

Features

Distributed file system

All machines on the SAN see the shared volumes as local and can read and write to them at the same time. The distributed locking mechanism doesn't rely on a server.

Reliability

All metadata operations are logged, which greatly reduces the possibilities for data corruption. The file system check is extremely fast, leading to higher availability. There is no server-like machine, eliminating potential single point of failure.

Speed and high performance

Melio FS transfers the bulk of data flow through the high-speed direct channel to the storage, and command and control are transferred over TCP/IP or other network protocol. Melio FS system layout is designed to speed up write and read from a file, create and delete a file, and directory lookup, as well as to support both large and small files efficiently. It allows multiple streams per file and minimum effort is used for allocation/deallocation of large data streams, as well as handling great amounts of small streams.

Scalability

Melio FS is designed as full 64-bit file system. This means maximum volume size of 2^{64} bytes, or more than 18 million terabytes (1TB= 10^{12} B).

Heterogeneous OS support

Melio FS runs on different operating systems - Windows NT/2000, Solaris, Linux, AIX

Security

Unix operating systems have quite different security semantics than Windows NT. For this reason Melio FS supports both types of security models - one for Unix and one for NT world.

Technical specifications

64-bit distributed journaling file system

- multiple computers can read and write on the same volume at the same time
- all metadata operations by any computer are stored in logs for high reliability and up-time
- no metadata server

Maximum volume size: 2^{64} bytes, or more than 18 million terabytes (1TB= 10^{12} B)

Maximum file size: 2^{64} bytes

File system block size: variable for maximum performance

Platforms: Windows NT 4.0, Windows 2000, Solaris, Linux, AIX

Storage hardware: any hardware that is supported by the host operating system



Melio File System

Sharing large amounts of data without performance degradation has led to the creation of SAN (Storage Area Network) architecture. The best way for managing large storage is to keep it controlled by a single file system.

Melio File System (Melio FS) is designed from the ground up specifically for use in storage network environments.

It is designed to improve speed, reliability and storage utilization within storage networks, while simplifying administration.



Sanbolic, Inc.
304 Pleasant Street, 2nd Floor
Watertown, MA 02472, USA
P 1 617 926 2802
F 1 617 926 2808
E sales@sanbolic.com
www.sanbolic.com

Specifications are subject to change without notice. Patents pending.

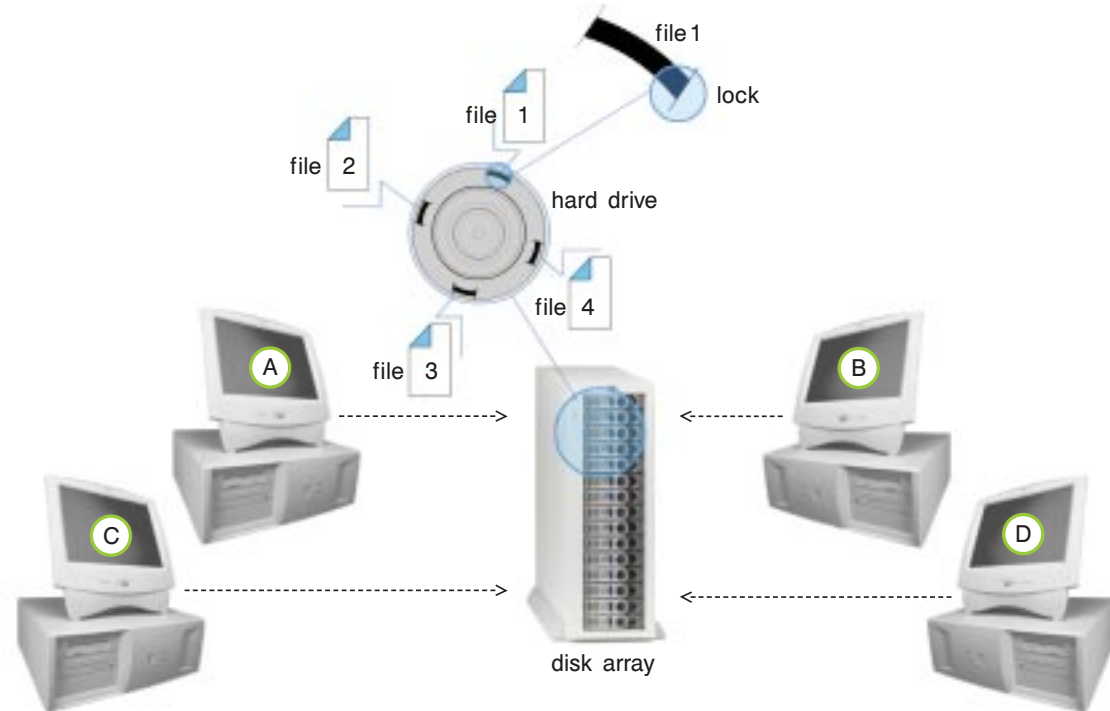
Melio FS is:

A distributed file system...

