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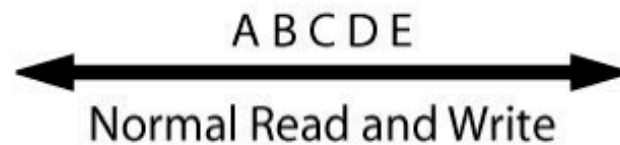
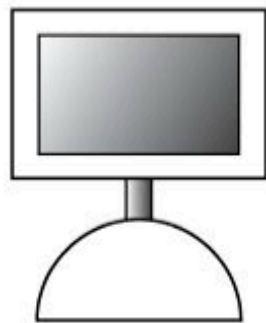
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- What is RAID?
- Creating a volume with SoftRAID
- Error Reporting in SoftRAID
- Using SoftRAID as a backup solution
- How is SoftRAID different than AppleRAID
- Questions



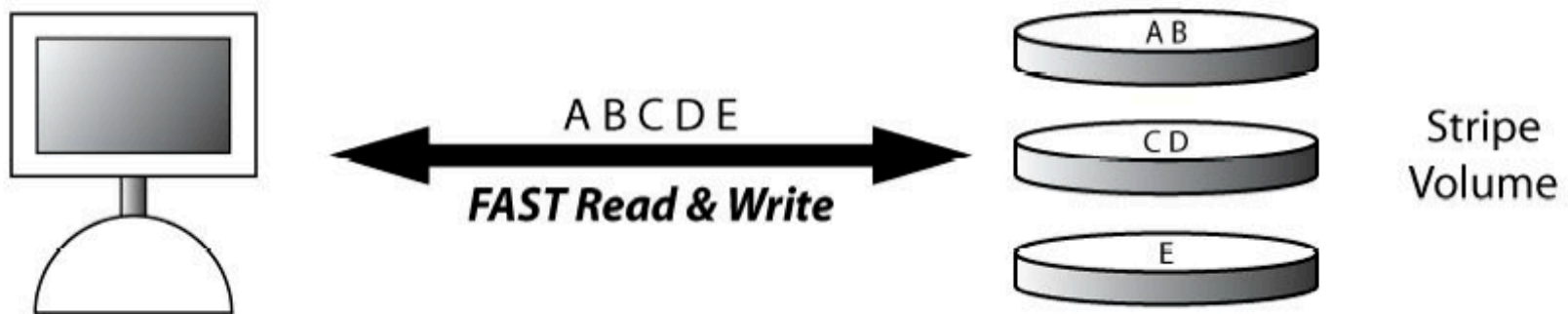
# Redundant Array Independent Disks

**Non-RAID** A non-RAID or standard volume consists of one disk drive. The speed of reading data off of a disk is physically constrained by how fast the reading mechanism, or disk head, can read data from the spinning disk.



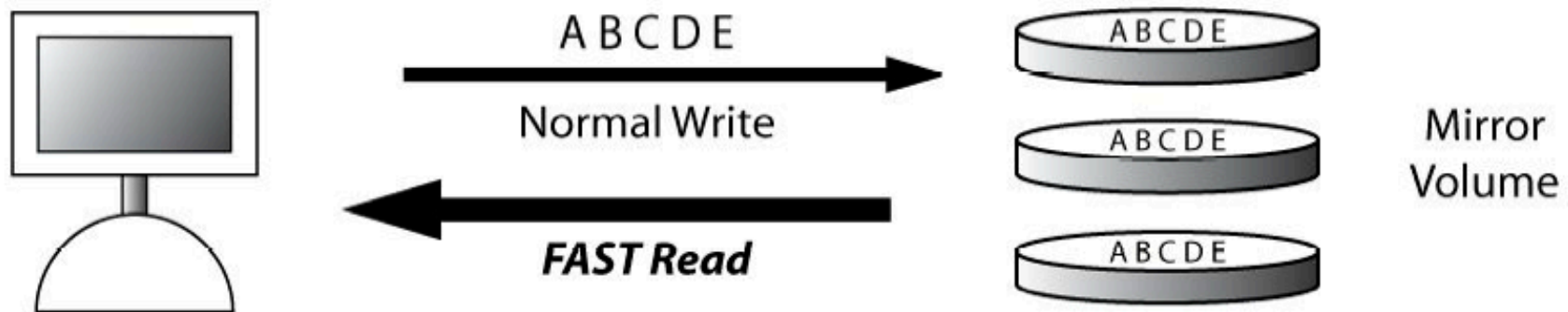
Non-RAID  
Volume

**Stripe (RAID 0)** If the data, instead of being clustered on one disk, is evenly distributed over two or more disks, each disk head can be reading or writing a part of the data simultaneously. A Stripe volume distributes the data across all the disks. The more disks used in a volume, the faster the reading and writing.





