

Samba Performance: Windows 2000 Advanced Server V's Samba on Linux

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Samba Performance Requests

Maximum System Cost USD\$2500 for Server Hardware

Intel P4 and AMD MP Dual CPU Built to equivalent Cost

3Ware IDE RAID Controller with 3 x 7200rpm IDE drives

- ? How does Samba compare with MS Windows 2000 Advanced Server?
- ? What resources should be provided for MS Windows 2000 Advanced Server?
- ? What resources should be provided for Samba on Linux?

Findings

? Hardware:

- AMD Dual CPU gives about 20% higher throughput than P4 single CPU at same Clock Speed
 - ? Same Cost
 - ? 64 bit PCI
- Use Gigabit Ethernet
- IDE RAID (eg: 3Ware) improves performance

? Software:

- Use kernel 2.4.18 or later on P4 if it has the Intel 845 or 850 chipset

More Findings

- ? Windows 2000 Advanced Server SP2 SR2
 - Approx. 300Kb per NetBench Client
 - NTFS gives much poorer throughput than FAT
 - ? No benchmarks here to show this
 - Demonstrated by Herb Lewis, SGI
- ? Samba on Linux
 - Approx. 460Kb per NetBench Client
 - Ext2FS gives highest benchmarks I/O
 - Supports up to 4 times number of clients at same resource levels (Memory/CPU/Ethernet Bandwidth)

AMD MP1500 Client Only Machine

- ? 512MB DDR RAM, Dual MP1500 CPUs, Tyan 2642 Mboard
 - Maxtor 5400rpm IDE HDD 40GB
 - Intel e1000 CDDI Ethernet with direct cable
 - ? Used for Data Only
 - Intel e100 Ethernet
 - ? Used only for control connection
 - Caldera OpenLinux 3.1.1
 - ? Linux 2.4.18 kernel with ac3,ea,acl patches
 - ? Used only for Dbench Tbench, SMBTorture (Head)

AMD MP1500 Target Machine

- ? 1GB DDR RAM, Dual AMD MP1500 CPU, Tyan TK7
 - Removable (HDD Pack or 3Ware IDE RAID Pack)
 - Intel e1000 CDDI Ethernet with direct connect cable
 - ? Used for all tests (data traffic only)
 - Intel e100 Ethernet
 - ? Control communication

Intel P4 Target Machine

- ABit TH7-RAID Motherboard (Intel 850 chipset), P4 1500MHz CPU, 1GB RAMBUS RAM
 - Removable HDD IDE HDD or 3Ware RAID Pack
 - Intel e1000 CDDI Ethernet (Data only)
 - Intel 3COM 3c905b Ethernet (Control Traffic)

