TECHNICAL BRIEF: RAID

This Technical Brief is a valuable resource to learn how to configure RAID (Redundant Array of Independent/Inexpensive Disks) for your LaCie professional server. In the pages that follow, you will find detailed instructions on how to build a RAID array on a LaCie 5big Office/Office+ that contains two, three, four, or five disks. While the examples and screenshots come from Windows® Storage Server 2008 R2 Essentials, they apply to Windows Home Server 2011 as well.

ADMINISTRATOR

In order to review, confirm, or redefine the software settings on your LaCie professional server, you must have Administrative rights to the device.

THE LACIE 5BIG OFFICE/OFFICE+ AND RAID

An early question when first integrating a server is:

What type of RAID array(s) will provide the best data protection and performance?

LaCie understands that the response differs according to the needs of an office and the amount of available storage. The 5big Office and 5big Office+ give you flexibility to create the RAID array that best suits your working environment. A turnkey unit with five disks features three pre-configured arrays while a single disk enclosure allows you to add hard drives with time. In both cases, you can adjust and redesign your desired level(s) of RAID.

While there are many potential solutions, we recommend one or a combination of the following two types of RAID:

RAID 1 (Mirroring): Data is copied to two or more drives in a mirrored set. Should a single disk should fail, data will be available to users on the network. RAID 1 provides solid data protection though storage capacity and performance will be reduced. A minimum of two disks are required to create a RAID 1 array.

RAID 5: Data is written across all disks using parity blocks. Similar to RAID 1, data integrity is maintained even if one drive fails. However, RAID 5 offers a more efficient use of storage capacity and enhanced performance when compared with RAID 1. Your LaCie professional server must have at least three hard drives to configure RAID 5.

For a full explanation of each RAID level, please see our White Paper.

> **Important info:** Revising and building RAID arrays will delete all data stored on the hard drives. LaCie highly recommends creating the RAID array(s) before the disks are used to store, share, and distribute data.

LACIE RAID CONFIGURATIONS AND WINDOWS® BACKUP

LaCie recommends backing up all data, including files stored on traditional backup servers such as the 5big Office and 5big Office+. To facilitate local backups, the 5big Office and 5big Office+ include a simple wizard that will help you to configure automated backups from your server to desktop attached storage (DAS). You may

connect your DAS to one of the USB 2.0 or eSATA ports found on the rear of the server. In most instances, businesses and IT professionals have considered their unique environment for backing up data so this Technical Brief will not delve into the logistical requirements for maintaining data in one or more sites.

However, it is important to note the limitations for backing up data beyond a fixed storage capacity. Please keep in mind that the wizard will not allow you to backup data from a volume that is **greater than 2TB**. Since the majority of businesses and IT professionals take advantage of commercial and private backup solutions, the default RAID configurations found in this Technical Brief include volumes greater than 2TB. If you do not have an alternative backup solution for your 5big Office/Office+ and would like to use the wizard, please see RAID - Creating Multiple Volumes.

For further information on the 2TB volume limitation with the Windows Backup Wizard, please see the links below:

5big Office+
5big Office

Offsite Backup

Many businesses may find it important to keep data safe in two or more locations in order to guard against hardware failure, natural disasters, or fire. The 5big Office+ includes data replication to maintain files between servers in two or more locations. Among the many advantages that replication offers is secure data backup to an alternative site. Please see our Technical Brief on tech-brief-dfs for further information.