JetStor Redundant Controller and Windows Server 2008 x86 MPIO Setup Guide

Revision 1.0

The Test Environment

OS: Windows Server 2008 Enterprise SP2 32bit

FC HBA: Two (2) QLE2462

RAID Subsystem: EP-3163D-F4S3

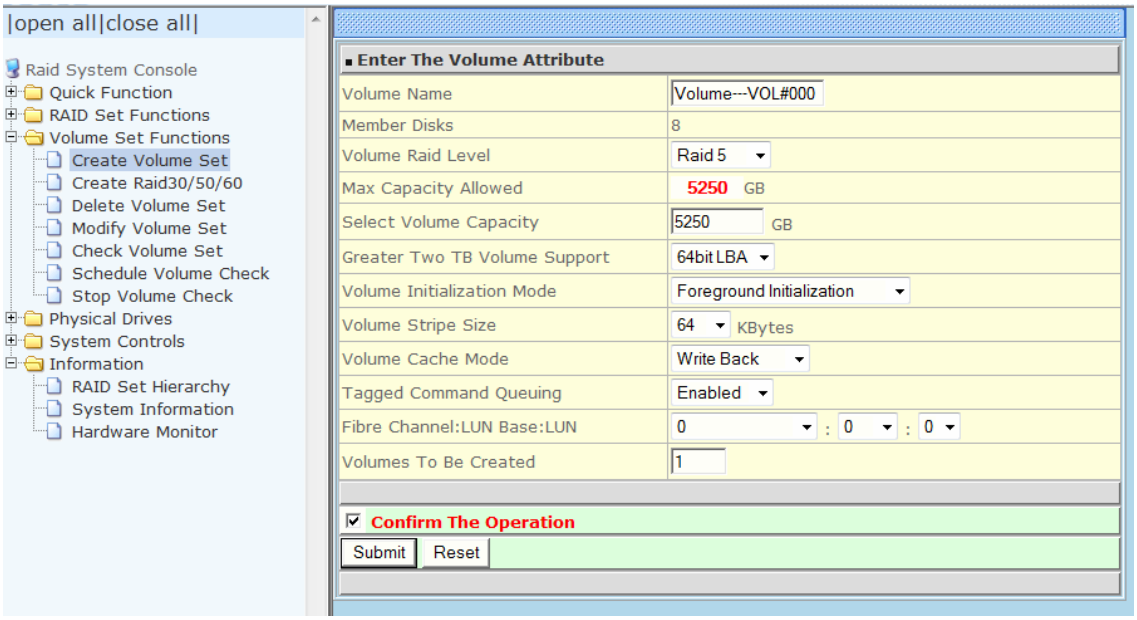
NOTE: The RAID Controller Firmware version must be Dual Controller version. In Web GUI, verify in "System Information" if the Dual Controller State is "Dual Operational".

A. Create Raid Set and Volume Set, and Map to Host Channel

NOTE: When using MPIO in dual controller mode, it is recommended to create only one Volume Set in every Raid Set. For example, use 8 drives to create a Raid Set and then create a single Volume Set. Use another 8 drives to create another Raid Set, and then create a single Volume Set.

1. To create Raid Set, select "RAID Set Functions" → "Create RAID Set". Select the disks to be included in the RAID Set (sample RAID Set Name: "Raid Set # 000"). Tick "Confirm The Operation" and click "Submit".

2. To create a Volume Set from Raid Set #000, select "Volume Set Functions" → "Create Volume Set". Select the RAID Set "Raid Set #000" that was created before. Configure the Volume Set settings, such a Volume Name (**Volume---VOL#000**), RAID Level, and Fibre Channel: LUN Base: LUN mapping (FC Port 0, LUN Base 0, and LUN 0).



NOTE: If the capacity of the Volume Set to be created is over 2TB, select "64bit LBA" in Greater Two TB Volume Support for Windows Server 2008 OS.

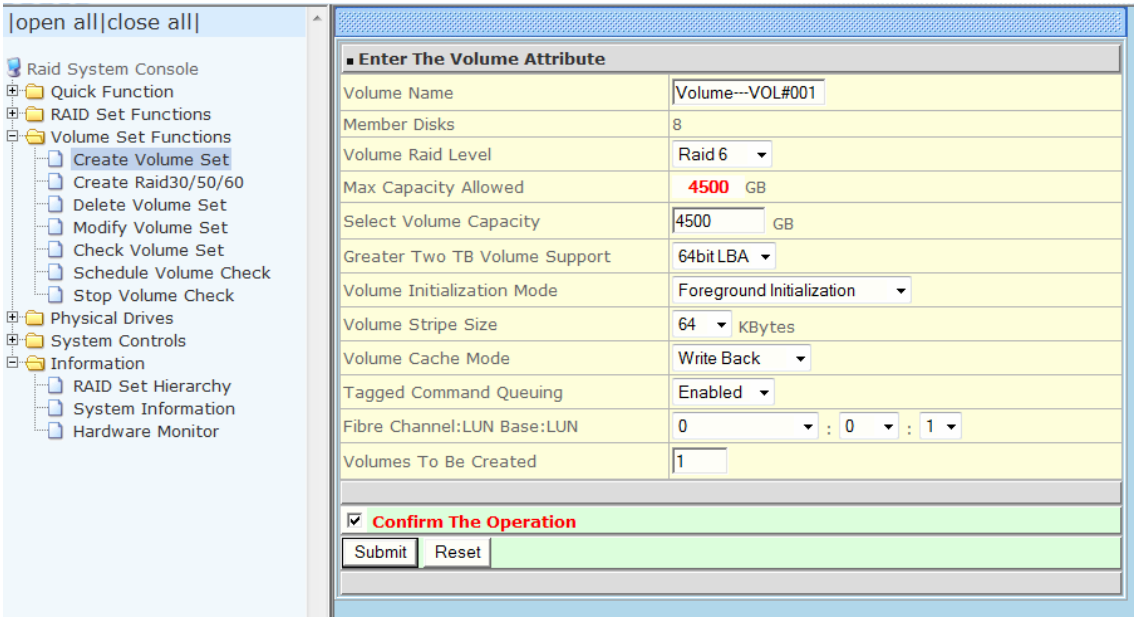
Greater Two TB Volume Support:

If the Volume Set size is over 2TB, an option "Greater Two TB Volume Support" will be automatically provided in the screen as shown in the example above. There are three options to select: "No", "64bit LBA", and "4K Block").

64bit LBA: Use this option for UNIX, Linux kernel 2.6 or later, and Windows Server 2003 SP1 or later OS versions. The maximum Volume Set size is up to 512TB.

