Rebuilding a Show Store RAID with the original drives

It is important to note that if a drive fails in the Show Store RAID, it does not necessarily mean that the drive is faulty. In the vast majority of cases, carrying out a RAID rebuild using the drives already present is sufficient to fix the fault. We recommend following this procedure as a first course of action if the RAID is degraded. Please note, in order to perform the rebuild procedure, a keyboard and monitor must be connected to the Show Store.

One of the reasons a drive may fail in the RAID, is that the drive may not be correctly inserted into the RAID controller card. With the Show Store powered off, you should unplug and firmly replug the failed drive to ensure correct contact with the RAID controller board. Once this is done, power up the Show Store and press Alt+3 when you see the RAID drives listed.

Decompose Press <Alt-3> to access 3ware BIOS Manager Decom 3ware Serial ATA RAID Controller: 95505X-4LP BIOS: BE9X 3.08.00.004 Firmware: FE9X 3.08.00.016 Slot: 5 BBU Status: Not Present Number of online units: 1, available drives: 0, hot spares: 0, offline units: 0 Exportable Units: 4 drive 64K RAID 5 1.09 TB (Unit 0) DEGRADED SATA - ST3400620NS 372.61 GB (Port 3) Not in Use SATA - ST3400620NS 372.61 GB (Port 2) SATA - ST3400620NS 372.61 GB (Port 1) SATA - ST3400620NS 372.61 GB (Port 1) SATA - ST3400620NS 372.61 GB (Port 0) Once you have entered the RAID BIOS, you will see a warning message displayed indicating that the RAID is degraded.



Press any key to get to the next screen, which shows the detected RAID array.

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Exportable II	nits:			'n
+ 4 drive 64K	RAID 5 1.09	TB (Unit 0) DEG	RADED	
				U -
Create Unit	Delete Unit	Maintain Unit	Settings	Information
Alt-F1 Help \$* Pr F6 Restore Init	ev/Next Alt-a So ial Ualues - Esc	elect All Drives	Alt-r Rescan F8 Done PCH	Enter Select/Desel P PCDOWN Reorder
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With the RAID unit highlighted, press the SPACE bar to select it. There should be an asterisk (*) to the left of the text when the unit is selected. Press TAB to access the menus on the bottom of the screen. Select "Maintain Unit" and press the ENTER key. Select the "Rebuild" option from the menu and press the ENTER key.

				- 3ware	BIOS manag	jer (sl	ot 5)		
	Expor	table U	nits:	1 00 T		DECR	D.F.D.		î
	+ (*)4 dr 1	VE 64K	KHID 5	1.09 1	B (Unit U)	DECKH	IVED		
						ſ	Mainta	ain	
-							Rebuild		
							Verify Configure		
							Remove		
							Exit		
									t.
l		Via	Rebuild,	you ca	n regenerat	e degr	aded RAID un	nits	
	Create	Unit	Delete	Unit	Maintain l	lnit	Settings	Information	
Al	t-F1 Hel F6 Resto	p ‡+ Pro re Init:	ev∕Next A ial Value	llt-a Se s Esc	lect All Dr Cancel	ives A	llt-r Rescan F8 Done <u>PG</u> l	Enter Select/D JP PGDOWN Reord	lese l ler

NB: If you see the following error message, it means the RAID controller is not detecting all four drives. Firstly, make sure that the array is selected by checking that the asterisk is present on the left side of the text "4 drive 64K RAID 5". If this is present, make sure that the failed drive is plugged in correctly and reboot the unit.



In the next screen, select "OK" at the bottom of the screen and press ENTER.



The RAID rebuild will be confirmed once the F8 key is pressed. Press the Y key when prompted to save the configuration.



This will exit the RAID BIOS and the unit will boot as normal. The RAID rebuild will not begin until the Show Store has been powered up for 10-15 minutes. Once the rebuild has started, the failed drive LED should flash red and yellow alternately. All four drive LEDs will flash green once the rebuild has completed.

Rebuilding a Show Store RAID with a replacement drive

If the RAID controller does not see the failed drive during the Rebuilding a Show Store RAID with the original drives procedure, or the same drive fails again shortly after performing this procedure, it is likely that the drive is faulty and will need to be replaced.

Once the replacement drive is firmly connected to the RAID controller, reboot the unit. When the RAID drives are listed, press ALT+3 to enter the RAID BIOS.

```
mome Press (Alt-3) to access 3ware BIOS Manager meme
3ware Serial ATA RAID Controller: 95505X-4LP
BIOS: BE9X 3.08.00.004 Firmware: FE9X 3.08.00.016 Slot: 5
BBU Status: Not Present
Number of online units: 1, available drives: 0, hot spares: 0, offline units: 1
Exportable Units:
4 drive 64K RAID 5 1.09 TB (Unit 0) DECRADED
SATA - ST3400620NS 372.61 GB (Port 2)
SATA - ST3400620NS 372.61 GB (Port 1)
SATA - ST3400620NS 372.61 GB (Port 0)
Unusable Arrays:
4 drive 64K RAID 5 1.09 TB (Unit 1)
SATA - ST3400832NS 372.61 GB (Port 3)
```

Once you have entered the RAID BIOS, you will see a warning message displayed indicating that the RAID is degraded.

