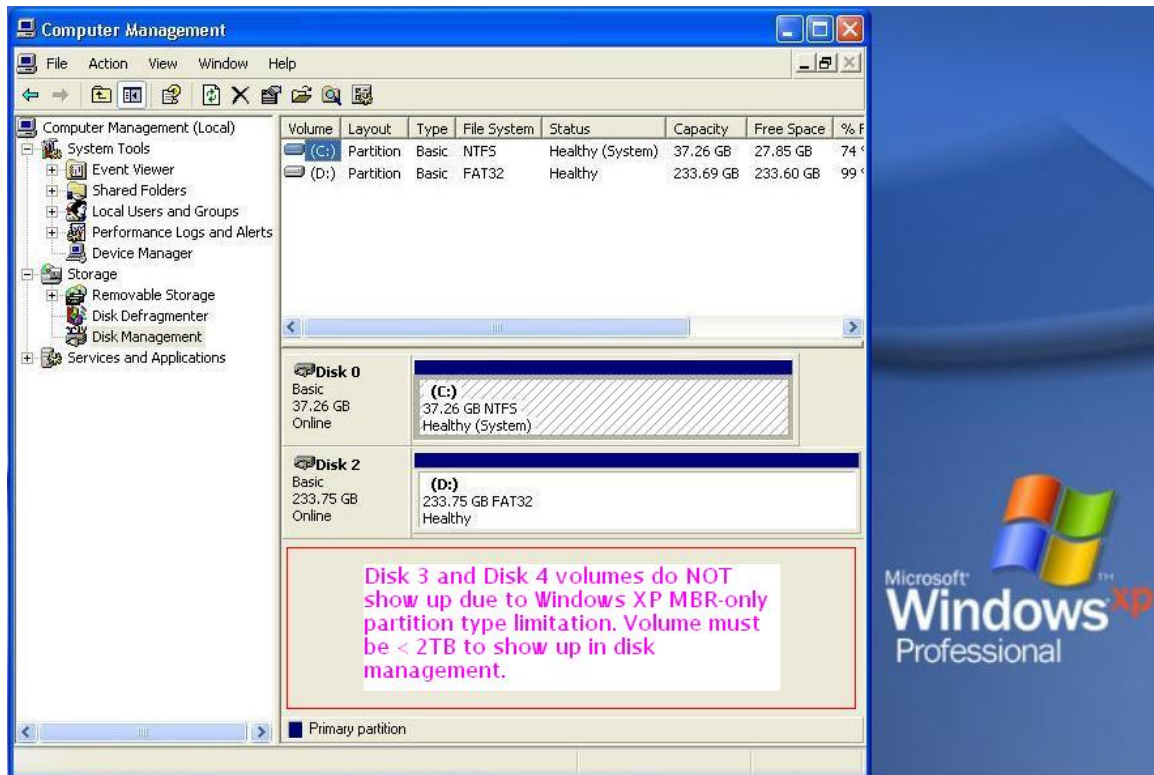




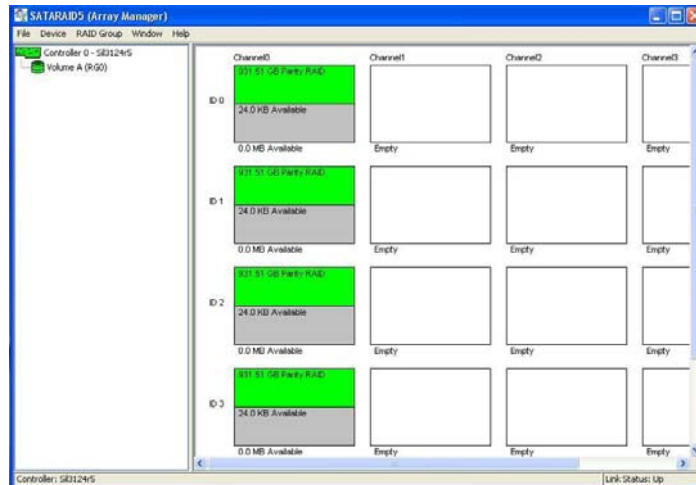
Guide: Re-Configuring the RAID5 CADA-SA4 to two RAID5 volumes. (Guide is applicable to each channel of 4 drives of the CADA-SA8)

NOTE: This guide is useful if you are running an operating system that only supports MBR partitions (Windows XP and older, Mac OS v10.4 and older) because MBR partitions only support volumes up to 2TB. Thus, to use a disk array with a total capacity exceeding 2TB, you must break the capacity down into smaller partitions. Those running newer operating systems that support GPT partitions (Windows Vista, XP x64, 2003 Server SP2, Mac OS 10.5) can access partitions over 2TB, and should thus partition their RAID 5 Disk Array into as few partitions as possible (one partition for the CADA-SA4 and two for the CADA-SA8) i.e. not using this guide. For regular partitioning instructions that are optimal for those with a GPT-compatible OS, see the "Driver & Software Installation Guide" found on our product manuals page: <http://www.cavalrystorage.com/manuals.htm>.

