# RAID - TWO-DISK SERVER

A 5big Office/Office+ with two drives offers many options for the user, including the RAID configuration. While it is possible to create Spanned disks or a RAID 0 array, LaCie highly recommends mirroring for optimal protection of your data. RAID 0 can offer some speed advantages but data will not be duplicated across both volumes as with mirroring. Users risk losing data if one of the disks should fail in a RAID 0 array.

## SUGGESTED RAID CONFIGURATION FOR TWO DISKS

| Volume | Disks and RAID Level | Usage | Notes |
|---|---|---|---|
| Windows | 2 Disks<br><br>Mirror | Windows must run from its own volume.<br><br>Storing data on the system volume will impact server performance.<br><br>Page file* | A Mirror requires two drives, making it ideal for the Windows operating system.<br><br>A Mirror offers redundancy, duplicating each file on the two disks that make up the volume.<br><br>If one disk should fail, the system data will be available on its mirrored drive. If Disk 0 should fail, it will be possible to recover the system boot disk before restarting the server. |
| Data | 2 Disks<br><br>Mirror | The Data volume should be used to create Shares and store data. | A Mirror offers redundancy, duplicating each file on the two disks that make up the volume.<br><br>If one disk should fail, the data may be accessed from the mirrored drive without losing time. |

*The page file can be stored on the Windows volume.

**Important info:** Mirroring provides very good protection if one drive should encounter problems. However, LaCie highly recommends backing up the data stored on your professional server regularly in order to guard against worst case scenarios (i.e. accidental data deletion, malicious programs, viruses, etc.). LaCie professional servers include USB 2.0 and eSATA ports to attach desktop drives for use as backup storage. You can also backup your data to another server on the network.

## ADJUSTING THE RAID

Administrators may change RAID configurations to suit the needs of a business or after a server system recovery.

Use Disk Management to view or change RAID configurations in Windows:

1. Launch the Dashboard from a Windows workstation on the same network as your LaCie 5big Office/Office+.
   **Start > All Programs > Windows Home Server 2011/Windows Storage Server 2008 R2 > Windows Home Server 2011 Dashboard/Windows Storage Server 2008 R2 Dashboard**
2. Select the **Home** tab.

