



AMD RAID

USER GUIDE

Motherboard

AMD RAID Configuration

The following are the RAID levels supported by RAIDXpert2.

- RAID 0** (Striping) breaks the data into blocks which are written to separate hard drives. Spreading the hard drive I/O load across independent channels greatly improves I/O performance.
- RAID 1** (Mirroring) provides data redundancy by mirroring data between the hard drives and provides enhanced read performance.
- RAID 10** (Striped RAID1 Sets) uses four hard drives to create a combination of RAID 0 and 1 by forming a RAID 0 array from two RAID 1 arrays.
- Volume** (JBOD) provides the ability to link-together storage from one or several disks, regardless of the size of the space on those disks. Useful in scavenging space on disks unused by other disks in the array. Does not provide performance benefits or data redundancy.
- RAIDABLE** (also known as RAID Ready) allows the user to add more storage space or create a redundant array after a system is installed.

RAID level comparison

	RAID 0	RAID 1	RAID 10
Minimum # drives	2	2	4
Data protection	None	Excellent	Excellent
Read performance	Excellent	OK	OK
Write performance	Excellent	Good	Good
Capacity utilization	100%	50%	50%



Important

All the information/ volumes/ pictures listed in your system might differ from the illustrations in this appendix.

Enabling RAIDXpert2 Configuration Utility

To enter the RAIDXpert2 Configuration Utility menu

1. Power on and press **Delete** key to enter BIOS Setup menu.
2. Press **F7** to switch to Advanced mode from EZ mode.
3. Go to **BIOS > SETTINGS > Advanced > Integrated Peripherals > SATA Mode** and change setting to **RAID Mode**.
4. Go to **BIOS > SETTINGS > Advanced > Windows OS Configuration > BIOS UEFI/CSM Mode** and change setting to **UEFI**.
5. Press **F10** to save configuration and exit, and then reboot and press **Delete** key to enter BIOS Setup menu.
6. Go to **BIOS > SETTINGS > Advanced > RAIDXpert2 Configuration Utility** sub-menu.

Initializing Disks

New disks and legacy disks must be initialized before they can be used to create an AMD-RAID array. Initialization writes AMD-RAID configuration information (metadata) to a disk.

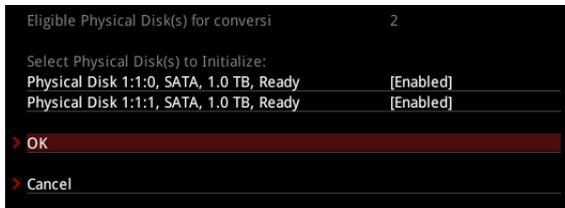


Important

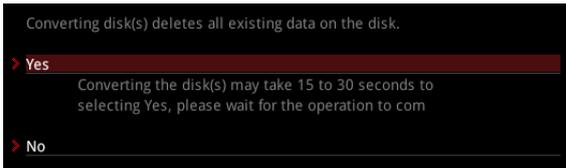
- If a disk is part of an AMD-RAID array, the disk cannot be selected for initialization. To initial the disk anyway, delete the AMD-RAID array. Data on the disk is deleted during initialization so ensure the correct disks are chosen to initialize.
- A legacy disk can contain valid data. When a legacy disk is initialized, all data on the disk is lost.

To initialize disks

1. As previously mentioned, enable RAIDXpert2 Configuration Utility.
2. Go to **BIOS > SETTINGS > Advanced > RAIDXpert2 Configuration Utility > Physical Disk Management > Select Physical Disk Operations > Initialize Disk** sub-menu.



3. Select desired disks by changing the Physical Disk setting to **Enabled**.
4. Select **OK**, then press Enter.



5. Review the warning message, if you want to proceed, select **YES**, then press Enter.
6. Initialization takes 10 to 15 seconds per disk. During initialization, a complete rescan of all channels is done automatically.

Creating Arrays

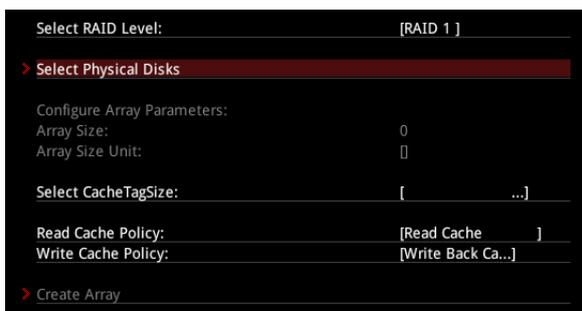
Arrays can be created after the disks are initialized.