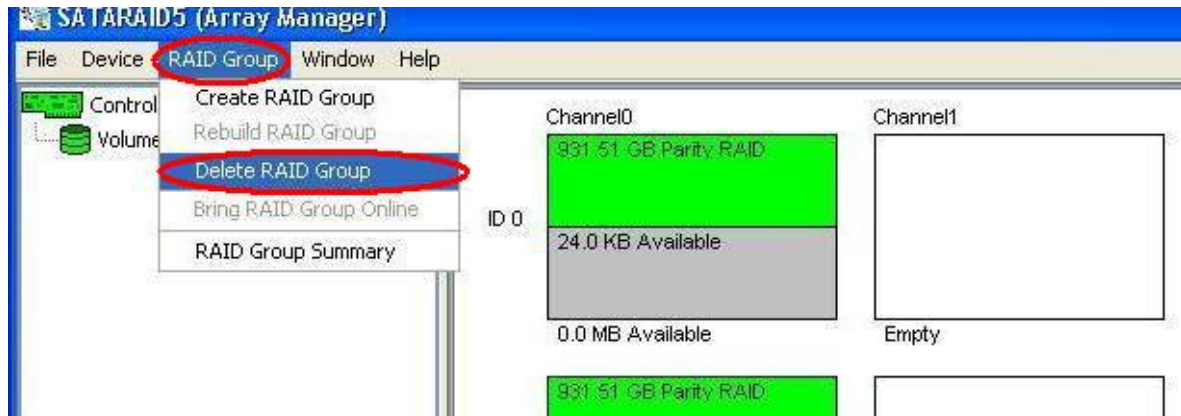
Note that Windows XP and earlier cannot recognize volumes over 2TB:



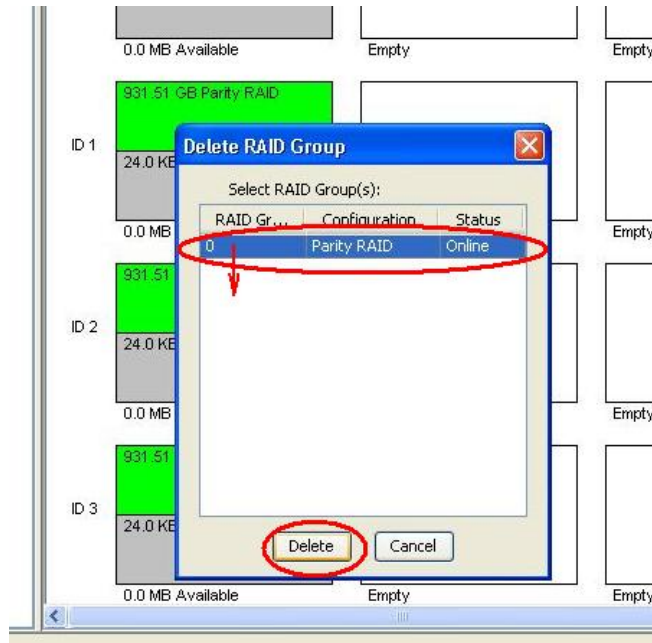
1. Go to the Silicon Image SATARAID Tools RAID5 Configuration Manager Utility. You should have your CADA00XSA4 unit already connected turned on and the driver and the Configuration manager utility already installed. If you need help on installing the unit and the drivers and software see the online guide "Driver & Software Installation Guide" under "CADA-SA4" or "CADA-SA8" at <http://www.cavalrystorage.com/manuals.htm>



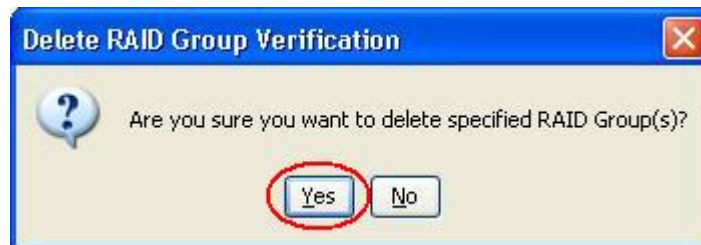
2. First delete all existing RAID configurations on the channel 0 set. (If you have a CADA-SA8, use the same procedure on both channel 0 and channel 1) Go to top menu "RAID Group" -> Select "Delete RAID Group"