**Mirror (RAID 1)** When all of the data is written to each of the disks, a Mirror volume is created. This makes the backup of data an ongoing process. If one disk fails, the data is intact on the other disks in the volume. SoftRAID 3 enhances RAID 1 by allowing more than two disks in a Mirror volume and by making reads as fast as those from a RAID 0 Stripe volume.





# SoftRAID®

## Disks



ATA bus 1, ID 0 (Bay 4)  
size: 232 GB • free: 232 GB  
HDT722525DLA380 v.V44OA96A



ATA bus 1, ID 1 (Bay 3)  
size: 465 GB • free: 465 GB  
HDS725050KLA360 v.K2AOA10C



ATA bus 1, ID 2 (Bay 2)  
size: 465 GB • free: 465 GB  
HDS725050KLA360 v.K2AOA10C



ATA bus 1, ID 3 (Bay 1)  
size: 232 GB • free: 128 MB  
WDC WD2500JS-41SGB0 v.20.06C04

## Volumes







Macintosh HD (10.4.8 startup)  
232 GB • HFS+ ( journaled)



# SoftRAID®

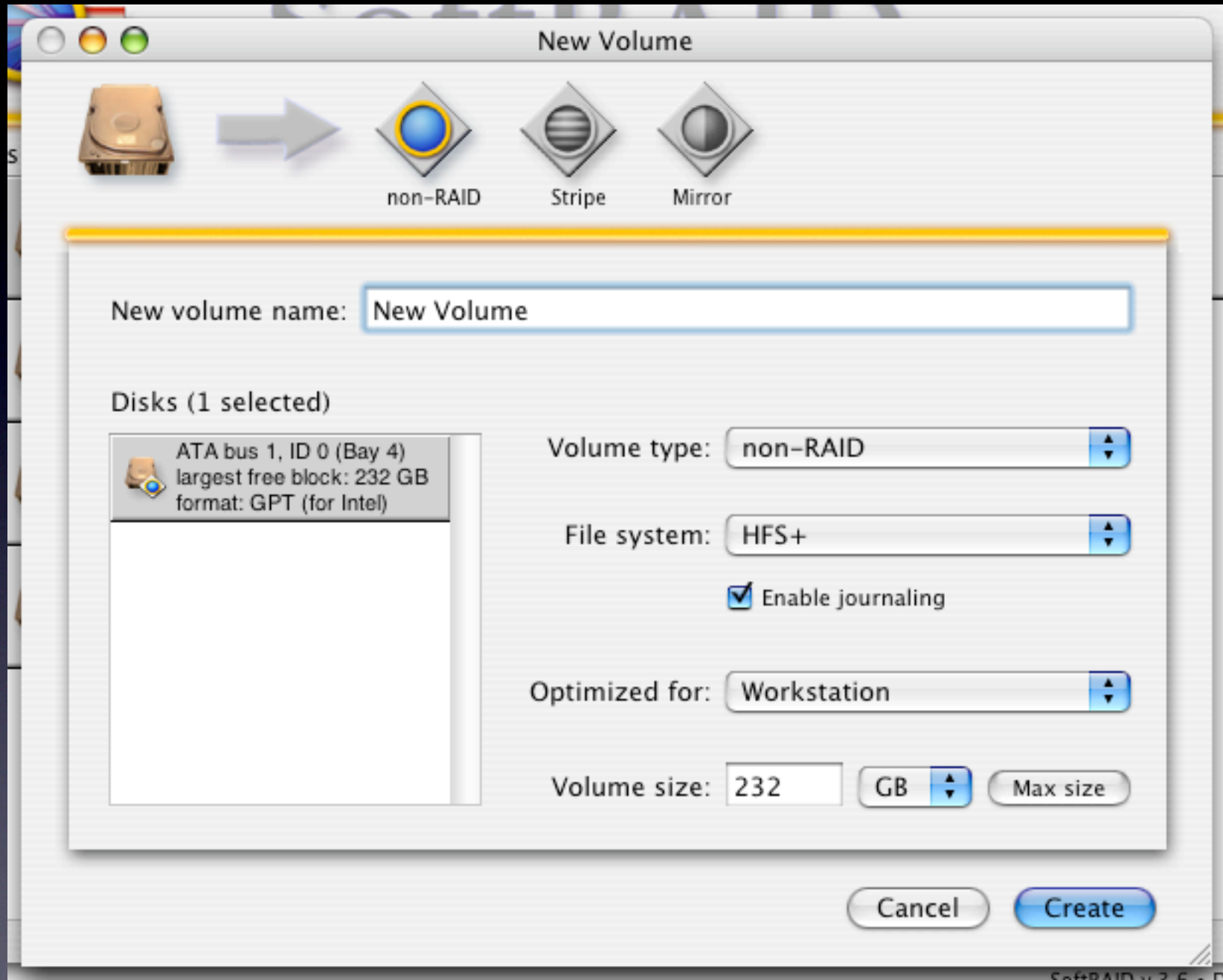
## Disks

	ATA bus 1, ID 0 (Bay 4) size: 232 GB • free: 232 GB HDT722525DLA380 v.V440A96A <i>no errors</i>
	ATA bus 1, ID 1 (Bay 3) size: 465 GB • free: 465 GB HDS725050KLA360 v.K2AOA10C
	ATA bus 1, ID 2 (Bay 2) size: 465 GB • free: 465 GB HDS725050KLA360 v.K2AOA10C
	ATA bus 1, ID 3 (Bay 1) size: 232 GB • free: 128 MB WDC WD2500JS-41SGB0 v.20.06C04

## Volumes

	Macintosh HD (10.4.8 startup) 232 GB • HFS+ ( journaled)
---	---







# SoftRAID

**Disks**

- ATA bus 1, ID 0 (Bay 4)  
size: 232 GB • free: 0.50 KB  
HDT72252DLA380 v.V440A96A  
no errors
- ATA bus 1, ID 1 (Bay 3)  
size: 465 GB • free: 465 GB  
HDS725050KLA360 v.K2AOA10C
- ATA bus 1, ID 2 (Bay 2)  
size: 465 GB • free: 465 GB  
HDS725050KLA360 v.K2AOA10C
- ATA bus 1, ID 3 (Bay 1)  
