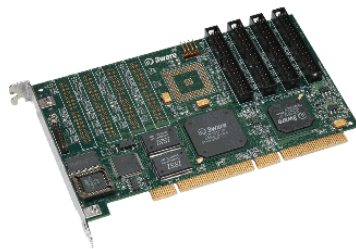




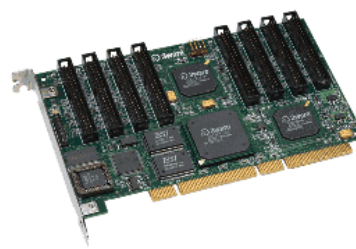
ATA RAID Array Controller

Performance Benchmark Report

 **3ware 7500-4**



 **3ware 7500-8**



July 2002



Performance Benchmarks

| | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Benchmark Program | Intel Iometer, version 1999.10.20 http://www.intel.com/design/servers/devtools/iometer/download.htm |
| System | Dual Processor Intel STL2 (1.0GHz) STL2 BIOS Release 1.12 PhoenixBIOS 4.0 Release 6.0 512 MBytes system RAM |
| Operating System | Microsoft Windows 2000 Advanced Server Service Pack 2 |
| RAID Levels | 0, 5 |
| PCI slot type | 64-bit / 33 MHz |
| Number of Outstanding I/Os | Variable, exponentially increasing from 1 to 256 |
| Test type | Sequential I/O block sizes: 8K, 64K, 512K, 1024K Random I/O block sizes: 2K, 4K, 8K, 16K |
| Partitions | None (raw I/O tests) |
| Data recorded | Total IOs/sec (reads+writes), MBytes/sec (reads+writes), % CPU utilization |
| ATA Hard Disk Drives | Maxtor 4G160J8, 160 GByte 5400 RPM |
| RAID Controllers: 3ware | 7500-4 (code 7.5 release) 7500-8 (code 7.5 release) |

Test Results (Maximum value shown)

| Card Type/ RAID Level | I/O Type | Sequential I/O | Random I/O |
|--------------------------|----------|------------------|--------------|
| 7500-4 RAID 0 | Read | 140.1 MBytes/sec | 323.9 IO/sec |
| 7500-4 RAID 0 | Write | 137.0 MBytes/sec | 362.2 IO/sec |
| 7500-4 RAID 5 | Read | 105.0 MBytes/sec | 339.8 IO/sec |
| 7500-4 RAID 5 | Write | 65.5 MBytes/sec | 87.9 IO/sec |

