

Chapter 5: Raid Configurations; Raid Configurations; Raid Definitions - Asus SABERTOOTH Z170 Manual

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RAID Configurations

5.1

RAID configurations

The motherboard comes with the Intel RAID 1, RAID 10 and RAID 5 configuration.

5.1.1

RAID definitions

RAID 0 (Data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a

sustained data transfer rate, double that of a single disk alone, thus improving data access

and storage. Use of two new identical hard disk drives is required for this setup.

RAID 1 (Data mirroring) copies and maintains an identical image of data from one drive to

a second drive. If one drive fails, the disk array management software directs all applications

to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use

two new drives or use an existing drive and a new drive for this setup. The new drive must be

of the same size or larger than the existing drive.

RAID 5 stripes both data and parity information across three or more hard disk drives.

Among

the advantages of RAID 5 configuration include better HDD performance, fault tolerance, and

higher storage capacity. The RAID 5 configuration is best suited for transaction processing,

relational database applications, enterprise resource planning, and other business systems.

Use a minimum of three identical hard disk drives for this setup.

RAID 10 is data striping and data mirroring combined without parity (redundancy data) having

to be calculated and written. With the RAID 10 configuration you get all the benefits of both

RAID 0 and RAID 1 configurations. Use four new hard disk drives or use an existing drive

and three new drives for this setup.

SABERTOOTH Z170 S

Rapid Storage Technology that supports RAID 0,

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