size: 232 GB • free: 128 MB  
WDC WD2500JS-41SGB0 v.20.06C04

**Volumes**





- Macintosh HD (10.4.8 startup)  
232 GB • HFS+ (journaled)
- New Volume  
232 GB • HFS+ (journaled)  
non-RAID • no errors

SoftRAID v 3.6 • Driver v 3.6



# SoftRAID®

## Disks

	ATA bus 1, ID 0 (Bay 4) size: 232 GB • free: 0.50 KB HDT722525DLA380 v.V44OA96A <i>no errors</i>
	ATA bus 1, ID 1 (Bay 3) size: 465 GB • free: 265 GB HDS725050KLA360 v.K2AOA10C <i>no errors</i> • <i>data disk</i>
	ATA bus 1, ID 2 (Bay 2) size: 465 GB • free: 265 GB HDS725050KLA360 v.K2AOA10C <i>no errors</i> • <i>data disk</i>
	ATA bus 1, ID 3 (Bay 1) size: 232 GB • free: 128 MB WDC WD2500JS-41SGB0 v.20.06C04

## Volumes






	Macintosh HD (10.4.8 startup) 232 GB • HFS+ (journaled)
	New Volume 232 GB • HFS+ (journaled) non-RAID • <i>no errors</i>
	Stripe Volume 400 GB • HFS+ (journaled) Stripe • <i>no errors</i>
	Optimized for Digital Video created: 2007-01-17 10:08:26 PST i/o requests: 227 i/o errors: 0







# SoftRAID®

## Disks

	ATA bus 1, ID 0 (Bay 4) size: 232 GB • free: 212 GB HDT722525DLA380 v.V440A96A no errors • primary disk
	ATA bus 1, ID 1 (Bay 3) size: 465 GB • free: 445 GB HDS725050KLA360 v.K2AOA10C no errors • secondary disk
	ATA bus 1, ID 2 (Bay 2) size: 465 GB • free: 465 GB HDS725050KLA360 v.K2AOA10C no errors
	ATA bus 1, ID 3 (Bay 1) size: 232 GB • free: 128 MB WDC WD2500JS-41SGB0 v.20.06C04
	FireWire bus 0, ID 0 size: 149 GB • free: 148 GB WDC WD16 00JB-22GVA0 v.08.0 no errors






## Volumes

	Macintosh HD (10.4.8 startup) 232 GB • HFS+ ( journaled)
	Mirror Volume 20.0 GB • HFS+ ( journaled) Mirror • no errors





