1. OVERVIEW

This document examines the throughput performance differences between the SMB and AFP/IP networking protocols when using OS X 10.2 to access file shares on a Windows 2000 server.

OS X natively supports SMB networking through a variant of the Samba suite (http://www.samba.org). AppleShare/IP is also natively supported via Apples own network stack.

2. BENCHMARK CONFIGURATION

Server	Client
Dell OptiPlex GX260C	Macintosh G4
Intel P4 3.06Ghz, HT on	MacOS X 10.2
1.0GB RAM	512MB RAM
2 x 40GB UATA hard disks	1 x 40GB UATA hard disk
On-board Intel Pro1000XT Gigabit Ethernet Adapter	Asante GigaNix Gigabit Ethernet Adapter

3. BENCHMARK TECHNIQUE

A file of known size (664MB) was copied both to and from the server from the Macintosh client, and the time taken recorded. Simple math then resulted in the final MB/s rating.

All recorded times are in seconds.

3.1 SMB Results

Mac Read	Run 1	Run 2	Run 3	Average	MB/s
	29.92	29.64	29.41	29.66	**22.38**

Mac Write	Run 1	Run 2	Run 3	Average	MB/s
	42.38	39.62	41.77	41.26	**16.10**

3.2 AFP/IP Results

Mac Read	Run 1	Run 2	Run 3	Average	MB/s
	24.36	24.32	24.13	24.27	**27.35**

Mac Write	Run 1	Run 2	Run 3	Average	MB/s
	65.76	68.77	69.14	67.69	**9.80**

4. CONCLUSION

In terms of file read performance, AppleShare/IP outperforms SMB by 23%. However, SMB is the hands down winner with file write performance (the most important factor in work with large files) with a 65% performance advantage.

Performance isn't everything, however. AppleShare/IP's days are certainly numbered, with the Advanced Server version of Windows 2003 not supporting AppleTalk at all, and it being disabled by default in Mac OS X.

Based on these test results and the aforementioned obsolescence factor, we cannot recommend requiring the use of AppleShare in any capacity in future Windows 2000 or Windows 2003 connected Creo products.