



Senior Project Demo

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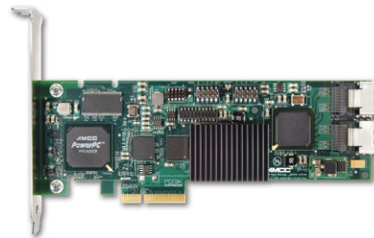


System requirements

- System shall be able to securely store large amount of data with relatively high speed
- System shall have hardware raid controller cards to insure the safety of stored data
 - Controller card shall be able to provide variety of different raid such as raid 0, 1, 5, 6, and 10
- The system shall at minimum provide 1 cpu and 2 GB RAM to each of the initial 4 users of the system
- System shall have option to use as tower server or rack-mount server to save space
- System shall have enough internal space for expansion for full size PCI cards such as high-end graphics cards
- System shall allow hot-swapping of hard drives for quick replacement
- System shall have way to lock and secure hard drives to prevent theft or unintended removal of hard drive
- System shall have free hard drive slots for future addition
- System shall have adequate amount of cooling fans and sensors to control and monitor system temperature
- System shall have inbuilt floppy drive bay for OS level troubleshooting and installation of drivers

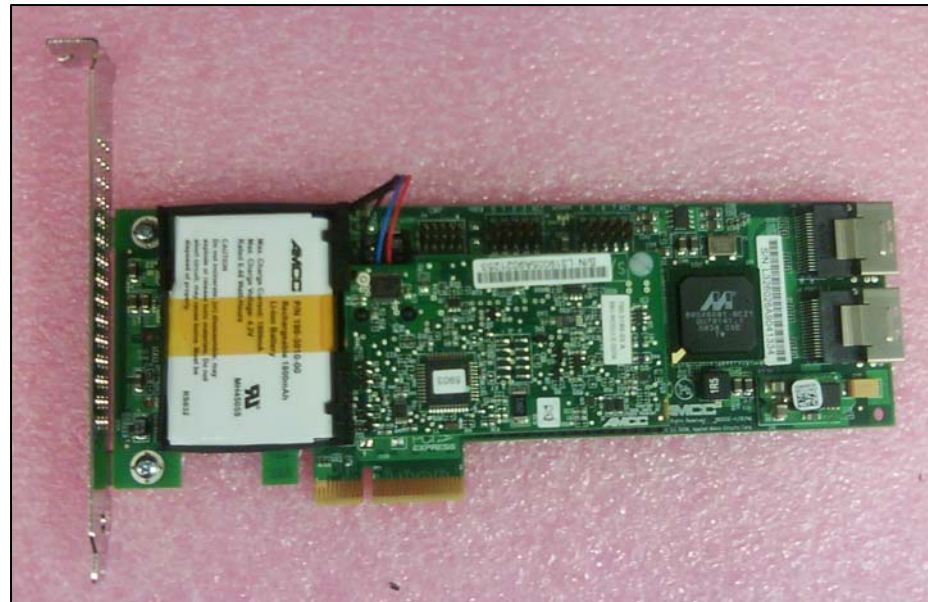
Summary of Components

Parts	Model Numbers	Description
Chassis	SC743TQ-865b-SQ	Black 4U Pedestal Chassis
Motherboard	H8DME (Rev # 2.01)	Supermicro Motherboard
CPU	Opteron 2347	AMD Third Generation CPU
CPU Heatsink	SNK-P0023P Socket F (B)	CPU Heatsink
RAM	AH28K72L8BHE6S	2GB Memory DIMM
Air Shroud	CSE-PT0123 Rev.B	Airflow Guiding Cover
RAID Controller Card	3ware 9650SE-2LP 2-Port	8 Port RAID Controller Card
Hard Drives	ST31000340AS	1TB Hard Drives
DVD/CD Drive	AD-7191A	Sony Optiarc DVD/CD Drive



Raid Controller Card

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Use of Raid 5

RAID 5 (striped disks with distributed parity) combines three or more disks in a way that protects data against the loss of any one disk. The storage capacity of the array is a function of the number of drives minus the space needed to store parity.