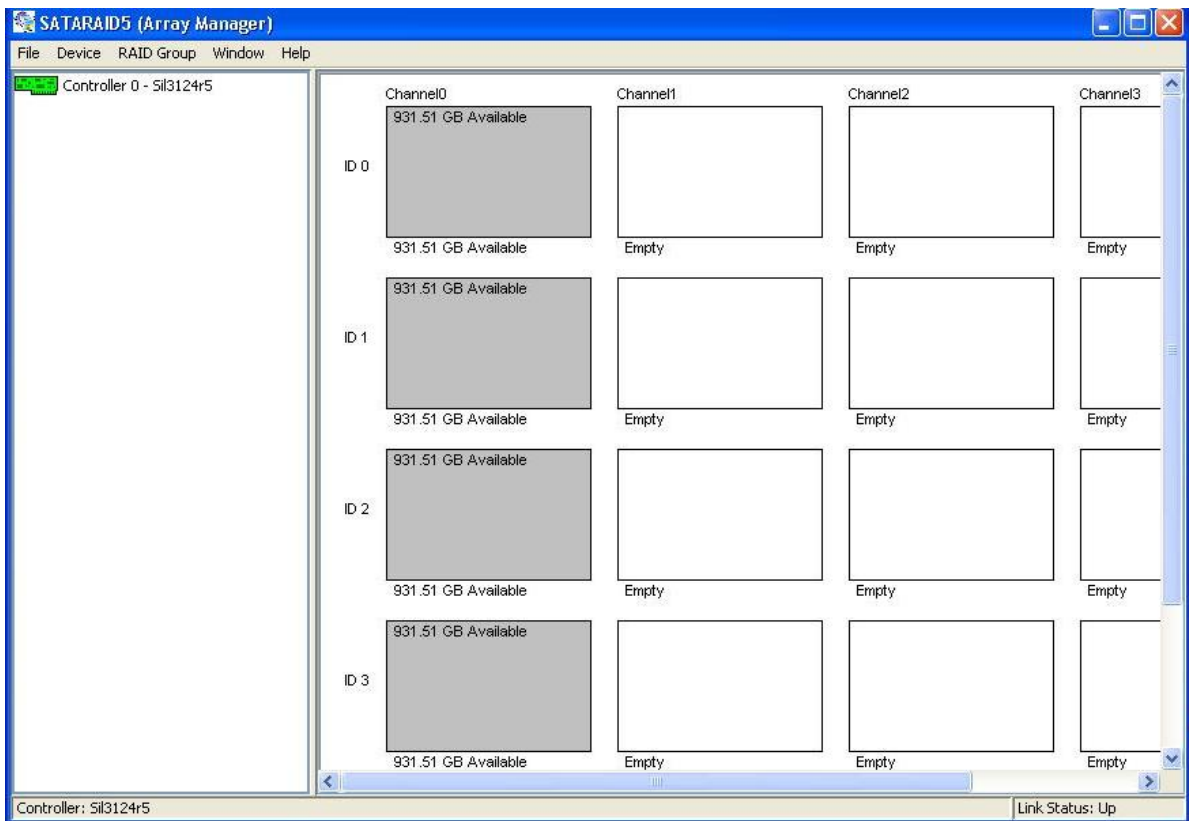
3. The "Delete RAID Group" window will pop up. It should list all the current configured RAID groups. You can select them by dragging a left-click from the first element to the last element, or by holding the shift key and pressing the down arrow.



Then click the "Delete" button. A small warning message box will pop-up. Just click "Yes" to continue.



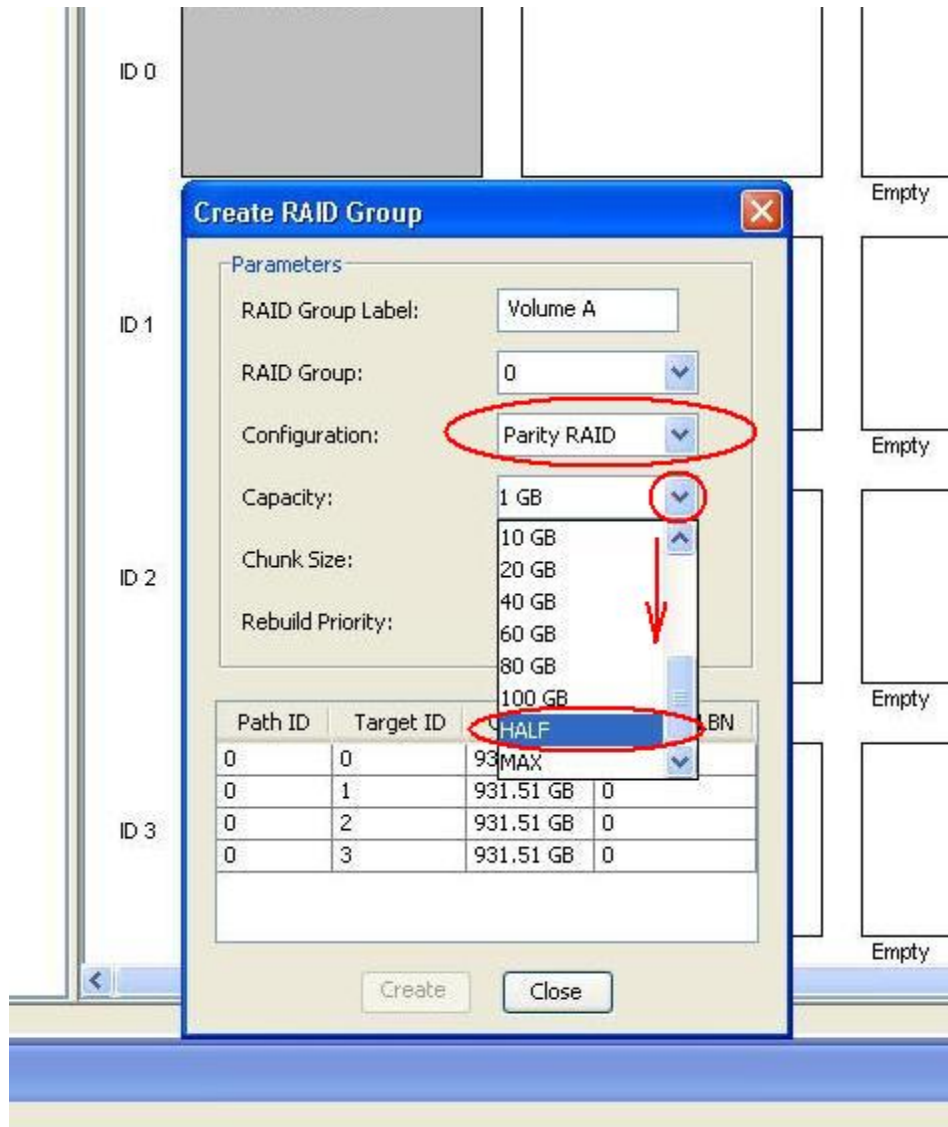
- Now the RAID configuration should display all drives as grayed out indicating cleaned, non-configured drives. (If you have a CADA-SA8, both Channel columns should have 4 grayed out drive boxes as well.)