A distributed or shared file system allows multiple users to access files on the storage as if they were their own. The metadata is contained within the file system on the storage; no metadata server or metadata transfers are necessary, eliminating a potential single point of failure. The metadata used is designed so it is decentralized allowing high independence of workstations, accessing the same volume.

...With distributed locking mechanism

The distributed locking mechanism allows several computers to access the same file simultaneously. Read and write operations to different parts of the same file can be performed at the same time from different machines. Any network protocol can be used to transport the locks between the machines and the locks are cached so the network traffic is kept to a minimum. The lock operations are executed concurrently with the journal write operations.

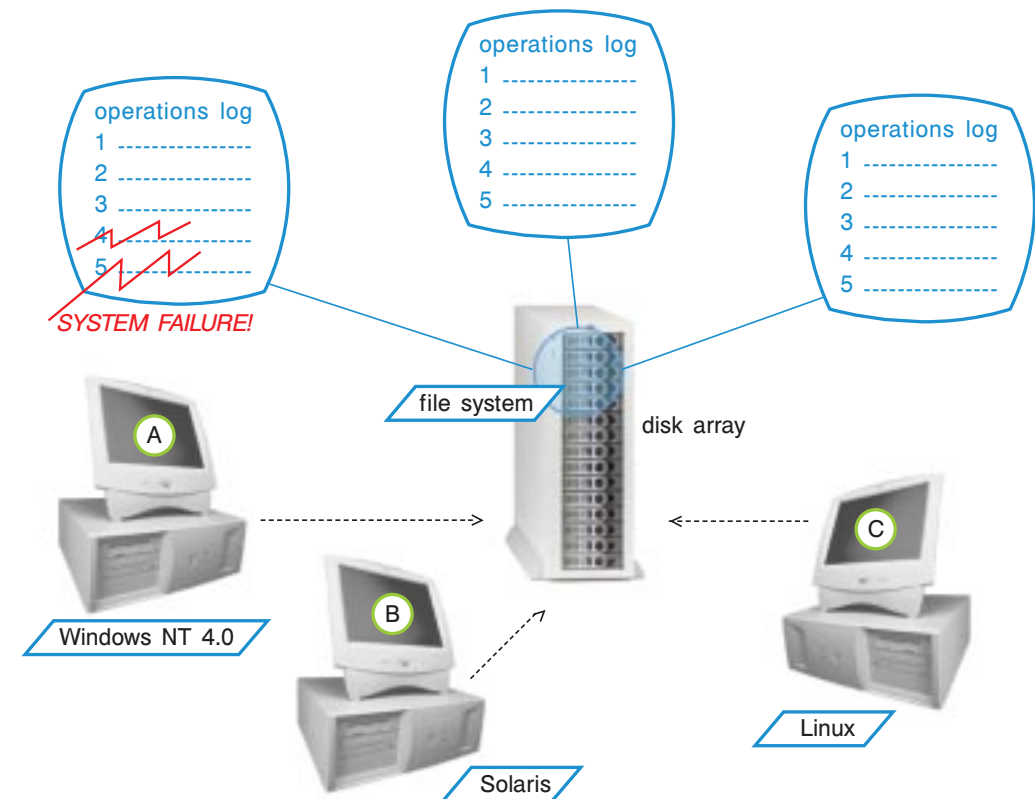


A journaling file system...

Updates to directories in the file system are constantly written into a journaling log on a disk. In case of system failure the journaling file system ensures that the system data on the disk is restored to its precrash configuration and recovers unsaved data within a few seconds, storing it in an alternative place. Melio FS journals all metadata operations, allowing recovery of file system structures without taking the volume offline.

...That supports multiple operating systems...

Different operating systems can run on Melio FS, since the file system layout is OS independent. This allows better utilization of existing hardware and infrastructure and means that the users are not confined to a single platform. It gives them the freedom to utilize the best application and best platform for any given task.



...And SAN clustering operations

Each computer within the cluster (possibly with different operating system) will see the volumes, formatted with Melio FS, as their local disks. If a member of the cluster fails, the remaining computers detect this and recovery of Melio FS metadata is based on the journal of the failed machine. The cluster does not require a master computer, thus communication between cluster members is symmetrical.