REPAIRING RAID CONFIGURATIONS

In the event that an individual hard disk fails in the 4big Rack Office, contact your LaCie reseller or LaCie Customer Support for technical assistance. If the server is within the warranty period, please use the replacement hard drive provided by LaCie.

In the example below, Disk 1 is Missing and both the Mirrored and RAID 5 arrays have *Failed Redundancy*.

🖞 Disk Managem	ent										
File Action V	liew Help										
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/olume	Layout	Туре	File System	Status	Capacity	Free Spa	% Free	Fault Tolerance	Overhead		
a Datal (D:)	RAID-5	Dynamic	NTFS	Failed Red	5408.75 GB	5389.96	100 %	Yes	25%		
Data2 (E:)	Mirror	Dynamic	NTFS	Failed Red	60.10 GB	59.69 GB	99 %	Yes	50%		
la System	Mirror	Dynamic	NTFS	Healthy (S	100 MB	38 MB	38 %	Yes	50%		
Windows (C:)	Mirror	Dynamic	NTFS	Healthy (B	60.00 GB	34.08 GB	57 %	Yes	50%		
Dynamic	Data2 (E)					Data	L (D-)				ľ
1863.02 GB	60.10 GB NTFS					1802.5	2 GB NTR	s			
Online	Failed Redunda	ncy				Failed	Redunda	incy			
Disk 2	Surtem		Mindaux (C)					Data1 (D)			
1863.02 GB	100 MB NTFS		60.00 GB NTFS			1802.92 GB NTF			1802.92 GB NTFS		
Online	Healthy (System	n)	Healthy (Boot,	Page File, Crash	Dump)			Failed Redundancy			
CRIDEN 2	1		1					р			
Dynamic	System		Windows (C:)					Data1 (D:)			
1863.02 GB	100 MB NTFS		60.00 GB NTFS				1802.92 GB NTFS				
Online	Healthy (System	n)	Healthy (Boot,	Page File, Crash	Dump)			Failed Redundancy			
Missing											
Dynamic	Data2 (E:)					Data	1 (D:)				
1863.01 GB	60.10 GB NTFS					1802.5	92 GB NTF	s			
Missing	Failed Redunda	ncy				Failed	Redunda	incy			
]										



Once the disk has been replaced, please make certain to repair the RAID arrays in the following order:

1. Mirror (Data2 in this example but the same order is in effect if one of the Disk 3 in the System Mirror fails.)

Important info on Disk 2 failure: If Disk 0, Disk 1, or Disk 3 must be replaced, please continue with the instructions in <u>Repair the Mirror Array</u>. If Disk 2 has failed, please see <u>Disk 2 Failure and Boot Order</u>.

REPAIR THE MIRROR ARRAY

The steps below will illustrate how to repair Mirrored and RAID 5 arrays following disk failure. The two partitions from the failed hard drive, Disk 1 in this example, are used for both Mirrored and RAID 5 arrays.

Note: Please wait until you have received and installed the replacement disk before attempting to repair the RAID.

- 1. Remove the failed Disk 1 and insert the replacement. See the <u>Hardware Maintenance</u> section of the 4big Rack Office User Manual for instructions on adding new drives. Please make certain that you replace the correct drive.
- 2. Power on the server. It may take 5 to 10 minutes for the server to be ready.
- 3. Launch the Dashboard from a Windows workstation on the same network as your LaCie 4big Rack Office. **Start > All Programs > Windows Home Server 2011 > Windows Home Server 2011 Dashboard**
- 4. Select the **Home** tab.
- 5. Click once on **COMMON TASKS**.
- 6. Click once on **Disk Management**.



7. Upon launch Disk Management will prompt you to initialize the drive. LaCie recommends initializing the disk as MBR to match the default configuration. Click "OK" to continue.

Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
☑ Disk 1
Use the following partition style for the selected disks:
MBR (Master Boot Record)
GPT (GUID Partition Table)
Note: The GPT partition style is not recognized by all previous versions of Windows. It is recommended for disks larger than 2TB, or disks used on Itanium-based computers.
OK Cancel

8. The replacement disk is listed as *Unallocated*.

🚽 Disk Manageme	int										
File Action Vi	ew Help										
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Volume	Layout	Туре	File System	Status	Capacity	Free Spa	% Free	e Fault Tole	rance O	verhead	
🚰 Datal (D:)	RAID-5	Dynamic	NTES	Failed Red	5408.75 GB	5390.14	100 %	Yes	25	%	
Data2 (E:)	Mirror	Dynamic	NTES	Failed Red	60.10 G8	59.69 GB	99 % 20 %	Yes	50	% *	
Windows (C:)	Mirror	Dynamic	NTFS	Healthy (B	60.00 GB	34.10 GB	57 %	Yes	50	5	
CRDisk 0											
Dynamic	Data2 (E)							Data1 (Dt)			
Online	Failed Redunda	ncy						1802.92 GB NTFS Failed Redundancy			
Disk 1	_										
1863.02 GB	1863.02 GB										
Online	Unallocated										
	1		_								
Disk 2 Dynamic	System		Windows	(C)					Data1 (D-)		1
1863.02 GB	100 MB NTFS	-	60.00 GB	60.00 GB NTFS Havillau (Root, Roos Ella Crack Durse)				1	802.92 GB NTF	s	
C.I.I.K	Healthy (system	~	Healthy (boot, Page File,	crash pump)			'	alled Nedundar	ncy	
GDisk 3											
Dynamic 1963 03 CP	System		Windows	(C)					Data1 (D:) //		
Online	Healthy (System	•	Healthy (NTFS Boot, Page File, I	Crash Dump)			F	ailed Redundar	ncy ///	
										<i></i>	
Missing	slog										
Dynamic Data2 (f) Data2 (f) 186301 (6) 60.10 (6) MTFS 100.292 (6) NTFS											
Missing	Missing Failed Redundancy Failed Redundancy										
	1										
Unallocated	Mirrored volume	RAID-5 ve	lume								

 The mirror must be broken before rebuilding it with the replacement disk. Right-click on the Data2 volume to select Remove Mirror... Please note that the same procedure should be followed if one of the disks in the System mirror has failed.

Disk 0 Jmarnic 1863.02 GB Online	Data2 010 60.10 GB NTFS Failed Redundancy		Open Epiore	
GRIDISK 1 Basic 1863.02 GB Online	1863.02 GB Unallocated		Remove Misso Break Missored Volume Change Drive Letter and Paths Format	
Dynamic 1863.02 GB Online	System 100 MB NTFS Healthy (System)	Windows (C) 60.00 GB NTFS Healthy (Boot, Page File, Crash Dump)	Repair Volume Reactivate Volume VTFS Delete Volume Properties	
Dynamic 1863.02 GB Online	System 100 MB NTFS Healthy (System)	Windows (C) 60.00 GB NTFS Healthy (Boot, Page File, Crash Dump)	Help IB02.92 GB NTF5 Failed Redundancy	
Unallocated	Data2 (E) 60.10 GB NTFS Failed Redundancy Mirrored volume RAID-5 volum	me	Data1 (00) 1002.92 GB NTPS Failed Redundancy	Rem

Mirror - Data2

10. In the *Remove Mirror* pop-up window, select **Missing**. Click **Remove Mirror**.

Remove Mirror
Removing a mirror from this volume removes one copy of the volume's data. The volume will no longer contain redundant data.
Select a disk from which to remove a mirror of E: (Data2).
Disks:
Disk 0 Missing
Remove Mirror Cancel

11. Click **Yes** at the Disk Management prompt.



12. The mirror has been successfully removed.

Dynamic 1863.02 GB Online	Data2 (E) 60.10 GB NTFS Healthy		Dutat (D3) 1802.92 GB NTPS Failed Redundancy					
Basic 1863.02 GB Online	1863.02 GB Unallocated							
Disk 2 Dynamic 1863.02 GB Online	System 100 MB NTF5 Healthy (System)	Windows (C.) 60.00 GB NTFS Healthy (Boot, Page File, Crash Dump)	D J J	utal (Dd 30.29 GB NTFS ailed Redundancy				
Disk 3 Dynamic 1863.02 GB Online	System 100 MB NTFS Healthy (System)	Windows (C:) 60.00 GB NTF5 Healthy (Boot, Page File, Crash Dump)	D Si Fi	utal (D) 30.29 GB NTFS ailed Redundancy				
Omissing Dynamic 1802.92 GB Missing	Data1 (D:) 1802.92 GB NTFS Failed Redundancy							