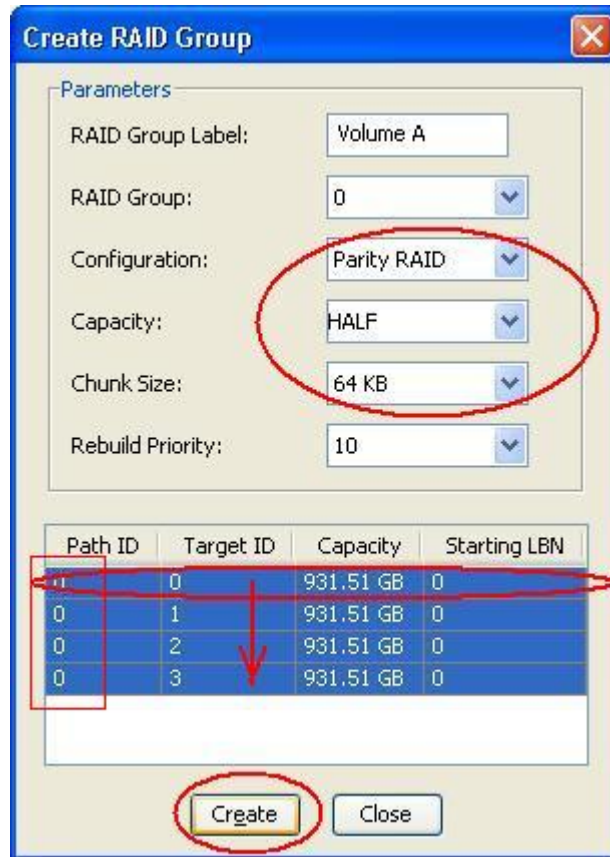
- Now create a new RAID group: Go to top menu "RAID Group" again and select "Create RAID Group" to start the "Create RAID Group" settings window.



6. In the "Create RAID Group" settings window. Leave the "RAID Group label" and "RAID Group" parameters alone as the wizard selects these for you. For "Configuration" use the pull down menu box to select "Parity RAID" which is the last selection. For "Capacity" make sure to select HALF.



7. Choose "Chunk Size" parameter to be 64k. Leave "Rebuild Priority" alone. Now select all four drives of Channel 0 (shown under table header "Path ID"). Each drive "Capacity" should be the free space of each drive. In this example all four drives selected should read "931.51 GB". When all four free space sections are selected the parameters are correctly selected, then click the "Create" button on the bottom to create the RAID5 group.



8. The "Create RAID Group" settings window will automatically allow you to configure the settings for your next RAID group configuration. Leave "RAID Group Label:" and "RAID Group:" at it's new settings. (1) Choose "Configuration:" -> Parity RAID. (2) Now choose "MAX" for the "Capacity:" parameter. (3) And then choose "64KB" for the "Chunk Size:" parameter again. Leave "Rebuild Priority:" on default. (4) Now select all four available free spaces as before in step 4. (5) Click "Create".

Notice that for each drive, exactly half of the original free space is available. This is why we choose "Capacity:" -> MAX, so that all of the remaining capacity is selected, ensuring the new volume is the same size as the first RAID5 volume configured.

The screenshot shows the 'Create RAID Group' dialog box with the following parameters:

- RAID Group Label: Volume B
- RAID Group: 1
- Configuration: Parity RAID
- Capacity: MAX
- Chunk Size: 64 KB
- Rebuild Priority: 10

The table below the dialog shows the available targets:

Path ID	Target ID	Capacity	Starting LBN
0	0	465.75 GB	3a383280
0	1	465.75 GB	3a383280
0	2	465.75 GB	3a383280
0	3	465.75 GB	3a383280

The 'Create' button is highlighted in red. The 'Capacity' field is set to 'MAX', and the 'Configuration' is set to 'Parity RAID'. The 'Chunk Size' is set to '64 KB'. The 'Rebuild Priority' is set to '10'. The 'RAID Group Label' is 'Volume B' and the 'RAID Group' is '1'. The 'Create' button is highlighted in red.

The background interface shows four channels (Channel0 to Channel3) with RAID5 volumes and available space. The available space is 465.75 GB for each channel. The RAID5 volumes are shown in green, and the available space is shown in grey.

The bottom of the screenshot shows a table with the following data:

Parameters	Status	Priority	Progress	Start Time	End Time	Remaining
Raid Group 0	Active	10	0 %	2/23/02 8:57:47 PM		20:27:05
Raid Group 0	Completed	0		2/23/02 8:54:15 PM	2/23/02 8:54:16 PM	
Raid Group 0	Completed	10		2/20/02 9:02:45 PM	2/20/02 9:17:01 PM	

- The "Create RAID Group" window appears again for the next available RAID group we want to configure, but we are done now: the 24KB left on each drive are artifacts left over because our chunk size was 64KB. Please click "Close" button to exit the window.