Bware BIOS manager (slot Your 3ware controller currently has a degraded disk array installed. Fault tolerant disk arrays become degraded when they are missing a member drive. While the array's data may be read and new data may be written to it, it is no longer fault tolerant. With a degraded array you have three courses of action: (1) If the array has a drive that is listed as Not In Use, try rebuilding the array first. If it still does not work, remove the Not in Use drive and rebuild the array using a new drive. (2) If one of the member drives is not listed, it may be unplugged or it may be broken beyond recognition. (a) If the drive was simply unplugged, reconnect it and reboot. If data was written to the array while it was degraded, you will be required to rebuild it. (b) Rebuild the array using a new drive. Any data on the new drive will be overwritten. (3) Do nothing and run with the array as functional, but not fault tolerant. Press any key to continue. Alt-F1 t/Desel F6 Restore Initial Values Esc Cancel F8 Done PGUP PGDOWN Reorder

Press any key to display the detected arrays. This screen will show the degraded array, under the title "Exportable Units", and the replacement drive. If the replacement drive is listed under the title "Available Drives", proceed to page 9. Otherwise, follow the instructions below.

	3	Bware BIOS manager (slot 5)
	Available Drives:	Î
	- Direct Attached	
	SATA – ST3400832NS	372.61 GB Port 3
	Exportable Units:	OQ TR (Unit O) DECRODED
	4 urive 04k kmib 5 1.0	05 ID (UNIC C) DEGRADED
	Create Unit Delete Uni	t Maintain Unit Settings Information
Alt	-F1 Help ‡+ Prev/Next Alt-	a Select All Drives Alt-r Rescan Enter Select/Desel
F	6 Restore Initial Values 🗌	Esc Cancel F8 Done s Toggle Hot Spare

If the replacement drive has previously been installed in another RAID system, the drive will appear as a separate RAID structure under the title "Unusable Arrays". In order to use this drive in the rebuilt RAID, highlight the "Unusable Array" and press the SPACE bar so that an asterisk (*) appears to the left of the text. Make sure there is no asterisk to the left of the line under "Exportable units". Press the TAB key to access the bottom menu and select "Delete Unit". Press the ENTER key.

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	Uı	nusa	ble	Arr	ays	:		1 00	TD	201 - 11	1)							
+	*4	drı	ve	64K	KH	ID :	5	1.09	18	lUnit	1)							
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	Cre	eate	Un	it	De	elet	te U	lnit		Mainta	in U	nit	Se	ttings		Info	rmatio	on
Alt-	-F1	Hel	p 🎗	+ Pr	ev/l	Next	t Al	t-a	Sel	ect Al	l Dr	ives	Alt-	r Resc	an I	nter	Selec	:t∕Dese
FE	Re	esto	re	Init	ial	Va	lues	Es	c Ca	ancel			F8	Done				

In the next screen, select "OK" and press ENTER.



The replacement drive should now be displayed under the title "Available Drives".

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	Available Drives:	Û	
	SATA - ST3400832NS	5 372.61 GB Port 3	
÷	Exportable Units: 4 drive 64K RAID 5 1	1.09 TB (Unit 0) DEGRADED	
		۳ ــــــــــــــــــــــــــــــــــــ	
	Create Unit Delete Un	nit Maintain Unit Settings Information	
Alt Fl	-F1 Help ‡+ Prev/Next Alt 5 Restore Initial Values	t-a Select All Drives Alt-r Rescan Enter Select/Dese Esc Cancel F8 Done s Toggle Hot Spare	l

Highlight the drive displayed under "Available Drives" and press the SPACE bar so that an asterisk (*) appears to the left of the text. Also, highlight the array displayed under "Exportable Units" and again press the SPACE bar to have the asterisk appear. Press the TAB key to access the bottom menus, select "Maintain Unit" and press ENTER. Select "Rebuild" in the "Maintain" menu and press Enter.

	Jware BIOS manager (slot 5)
Available Drives: Direct Attached *SATA - ST3400832NS	1 372.61 GB Port 3
Exportable Units:	
+ *4 drive 64K RAID 5 1.	.09 TB (Unit O) DEGRADED
Via Rebuild, y	Maintain Rebuild Verify Configure Remove Exit Du can regenerate degraded RAID units
Create Unit Delete Un	it Maintain Unit Settings Information
HIT-FI Help I+ Prev/Next HIT- F6 Restore Initial Values	a Select HIL Drives HIt-r Rescan Enter Select/Desel Esc Cancel F8 Done PGUP PGDOWN Reorder

Select the "OK" button and press ENTER.

Rebuild Disk Array							
Note: Rebuilding will occur after all cont and you have exited the 3ware Disk Array (figuration changes are complete Configuration Utility (F8).						
Drive to Use in Rebuild							
SATA - ST3400832NS	372.61 GB Port 3						
Array Being Rebuilt							
4 drive 64K RAID 5 1.09 TB (Unit 0) SATA - ST3400620NS SATA - ST3400620NS SATA - ST3400620NS	DEGRADED 372.61 GB (Port 2) 372.61 GB (Port 1) 372.61 GB (Port 0)						
ОК	Cancel						
Alt-F1 Help	Esc Cancel						

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portable U					
drive 64K DEGRADED	nits: RAID 5 REBUILD	1.09 TB 0%	(Unit 0)		Î
ate Unit	Delete	Unit	Maintain Unit	Settings	Information
	DEGRADED	DEGRADED REBUILD	DEGRADED REBUILD 0× Pate Unit Delete Unit	DEGRADED REBUILD 0% Pate Unit Delete Unit Maintain Unit	DEGRADED REBUILD 0% Pate Unit Delete Unit Maintain Unit Settings

The next screen informs you that any existing data on the replacement drive will be lost. Press Y to confirm the upgrade.



This will exit the RAID BIOS and the unit will boot as normal. The RAID rebuild will not begin until the Show Store has been powered up for 10-15 minutes. Once the rebuild has started, the failed drive LED should flash red and yellow alternately. All four drive LEDs will flash green once the rebuild has completed.