# Configuring a RAID Set (B550 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.
- 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.)

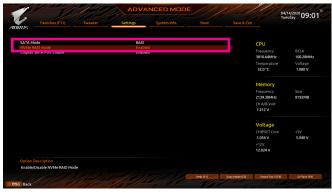


Figure 1

## 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 10	1. de	ADV	ANCED MOD	E			04/14/2020 Tuesday 09:02
Favorites (F11)		Settings	System Info.	Boot	Save & Exit		Tuesday
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 Bootup NumLock State Security Option Full Screen LOGO Show		UEFL				CPU Frequency 3810.64MHz Temperature 32.0*C	BCLK 100.28MHz Voltage 1.080 V
East Boot CSM Support Administrator Password User Password		Dirat * Disat				Memory Frequency 2139.30MHz Ch A/B Volt 1.212 V	Size 8192MB
Secure Boot Preferred Operating Mode		Auto				Voltage CHIPSET Core 1.056 V +12V 11.952 V	+5V 5.040 V
Option Description Enable/Disable CSM Support.							
				Help (F1)	Easy Mode (F2)	Smart Fan S (F6	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\IO Ports\RAIDXpert2 Configuration Utility** sub-menu (Figure 3).

1	14-17	1.	ADVA		E	1/7		04/14/2020 Tuesday 09:03
ADRUS	Favorites (F11)		Settings	System info.				Tuesday 03.03
HD Aud PCIEX10 Above 4 Onboar	isplay Output lio Controller B Bifurcation 4G Decoding d LAN Controller nfiguration		PCIe 1 Enabi Auto Disab Enabi	led led			CPU Frequency 3805.77MHz Temperature 32.0 °C	BCLK 100.15MHz Voltage 1.080 V
<ul> <li>SATA C</li> <li>Network</li> <li>Nealter</li> </ul>	Configuration onfiguration k Stack Configuration PCIe 2.3082 Family Con ert2 Configuration Utilit	troller (MACJUDEU/AC				3	Memory Frequency 2136.57MHz Ch A/B Volt 1.212 V	Size 8192MB
							Voltage CHIPSET Core 1.056 V +12V 11.952 V	+5V \$.040∨
	Description to configure RAIDXpert2	controller						
esc Back					Hela (F1)	Easy Mode (F2)	Smart Fan 5 (f	R Q-Flash (FR)

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 **Select CacheTagSize**, **Read Cache Policy** and **Write Cache Policy**.

	ADVAN	NCED MOD	E		94	1/14/2020 09:12
RUS Favorites (F11) Tweaker	Settings	System Info.				esday Ozer E
Select Media Type: Physical Disk 0:1:0, SATA, 1.0 TB, Ready Physical Disk 0:1:1, SATA, 1.0 TB, Ready Check All	BOTH Enabled Enabled				CPU Frequency 3805.77MHz	BCLK 100.15MHz
Uncheck All Apply Changes					Temperature 32.0°C	Voltage 1.080 V
					Memory Frequency 2136.57MHz Ch A/B Volt 1.212 V	Size 8192MB
					Voltage CHIPSET Core 1.056 V +12V 11.952 V	+5V \$.040 V
Submits the changes made to the entire form.						
			Hela (Ft)	Easy Mode (F2)	Smart Fan 5 (F6)	Q-Flash (F8)

Figure 5

#### Step 5: Move to **Create Array** and press <Enter> to begin. (Figure 6)

120	1. A.	ADVA		E		0	1/14/2020 Jesday 09:14
Favorites (F11)		Settings	System Info.				Jesday 02.14
Create Array							
Select RAID Level:		RAID			CF		
<ul> <li>Select Physical Disks</li> </ul>						05.77MHz	100.15MHz
Configure Array Parameters:						nperature	Voltage 1.080 V
Array Size:		19992			52	.0°C	1.080 V
Array Size Unit:		MB (A	degaBytes)				
Select CacheTagSize:		64KB			M	emory	
Read Cache Policy: Write Cache Policy:			Cache Back Cache			6.57MHz	8192MB
white cache Policy.		wine	Dack Cacile			A/B Volt	
Create Array					1.2	12 V	
					Vo	ltage	
						IPSET Core	
					1.0	156 V	5.040 V
						952 V	
Creates the Array							
				Help (F1)	Easy Mode (F2)	imart Fan S (Fig)	Q-Flash (F8)
SC Back							

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)

>					Tu	14/2020 09:17
Favorites (F11) Tweaker	Settings					
Select Array:		1, RAIDO, 1.9 TB, Normal				
					CPU	
Array Properties: Array ID:					Frequency	BCLK
RAID Level:	RAIDO				3805.77MHz	100.15MHz
Array Status:	Norm					
Array Capacity:	1.9 TE				Temperature	Voltage
Cache Tag Size:	64KB				32.0 °C	1.080 V
Hidden:						
Array Policies:					Memory	
Read Cache Policy:	Read				Frequency	
Write Cache Policy:	Write	Back Cache			2136.57MHz	8192MB
					Ch A/B Volt	
View Associated Physical Disks					1.212 V	
					Voltage	
					CHIPSET Core	
					1.056 V	5040 V
					+12V	3.040 1
					11.952 V	
Selects an Array.						
			Hela (F1)	Easy Mode (F2)	Smart Fan 5 (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).

	12		VII VI	ANCED MOD			04/	14/2020 09:1
RU5 -	avorites (F11)		Settings	System Info.			100	suay
Are you sure		of the data available the selected Array(	s)?				CPU Frequency	
Confirm YES Deleting a Yes, please	n Array may take u e wait for the oper	ip to 15 seconds. Aft ation to complete.	Enab ter selecting	led			3805.77MHz Temperature 32.0 °C	100.15MHz Voltage 1.080 V
NO							Memory Frequency 2136.57MHz Ch A/B Volt 1.212 V	Size 8192MB
							Voltage CHIPSET Core 1.056 V +12V 12.024 V	+5V 5.040 V
					Help (F1)	Easy Mode (F2)	Smart Fan 5 (Fil)	Q-Flash (Fil)

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" 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:

Copy the Hw10 folder under the \BootDrv folder in the driver disc 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. The location of the driver is as follows: Windows 64-bit:  $Wu10\RAID\x64$ 

Step 4:

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.

AMD-RAID Cor	tom Device (D:\Hw10/RAID\x64/SATA_RAID troller [storport] (D:\Hw10/RAID\x64/SATA_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 from the motherboard driver disc. Then double-click the **RAIDXpert2** icon on the desktop to launch the RAID utility.



Step 1:

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.