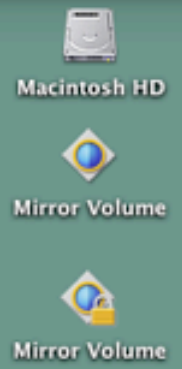
# SoftRAID®

## Disks

	ATA bus 1, ID 0 (Bay 4) size: 232 GB • free: 212 GB HDT722525DLA380 v.V44OA96A no errors • primary disk
	ATA bus 1, ID 1 (Bay 3) size: 465 GB • free: 445 GB HDS725050KLA360 v.K2AOA10C no errors • secondary disk
	ATA bus 1, ID 2 (Bay 2) size: 465 GB • free: 465 GB HDS725050KLA360 v.K2AOA10C no errors
	ATA bus 1, ID 3 (Bay 1) size: 232 GB • free: 128 MB WDC WD2500JS-41SGB0 v.20.06C04
	FireWire bus 0, ID 0 size: 149 GB • free: 128 GB WDC WD16 00JB-22GVA0 v.08.0 rebuilding secondary disk


## Volumes


	Macintosh HD (10.4.8 startup) 232 GB • HFS+ (journaled)
	Mirror Volume 20.0 GB • HFS+ (journaled) Mirror rebuilding • out-of-sync





SoftRAID


### Disks

- 

ATA bus 1, ID 0 (Bay 4)  
size: 232 GB • free: 212 GB  
HDT722525DLA380 v.V440A96A  
no errors
- 


ATA bus 1, ID 1 (Bay 3)  
size: 465 GB • free: 445 GB  
HDS725050KLA360 v.K2AOA10C  
no errors
- 


ATA bus 1, ID 2 (Bay 2)  
size: 465 GB • free: 465 GB  
HDS725050KLA360 v.K2AOA10C  
no errors
- 


ATA bus 1, ID 3 (Bay 1)  
size: 232 GB • free: 128 MB  
WDC WD2500JS-41SGB0 v.20.06C04
- 

FireWire bus 0, ID 0  
size: 149 GB • free: 128 GB  
WDC WD16 00JB-22GVA0 v.08.0  
no errors

### Volumes

- 

Macintosh HD (10.4.8 startup)  
232 GB • HFS+ (journaled)
- 

Mirror Volume  
20.0 GB • HFS+ (journaled)  
Mirror  
missing secondary disk
- 

Mirror Volume  
20.0 GB • HFS+  
Mirror • no errors  
read-only secondary

SoftRAID v 3.6 • Driver v 3.6















# SoftRAID®

## Disks

	ATA bus 1, ID 0 (Bay 4) size: 232 GB • free: 212 GB HDT722525DLA380 v.V44OA96A <i>no errors</i>
	SN: VDB41BT4DJ6LXC format: GPT (for Intel) i/o requests: 164,989 i/o errors: 0
	ATA bus 1, ID 1 (Bay 3) size: 465 GB • free: 445 GB HDS725050KLA360 v.K2AOA10C <i>no errors</i>
	ATA bus 1, ID 2 (Bay 2) size: 465 GB • free: 465 GB HDS725050KLA360 v.K2AOA10C <i>no errors</i>
	ATA bus 1, ID 3 (Bay 1) size: 232 GB • free: 128 MB WDC WD2500JS-41SGB0 v.20.06C04
	FireWire bus 0, ID 0 size: 149 GB • free: 128 GB WDC WD16 00JB-22GVA0 v.08.0 <i>no errors</i>

## Volumes

	Macintosh HD (10.4.8 startup) 232 GB • HFS+ (journaled)
	Mirror Volume 20.0 GB • HFS+ (journaled) Mirror <i>missing secondary disk</i>
	Mirror Volume 20.0 GB • HFS+ Mirror • <i>no errors</i> <i>read-only secondary</i>

## Why is SoftRAID better than AppleRAID?

- Much better user interface
- Report all read / write errors to the user
- Log all read / write errors to the system.log file
- Error counts saved to disk
- Easy to determine if a disk is failing and which disk it is
- Can convert existing Apple non-RAID and AppleRAID volumes to SoftRAID
- Much better facilities for managing mirror volumes
- No need to use command line interface to gain access to all the features
- Tech support is best in the business (often help users recover corrupted volumes caused by hardware failure)
- Frequent releases for bug fixes, work-arounds for OS bugs and feature refinements

**Can RAID be Used for Backup?**

MacTech Magazine  
January • 2007

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Q & A