# Configuring a RAID Set (X570 Series)

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# **RAID Levels**

	RAID 0	RAID 1	RAID 10
Minimum Number of Hard Drives	≥2	2	4
Array Capacity	Number of hard drives * Size of the smallest drive	Size of the smallest drive	(Number of hard drives/2) * Size of the smallest drive
Fault Tolerance	No	Yes	Yes

### To configure SATA hard drive(s), follow the steps below:

- A. Install hard drive(s) in your computer.
- B. Configure SATA controller mode in BIOS Setup.
- C. Configure a RAID array in RAID BIOS (Note 1)
- D. Install the RAID driver and operating system

#### Before you begin

- At least two SATA hard drives or SSDs (Note 2) (to ensure optimal performance, it is recommended that you
  use two hard drives with identical model and capacity). (Note 3)
- A Windows setup disc.
- · Motherboard driver disc or an Internet connected computer.
- A USB thumb drive.

# 1-1 Configuring SATA Controllers

### A. Installing SATA hard drive(s) in your computer

Install the hard drives/SSDs in the SATA/M.2 connectors on the motherboard. Then connect the power connectors from your power supply to the hard drives.

(Note 1) Skip this step if you do not want to create RAID array on the SATA controller.

(Note 2) An M.2 PCIe SSD cannot be used to set up a RAID set either with an M.2 SATA SSD or a SATA hard drive.

(Note 3) Refer to "Internal Connectors," for the installation notices for the M.2, and SATA connectors.

### B. Configuring SATA controller mode in BIOS Setup

Make sure to configure the SATA controller mode correctly in system BIOS Setup. Step:

Turn on your computer and press <Delete> to enter BIOS Setup during the POST (Power-On Self-Test). Under Settings\IO Ports, set SATA Configuration\SATA Mode to RAID (Figure 1). Then save the settings and restart your computer. (If you want to use NVMe PCIe SSDs to configure RAID, make sure to set NVMe RAID mode to Enabled.)

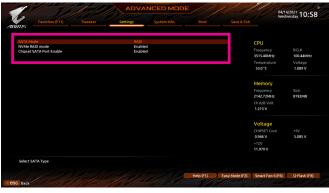


Figure 1

### C. UEFI RAID Configuration

Step 1:

In BIOS Setup, go to Boot and set CSM Support to Disabled (Figure 2). Save the changes and exit BIOS Setup.

1		1. Alla	ADVA	NCED MOD	E			04/14/2021 10:59
IRU5	Favorites (F11)		Settings	System Info.	Boot	Save & Exit		wednesday 1 0102
Boot Op Boot Op Boot Op Boot Op Boot Op Boot Op	otion #2 otion #3 otion #4		UEFE P0: TC P1: TC	ows Boot Manager (P1: T USB3.0 FLASH DRIVE PM DSHIBA DT01ACA100 DSHIBA DT01ACA100 .0 FLASH DRIVE PMAP		100)	CPU Frequency 3515.40MHz Temperature 34.0*C	BCLK 100.44MHz Voltage 1.101 V
Security	en LOGO Show		On Syste Enabl Disab	led Jord			Memory Frequency 2142.72MHz Ch A/B Volt 1.212 V	Size 8192MB
User Pa:			Auto				Voltage CHIPSET Core 0.946 V +12V 11.970 V	+5V 5.085 V
Enable/	Disable CSM Support.							
					Help (F1)	Easy Mode (F2)	Smart Fan 6 (F	6) Q-Flash (F8)

Figure 2



The BIOS Setup menus described in this section may differ from the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

Step 2:

After the system reboot, enter BIOS Setup again. Then enter the **Settings\RAIDXpert2 Configuration Utility** sub-menu (Figure 3).