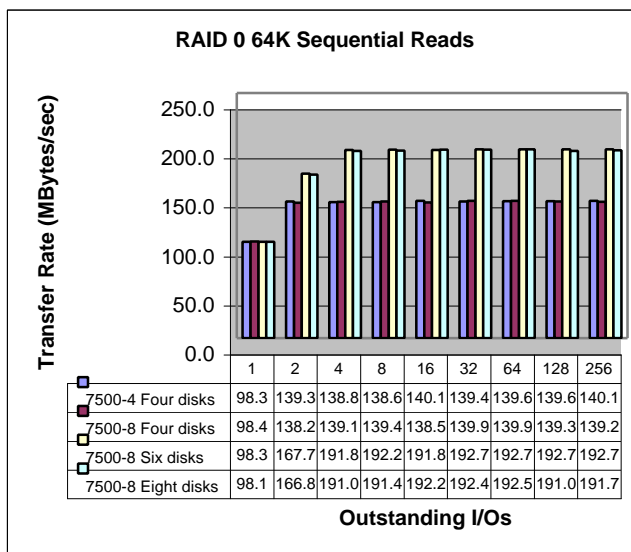
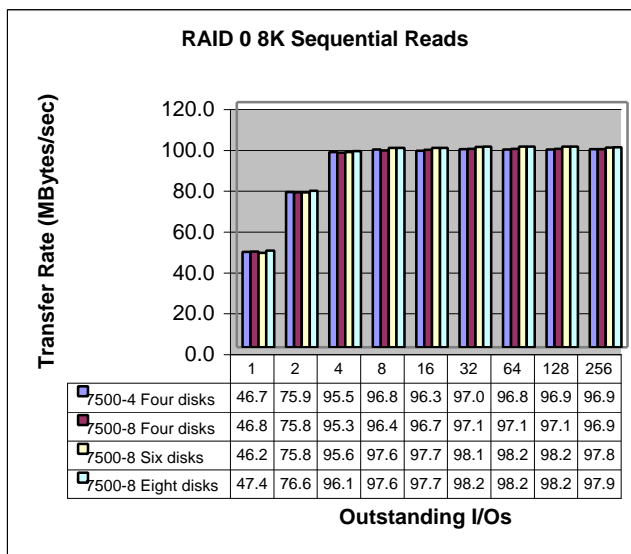
| Card Type/ RAID Level | I/O Type | Sequential I/O | Random I/O |
|--------------------------|----------|------------------|--------------|
| 7500-8 RAID 0 | Read | 192.7 MBytes/sec | 572.7 IO/sec |
| 7500-8 RAID 0 | Write | 146.1 MBytes/sec | 801.9 IO/sec |
| 7500-8 RAID 5 | Read | 185.8 MBytes/sec | 604.7 IO/sec |
| 7500-8 RAID 5 | Write | 73.4 MBytes/sec | 178.0 IO/sec |



These test results are organized as follows:

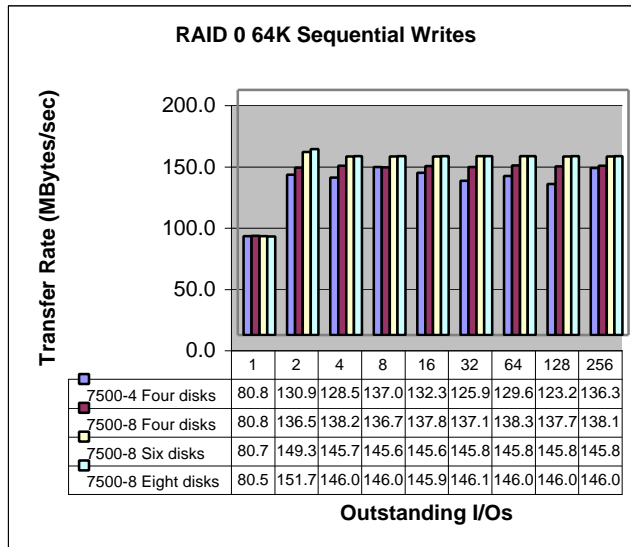
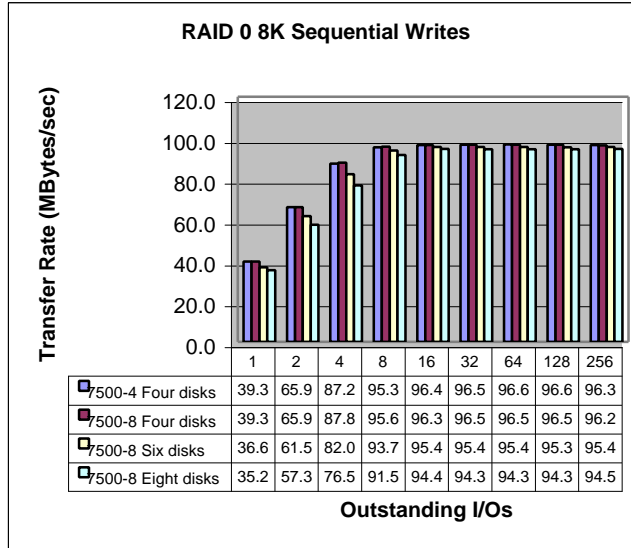
The # of Outstanding I/Os control specifies the maximum number of outstanding asynchronous I/O operations Iometer will attempt to have active at one time.