3. Tick "Confirm the Operation" and click "Submit". The Volume Set will initialize in Foreground mode.

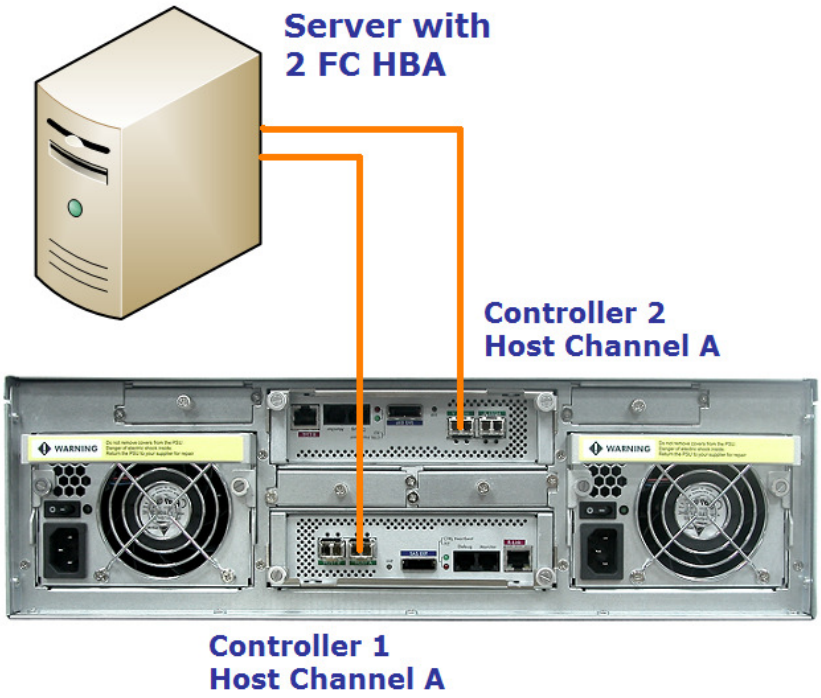
4. You can create another RAID Set (Raid Set # 001) and Volume Set (**Volume---VOL#001**). When Volume Set is initializing in Foreground mode, you need to wait for the initialization to be completed.



B. Preparation

NOTE: Prepare the following before installing the MPIO driver.

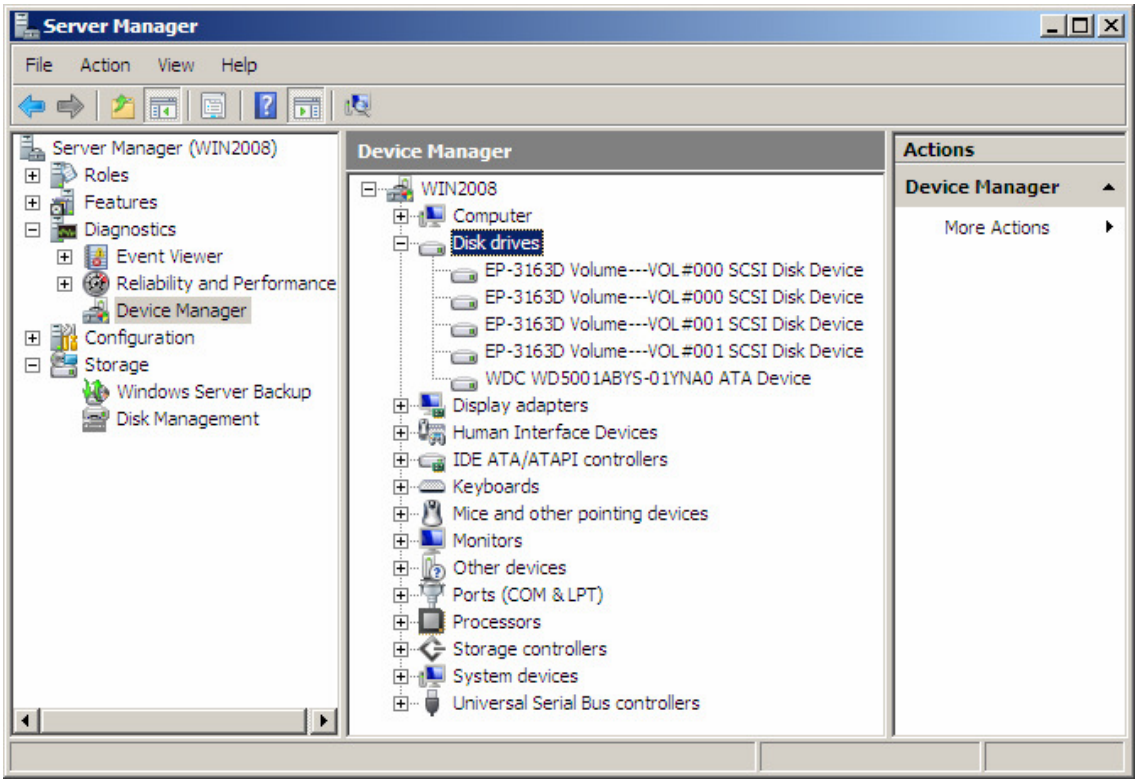
1. Connect FC host cables to Dual Controller Host Channels.
   Example: If Volume Set is mapped to Fibre Channel Port 0, then FC host cable must be connected to Host Channel A.



2. Install the two FC HBA in the server and boot up Windows Server 2008 OS, and then install (update) FC HBA Windows Driver.

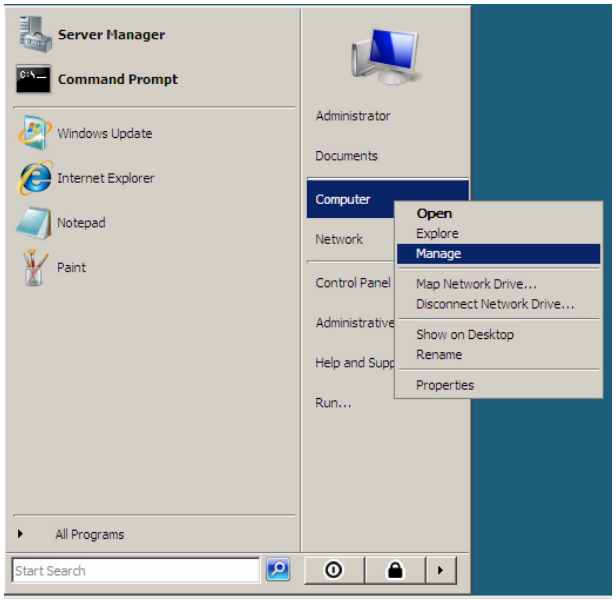
3. Check if Volume Sets (LUNs) are detected in "Disk Drives" in Windows "Device Manager". If not, please check the FC settings and connections. Also try to restart the controller (System Controls -> Restart Controller)

NOTE: The 2 Volume Sets must appear twice (total 4 Disk Device).