Initial Displ Integrated HD Audio O Pcie Tbt Su	Favorites (F11)		Settings	System Info.		Save & Exit	Wed	4/2021 11:00
Integrated HD Audio (	ay Output					Jave a Exc		
HD Audio (			PCIe 1 Auto	Slot			CPU	
	iontroller pport		Enable Disable				Frequency 3514.00MHz	BCLK 100.40MHz
PCIEX16 Bi Above 4G D Re-Size BA F_USB31C	Decoding R Support		Auto Disabk Disabk Auto				Temperature 35.0°C	Voltage 1.101 V
Onboard L	AN Controller		Enable	d			Memory Frequency	
USB Type-C USB Config NVMe Confi SATA Confi	figuration	nfiguration					2141.86MHz Ch A/B Volt 1.215 V	8192MB
Network SI	tack Configuration	25-V - 00:A0:C9:00:00:1	20			_	Voltage	
	2 Configuration Utility		N				CHIPSET Core 0.946 V +12V 11.988 V	+5V 5.092 V
Select to c	onfigure RAIDXpert2	controller					11.966 V	
Back					Help (F1)	Easy Mode (F2)	Smart Fan 6 (F6)	Q-Flash (F8)

Figure 3

Step 3:

On the RAIDXpert2 Configuration Utility screen, press <Enter> on Array Management to enter the Create Array screen. Then, select a RAID level (Figure 4). RAID levels supported include RAID 0, RAID 1, and RAID 10 (the selections available depend on the number of the hard drives being installed). Next, press <Enter> on Select Physical Disks to enter the Select Physical Disks screen.

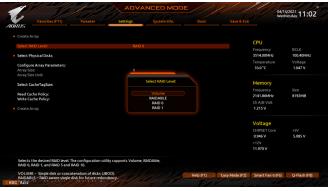


Figure 4

Step 4:

On the Select Physical Disks screen, select the hard drives to be included in the RAID array and set them to Enabled. Next, use the down arrow key to move to Apply Changes and press <Enter> (Figure 5).Then return to the previous screen and set the Array Size, Array Size Unit, Read Cache Policy and Write Cache Policy.

1 6/10	ADVAN		E	1/1	04	/14/2021 11:02
ADRUS Favorites (F11) Tweaker	Settings	System info.				ednesday TT.OZ
Select Media Type: Physical Disk 1:10, SATA, 1.0 TB, Ready Physical Disk 1:11, SATA, 1.0 TB, Ready Check All Uncheck All	BOTH Enabled Enabled				CPU Frequency 3514.00MHz Temperature 33.0*C	BCLK 100.40MHz Voltage 1.062 V
<ul> <li>Apply Changes</li> </ul>					Memory Frequency 2141.86MHz Ch A/B Volt 1.215 V	Size 8192MB
					Voltage CHIPSET Core 0.946 V +12V 11.970 V	+SV 5.085 V
Cesc Back			Help (F1)	Easy Mode (F2)	Smart Fan 6 (F6)	Q-Flash (F8)

Figure 5

#### Step 5:

After setting the capacity, move to Create Array and press <Enter> to begin. (Figure 6)

1 10	Cold de	ADVA		E	1/0	04/1	1/2021 hesday 11:03
ADRUS Favorites (F11)		Settings	System Info.			Wed	hesday 11.05
Create Array     Select: RAID Level:     Select Physical Disks     Configure Array Parameters:						CPU Frequency 3514.00MHz Temperature	BCLK 100.40MHz Voltage
Array Size: Array Size Unit:		19992 MB (M	87 legaBytes)			34.0 °C	1.047 V
Select CacheTagSize: Read Cache Policy: Write Cache Policy:		64KB Read 0 Write I	Cache Back Cache			Memory Frequency 2141.86MHz Ch A/B Volt	Size 8192MB
<ul> <li>Create Array</li> </ul>						1.212 V Voltage CHIPSET Core 0.946 V	+5V 5.085 V
Creates the Array						+12V 11.988 V	
Cesc Back		A de		Help (F1)	Easy Mode (F2)	Smart Fan 6 (F6)	Q-Flash (F8)

Figure 6

After completing, you'll be brought back to the **Array Management** screen. Under **Manage Array Properties** you can see the new RAID volume and information on RAID level, array name, array capacity, etc. (Figure 7)