RAID 0 Sequential Reads (8K, 64K)



RAID 0

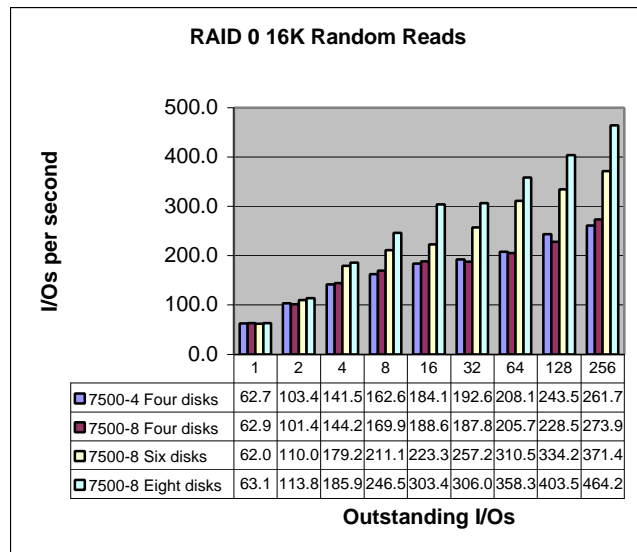
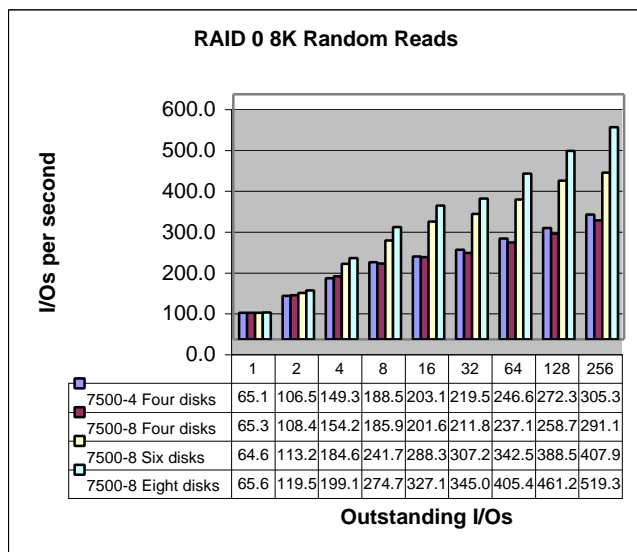
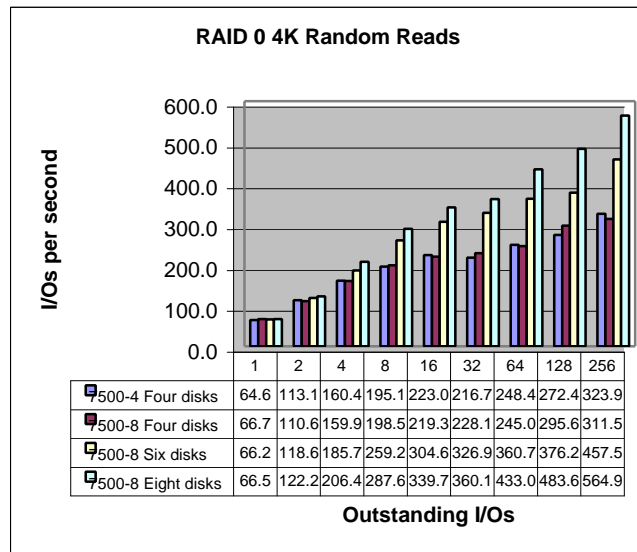
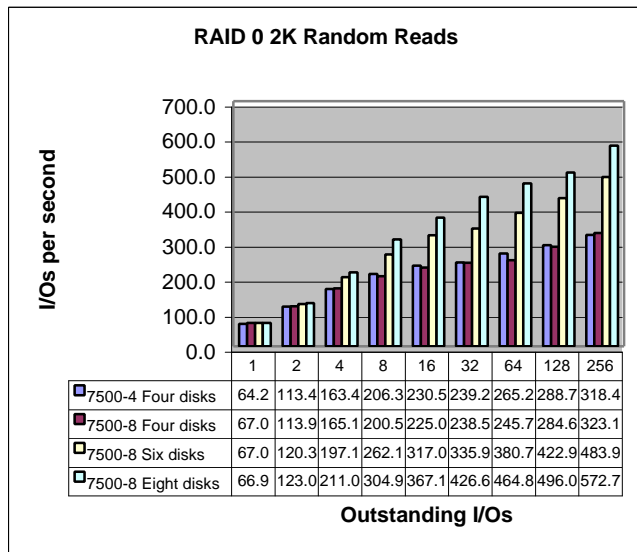
Sequential Writes (8K, 64K)