3. Click once on **COMMON TASKS**.
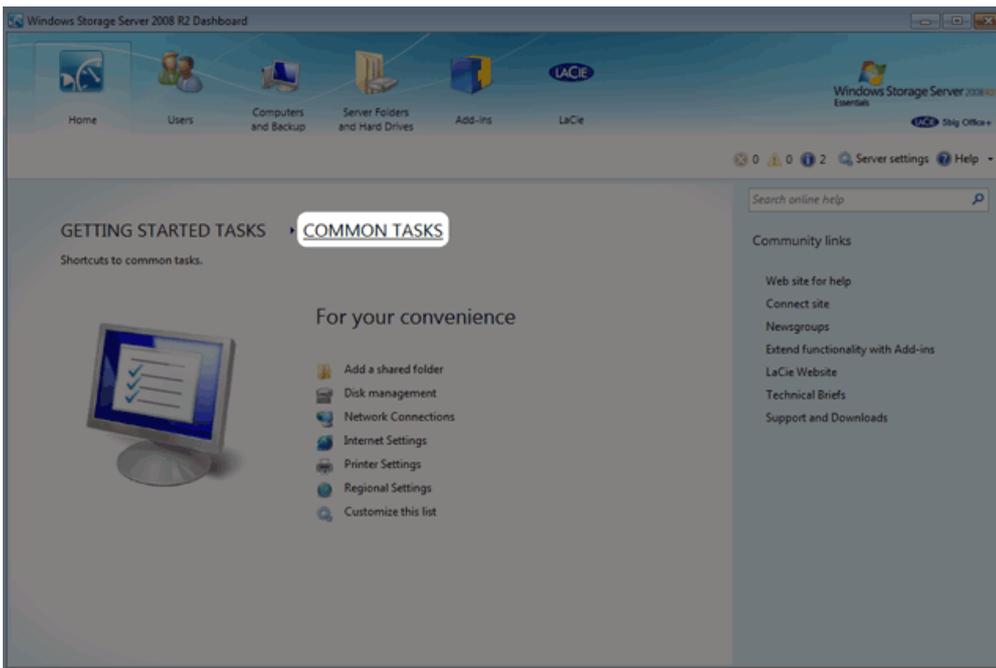


4. Click once on **Disk Management**.
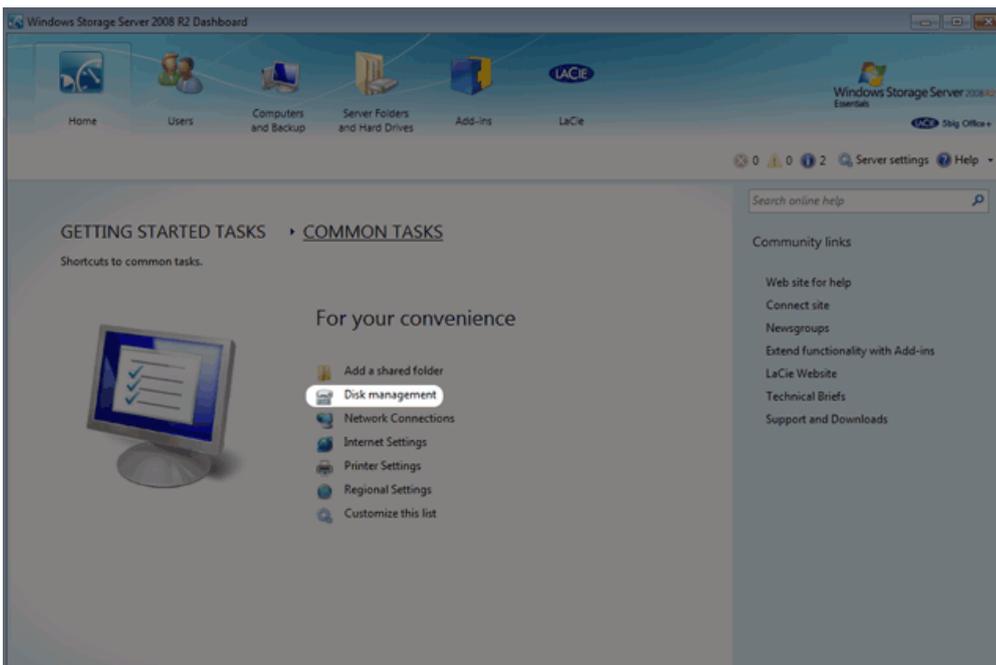


The first time Disk Management is launched, you may be prompted to initialize your drives using MBR or GPT. For information on MBR and GPT formats, please read MBR, GPT and the 5big Office/Office+ Operating Systems. You can initialize the disks at this step or later in the process.
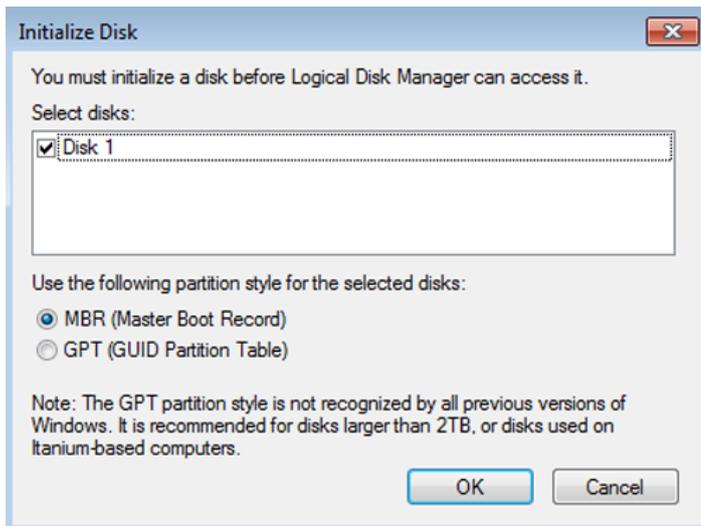
> **Note:** If you do not see Disk Management among the *Common Tasks*, you can add it by clicking **Customize this list**. Check the box next to each task that you wish to include on the *Common Tasks* list then click **OK**.