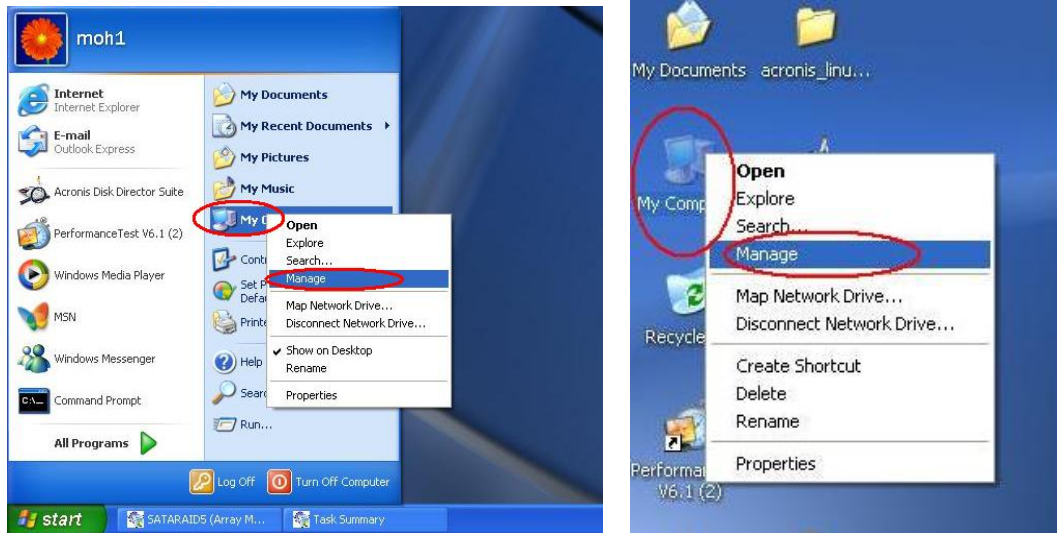
Now you have two sets of RAID5 volumes on the same 4 drives, each using half of the total free space. You can see in the configuration how each RAID group corresponds to the headers and also that 24KB were left over for each drive, a tiny bit of external fragmentation. Also note that remaining time for each RAID5 group to finish striping. It is recommended to wait until the striping is done for both volumes before going to disk management to finish initializing, partitioning, and formatting the new volumes.

Task	Operation	Parameters	Status	Priority	Progress	Start Time	End Time	Remaining
2	Create RAID Group	Raid Group 0	Active	10	0 %	2/23/02 8:57:47 PM		23:00:56
3	Create RAID Group	Raid Group 1	Active	10	0 %	2/23/02 8:59:25 PM		29:09:32
1	Delete RAID Group	Raid Group 0	Completed	0		2/23/02 8:54:15 PM	2/23/02 8:54:16 PM	

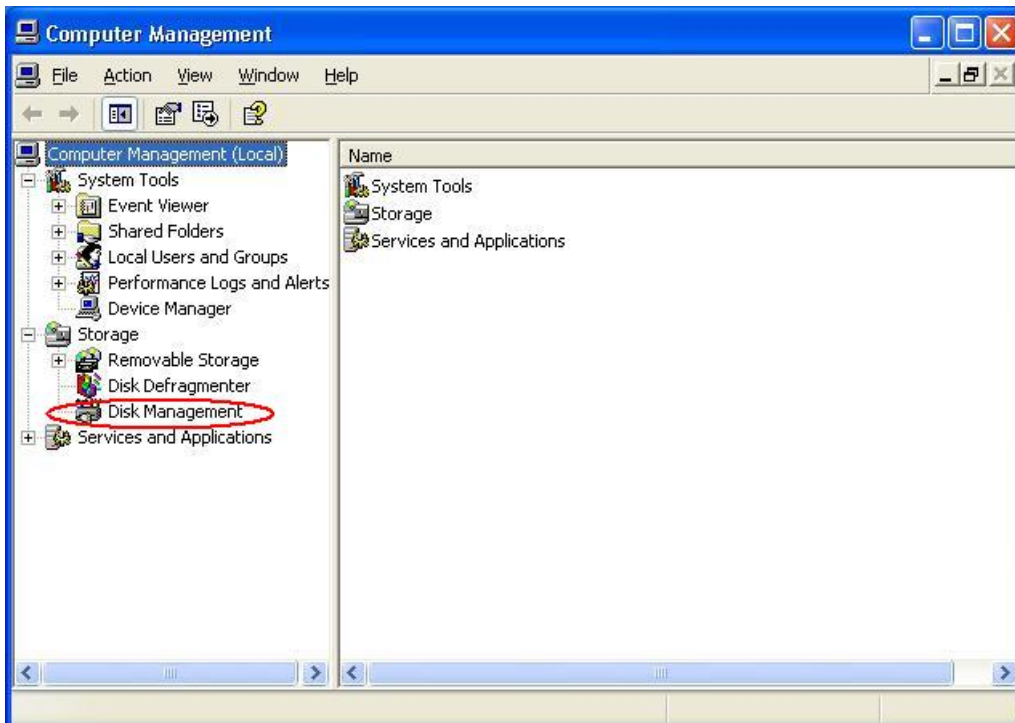
Note: If you have the CADA-SA8 and two channel sets of 4 drives, repeat steps 4 through 9 for the second set of 4 drives under Channel 1 the same way as was done for Channel 0. You will then end up with 4 RAID5 groups instead of the 2 shown.