RAID 0

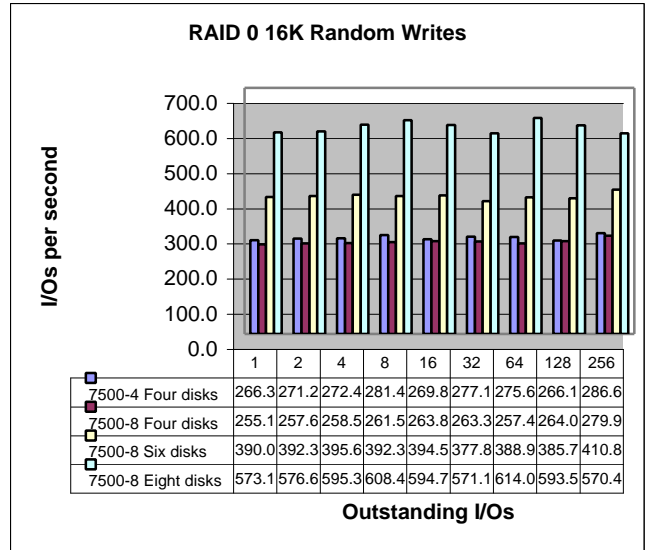
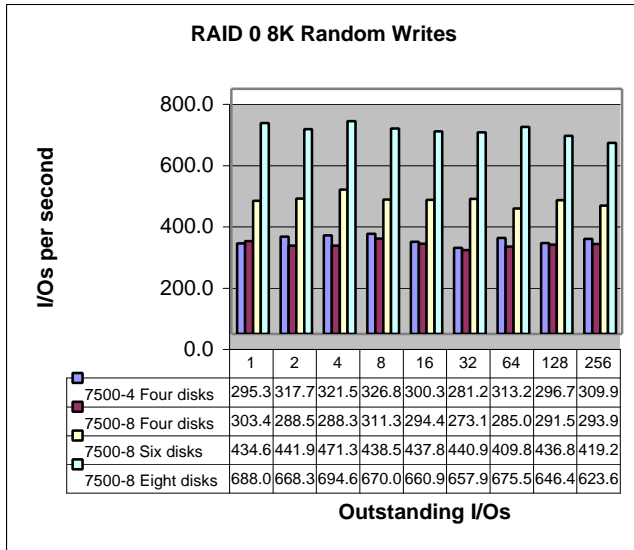
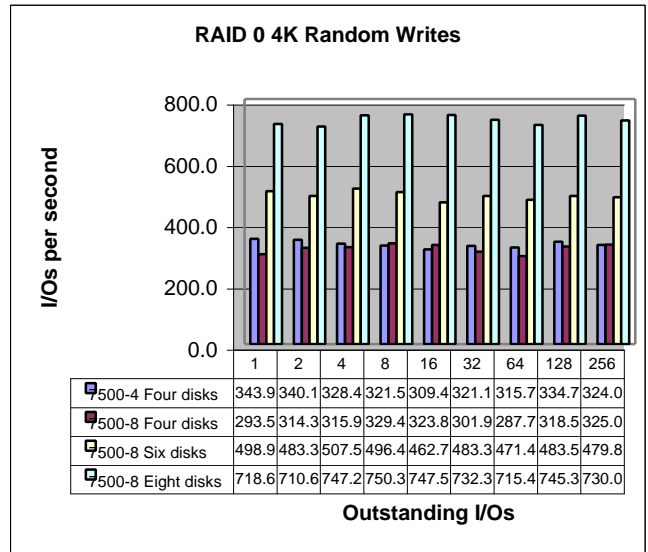
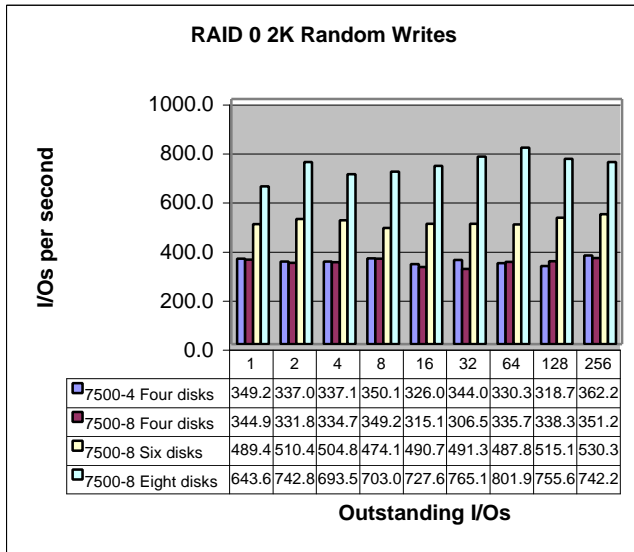
Random Reads (2K, 4K, 8K, 16K)