>
> 
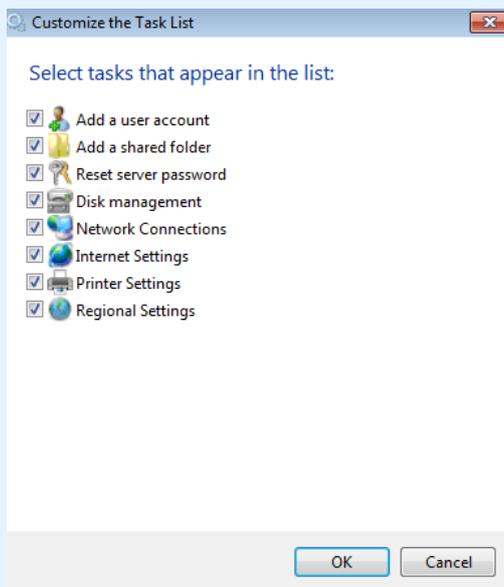
# 5BIG OFFICE/OFFICE+ SINGLE DISK DEFAULT CONFIGURATION

A single disk 5big Office/Office+ is shipped with three partitions, System, Windows, and Data. (The System partition takes up 100MB). The screenshot below shows both partitions on a single hard drive, Disk 0. Volume C contains the Windows operating system and volume D is meant to store data. As shipped, volume C takes up 60 GB.
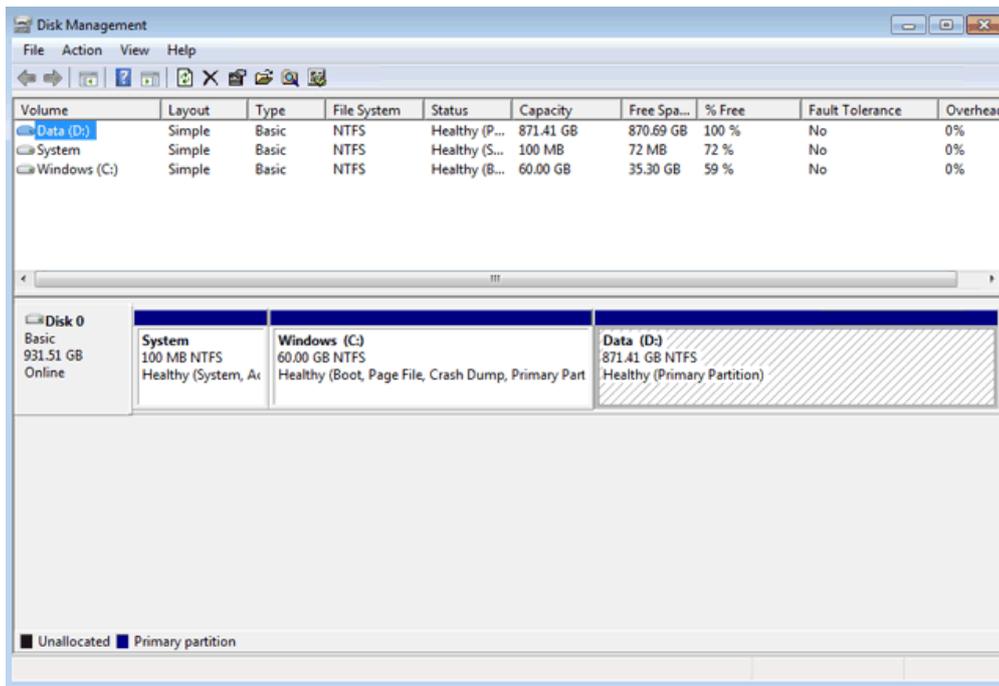
If you have not inserted disks into the 5big enclosure, please see Removing and Installing Disks for instructions.