13. Right click on the **Data2** partition to select **Add Mirror...**

Dynamic 1863.02 GB Online	Data2 (63) 60,10 GB NTFS Heathy		Open Explore	
Disk 1 Basic 1863.02 GB Online	1863.02 GB Unallocated		Extend Volume Shrink Volume Add Mirror Change Drive Letter and Paths	
Dynamic 1863.02 GB Online	System 100 MB NTFS Healthy (System)	Windows (C) 60.00 GB NTF5 Healthy (Boot, Page File, Crash Dump)	Format Reactivate Volume Delete Volume	TFS dancy
Dynamic 1863.02 GB Online	System 100 M8 NTFS Healthy (System)	Windows (C:) 60.00 GB NTFS Healthy (Boot, Page File, Crash Dump)	Help Failed Redur	1TFS Idancy
Cynamic Dynamic 1802-92 GB Missing	Data1 (D-) 1802-92 GB NTFS Failed Redundancy			
Unallocated	Simple volume Mirrored volum	e RAID-5 volume		•

14. From the *Add Mirror* pop-up window, select your replacement disk (in this example, **Disk 1**). Click **Add Mirror**.



15. Click **Yes** at the Disk Management pop-up window. The Mirror will begin the resynching operation.



Data2 (1:) 60.10 GE NTFS Resynching : (54%)			Datal (D) 180252 GB NTFS Feiled Redundancy					
Data2 (E:) 60.10 GB NTFS Resynching : (54%)		1802.92 GB Unallocated						
System Windows (C) 100 MB NTFS 60.00 GB NTFS Healthy (System) Healthy (Boot, Page File, Crash Dump)			Deta1 (D3) 1802.92 GB NTFS Failed Redundancy					
System 100 MB NTFS Healthy (System)	Windows (C-) 60.00 GB NTF5 Healthy (Boot, Page File, Crash Dump)		Data1 (D3) 1802.92 GE NTFS Failed Redundancy					
Data1 (02) 1802.92 GB NTFS Failed Redundancy								
	Deta2 (E) 60.30 GB NTFS Resynching : (54%) 100 MB NTFS Data2 (E) 60.30 GB NTFS Resynching : (54%) 100 MB NTFS Job MB NTFS Healthy (System) System 100 MB NTFS Healthy (System) 100 MB NTFS Fealthy (System) 100 MB NTFS Healthy (System) 100 MB NTFS Healthy (System) 100 MB NTFS	Data2 (E) 60.0 0 B NTFS Resynching : (54%) Data2 (E) (0.10 GB NTFS Resynching : (54%) System 100 MB NTFS Healthy (System) System 100 MB NTFS Healthy (Boot, Page File, Crash Dump) System 100 MB NTFS Healthy (Boot, Page File, Crash Dump) System 100 MB NTFS Healthy (Boot, Page File, Crash Dump) Data1 (D) Data1 (D) 1002:22 GB NTFS Failed Redundancy	Data2 (E3 60.01 06 NTFS Resynching : (54%) Data1 (D3 130.292 06 NTFS Field Redundancy Data2 (E3 60.01 06 NTFS Resynching : (54%) 1802.92 06 Unallocated System 100 MB NTFS Healthy (System) Windows (C3 60.00 06 NTFS Healthy (Boot, Page File, Crash Dump) System Healthy (System) Windows (C3 60.00 06 NTFS Healthy (Boot, Page File, Crash Dump) System Healthy (System) Windows (C3 60.00 06 NTFS Healthy (Boot, Page File, Crash Dump) Data1 (D3 100 MB NTFS Healthy (System) Windows (C3 60.00 06 NTFS Healthy (Boot, Page File, Crash Dump) Data1 (D3 100.292 06 NTFS Field Redundancy Windows (C3 60.00 06 NTFS Healthy (Boot, Page File, Crash Dump)	Deta: (E) (0.0.0 GR HTS Reynching: (54%) Deta: (D) Failed Redundancy Deta: (C) (0.0.0 GR HTS Reynching: (54%) 1802.82 GB Unallocated System 100.08 NTFS Reynching: (54%) 1802.82 GB Unallocated System 100.08 NTFS Healthy (Boot, Page File, Crash Dump) Deta: (D) 1802.82 GB NTFS Failed Redundancy System 100 MB NTFS Healthy (Boot, Page File, Crash Dump) Deta: (D) 1802.82 GB NTFS Failed Redundancy System 100 MB NTFS Healthy (Boot, Page File, Crash Dump) Deta: (D) 1802.82 GB NTFS Failed Redundancy Deta: (D) 1802.82 GB NTFS Healthy (Boot, Page File, Crash Dump) Deta: (D) 1802.82 GB NTFS Failed Redundancy Deta: (D) 1802.82 GB NTFS Failed Redundancy Deta: (D) 1802.82 GB NTFS Failed Redundancy				