RAID 0

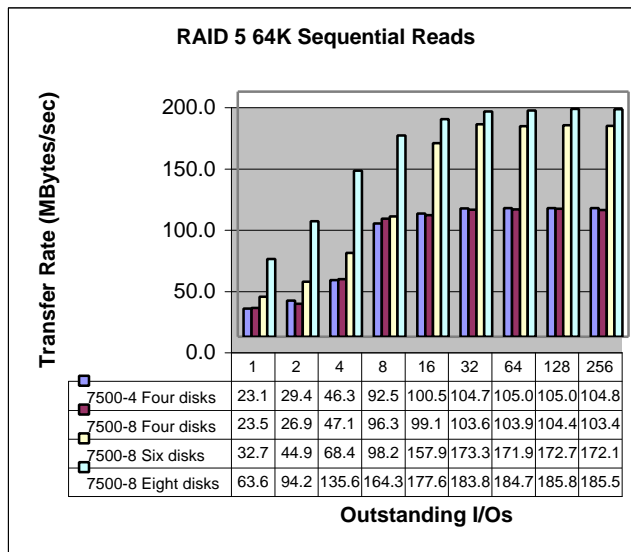
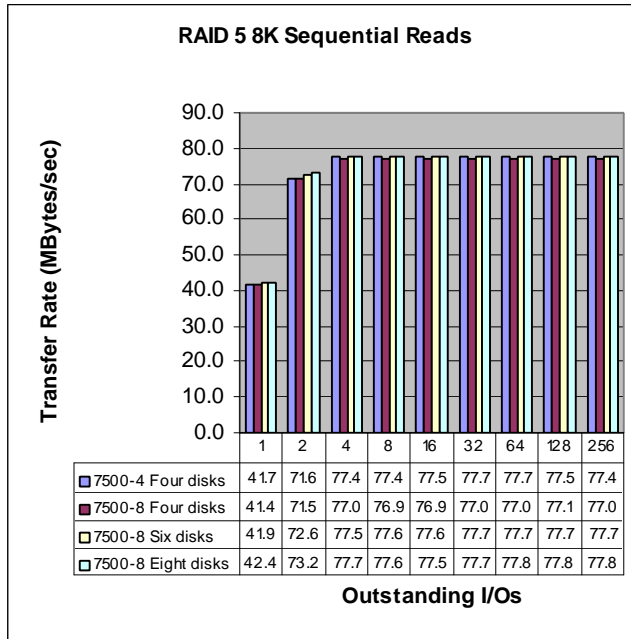
Random Writes (2K, 4K, 8K, 16K)