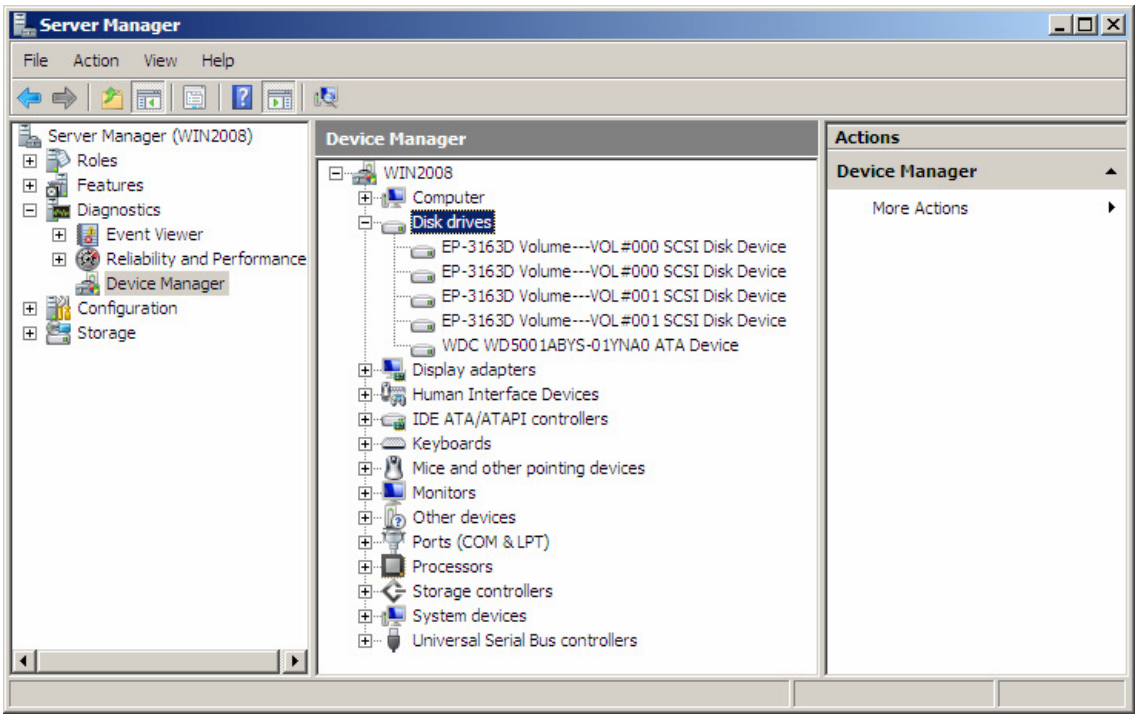


C. How to Install MPIO

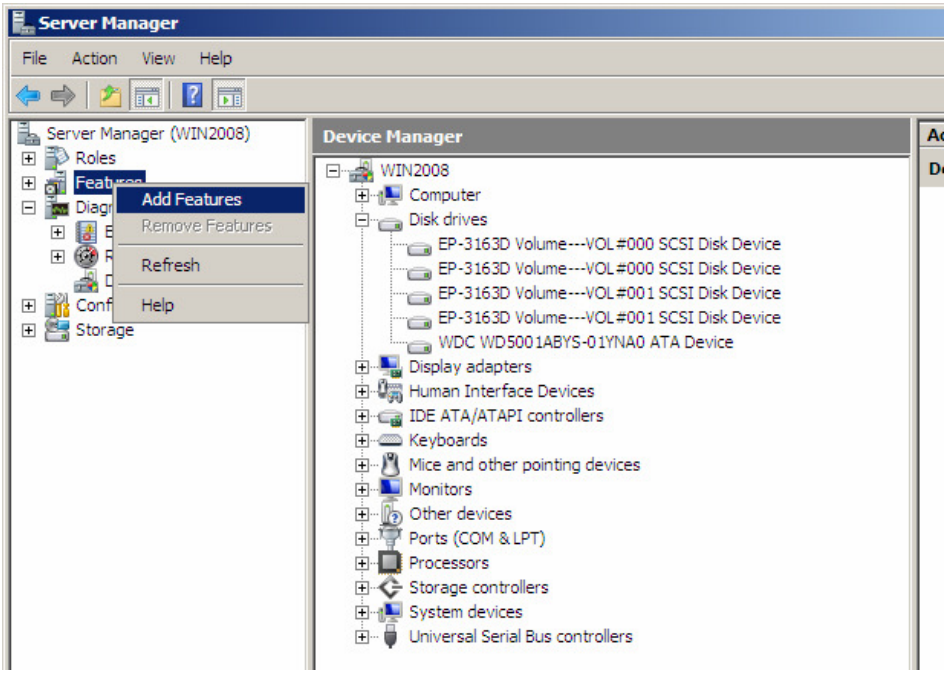
1. Select "Start" then right-click "Computer" and select "Manage".



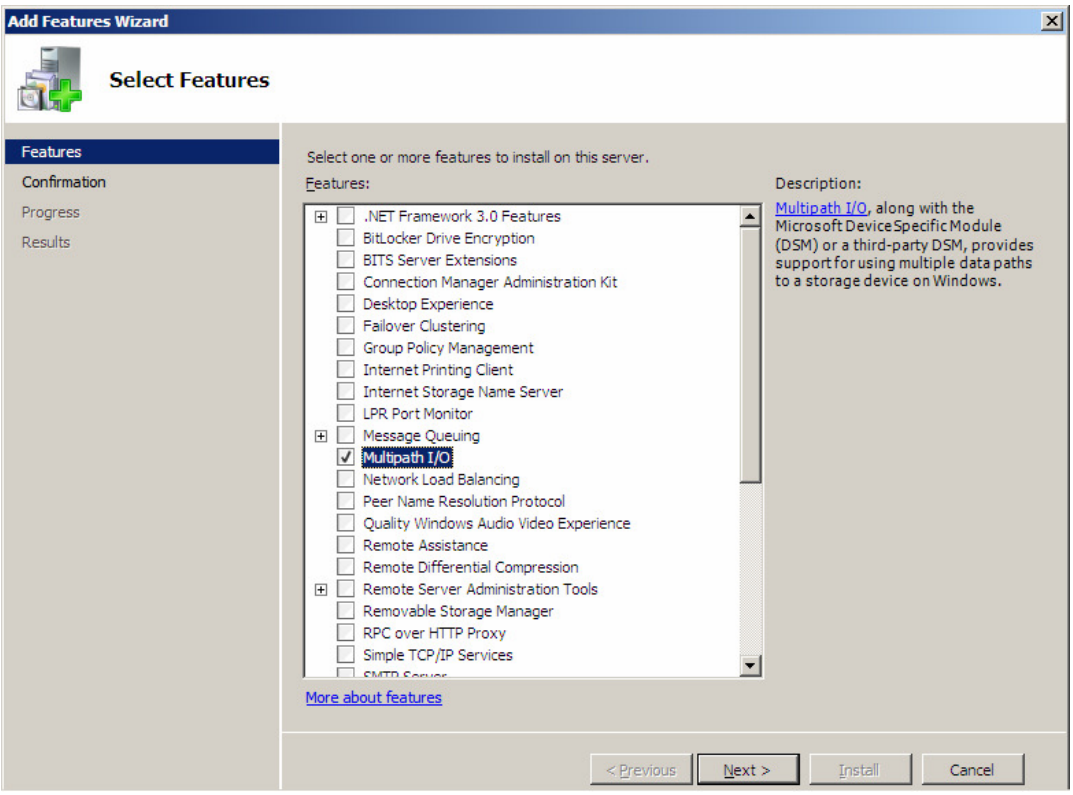
2. Open "Diagnostics" and select "Device Manager". The 2 Volumes Sets that were created before will appear twice (4 Disk Device).



