Configuring a RAID Set (X570 AORUS 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 SATA RAID/AHCI 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 disk.
- Motherboard driver disk.
- 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.)

	(delle		NCED MODE				05/15/2019 Wednesday 17:06
RUS Favorites (F11)	Tweaker	Settings				Exit	
Initial Display Output HD Audio Controller PCIEX16 Bifurcation		PCIe 1 S Enable Auto				CPU Frequency	
Above 4G Decoding		Disable	rd			3310.56MHz	100.32MHz
NVMe RAID mode		Enable	d			Temperature 28.0 *C	Voltage 1.236 V
USB Configuration NVMe Configuration						Memory	
SATA Configuration						Frequency	
Network Stack Configuration AMD CBS						2140.16MHz	4096MB
AMD Overclocking						Ch A/B Volt 1.212 V	
						Voltage	
						CHIPSET Core 0.990 V	+5V 5.070 V
						+12V 11.880 V	
SATA Configuration Settings							
			rain all a so	telo (F1)	Easy Mode (F2)	Smart Fan S (F	6) Q-Flash (F8)

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.

11-6				1/0	2//	05/15/2019 Wednesday 17:16
ADRUS Favorites (F11)	Tweaker Settings	System Info.	Boot	Save &		Wednesday 17.10
Boot Option Priorities Boot Option #1 Boot Option #2		USB FLASH DRIVE PMAP, Pa DSHIBA DT01ACA100	rtition 1		CPU Frequency 3315.84MHz	BCLK 100.48MHz
Hard Drive BBS Priorities Bootup NumLock State Security Option	On System				Temperature 29.0 °C	Voltage 1.224 V
Full Screen LOGO Show	Enable	led		_	Memory Frequency 2143.57MHz	4096MB
CSM Support Administrator Password User Password	Disabl	led			Ch A/B Volt 1.212 V	
 Secure Boot Preferred Operating Mode 	Auto				Voltage CHIPSET Core 0.990 V	+5V 5.070 V
Option Description					+12V 11.880 V	
Enable/Disable CSM Support.			b (F1)	Easy Mode (F2)	Smart Fan 5 (Fé	n O-Flash (F8)
				Easy Mode (F2)	Smart Pan 5 (PC) Q-Plash (P8)

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).

1	10	1. Alexandre de la	ADVA	NCED MODI				05/15/2019 Wednesday 17:16
RUS	Favorites (F11)	Tweaker	Settings	System Info.			Exit	wednesday 1711
HD Aud PCIEX10 Above Onboar	isplay Output dio Controller 6 Bifurcation 4G Decoding rd LAN Controller		PCIe 1 Enable Auto Disable Enable	d ed			CPU Frequency 3315.84MHz Temperature	BCLK 100.48MHz Voltage
USB Co NVMe (SATA C Networ AMD C	RAID mode nfiguration Configuration onfiguration ik Stack Configuration BS wertOcking wertOcking wertOcking		Disable	d			28.0°C Memory Frequency 2143.57MHz Ch A/B Volt 1.212 V	1.224√V 4096MB
							Voltage CHIPSET Core 0.990 V +12V 11.880 V	+5V 5.070 V
	Description to configure RAIDXpert2	controller			Help (F1)	Easy Mode (F2)	Smart Fan 5 (f	6) O-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.

3				05/16/2019 13:05 Thursday
RUS Favorites (F11) Tweaker	Settings			
Select Media Type: Physical Disk 1:1:0, SATA, 1.0 T8, Ready	BOTH Enabled		CPU	
Physical Disk 1:1:1, SATA, 1.0 TB, Ready	Enabled		Frequen 3615.12	ncy BCLK MHz 100.42MHz
Check All Uncheck All			Temper 31.0 °C	ature Voltage 1.320 V
Apply Changes			h toma	
			Memo Frequen 2142.29	1cv
			Ch A/B 1 1.224 V	
			Voltag CHIPSET 0.990 V	T Core +5V
			+12V 11.880 V	
		telp (F1)	Easy Mode (F2) Smart Fa	n 5 (F6) O-Flash (F8)

Figure 5

Step 5:

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

		DE		05/16/2019 13:05
ADRUS Favorites (F11) Twee	sker Settings System Info.			Thursday 13.03
Select RAID Level: Select Physical Disks			CPU Frequency	
Configure Array Parameters: Array Size: Array Size Unit:	1999287 MB (MegaBytes)		3615.12MHz Temperature 31.0 °C	
Select CacheTagSize: Read Cache Policy: Write Cache Policy:	64KB Read Cache Write Back Cache		Memory Frequency 2142-29MHz	8192MB
Create Array			Ch A/B Volt 1.224 V	
			Voltage CHIPSET Corr 0.990 V	e +5V 5.040 V
			+12V 11.880 V	
Option Description Creates the Array				
SC Back		Help (F1) Easy M	ode (F2) Smart Fan S (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)

2 Clark Charles						05/16/2019 13:00 Thursday
Pavorites (F11) Tweaker	Settings					
Select Array:	Array 1	, RAIDO, 1.9 TB, Normal				
Array Properties:					CPU	
Array ID: RAID Level:	1 RAID0				Frequency 3615.12MHz	BCLK 100.42MHz
Array Status: Array Capacity: Cache Tag Size:	Normal 1.9 TB 64KB				Temperature 31.0 °C	Voltage 1.320 V
Array Policies: Read Cache Policy:	Read C	rche			Memory	
Write Cache Policy:		lack Cache			Frequency 2142.29MHz	8192MB
View Associated Physical Disks					Ch A/B Volt	
					1.224 V	
					Voltage CHIPSET Core 0.979 V	+5V 5.040 V
					+12V 11.880 V	
Displays the physical disks associated with the Array.						
		marked all all all	telo (F1)	Easy Mode (F2)	Smart Fan StF	O-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 and all	AUDVA	NCED MODE			05	/16/2019 13:0
Favorites (F11)	Tweaker	Settings	System Info.				ursuay 1510
Deleting an Array will delete a Are you sure you want to dele						CPU	
Confirm	are the selected Amayla	Enable	3			Frequency 3615.12MHz Temperature	BCLK 100.42MHz Voltage
YES Deleting an Array may take Yes, please wait for the op	e up to 15 seconds. Afte eration to complete.	er selecting				31.0 °C	1.320 V
NO						Memory	
						Frequency 2142.29MHz	8192MB
						Ch A/B Volt 1.224 V	
						Voltage	
						CHIPSET Core 0.990 V	+5V 5.040 V
						+12V 11.880 V	
			Second and Second	Help (F1)	Easy Mode (F2)	Smart Fan 5 (F6)	O-Flash (F8)

Figure 8

1-2 Installing the SATA RAID/AHCI 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 SATA RAID/AHCI driver, you do not need to install separate RAID/ AHCI driver during the Windows installation process. After the operating system is installed, we recommend that you install all required drivers from the motherboard driver disk using "Xpress Install" to ensure system performance and compatibility. If the operating system to be installed requires that you provide additional SATA RAID/AHCI 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 disk to your USB thumb drive.

Step 2:

Boot from the Windows setup disk 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.

🚱 👰 Install Windows	×
Select the driver to be installed.	
AMD-RAID Bottom Device (CHWu10/RAID/a64/rcbottom.inf) AMD-RAID Controller [storport] (CHWu10/RAID/a64/rcbottom.inf)	
Astro-KAD Controller (surport) ((twite KAD) Abore continuation	
☐ Hide drivers that are not compatible with hardware on this computer.	
Brgwse Bescan	Next
Figure 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 from the motherboard driver disk. 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.