RAID 5

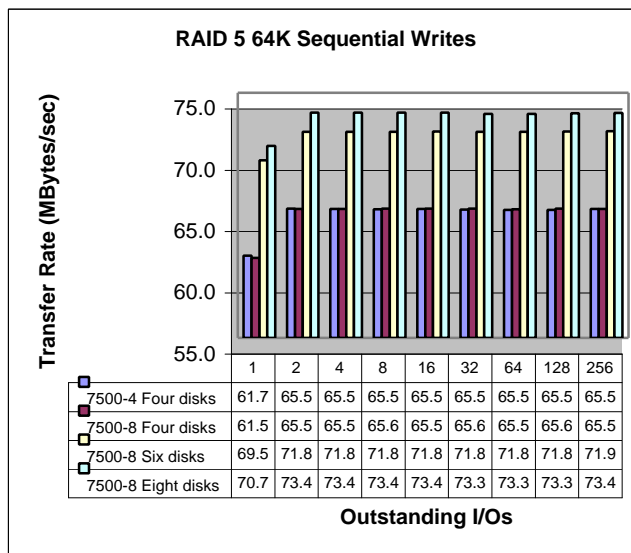
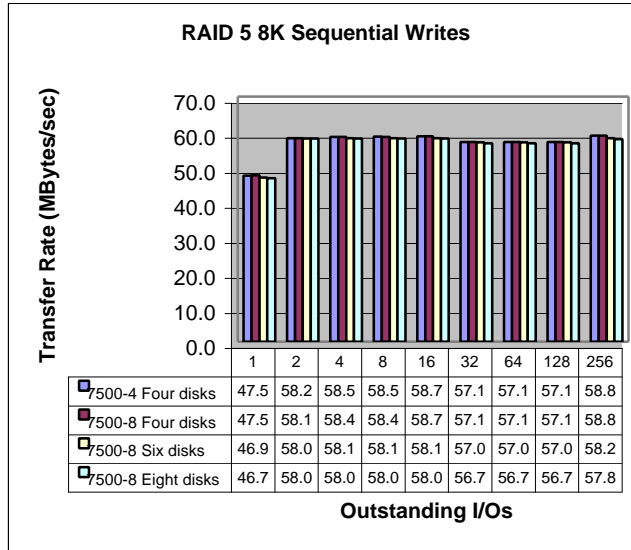
Sequential Reads (8K, 64K)