1 0	ADV				0	1/14/2021 Iednesday 11:04
ADRUS Favorites (F11)	Tweaker Settings	System Info.				rednesday 1 110 1
Select Array:	Arra	1, RAID0, 1.9 TB, Normal			CPU	
Array Properties: Array ID: RAID Level: Array Status: Array Capacity: Cache Tag Size: Hidden:	1 RAIC Norr 1.9 T 64KE No	hal B			Frequency 3514.00MHz Temperature 33.0 °C	BCLK 100.40MHz Voltage 1.044 V
Array Policies: Read Cache Policy: Write Cache Policy: • View Associated Physical Disks		l Cache e Back Cache			Memory Frequency 2141.86MHz Ch A/B Volt	Size 8192MB
Manage Dedicated Hot Spares					1.212 V Voltage CHIPSET Core 0.946 V +12V	+5V 5.085 V
Displays the physical disks associate	ed with the Array.				11.970 V	
esc Back			Help (F1)	Easy Mode (F2)	Smart Fan 6 (F6	) Q-Flash (F8)

Figure 7

#### **Delete RAID Volume**

To delete a RAID array, select the array to be deleted on the RAIDXpert2 Configuration Utility\Array Management\Delete Array screen. Press <Enter> on Delete Array to enter the Delete screen. Then set Confirm to Enabled and press <Enter> on Yes (Figure 8).

1	10	Cort 1	ADVA		E		04/14	/2021 esday 11:0
RUS	Favorites (F11)		Settings	System Info.			Wedn	esday TT.O
	g an Array will delete all o sure you want to delete						CPU Frequency	
Confirm	ting an Array may take u		Enabl	ed			3514.00MHz Temperature 33.0°C	100.40MHz Voltage 1.056 V
Yes,	please wait for the opera	tion to complete.					Memory Frequency 2141.86MHz Ch A/B Volt 1.212 V	Size 8192MB
							Voltage CHIPSET Core 0.946 V +12V 11.988 V	+5V 5.092 V
C Back					Help (F1)	Easy Mode (F2)	Smart Fan 6 (F6)	Q-Flash (F8)

Figure 8

# 1-2 Installing the RAID Driver and Operating System

With the correct BIOS settings, you are ready to install the operating system.

### A. Installing Windows

As some operating systems already include RAID driver, you do not need to install separate RAID driver during the Windows installation process. After the operating system is installed, we recommend that you install all required drivers from the motherboard driver disc using "Xpress Install" or from the GIGABYTE APP Center to ensure system performance and compatibility. If the operating system to be installed requires that you provide additional RAID driver during the OS installation process, please refer to the steps below:

Step 1:

Method 1: Copy the Hw10 folder under the \BootDrv folder in the driver disc to your USB thumb drive.

Method 2: Go to GIGABYTE's website, browse to the motherboard model's web page, download the AMD RAID Preinstall Driver file on the Support\Download\SATA RAID/AHCI page, unzip the file and copy the files to your USB thumb drive.

Step 2:

Boot from the Windows setup disc and perform standard OS installation steps. When the screen requesting you to load the driver appears, select **Browse**.

Step 3:

Insert the USB thumb drive and then browse to the location of the driver. When a screen as shown in Figure 1 appears, select **AMD-RAID Bottom Device** first and click **Next** to load the driver. Then select **AMD-RAID Controller** and click **Next** to load the driver. Finally, continue the OS installation.

🚱 🚰 Install Windows		×
Select the driver to be installed.		
AMD-RAID Bottom Device (C:HW10/RAID/o/54/rcbottom.inf) AMD-RAID Controller [storport] (C:HW10/RAID/o/54/rcbottom.inf)		
Hide drivers that are not compatible with hardware on this computer.		
Brgwse Bescan	N	at
Eiguro 1		

Figure 1

#### B. Rebuilding an Array

Rebuilding is the process of restoring data to a hard drive from other drives in the array. Rebuilding applies only to fault-tolerant arrays such as RAID 1 and RAID 10 arrays. To replace the old drive, make sure to use a new drive of equal or greater capacity. The procedures below assume a new drive is added to replace a failed drive to rebuild a RAID 1 array.

While in the operating system, make sure the Chipset and RAID drivers have been installed. Then double-click the **RAIDXpert2** icon on the desktop to launch the RAID utility.





Enter the login ID and password (default: "admin"), and then click **Submit** to launch **AMD RAIDXpert2**.



Step 3:

On the next screen, select **Assign as Global Spare** and click **Confirm**.



Step 5:

Then rebuild is complete when the **Task State** column shows "COMPLETED."





In the **Disk Devices** section, left-click your mouse twice on the newly-added hard drive.





During the rebuild process, you can select the array that is being built (displayed in red) in the **Active Volumes** section to check the current progress.