## BOOT ORDER AND CREATING THE SYSTEM MIRROR

All Windows system files are duplicated on each disk in the mirror. To protect your system files and to save important data collected by the operating system, LaCie recommends a RAID 1 configuration for the system and Windows volumes. In case of disk failure, all files will be accessible on the disk paired for the mirror.

Though the bootloader file will be duplicated on both disks, Windows will only boot from Disk 0. Therefore, it is highly recommended that you do not restart the server if Disk 0 experiences problems. Instead, replace Disk 0 (Disk Tray Slot 1) as soon as possible and rebuild the RAID 1 onto the new drive.

## CREATING THE SYSTEM MIRROR

1. Insert the new disk into Drive Tray Slot 2.
2. Go to Disk Management Adjusting the RAID.
3. The second disk will appear as *Unallocated*.
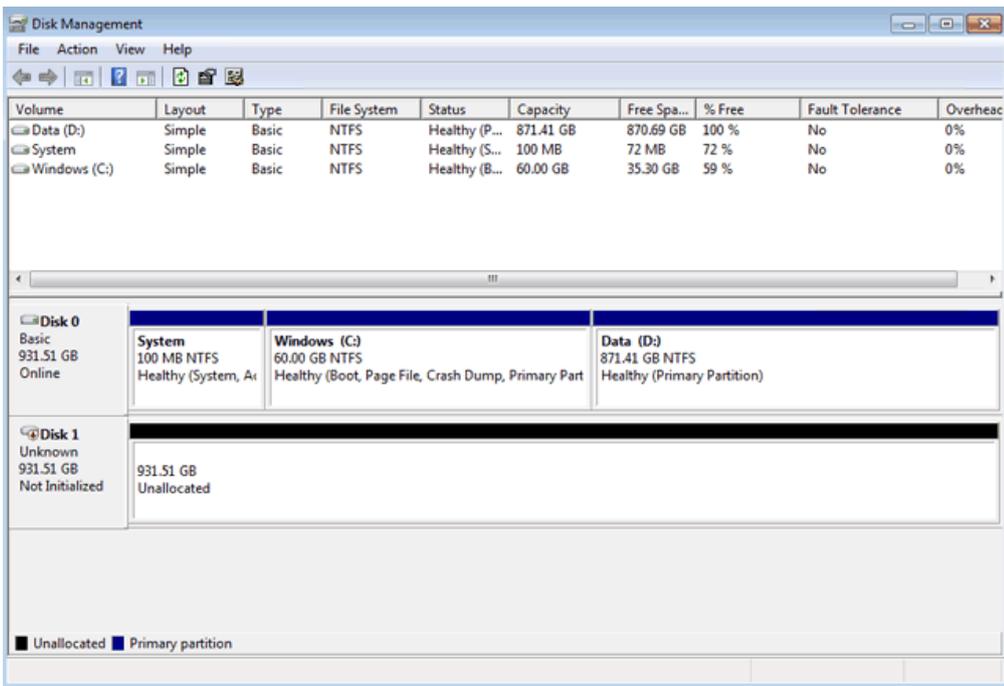
4. Right-click on the **System** volume to select **Add Mirror...**
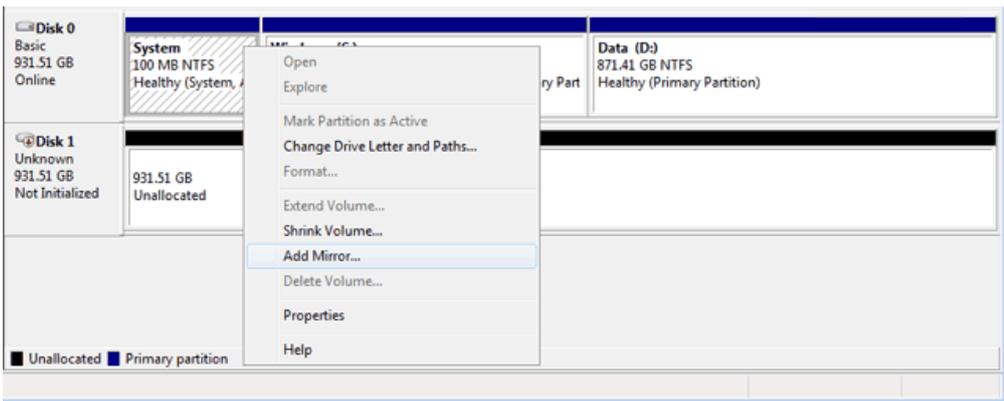