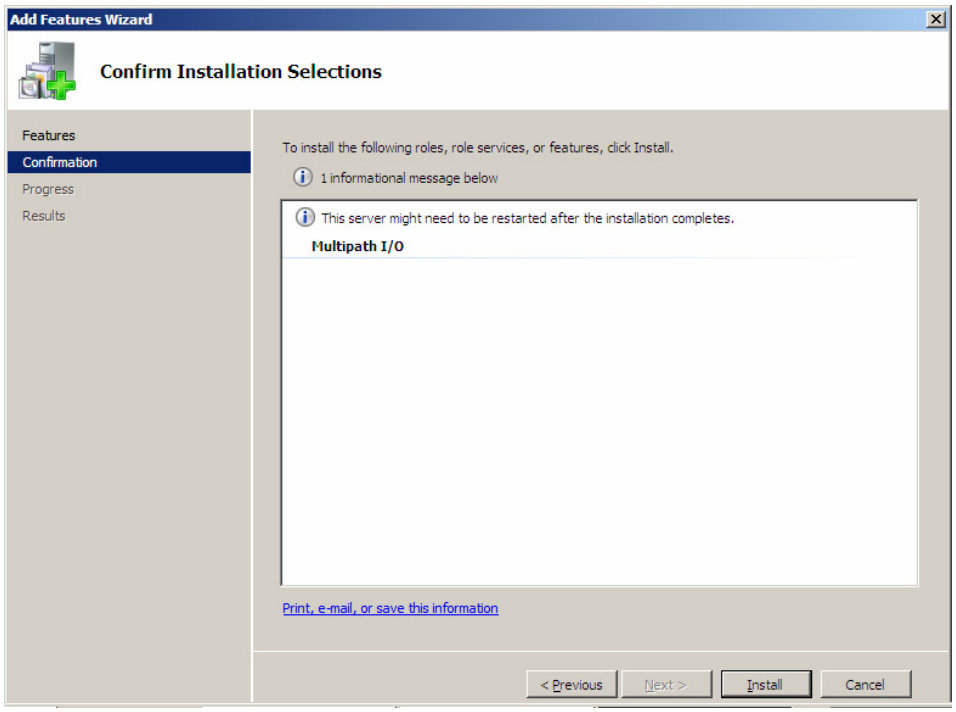
3. Select "Feature" and "Add Features".



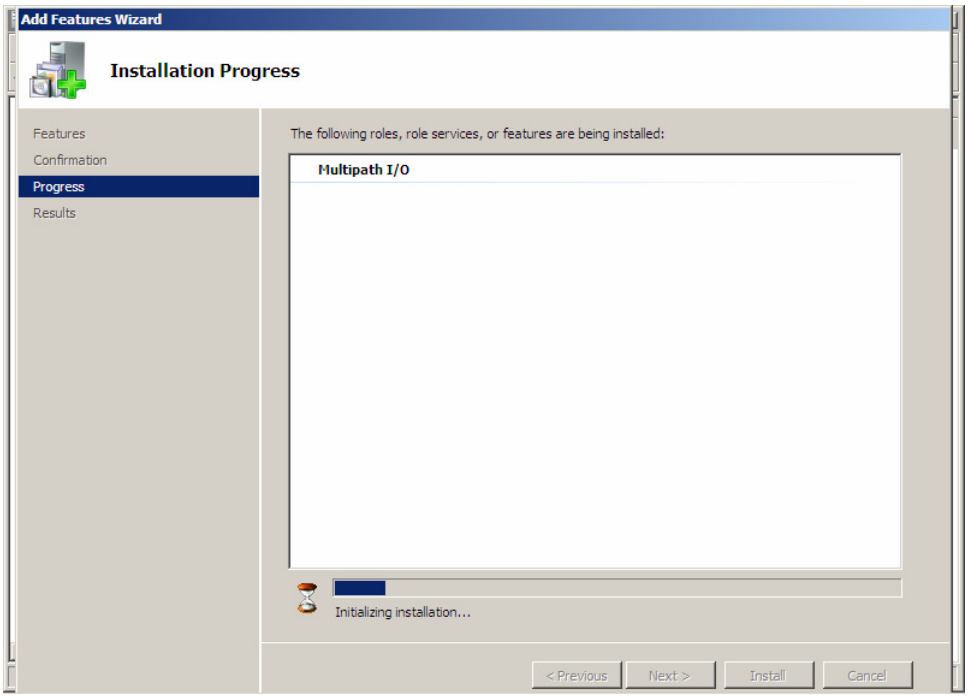
4. Select (tick) the "Multipath I/O" feature. Click "Next.



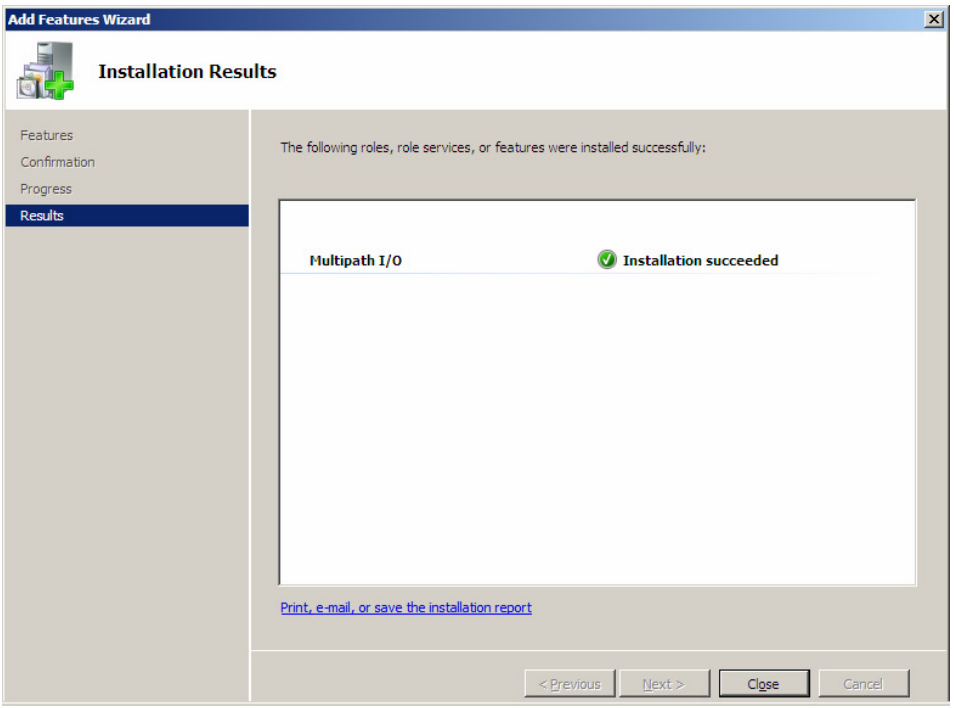
5. The Confirm Installation Selections screen will be shown. Click "Install" to complete MPIO installation.