Supported RAID levels 0, 1, 5, 6, 10, 50, Single Disk, and JBOD

System Specs

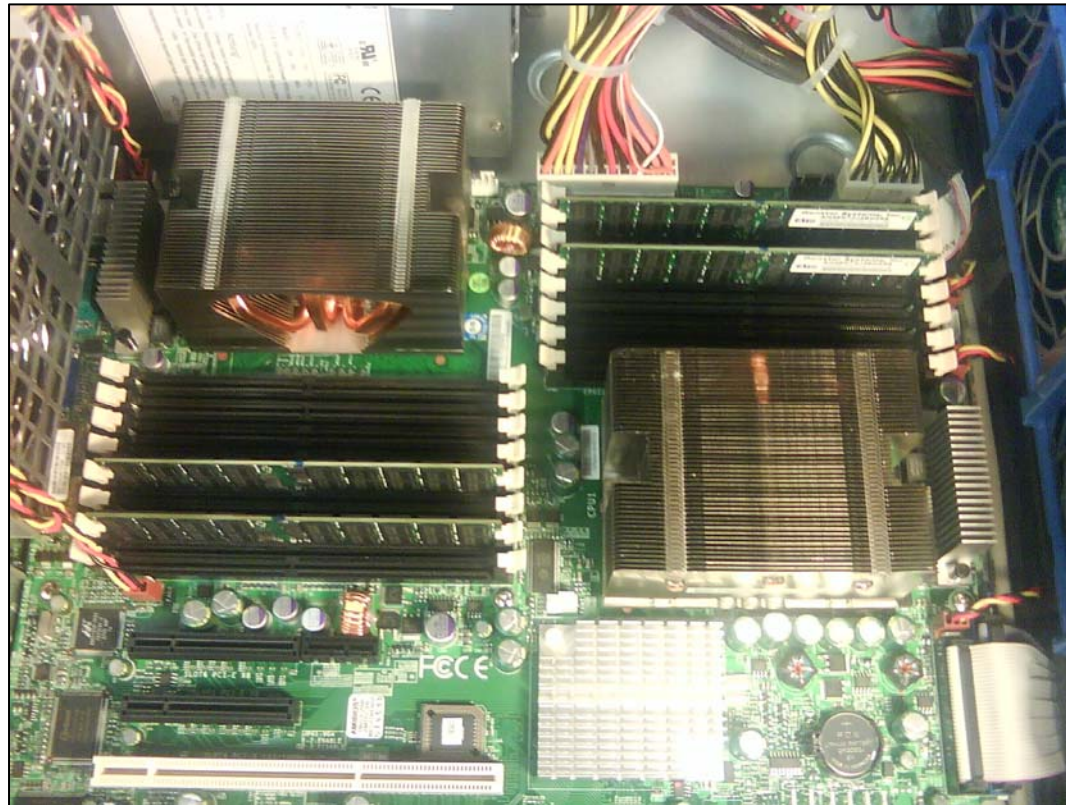
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2X Quad Core AMD Opteron CPUs