5. A prompt will ask you to select a location for the mirror. Choose **Disk 1** and click **Add Mirror**.
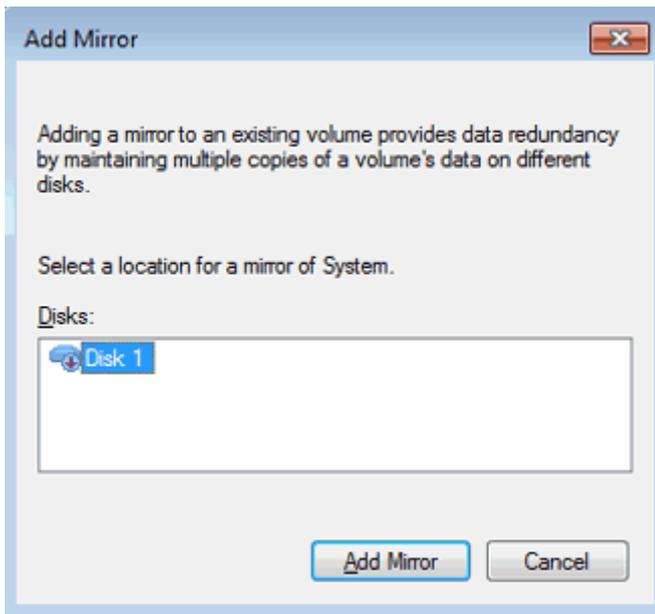
6. A Disk Management warning will appear. Please click **Yes** to continue.
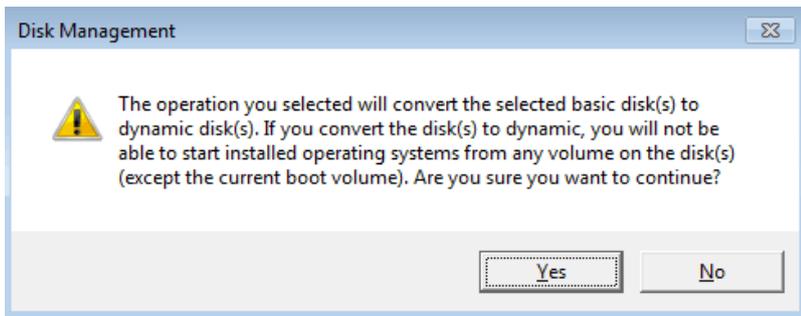