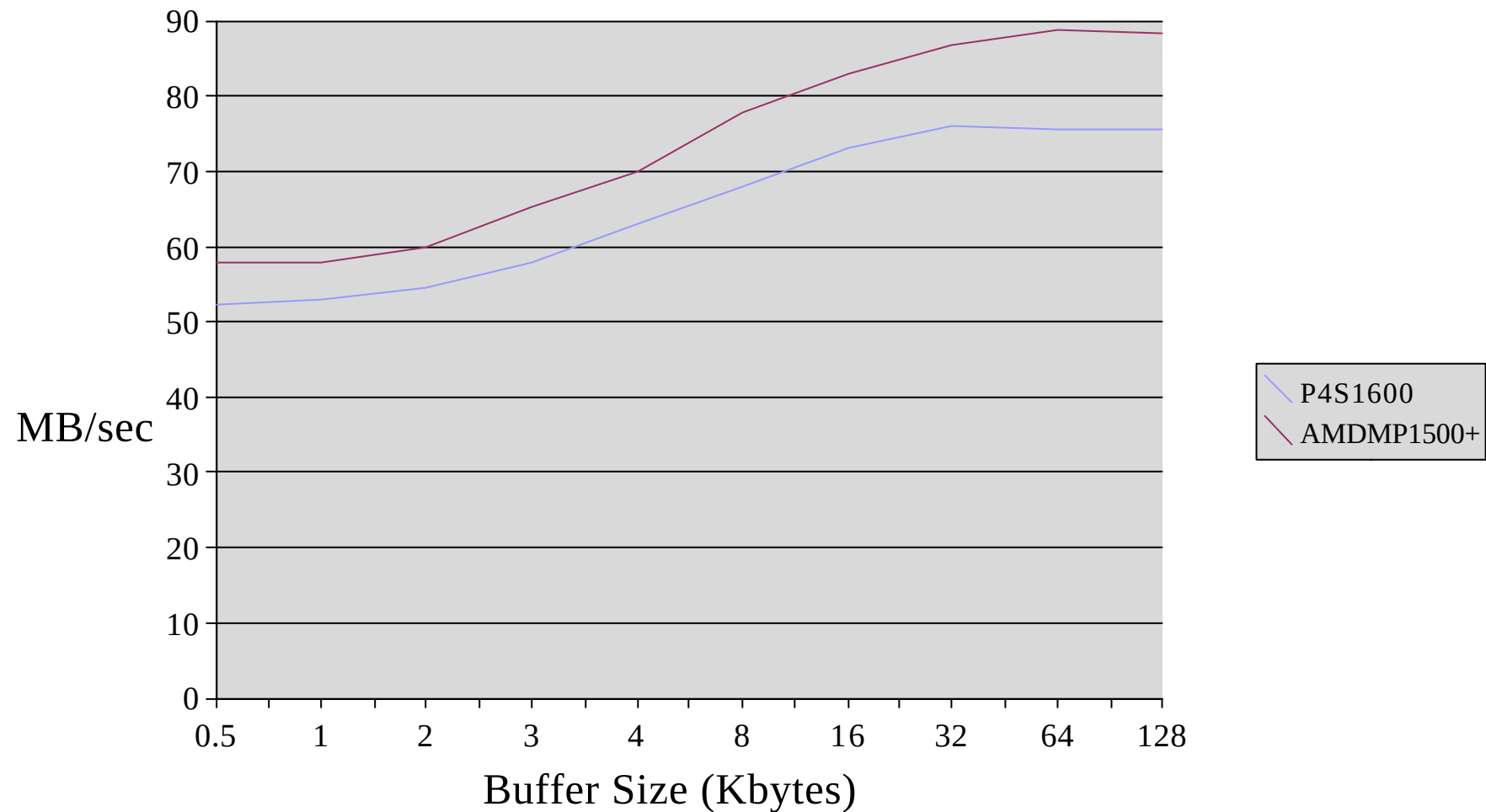
Intel P4S Target Machine

- ? Intel 845WB MBoard, 1600MHz P4S CPU, 640MB PC133 RAM
 - Removable HDD Diskpack
 - Intel e1000 CDDI Ethernet (Data Only)
 - 3COM 3C905b Ethernet (Control Traffic)

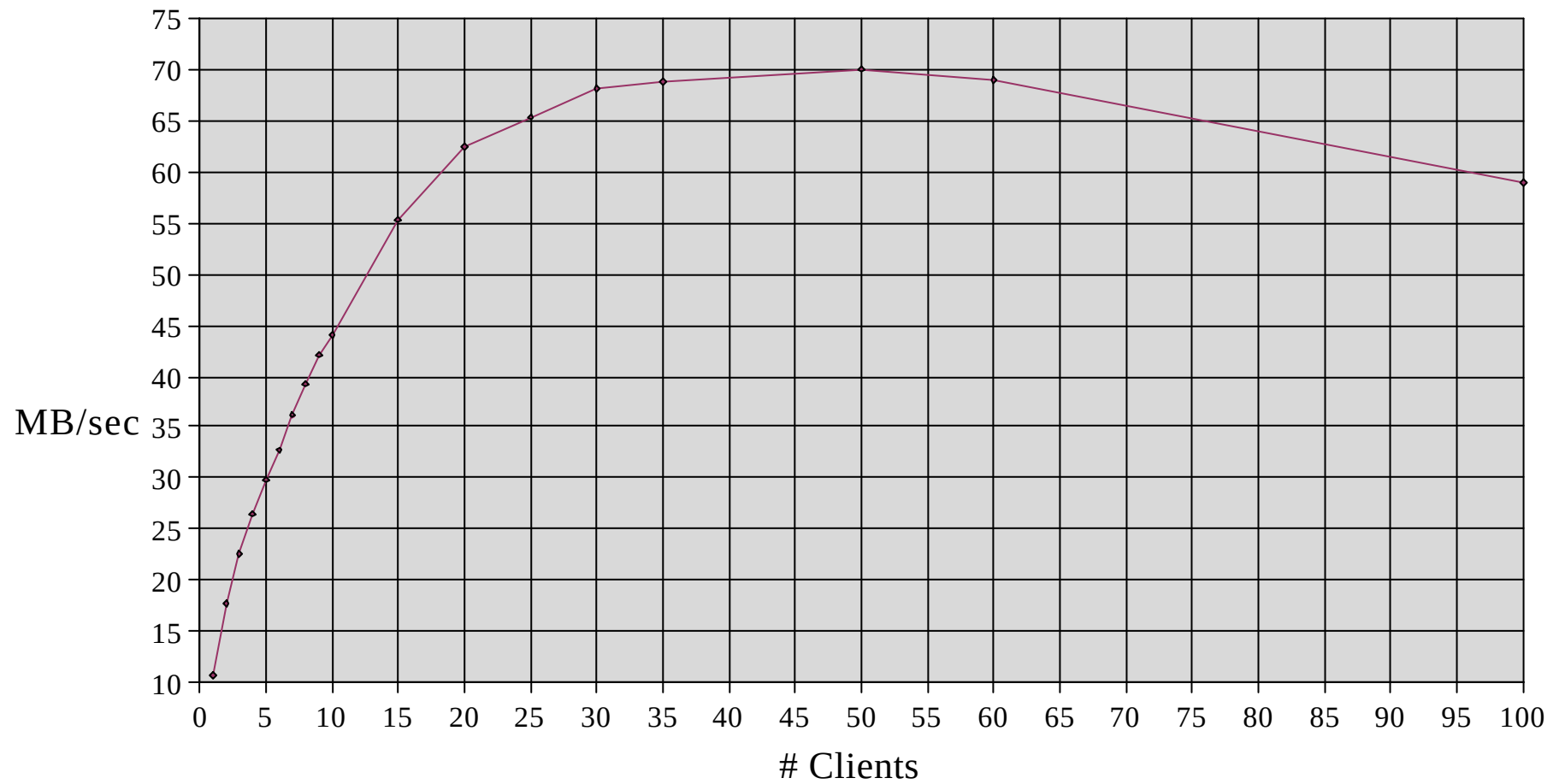
Removable Diskpacks

- ? Maxtor 5400rpm 40GB IDE HDD
 - OpenLinux 3.1.1 (kernel 2.4.18 with ac3,ea,acl patches)
 - ? Samba 2.2.4 pre March 13, 2002
- ? Western Digital 7200rpm 60GB IDE HDD
 - MS Windows 2000 Advanced Server SP2 SR2
 - OpenLinux 3.1.1 (kernel 2.4.18 with ac3,ea,acl patches)
 - SuSE 8.0 Final (kernel 2.4.18, Samba 2.2.3a)
- ? 3Ware IDE RAID
 - 3 x Western Digital 7200rpm 60GB IDE HDD
 - RAID 0