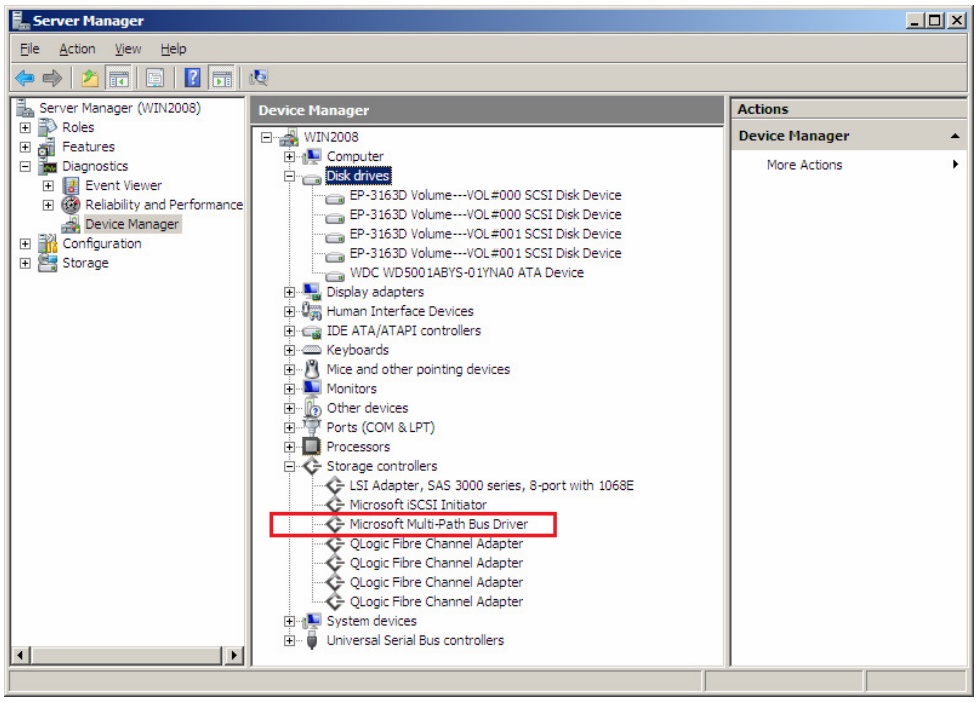
6. The installation progress will be shown.