4X 2GB DDR2-667 PC2-54000MHz Memory DIMMs

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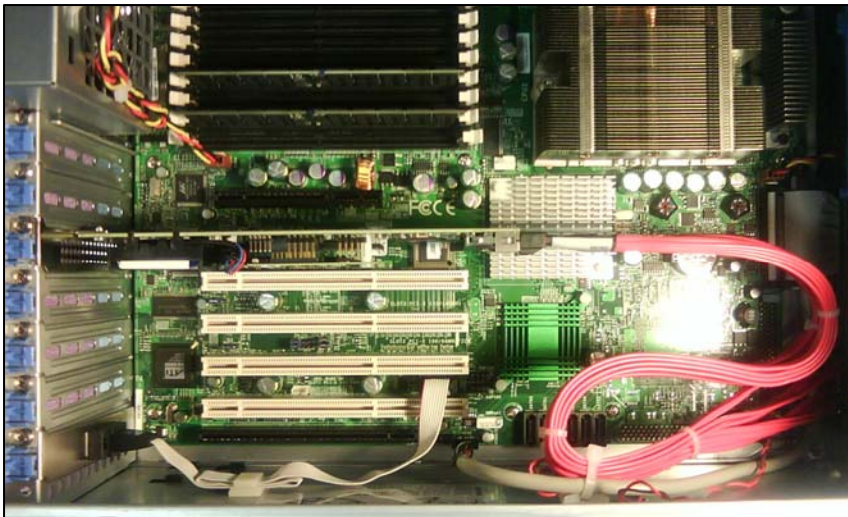
System Case Selection

- System shall have option to use as tower server or rack-mount server to save space
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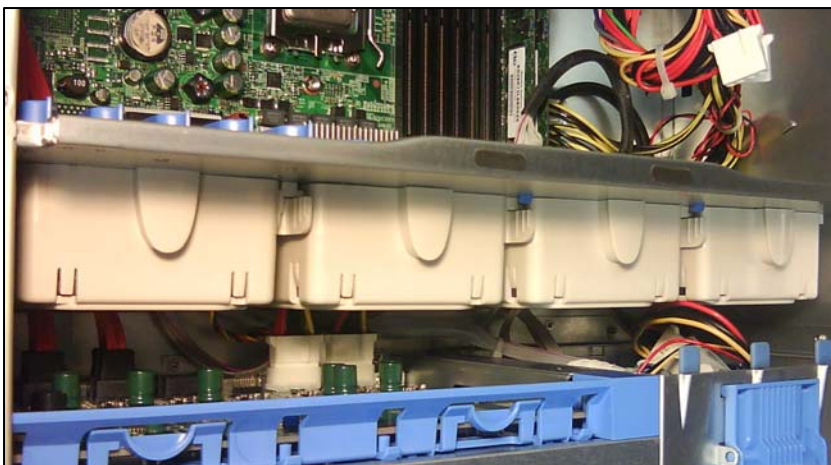
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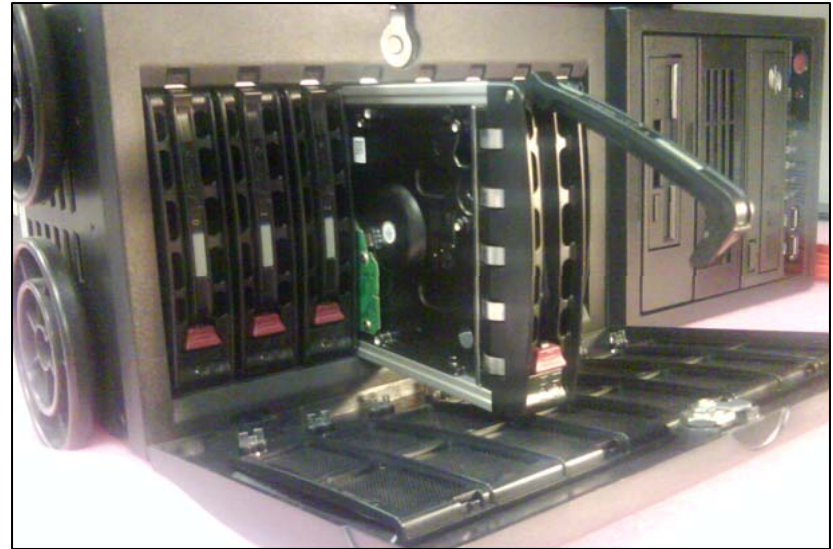
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Floppy / DVD Drives

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Safety and Caution

- Use of ESD protected equipments during assembly process



OS Selection

- Linux vs. Windows
 - Price, Reliability, Easy Use, Software Cost, Hardware, Support, Open Source, and Security
- Choosing CentOS 5.3 for final installation

