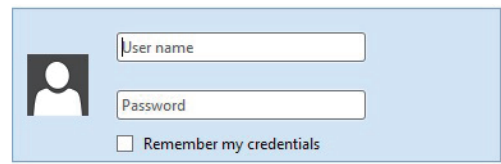
※ Method 2: MRAID Storage Manager From ArchHTTP

1. Start ArchHTTP– Browser Edition:
 - (1) In Windows, right-click on "Start" menu and choose "Programs". Clicking "MRAID" program icon starts the ArchHTTP utility (From the Start menu, choose Programs > MRAID > ArchHTTP).
 - (2) On a Mac, there is one MRAID icon showing on your desktop. This icon is for you to start up the ArchHTTP utility.
2. When you double-click on the "ArchHTTP64", it shows all RAID adapters available on the system and create an individual RAID adapter icon located on left column of the "ArchHTTP Configurations" screen.

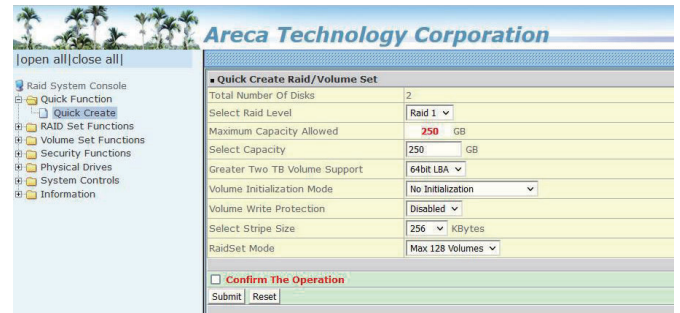
3. Locate "ARC-1686-XNOD Web Management" and launch the selected MRAID storage manager.



4. Type the User Name and Password when the login page prompts. The RAID adapter default User Name is "admin" and Password is "0000". After logging in, the MRAID storage manager process starts.



5. Click on the "Quick Create" in the main menu, your volume is automatically configured based on the number of disks in your system. You can create a RAID set associated with exactly one volume set.



See chapter 6 of ARC-1686-XNOD user manual for information on customizing your RAID volumes using MRAID storage manager.

If you need more detail information, please download user manual from the website below:

- <https://www.areca.com.tw/products/nvme-1686-nod.html>
- <https://www.areca.com.tw/support/downloads.html>

ARC-1686-xNOD Specifications

Model Name	ARC-1686-2NOD	ARC-1686-4NOD	ARC-1686-6NOD
I/O Processor	Tri-Mode Dual Core ARM A15 1.6GHz ROC		
Host Interface	PCIe 4.0 x8 Lanes		
Form Factor	64.41(H) x 167.65(L) mm	107.2(H) x 205(L) mm	107.2(H) x 262(L) mm
Device Connector	2 x M.2 Connector	4 x M.2 Connector	6 x M.2 Connector
Max M.2 Devices Support	2 x NVMe[x4]	4 x NVMe[x4]	2 x NVMe[x4] + 4 x NVMe[x2]
RAID Level	0, 1, Single Disk(Single/Dual), JBOD	0, 1(Simple/Multi Mirroring), 10, Single Disk(Single/Dual/Triple) or JBOD.	
Device Interface	12Gb/s SAS, 6Gb/s SATA, Gen 4.0 PCIe (NVMe)		
Management Port	In-Band: PCIe		
Power Loss Protection (PLP) Support	Yes		
Individual NVMe Power Disable Feature	Yes		
Hold-up Supercapacitor	On-board		
Software Package	Same as ARC-1886 Tri-Mode RAID Adapter		