RAID 5

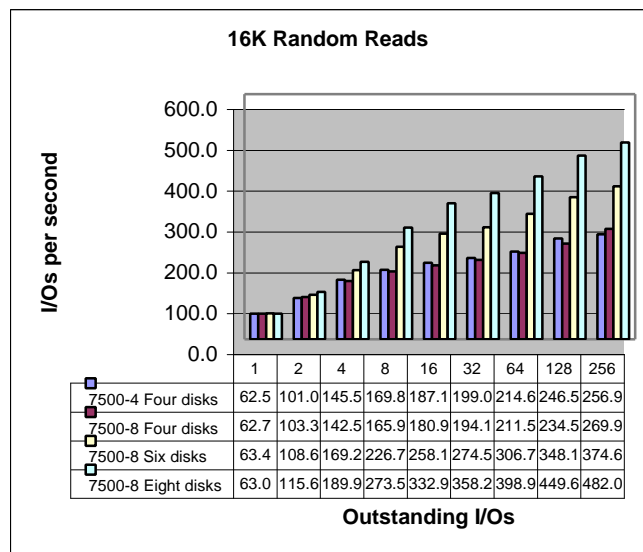
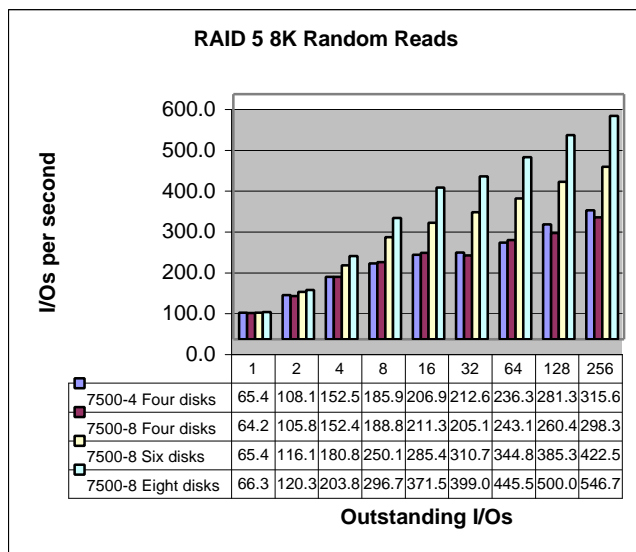
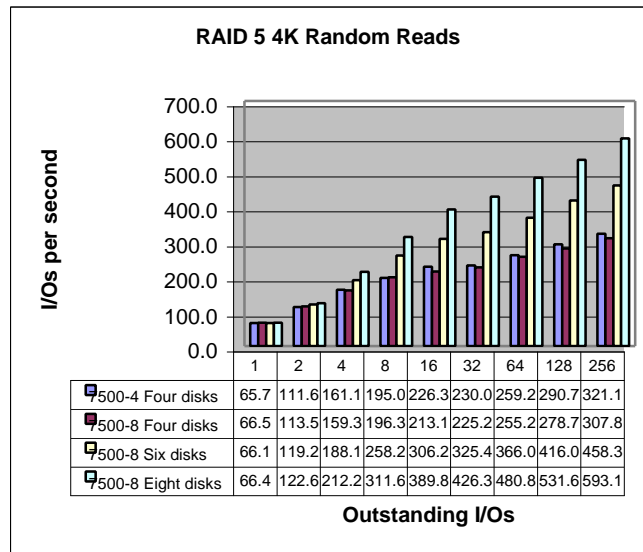
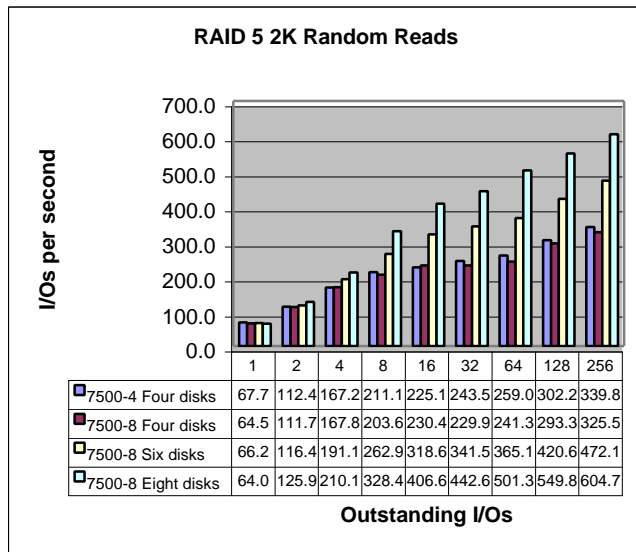
Sequential Writes (8K, 64K)





RAID 5

Random Reads (2K, 4K, 8K, 16K)





RAID 5

Random Writes (2K, 4K, 8K, 16K)