## CREATING THE WINDOWS MIRROR

1. Create the System Mirror before the Windows Mirror.
2. Right-click on the **Windows** volume to select **Add Mirror...**
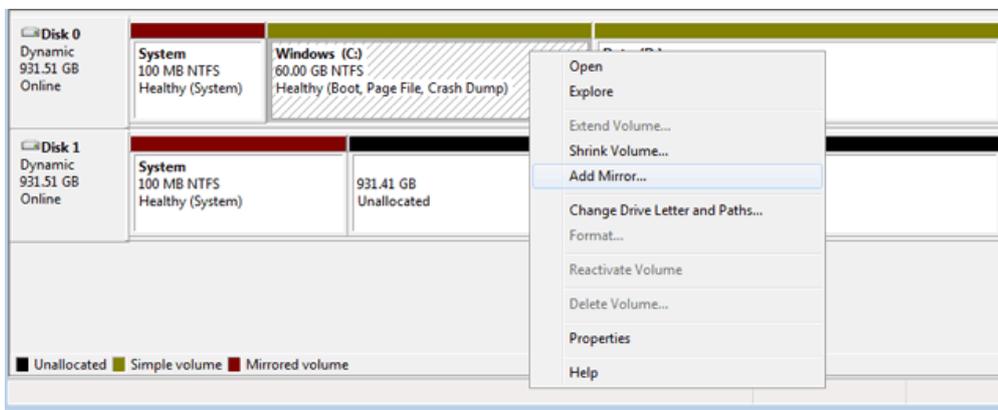


3. A prompt will ask you to select a location for the mirror. Choose **Disk 1** and click **Add Mirror**.
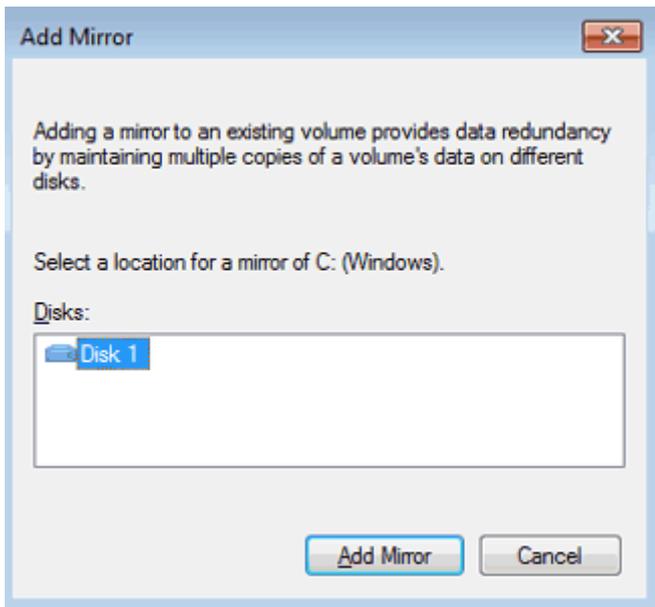
4. It may take ten minutes to resync the RAID 1 array.
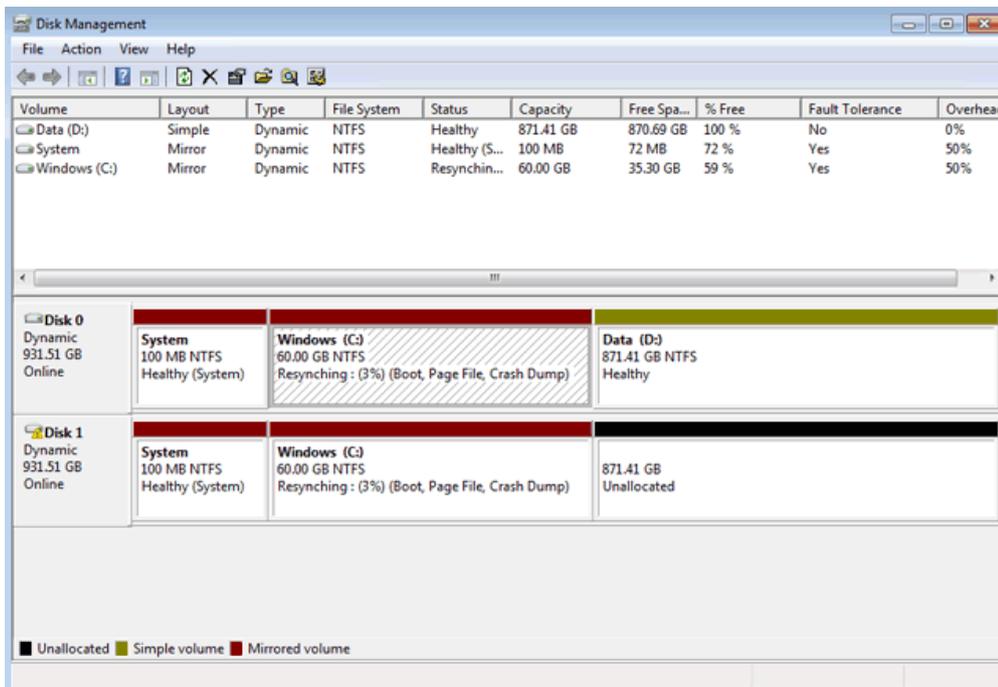