Socklib Throughput

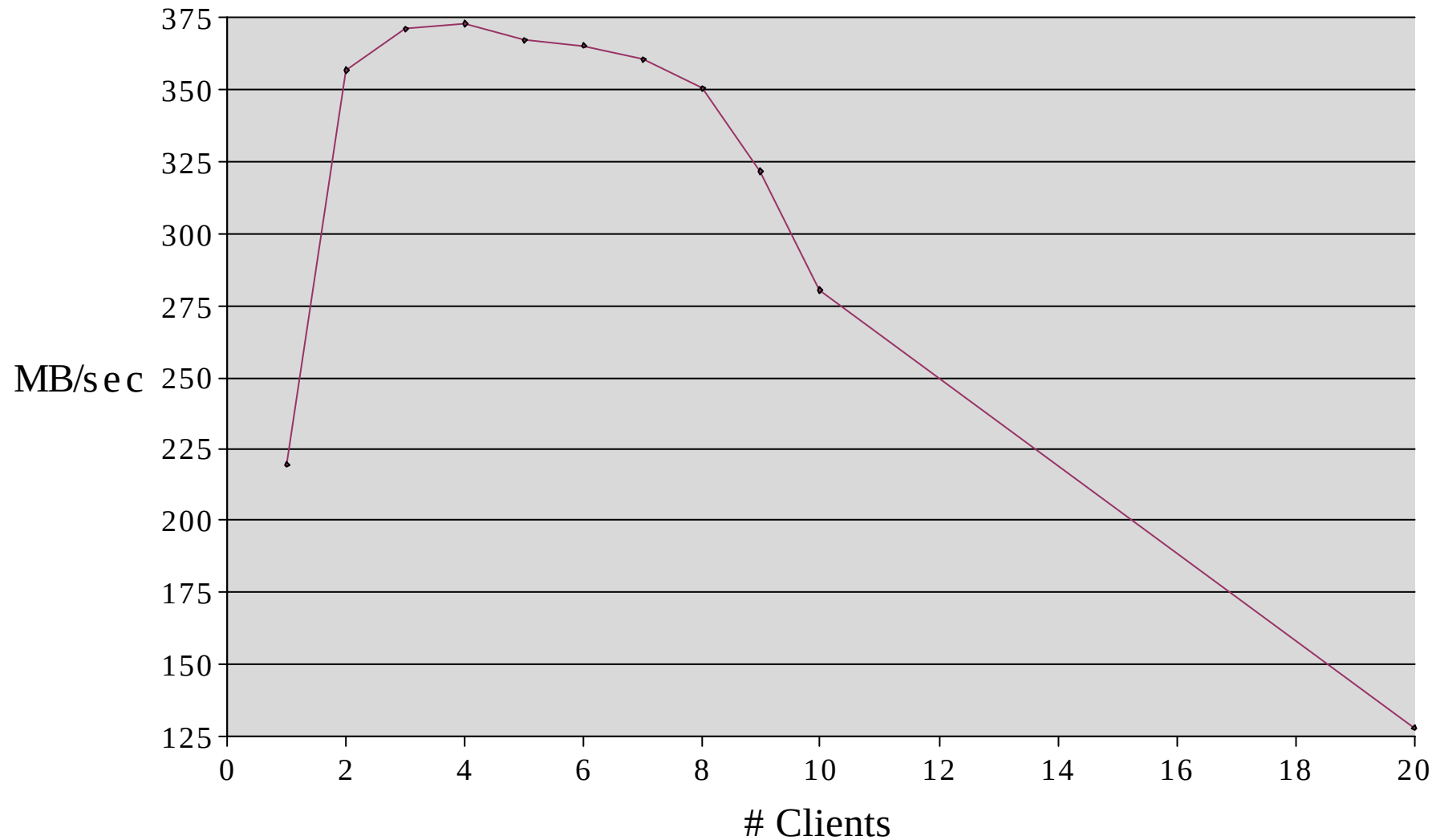


AMD MP1500 + Tbench

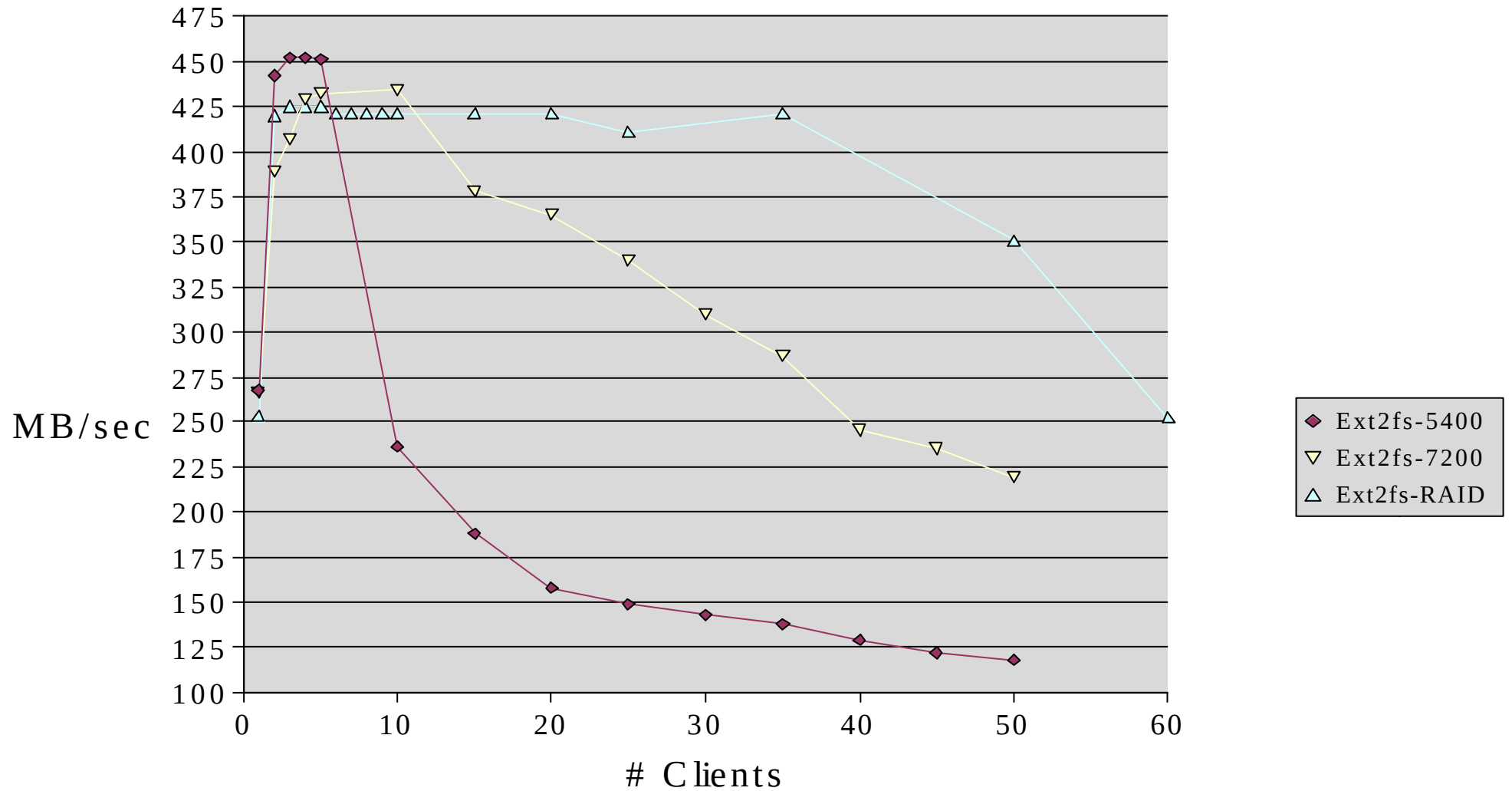


Dbench - AMD MP1500