7. Verify if MPIO installation succeeded. Click "Close".

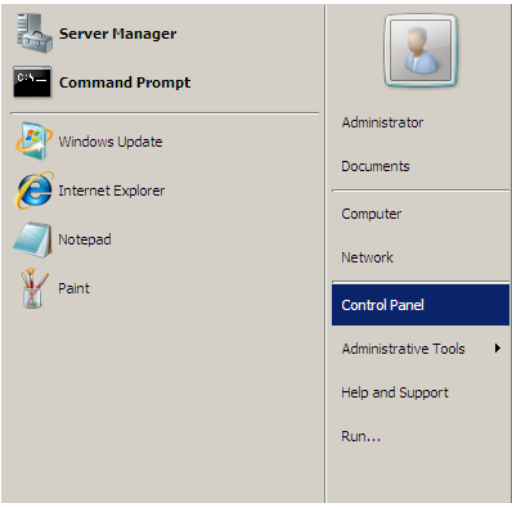


8. Verify MPIO driver under "Storage controllers". It should display "Microsoft Multi-Path Bus Driver".

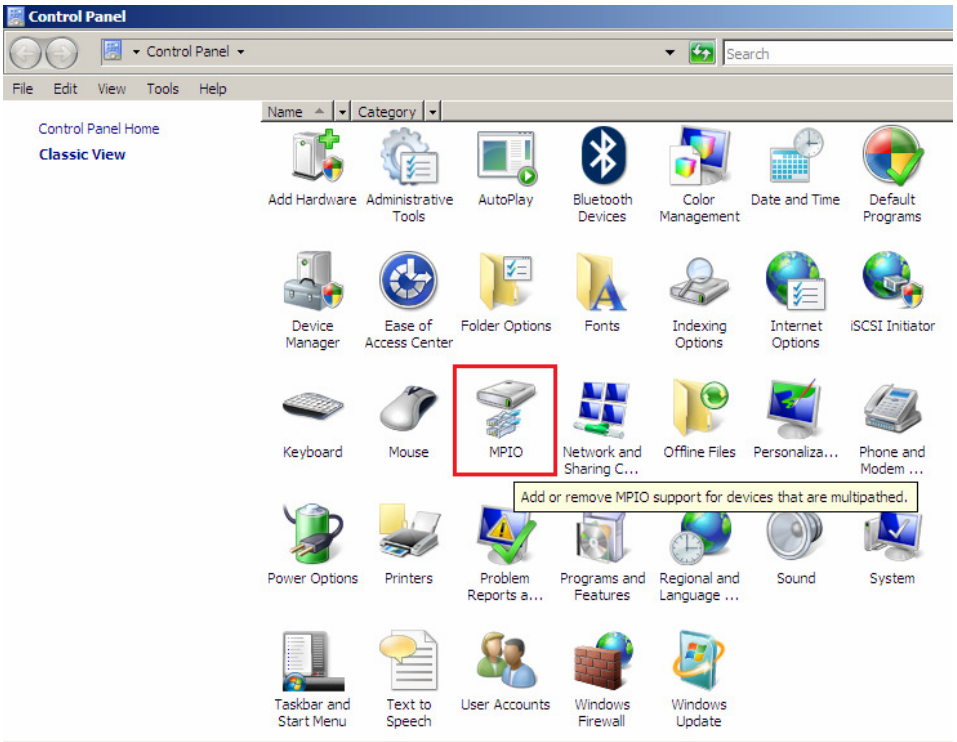


D. How to Configure MPIO

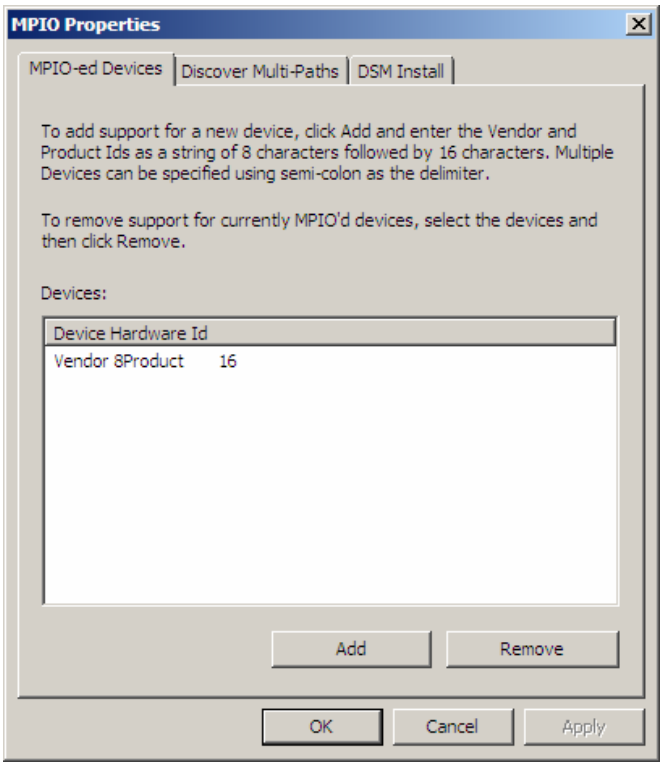
1. Select "Start" then "Control Panel".



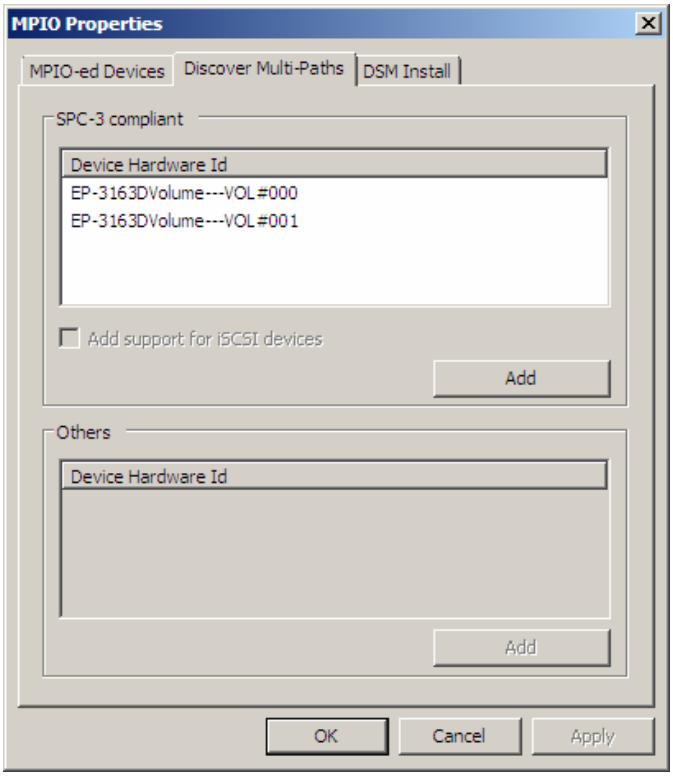
2. Double-click "MPIO".



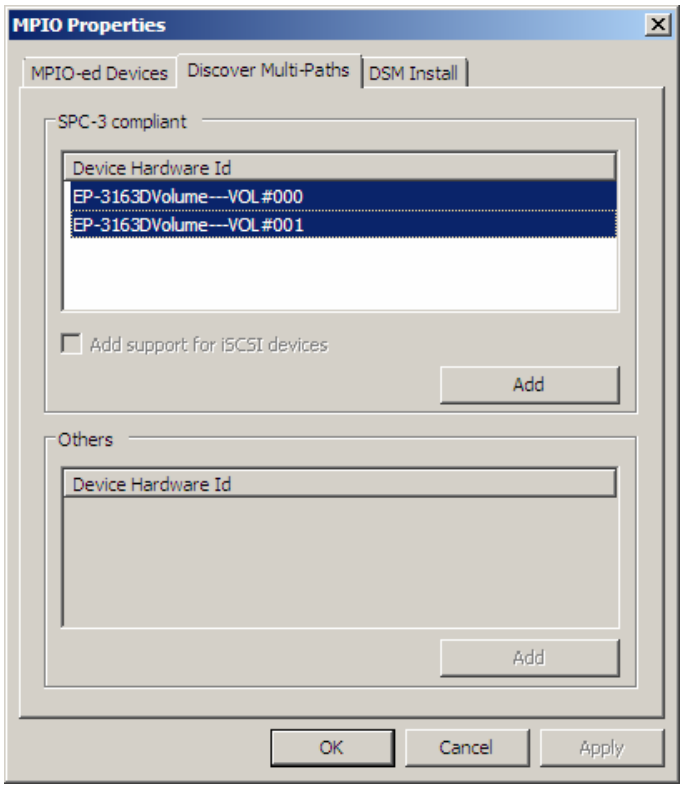
3. The "MPIO-ed Devices" tab is shown. Note that no devices are shown.



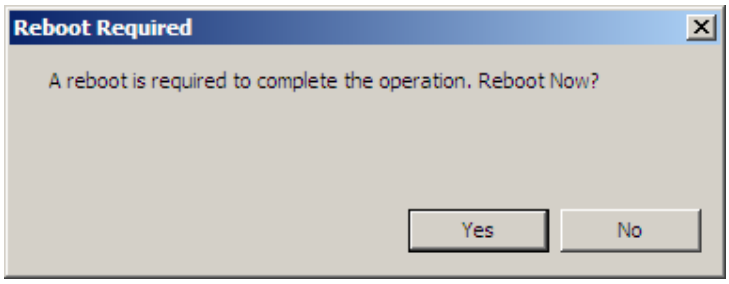
4. Select "Discover Multi-Paths" tab. The available drives are listed.



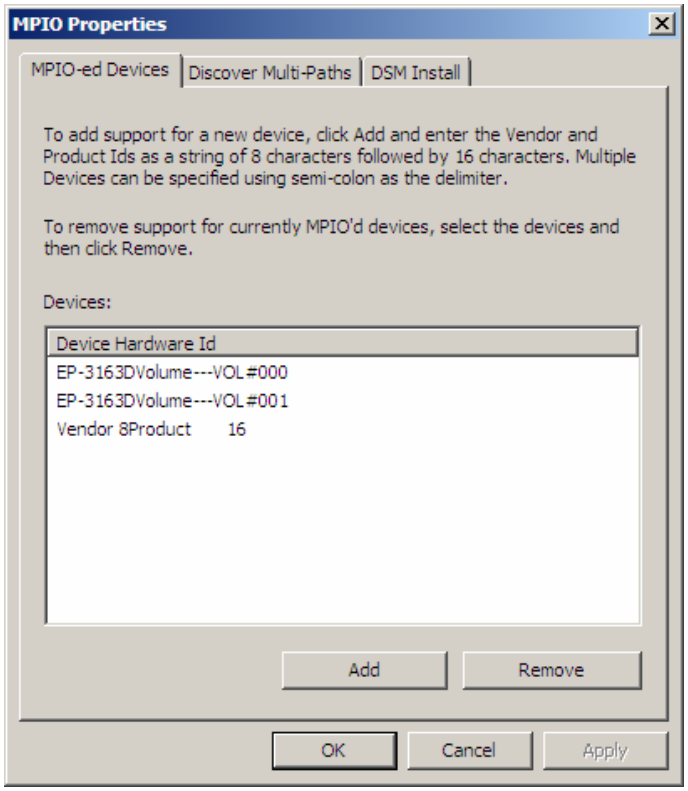
5. Select the 2 devices and click "Add".