# CREATING THE DATA MIRROR

1. Create the System and Windows Mirrors before the Data Mirror. You may create the Data Mirror while System Mirror is resyncing.
2. Right-click on the **Data** volume to select **Add Mirror…**
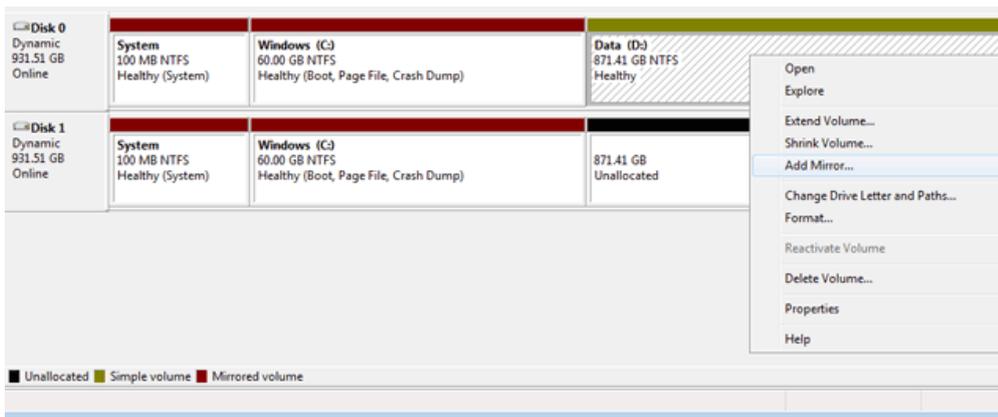
3. A prompt will ask you to select a location for the mirror. Choose **Disk 1** and click **Add Mirror**.
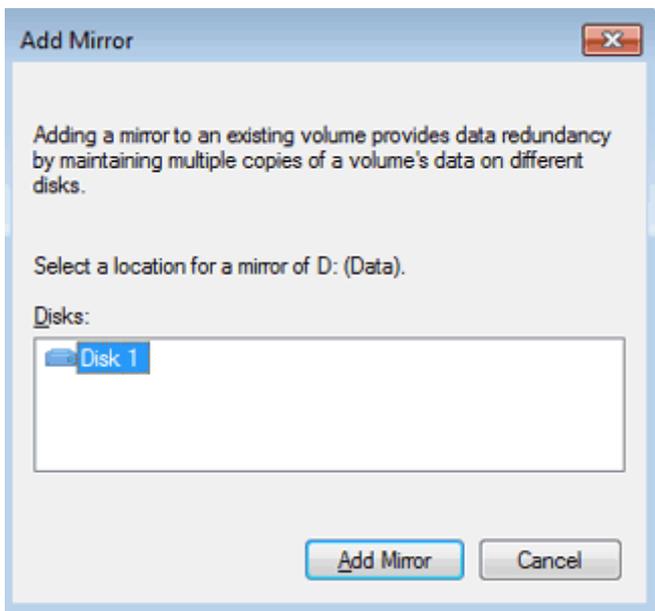