Important

- For redundant arrays, the Create process is not started until after the operating system and AMD-RAID OS drivers have been installed and the system has booted to the operating system. However, the arrays are immediately available to use for either a bootable array or a data array.
- Array numbers are valid only for a given boot and might be different in the RAIDXpert2 Configuration Utility and RAIDXpert2. If a permanent label is required, use the RAIDXpert2 Web GUI Array Naming feature.
- At any point in the procedure, return to a prior window by pressing ESC.
- If the system is booted from an AMD-RAID bootable array, the first array in the Arrays section must be the bootable array. The system boots only from the first array in the Arrays section.

To create an array

1. As previously mentioned, enable RAIDXpert2 Configuration Utility.
2. Go to **BIOS > SETTINGS > Advanced > RAIDXpert2 Configuration Utility > Array Management > Create Array** sub-menu.



3. Select the RAID level from the **Select RAID Level** drop down menu.
4. Enter **Select Physical Disks** sub-menu, select member disks by changing the Physical Disk setting to **Enabled**.



5. Select **Apply Changes**, then press Enter to apply and go back to previous sub-menu.
6. Change the **Select CacheTagSize**, **Read Cache Policy** and **Write Cache Policy** settings according to your needs.
7. Select **Create Array**, then press Enter.

Deleting Arrays



Important

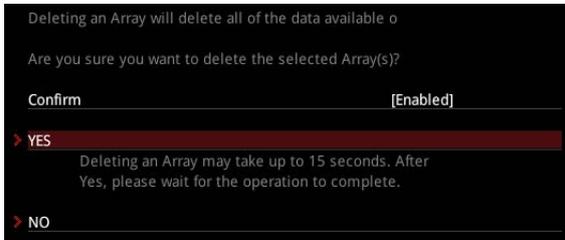
- *Deleting an array permanently destroys all data that is on the array. This action cannot be undone and it is very unlikely that the data can be recovered.*
- *Do not delete the first array listed in the Arrays section, if it is the AMD-RAID bootable array. Doing this deletes the operating system and AMD-RAID files.*

To delete an array

1. As previously mentioned, enable RAIDXpert2 Configuration Utility.
2. Go to **BIOS > SETTINGS > Advanced > RAIDXpert2 Configuration Utility > Array Management > Delete Array** sub-menu.



3. Select the desired array and change the setting to **Enabled**.
4. Enter **Delete Array(s)** sub-menu.



5. Review the warning message, if you want to proceed, Select **Confirm** and change the setting to **Enabled**.
6. Select **YES** then press Enter.

Installing RAID Driver

New Operating System Installation

The following details the installation of the drivers while installing operating system.

1. During the operating system installation, after selecting the location to install Windows click on **Load driver** button to install a third party RAID driver.
2. When prompted, insert the USB flash drive with **AMD RAID Drivers** and then click **Browse**.
 - To make an **AMD RAID Drivers** USB flash drive. Insert the MSI Driver Disc into the optical drive. Copy all the contents in \\Storage\AMD\
3. Navigate to the directory containing the saved AMD RAID drivers, then click **OK**.
4. Select the **(rcbottom.inf)** driver, click **Next**.
5. When prompted, click **OK**.
6. Click **Browse** and navigate to the directory containing the saved AMD RAID drivers again, then click **OK**.
7. Select the **(rcraid.inf)** driver, click **Next**.
8. You have successfully installed the RAID driver, and Windows setup should continue.
9. Leave the disk/ USB drive in the computer until the system reboots itself. Windows setup will need to copy the files after the RAID volume is formatted, and Windows setup starts copying files.

AMD RAIDxpert2 Management Suite Installation

1. Set the **SATA Mode** to **RAID Mode** in BIOS
2. Insert the MSI Driver Disc/ MSI USB Drive into the optical drive/ USB port.
3. Click the **Select to choose what happens with this disc** pop-up notification, then select **Run DVDSetup.exe** to open the installer. If you turn off the AutoPlay feature from the Windows Control Panel, you can still manually execute the **DVDSetup.exe** from the root path of the MSI Driver Disc/ MSI USB Drive.
4. Under the **Drivers/Software** tab, check the **AMD RAID Drivers** check-box.
5. Click the **Install** button.
6. When prompt you to restart, click **OK** button to finish.
7. Restart your computer and enter the Windows operating system.
8. Double-click the **RAIDxpert2** icon to open the RAIDxpert2 Web GUI.
 - Default credentials are:
 - Username - **admin**
 - Password - **admin**
9. Change the credentials:
 - Create new username and password
10. Re-log into the RAIDxpert2 Web GUI with the new credentials.