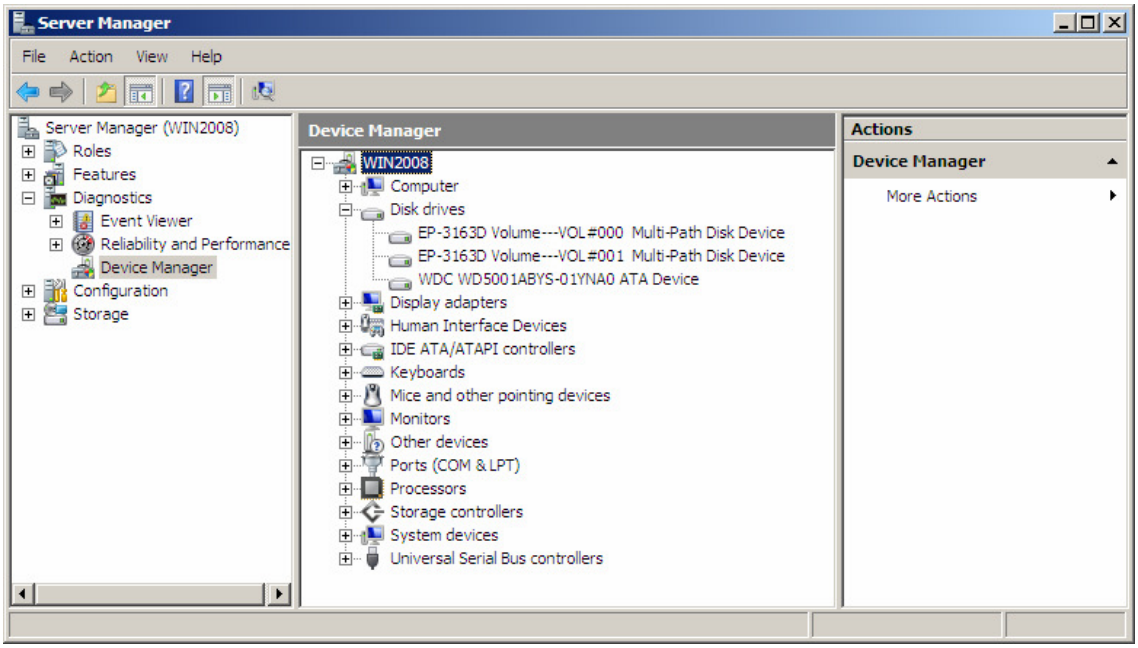
6. A reboot will be required to complete the operation. Select "Yes" to reboot now.



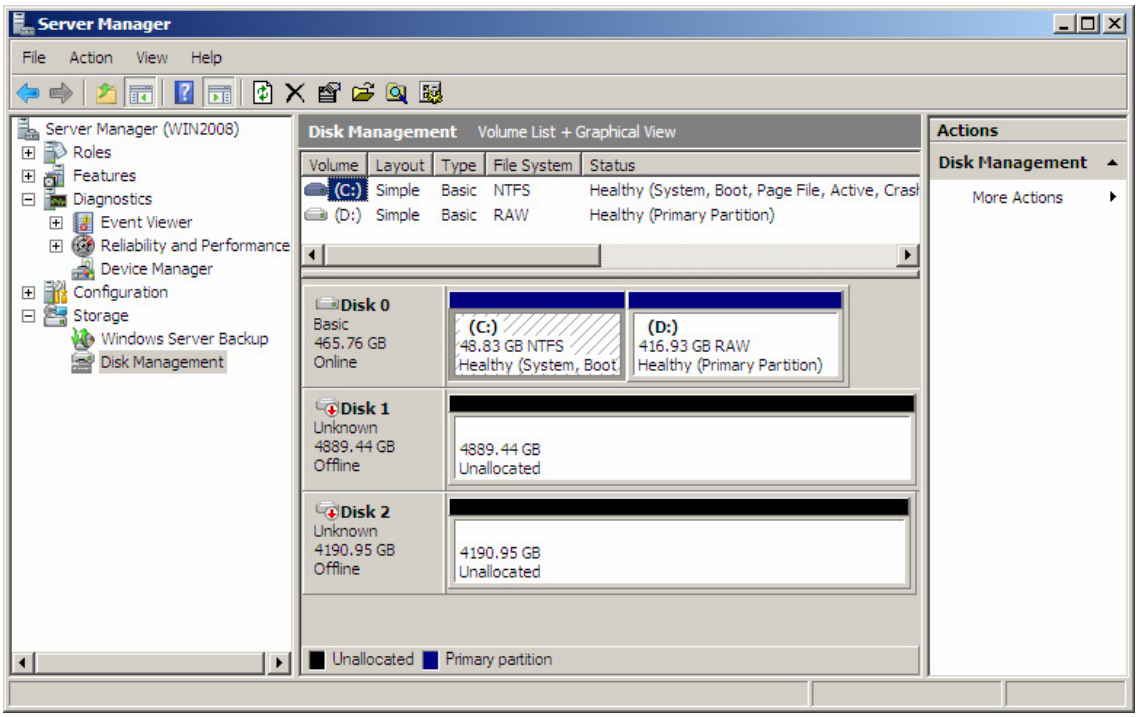
7. Open Control Panel and MPIO. Verify in "MPIO-ed Devices" tab if the 2 Volumes are listed (added successfully).