4. Due to the size of the Mirrored set, it will take some time to resync the array. However, you can begin working with your LaCie professional server immediately.

| Volume | Layout | Type | File System | Status | Capacity | Free Spa... | % Free | Fault Tolerance | Overhead |
|---|---|---|---|---|---|---|---|---|---|
| Data (D:) | Mirror | Dynamic | NTFS | Resynching | 871.41 GB | 871.26 GB | 100 % | Yes | 50% |
| System | Mirror | Dynamic | NTFS | Healthy (S... | 100 MB | 72 MB | 72 % | Yes | 50% |
| Windows (C:) | Mirror | Dynamic | NTFS | Healthy (B... | 60.00 GB | 35.31 GB | 59 % | Yes | 50% |
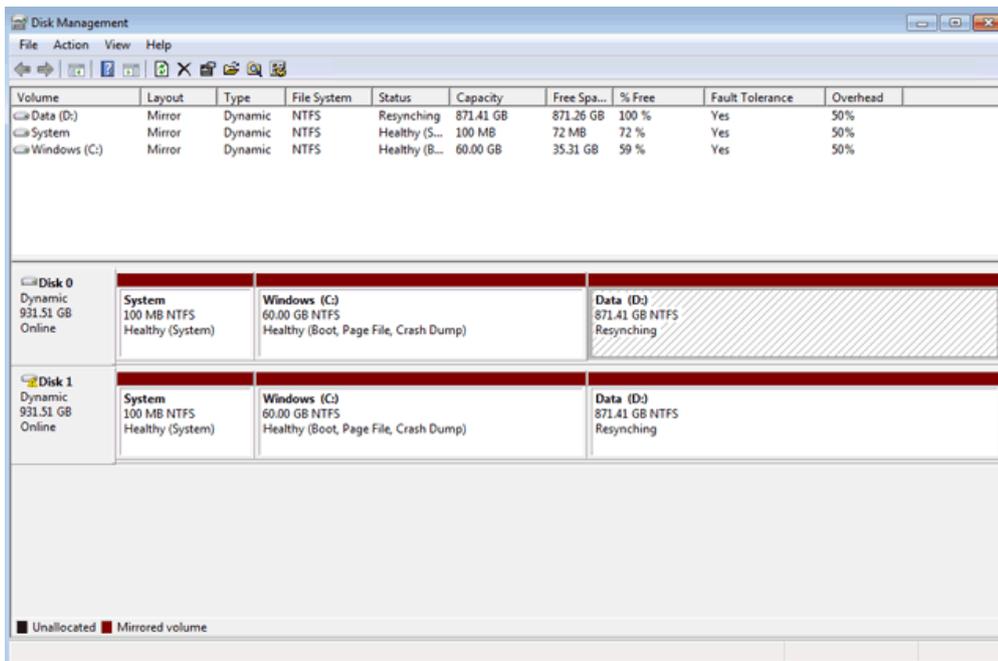
**Note:** Please keep the following in mind as Mirrored and/or RAID 5 volumes resync:

- Rebooting the 5big Office/Office+ while Disk Management is resyncing a Mirrored or RAID 5 volume will not harm the configuration or its data. However, since the process was interrupted, Disk Management will automatically start a new resync at 0% once the 5big Office/Office+ has rebooted.
- Due to the capacity of the RAID 5 volume, rebooting while a resync is in progress could extend the operation for many hours.
- A volume that is in the midst of a resync may be accessed by workstations on the network. Users can perform common actions with the volume(s), such as reading files, writing files, or moving Shared Folders. However, performance will be degraded while Windows is resyncing Mirrored and/or RAID 5 volumes.