NOTE: the following instructions are for Windows XP only. For formatting instructions in other operating systems, go to our downloads page ([www.cavalrystorage.com/download.htm](http://www.cavalrystorage.com/download.htm)) and click on "Guide: Formatting".

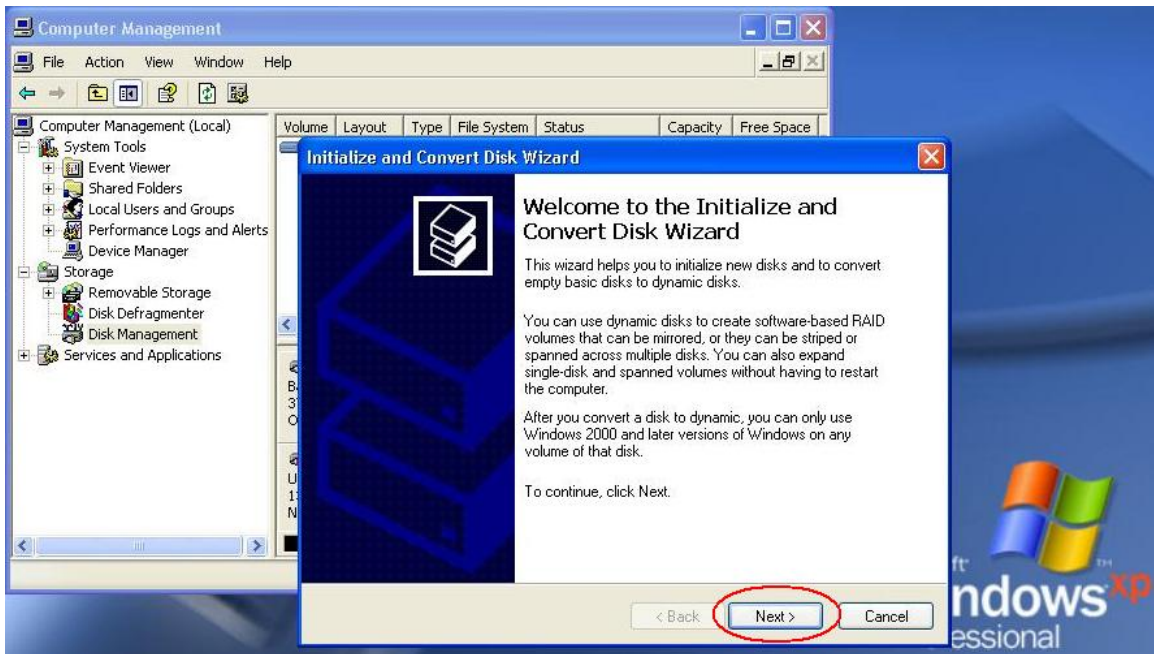
10. Now you can go to disk management: click "Start Menu" -> Right-click "My Computer" -> Left-click "Manage", or Right-Click on "My Computer" icon on your desktop then left-click "Manage" to start computer management.



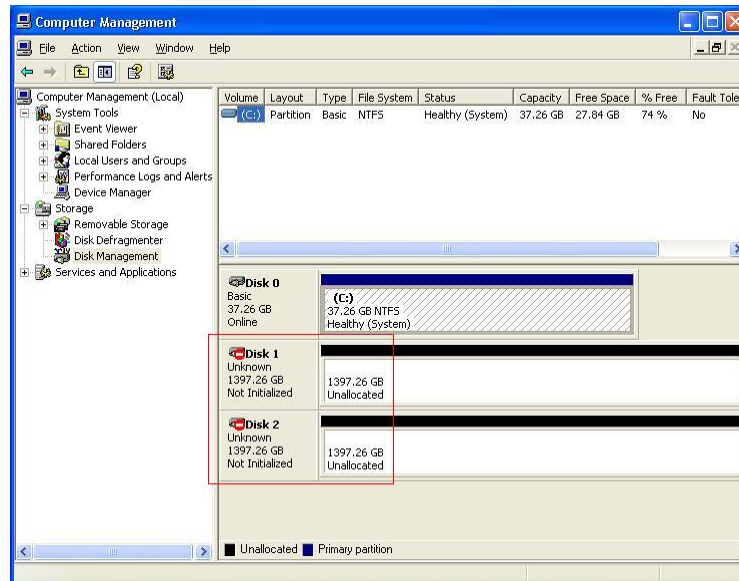
11. When the Computer Management Console window shows up. Click on "Disk Management" sub-header under the "Storage" header to start the Disk Management service, which shows the physical hard drives, volumes and partitions (or empty unallocated space) on the right pane.