16. Go to <u>Repair the RAID 5 Array</u> to continue. You may repair the RAID 5 array while the Mirror is resynching.

Repair the RAID 5 array

Please follow the instructions in <u>Repair the Mirror Array</u> before attempting the steps below.

1. Right click on any volume in the RAID 5 array except for the *Missing* disk. Select **Repair volume**.

				Explore	
Data2 (E:) 60.10 GB NTFS Resynching: (93%)		1802.92 GB Unallocated		Change Drive Letter and Paths Format Repair Volume Reactivate Volume	
System 100 MB NTFS Healthy (System)	Windows (C3) 60,00 GB NTFS Healthy (Boot, Page File, Crash Dump)		Data1 (D:) 1802.92 GB NTFS Failed Redundancy	Delete Volume Properties Help	
System 100 MB NTFS Healthy (System)	Windows (C3) 60.00 GB NTFS Healthy (Boot, Page File, Crash Dump)		Data1 (D:) 1802.92 GB NTFS Failed Redundancy		
Data1 (D3) 1802.92 GB NTFS Failed Redundancy					
	60.10 06 NIFS Resynching : (93%) System 100 MB NTFS Healthy (System) 500 MB NTFS Healthy (System) Data 1 (D2) 1802.92 GB NTFS Failed Redundancy Altroned volume RAID-S volum	60.10 (60 NTFS System 100 MB NTFS Healthy (System) Windows (C.) 500 MB NTFS Healthy (Boot, Page File, Crash Dump) System 100 MB NTFS Healthy (System) Windows (C.) 500 GB NTFS Healthy (System) Windows (C.) 60.00 GB NTFS Healthy (System) Windows (C.) 500 GB NTFS Healthy (Soot, Page File, Crash Dump)	60.10 GB NTFS B02.32 GB Persynching: (935) B02.32 GB System 60.00 GB NTFS Healthy (System) Healthy (Boot, Page File, Crash Dump) System Stot MB NTFS Healthy (Soot, Page File, Crash Dump) Data: (D3 B02.32 GB NTFS Failed Redundancy Entrored volume RAD-5 volume	60.10 GB NTFS 1802.22 GB Persynching : (935) Unallocated System 60.00 GB NTFS Healthy (System) Healthy (Boot, Page File, Crash Dump) System 00.00 GB NTFS Healthy (System) 100.222 GB NTFS Failed Redundancy Failed Redundancy	60.10 06 NTFS ReparkIng: (935) 1802.92 GB Unallocated Feality Colume System 100 MB NTFS Healthy (System) 0atal (D) 1802.92 GB NTFS Healthy (Boot, Page File, Crash Dump) Datal (D) 1802.92 GB NTFS Failed Redundancy Datal (D) 1802.92 GB NTFS Failed Redundancy System 100 MB NTFS Healthy (System) Windows (C3) 00.00 GB NTFS Healthy (Boot, Page File, Crash Dump) Datal (D) 1802.92 GB NTFS Failed Redundancy Datal (D) 1802.92 GB NTFS Failed Redundancy Datal (D) Failed Redundancy

2. In the *Repair RAID-5 Volume* window, choose the disk to repair the Data1 volume (in our example, **Disk 1**). Click **OK**. In most instances, the Data1 volume will start resynching (See <u>Plex Error When Resynching RAID 5</u> if you receive a *plex* error.) Please be patient since the repair might take more than 40 hours depending upon the type of drive used. While there may be a slight reduction in performance, you may use the RAID 5 array while it is resynching.

Repair RAID-5 Volume	×
Select one of the disks listed below. It will be used as a replacement for the broken RAID-5 volume.	
Disks:	
OK Cance	