

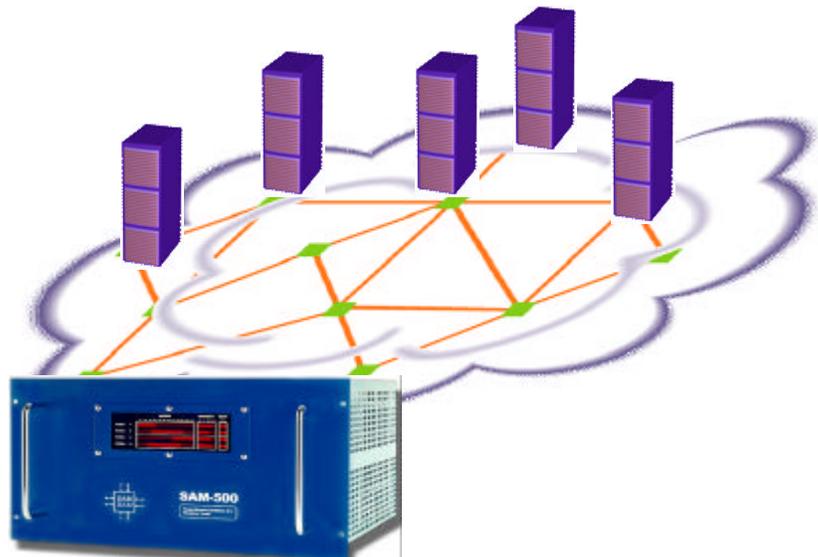
## File Sharing with the Texas Memory Systems RAM-SAN

Traditional file systems are either unable or ineffective at supporting file sharing. The few file systems that support file sharing, such as NFS, rely on the LAN for moving files around to different host machines. In a collaborative environment, using the LAN for shared storage traffic can saturate your network, resulting in users that spend much of their day waiting on files to be saved or loaded to their workstation. These problems force system designers to use direct attached storage in situations where file sharing would be more efficient or to accept that the file servers will slow users down.

Web serving environments are a great opportunity for file sharing. With direct attached storage, the same files have to be copied onto every web server. The biggest problem in this environment is version control. In the event web content needs to be updated, every web server needs to be updated. At a minimum, this means that the first web server updated and the last web server spend some amount of time out of sync. Additionally, the process to load these files to multiple systems requires valuable staff time.

Fortunately, a new breed of file sharing systems is providing an alternative. ADIC's CentraVision, Sistina's GFS, and Tivoli's SANergy offer a storage area network (SAN) solution for sharing storage. SANs, unlike LANs, are optimized for handling storage traffic. For example, a SAN uses Fibre Channel interfaces to connect workstations and storage devices. Fibre Channel is capable of passing data much faster than typical LANs. Therefore, the storage traffic does not slow down your LAN and your users receive data more quickly. In this case, storage becomes the bottleneck. It is good to have very fast storage handle the files that are commonly accessed.

The Texas Memory Systems RAM-SAN is optimized to provide fast file sharing over SANs. Key attributes of the RAM-SAN that support file sharing are: low latency for data access (100 times faster than RAID), high bandwidth for storage traffic (3,000MB/sec), and the ability to handle an enormous user load. The benefit of low latency data access is that every file access begins to return data to servers in 20 microseconds, therefore users are no longer waiting. Each of fifteen Fibre Channel ports can be dedicated to one server or can be shared by many servers through a Fibre Channel switch. Even a single Fibre Channel port provides 10 times the bandwidth of a LAN.



Integrating the RAM-SAN and a shared file system into a web server farm results in much faster data access for speed sensitive web users. Through a shared file system every web server can access the RAM-SAN for web files. In this configuration, the web servers have "read-only" access to the shared data on the RAM-SAN. A separate server has "write" access to shared storage and can therefore update the web server files for all web servers simultaneously. The shared file system also handles updating the file cache on each web server so that the file cache and the shared files are kept synchronized. Since the web servers are using the RAM-SAN as the storage for shared files, the files are returned to the web server with almost no delay.

By migrating shared storage environments from LAN to SAN, users will immediately benefit from the decrease in LAN traffic. By storing data on the RAM-SAN, users will see unparalleled performance when they access shared files. Improve shared file access speed by storing your files on the RAM-SAN.



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