2241-2IR How to Creat RAID

1. RAID Creat

 $1 \$ Through UEFI to creat RAID ONLY, Enter into BIOS, find CSM Configuration, press Enter into



2. Find storage choice, change the mode into UEFI, save and restart (Note: Some motherboard position will be a little different, exactly position is according the motherboard itself.)

Option ROM execution	
Network	[Legacu]
Storage	[UEFI]
Video	[UEFI]
Other PCI devices	[UEFI]

3、 Enter into BIOS again, you will see the card information as follows

		Apt	io Setup – A	MI
Half Advanced Chipset	Security	Boot	Save & Exit	MEBX
▶ Connectivity Configuration		HAMMANA		
► CPU Configuration				
▶ Power & Performance				
PCH-FW Configuration				
Trusted Computing				
► ACPI Settings				
Super IO Configuration				
▶ Hardware Monitor				
▶ OEM Flavor				
Power Control				
S5 RTC Wake Settings				
USB Configuration				
Network Stack Configuration	in			
CSM Configuration				
NVMe Configuration				
RAM Disk Configuration				
Marvell NVMe Configuration	Utility			

4、 Enter into card interface, as follows:



5、Creat RAID, choose Create RAID Configuration menu, press Enter, you will see two NVME disk

Advanced	Aptio Setup – AMI
Device select IOI Samsung SSD 980 PRO 250GB III Samsung SSD 970 EVO Plus 250GB	[Disabled] [Disabled]

6 \sim Press' \downarrow ' and Enter' to change the state from Disable to Enable. Then choose Goto RAID Config, as follows:



7、 Change RAID Level according to your demands. Take RAID1 for example with default parameters, the pop-up 'Would you like to create this virtual disk' choose 'YES', the Warning as shown below, press 'Enter'

1	Advanced	Aptio Setup – AMI	
	RAID Configuration RAID Level Stripe Size Initialization Name	[RAID1] [128K] [Quick]	Select [Yes] to co Virtual Disk creat parameters.
	Would you like to creat virtual disk?	e this [No]	
		WHENING Warning: Applying the new configura will delete all data of the Physical used for the new configuration.	tion Disk Select
			ange Opt. F1: General Help F2: Previous Values

8、 Choose 'Accept', then 'Enter'

Advanced	Aptio Setup – AMI
RAID Configuration RAID Level Stripe Size Initialization Name	[RAID1] [128K] [Quick]
Would you like to create this virtual disk?	[Yes]
▶ [Accept]	

 $9 \ {\rm S}$ Finished creating the RAID, choose 'OK'

Advanced	Aptio Setup – A
Successful! ▶ OK	

10、 Choose Virtual Device Information to check the RAID information , If the screen as follows, means you creat the RAID succesfully.

Advanced	Aptio Setup – AMI		
Detail Information ID Name Status BGA Type BGA Status RAID Level Member Count Member ID Stripe Block Size	0 New_VD Functional NONE NONE RAID1 2 [0][1] 128K 232GB		
Media Patrol Option ▶ [START]			

2. RAID Reconstruction

 When there's failed disk for RAID Mode, need to shutdown and change the bad disk to a good one. RAID mode will be reconstructed automatically. Get into RAID interface, status shows 'Degrade' and BGA Type shows 'Rebuilding'. You can check the progress of percent that shown after 'Running'.

Aptio Setup — AMI		
0 New_VD		
Degrade Rebuilding RUNNING(6%)		
RAID1 2 [0][1] 128K 2326B		

3. Delete RAID

 $1_{\times}\,$ Choose Delete RAID Configuration and press 'Enter'



2、 Shown 'Are you sure you want to delete the selected virtual Disk?' then choose 'YES' then 'ACCEPT' to delete RAID.

Aptio Setup – AMI	
[Enabled]	
[Yes]	

Using CLI Tool to creat, we have 3 tools (UEFI, Linux, Windows).

1、 Take linux System for example, run with cli Tool, ./mnv_cli Command.,

[root@localhost linux]# ./mnv_cli
CLI Version: 1.0.0.1046
Welcome to NVMe Command Line Interface.

>

2、 Check the info of RAID Card, run command info -o hba,

> info - o hba	
NVMe Controller ID	0
Bus Device Fun:	01:00.00
Device:	/dev/nvme0
Firmware Version:	1.0.0.1054
VID:	0x1b4b
SVID:	0x1b4b
DID:	0x2241
SDID:	0x2241
RevisionID:	BOB
Port Count:	2
Max PD of Per VD:	2
Max VD:	2
Max PD:	2
Max NS of Per VD:	1
Max NS:	2
Host ID:	0
Supported RAID Mode:	RAIDŪ RAID1 JBOD
Cache:	On
Supported BGA Features:	Initialization Rebuild MediaPatrol
Support Stripe Size:	128KB 256KB 512KB
Supported Features:	Import RAID Namespace Dump
Root Complex:	0
Link width:	4x
PCIe speed:	8Gb/s
Root Complex:	1
Link width:	4x
PCIe speed:	8Gb/s
End Point:	0
Link width:	8x
PCIe speed:	8Gb/s

3、 Check the info of the disks, run Command info -o pd,

PD ID: 0 Model: Samsung SSD 980 PRO 500GB 55 GYNFOW1 00501 Y Serial: 512 bytes 976773168 Sector Size: LBA: 465 **GB** Size: SSD backend RC/Slot ID: 0 SSD backend Namespace ID: 1 5**B2QGXA**7 Firmware version: Idle Status: Assigned: No SMART Critical Warning: No PD ID: 1 Model: Samsung SSD 980 PRO 500GB s5GYNFOW100578T 512 bytes Serial: Sector Size: LBA: 976773168 Size: 465 GB SSD backend RC/Slot ID: 1 SSD backend Namespace ID: 1 Firmware version: 5B2QGXA7 Status: Idle Assigned: No SMART Critical Warning: No

4、 Creat RAID1, execute command vd -a create -r 1 -d 0,1, 'cmd success' shown created successfully.

```
> vd - a create - r 1 - d 0,1
cmd success
>
```

5、Check RAID info, execute command info -o vd

> info - o vd	
VD ID:	0
Name:	VD_0
Status:	Functional
Importable: RAID Mode:	No RAID1 465 GR
PD Count:	2
PDs:	0 1
Stripe Block Size:	128K
Sector Size:	512 bytes
Total # of VD:	1

6、 If SSD has malfunction, shutdown and change to a good one, RAID will reconstructed automatically. Check RAID info as below.

> info -o vd					
VD ID:	0				
Name:	VD_0				
Status:	Degrade				
Importable:	No				
RAID Mode:	RAID1				
size:	465 GB				
PD Count:	2				
PDs:	0 1				
Stripe Block Size:	128K				
Sector Size:	512 bytes				
BGA progress:	Rebuilding	is	running	in	13%

7、 To Delete RAID, execute Command vd -a delete -i 0.