RBSU Settings

RBSU (BIOS) settings were set to the defaults. Then, the following options were set or verified:

System Options
- Processor Options
  - No-Execute Page-Protection – Enabled
  - AMD Virtualization – Enabled
  - Processor Core Disable (AMD Core Select) – ALL
  - AMD Core Performance Boost – Enabled

Power Management Options
- HP Power Profile – Maximum Performance
- HP Power Regulator – HP Static High Performance Mode
- Redundant Power Supply Mode – Balanced Mode
- Advanced Power Management
  - Memory Interleaving – Channel Interleaving
  - Maximum Memory Bus Frequency – Auto
  - HyperTransport Frequency – HT Full Performance Mode
  - Minimum Processor Idle Power State – No C-States
  - PCI Express Generation 2.0 Support – Auto
  - Dynamic Power Savings Mode Response – Slow

Advanced Options (all default except listed next)
- Advanced Performance Tuning Options
  - Hardware Prefetch training on Software Prefetch – Disabled
  - DRAM Prefetch on CPU Request – Enabled
  - DRAM Prefetch on I/O Request – Enabled
  - CPU Core Hardware Prefetcher – Disabled
  - Node Interleaving – Disabled
  - HPC Optimization Mode – Enabled

Additionally, Stride H/W Prefetch was disabled via an AMD utility, this option will be exposed in a ROM to be release by 12/31/11, which dictated the system availability date.

Configuration of Violin Disk Arrays

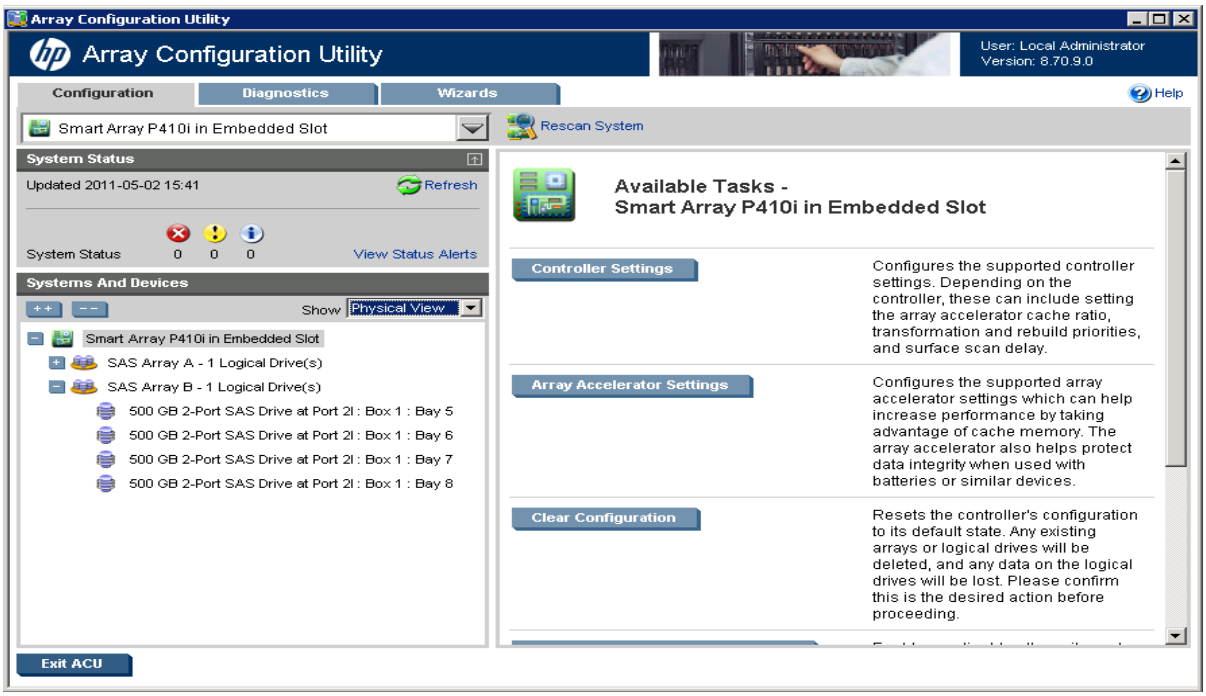
The Violin Memory flash arrays are billed as 5.2TB arrays, but the amount that can be used to accommodate writes can be varied by the vendor. As delivered they were configured to present 3.37TB of storage to the system.