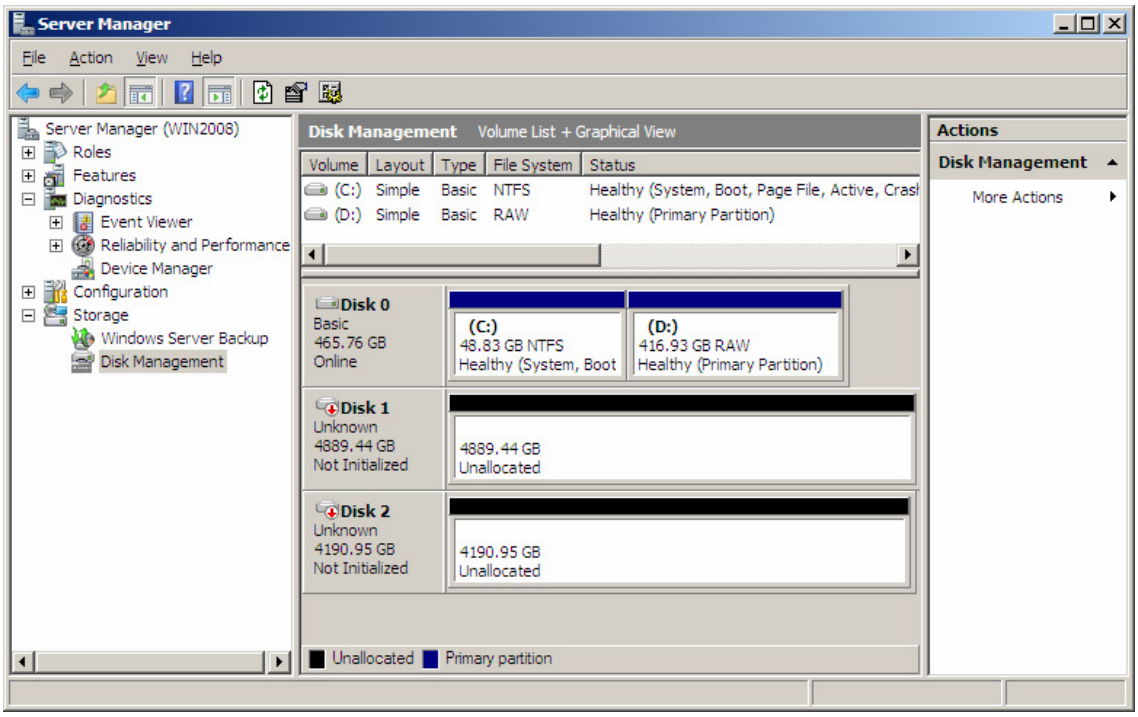
8. Open Device Manager / Disk Drives. The **4 Disk Devices** will appear only as **2 Disk Devices**.

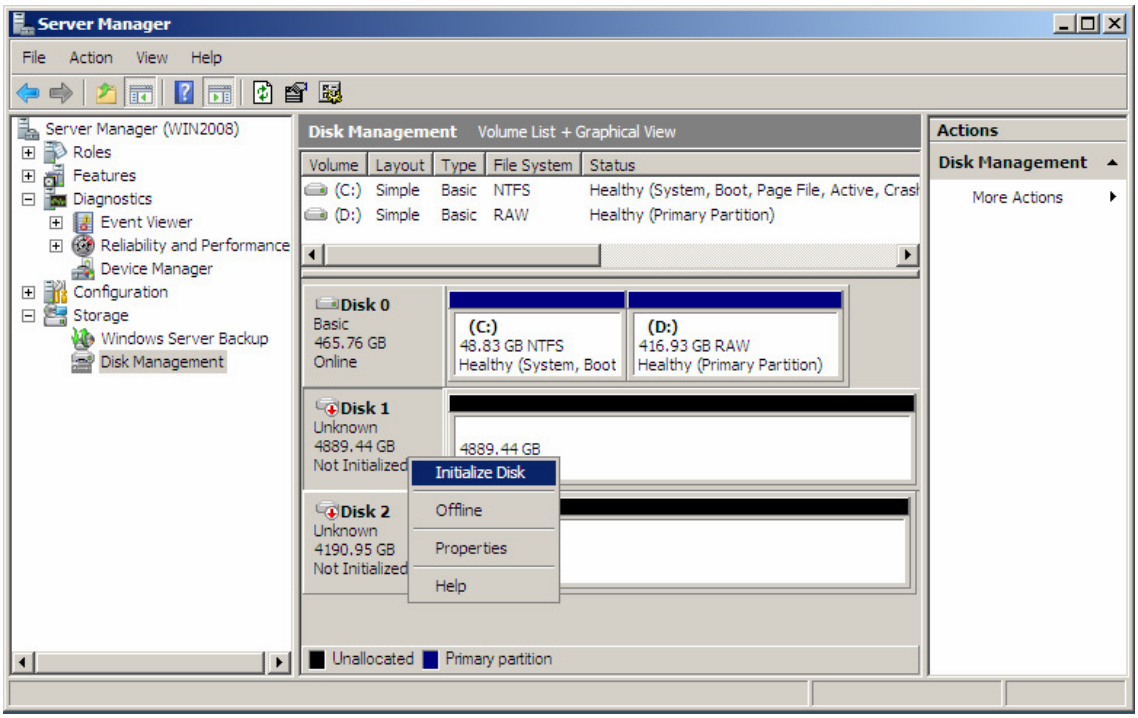


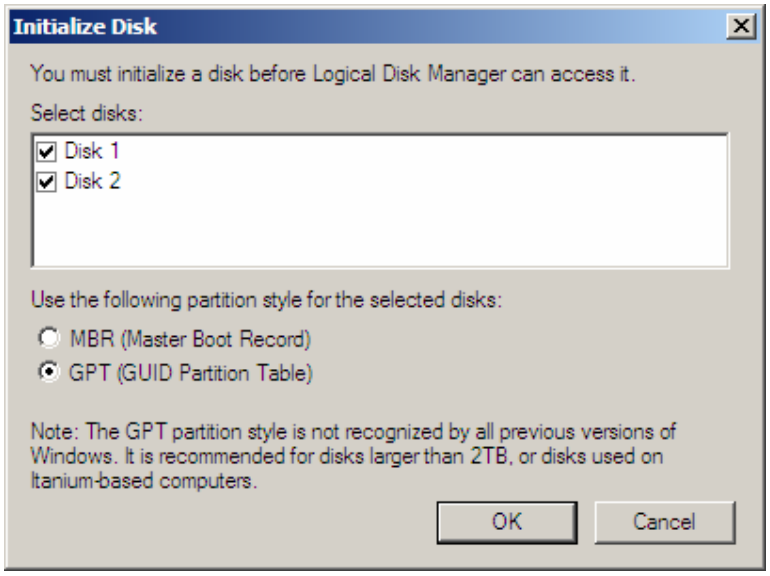
9. Open Storage / Disk Management. Make the 2 Disks "Online".



10. Initialize the 2 Disks. Use "GPT".




Server Manager
File Action View Help
Server Manager (WIN2008)
Roles
Features
Diagnostics
Event Viewer
Reliability and Performance
Device Manager
Configuration
Storage
Windows Server Backup
Disk Management
Disk Management Volume List + Graphical View
Volume Layout Type File System Status
(C:) Simple Basic NTFS Healthy (System, Boot, Page File, Active, Crash
(D:) Simple Basic RAW Healthy (Primary Partition)
Disk 0
Basic
465.76 GB
Online
(C:)
48.83 GB NTFS
Healthy (System, Boot
(D:)
416.93 GB RAW
Healthy (Primary Partition)
Disk 1
Unknown
4889.44 GB
Not Initialized
4889.44 GB
Initialize Disk
Offline
Properties
Help
Disk 2
Unknown
4190.95 GB
Not Initialized
Unallocated
Primary partition
Actions
Disk Management
More Actions


Initialize Disk
You must initialize a disk before Logical Disk Manager can access it.
Select disks:
Disk 1
Disk 2
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

11. Create Volume (format partition).