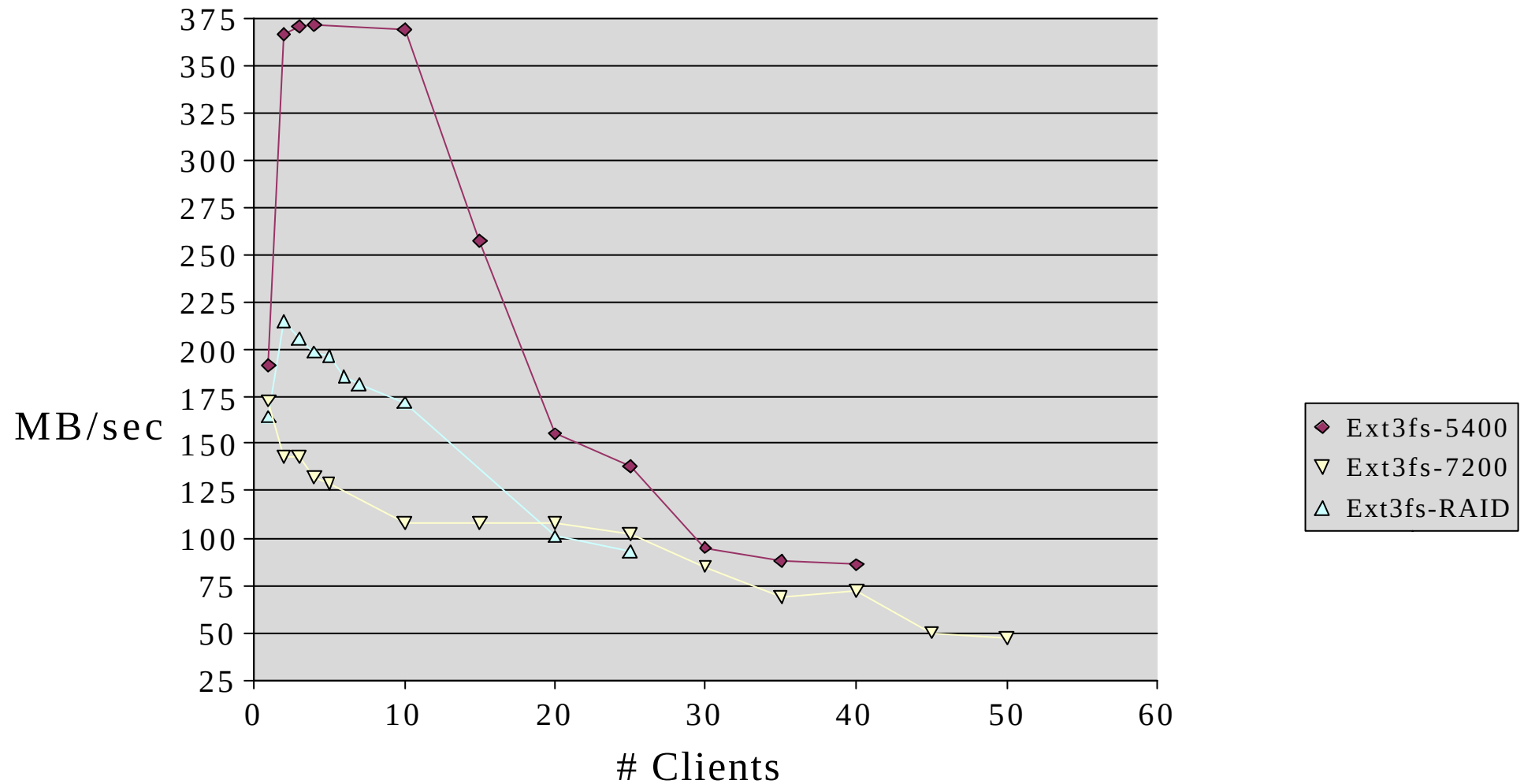
5400rpm Maxtor IDE Drive



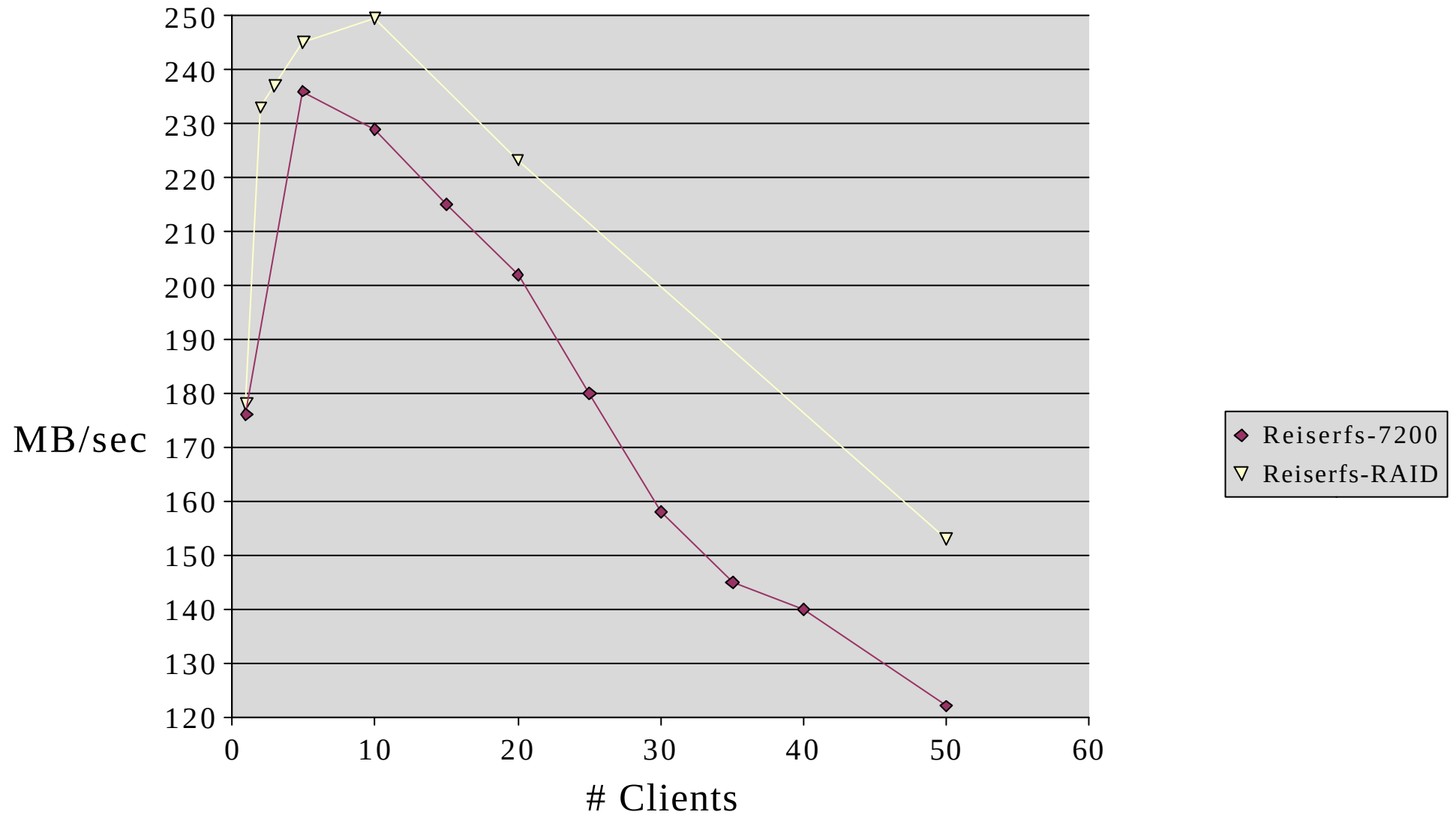
AMD MP1500, Dbench, EXT2FS