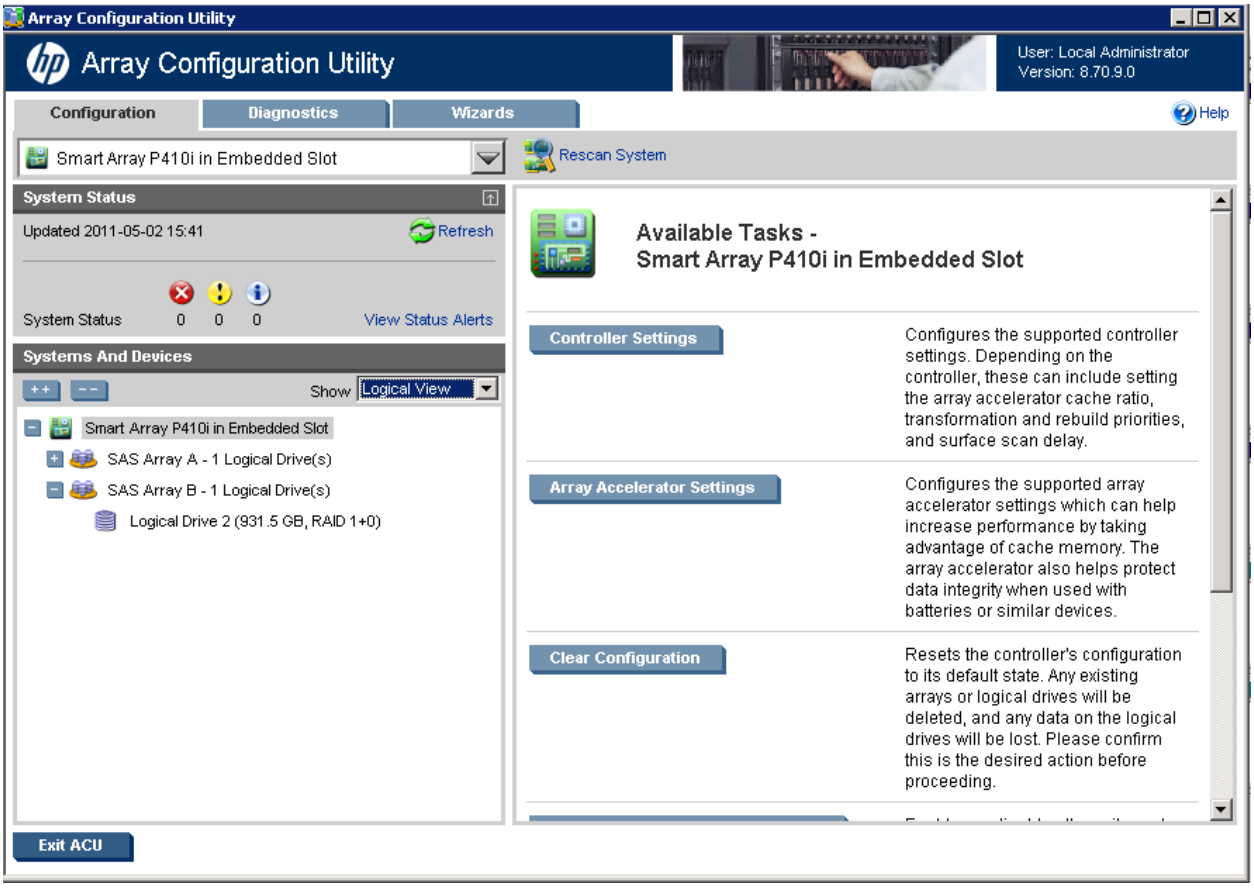
Each of the two Violin 3205 Memory Appliances was connected via PCI extender cards to the SUT.

Each array presented one logical disk to the operating system. Each logical disk was then formatted into 3 partitions contains the TPC-E growing files, fixed files, and SQL server temp files. The partition details are in the full disclosure report.

Configuration of SQL Log Array

The SQL log array used the built in P410i SmartArray and the built in drive bays. The log shares this controller with the boot disks. The following screen shots illustrate that 4 500GB disks were made into one RAID 1+0 volume.





This volume was partitioned in the OS, but left as a raw disk and not formatted.

Configuration of Backup Devices

Four SmartArray P411 RAID controllers were also installed in the system and connected to 10 enclosures with 24 disk drives each for database build/backup. These were not active during the benchmark performance run.