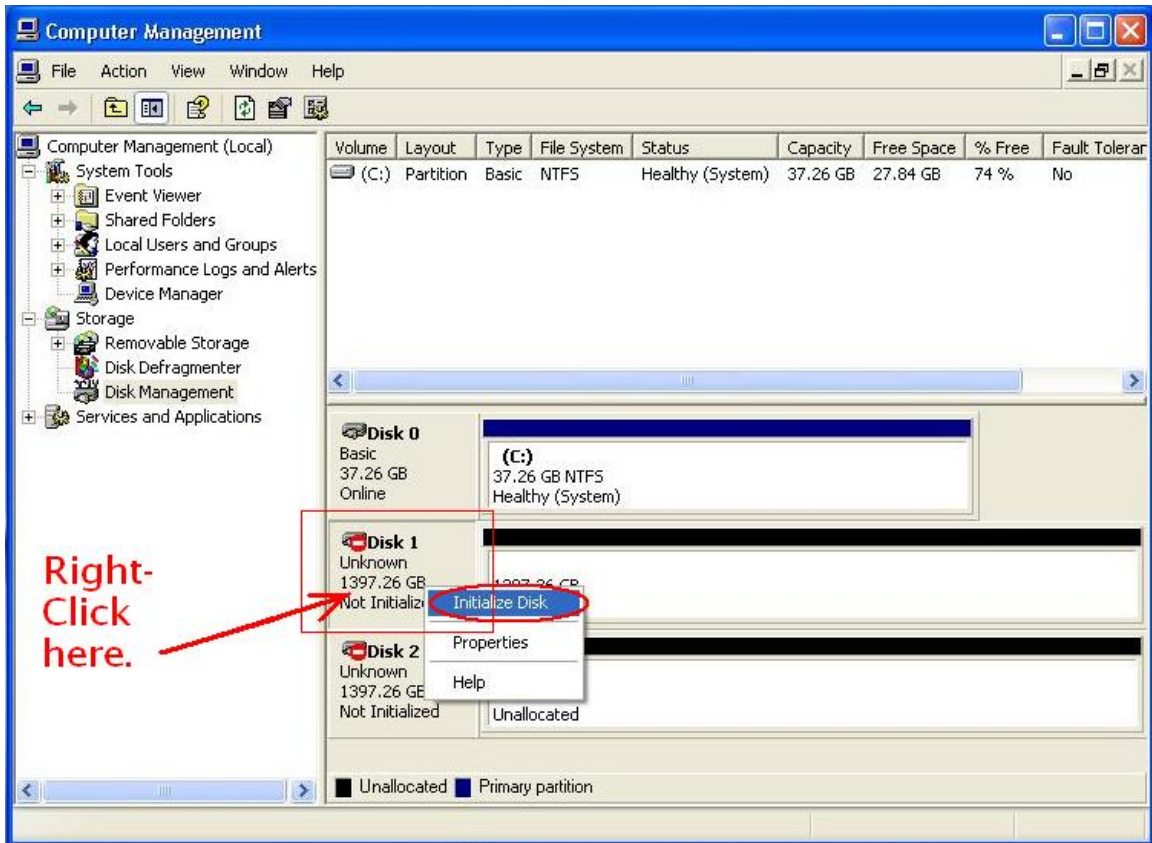
12. The two new volumes will show up in your disk management. (4 if you configured 4 RAID5 groups for a CADA-SA8) If a wizard asks you to initialize a drive, go ahead and click "Next". The "Initialize and Convert Disk Wizard" automatically starts.



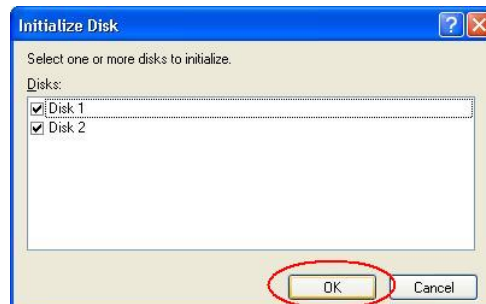
If you don't get an drive initialization wizard right away, or you need to redo the step manually, then navigate back to Disk Management so you can see your uninitialized drives.



Now you need to manually start the disk initialization. Right click on Box area with the “Disk #, Unknown, xxx.xx GB, Not Initialized” information. Click on “Initialize” to start the “Initialize and Convert Disk Wizard”