AMD MP1500, Dbench, EXT3FS

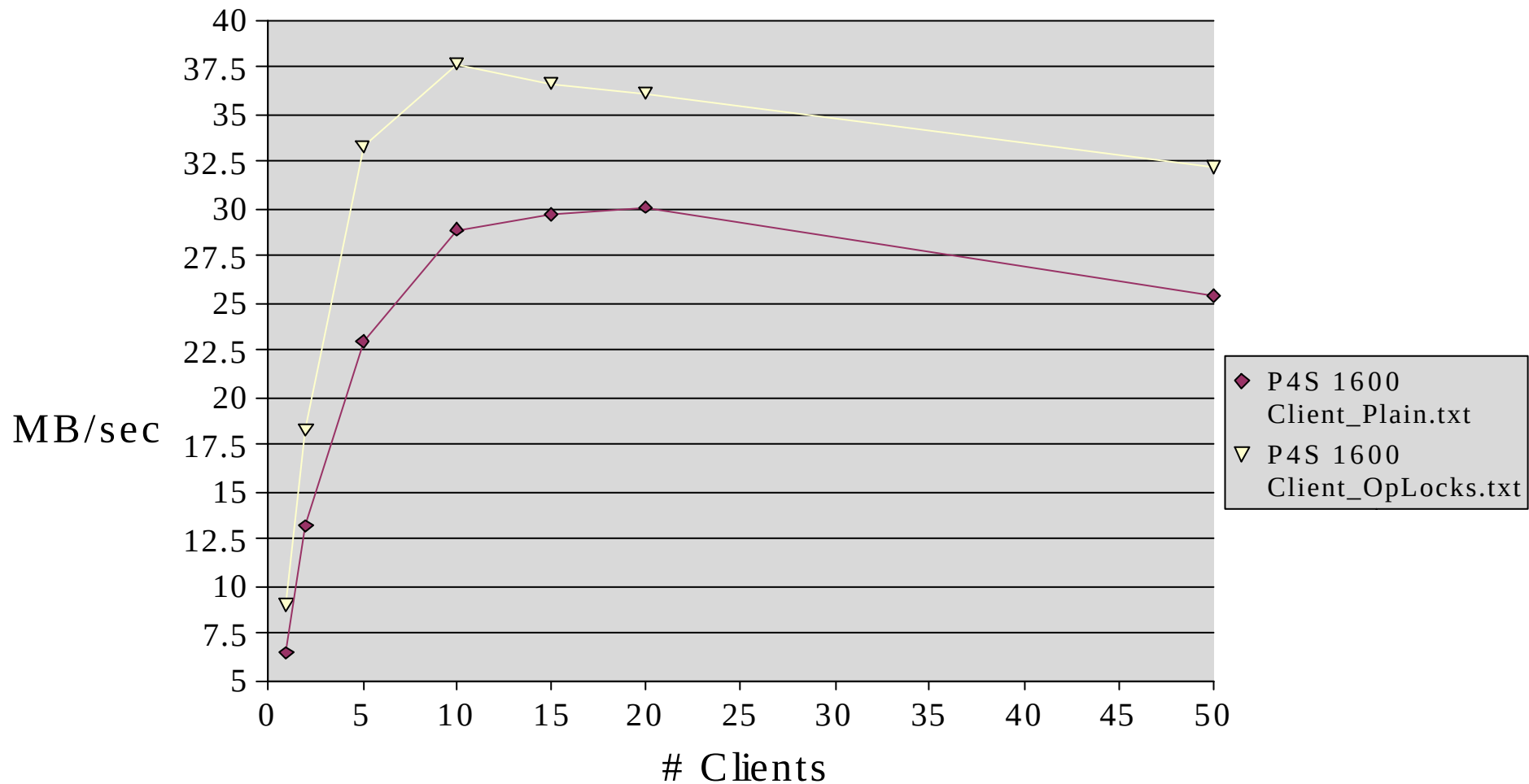


AMD MP1500, Dbench, ReiserFS



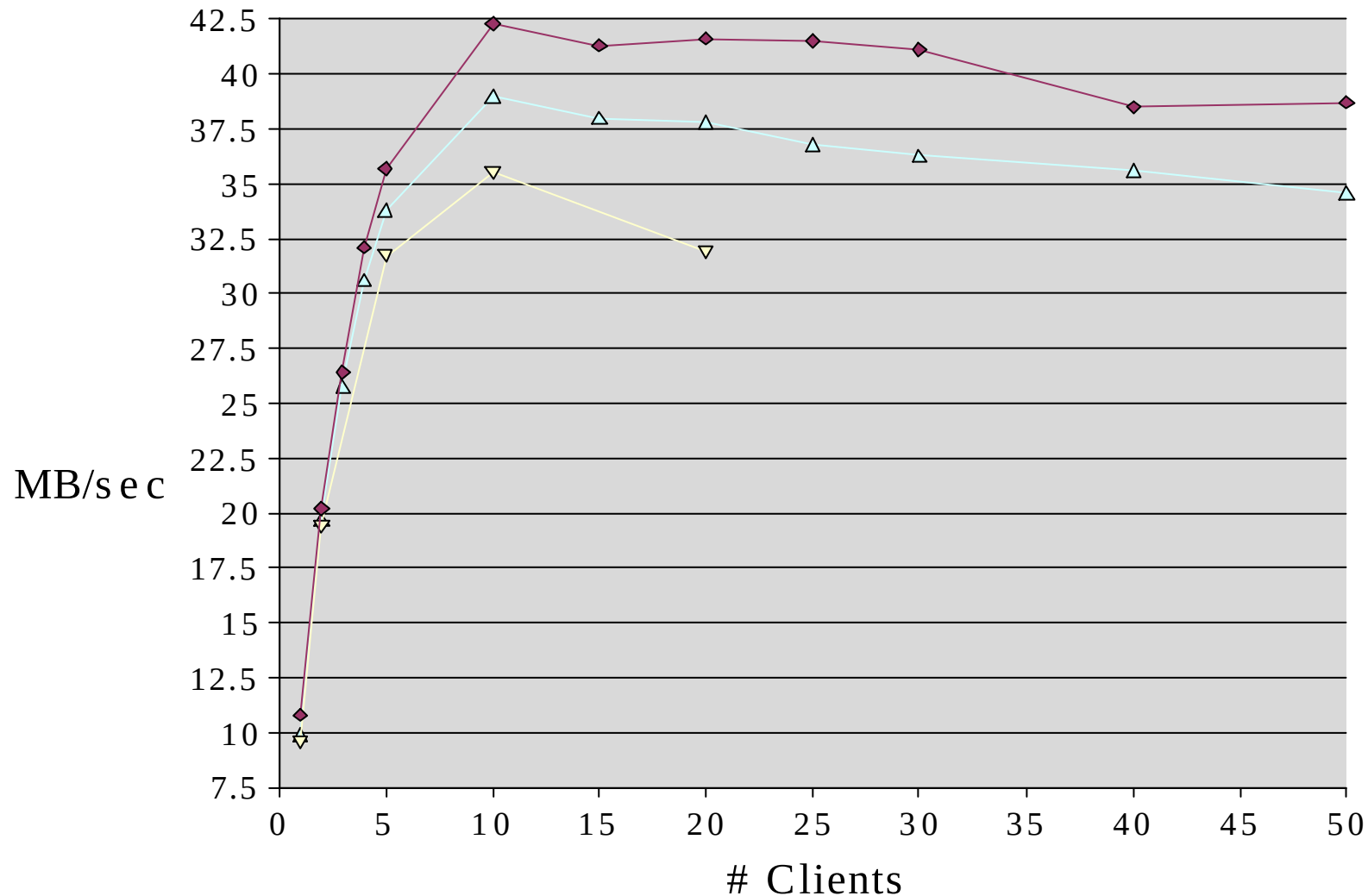
SMBTorture NBENCH

P4S 1600MHz Maxtor 5400rpm IDE Drive

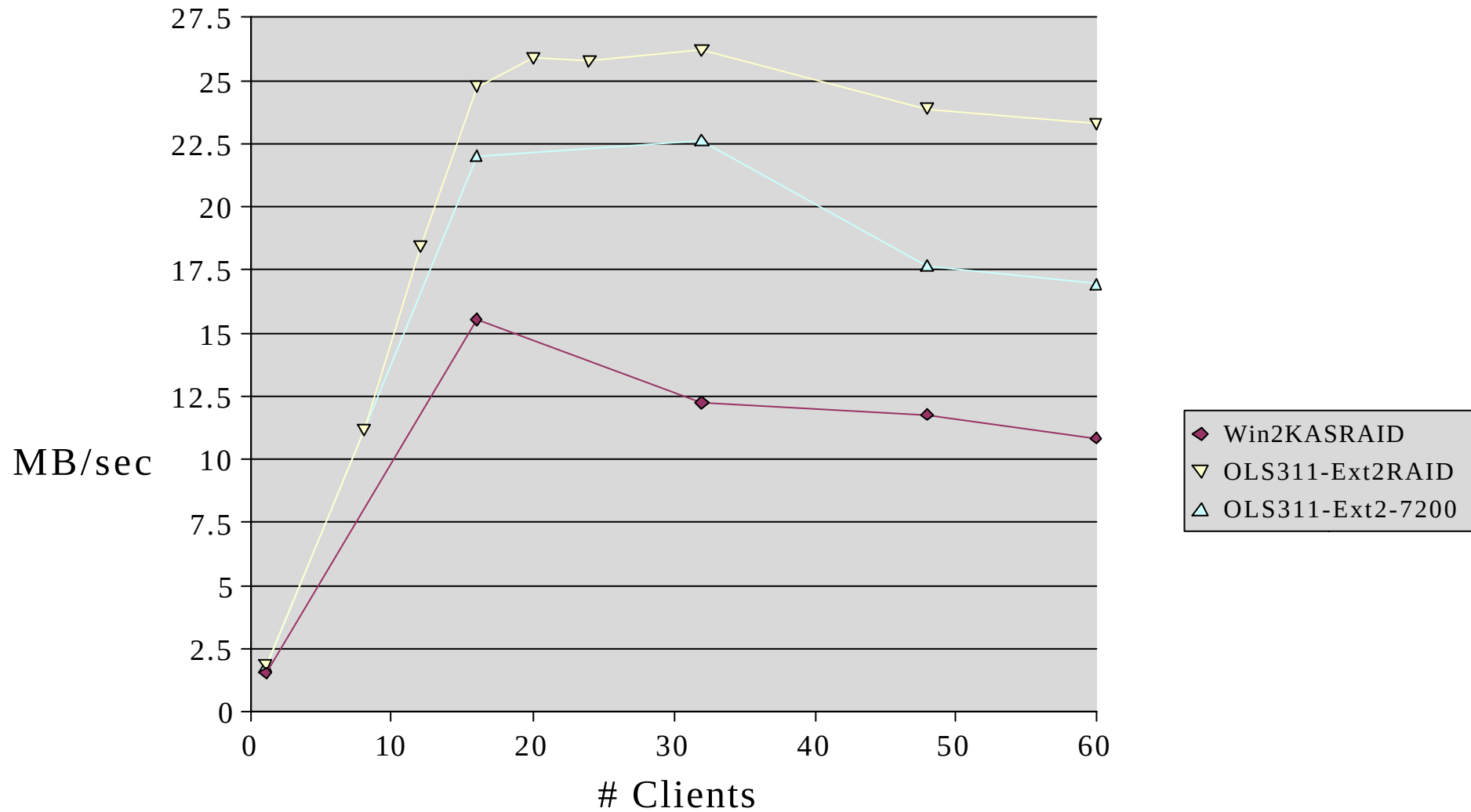


SMBTorture NBENCH

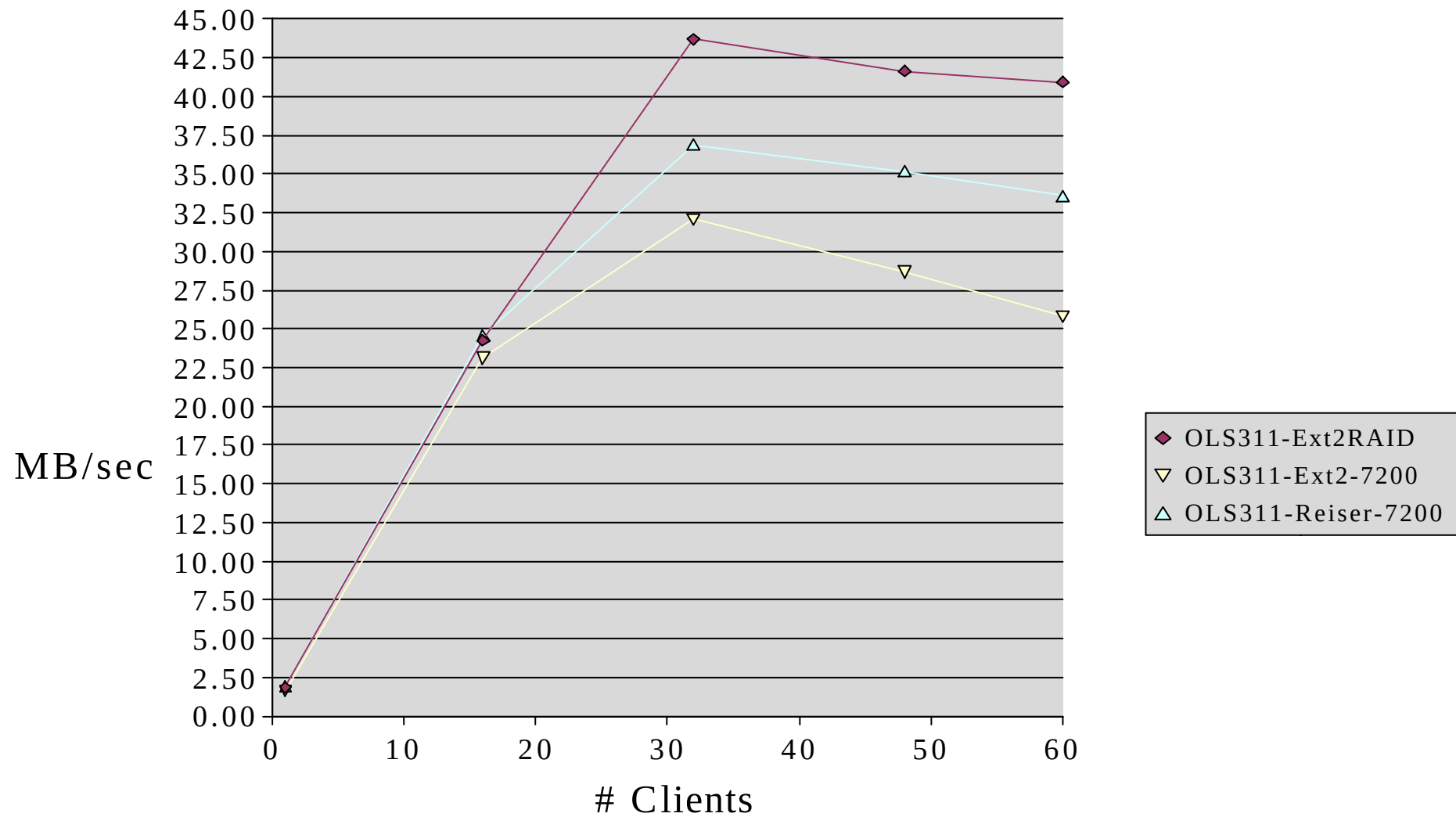
AMD MP1500, 1GB RAM, 3Ware RAID
smbtorture with client_oplock.txt



P4/1500 and NetBench 7.0.2



AMD MP1500 + NetBench 7.0.2



Thanks To:

Herb Lewis and SGI

Richard Sharpe

Marc Miller (AMD)

Peter Graas (3Ware)

Intel - Gigabit Ethernet Cards

and

Andrew Tridgell plus the Samba-Team