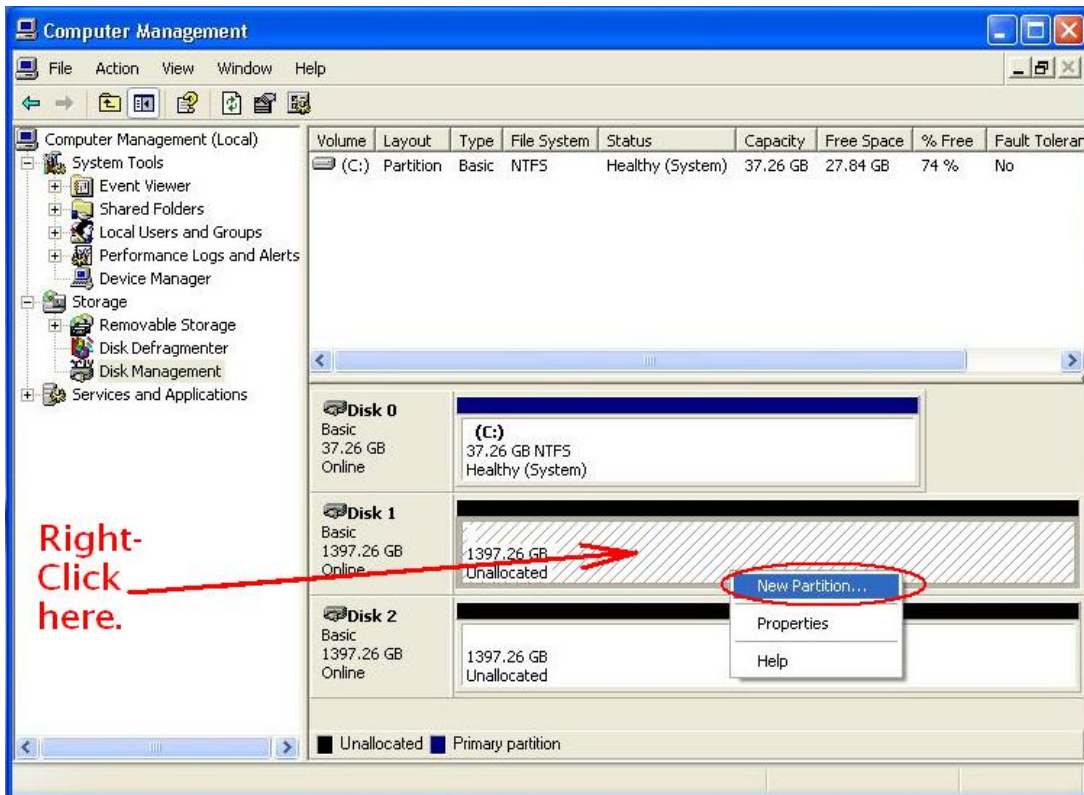
14) The “Initialize and Convert Disk Wizard” will start. On the first page, make sure BOTH of the new unallocated RAID5 group drives are checkbox selected to initialize. Then continue on through the wizard completely by just clicking “Next” until “Finish”. Ignore any other selections which show up in the ensuing pages of the wizard. After it’s done, both drives are initialized although still unallocated.



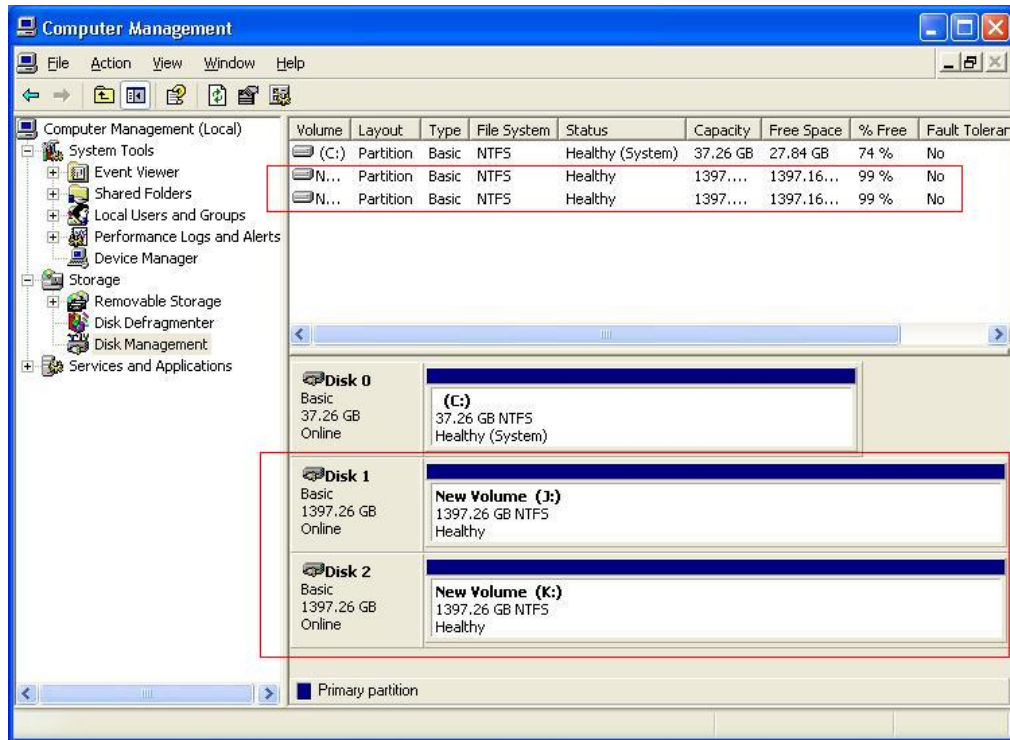
15) Now you can create a new partition and format the volume for each drive. Right-click on the unallocated volume (anywhere under or including the black top bar) and left-click "New Partition" to start the "Create new partition wizard". Navigate this wizard until finished. For more information on using the "Create new partition wizard" and formatting, see the Cavalry Formatting Guide at:

[http://www.cavalrystorage.com/products/manuals/Formatting\\_Instructions.pdf](http://www.cavalrystorage.com/products/manuals/Formatting_Instructions.pdf)

Repeat this step for the other unallocated volume(s).



16) You now have two finished partitions and volumes of your RAID5 set of 2 drives. Notice that each volume is less than 2TB so Windows XP can see them in disk management.



17) You can go to "My Computer" and now access and use them.

