



Critical Issues in Backup/ Open File Management

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Backup Market Place

- Growth of platforms

- Servers
- Workstations

- Growth of data / solutions

- Data - The Corporate Data Explosion
- Backup Solution Vendors - slowing to a 22% growth rate!

- The changing landscape of vendors

- Heterogeneous Backups deployed across 50% of corporate America
- Non-exclusive
- Exclusive



New Environments

■ Redundant systems

- What they are - Live copies of active servers
- What they do for you - Nearly eliminate downtime

■ Clusters

- What they are - Two (or more) servers and one disk farm
- What they do for you - Improve performance, fail-over

■ SANs / NASs

- What they will be
 - SAN - Fibre "networks" redundant to your networks
 - NAS - A file "toaster" which simply plugs into your network
- What they will cause you to consider
 - SAN - Complete network (redundant, improved performance, highly available..)
 - NAS - Very Easy; "Plug and Save"; "Evolution of the file server"

Value of Backup

■ Cost of Replacing Data

➤ You'll be amazed

'98 3M Research Study - Cost to Recreate 20MB of Lost Data

➤ Sales/Marketing	19 days	\$17k
➤ Accounting	21 days	\$19k
➤ Engineering	42 days	\$98k

■ Can the Data Ever be Replaced?

'98 3M Research Study - Cost to Recreate 20MB of Lost Data

➤ 80% of companies who suffer a complete loss of customer data aren't in business 2 years later.



Open File Management

*- NetWare, Windows NT Server
and NT Workstations*

- Unix File Systems 'Snapshot'



What Open File Management Adds

- Increases productivity
- Integral to successful disaster recovery
- Supports NetWare, NT Servers and NT Workstations
- Application independent
- Backup vendor independent



What to Look for in a Solution

■ Scalability

- Remember 50% of corporate America now deploys heterogeneous backups for differing departmental needs

■ Minimum network overhead

- Cannot afford to slow the network during a backup (or slow the backup)

■ Manageability

- Centralized installation and management
- Transparent to the users, backup software, and network systems/components

■ Complete Solution ... protecting all files



What Open File Management Is

- Works with any combination of backup programs
- Independent of tape drives, autoloaders, Controllers
- License transferable between Servers
- Quick response to market
 - New application support (automatically)
 - New backup package support
- **High value, low Cost, Completely Interoperable between heterogeneous backups**



The Current Backup Scenario

■ When the backup software encounters open files

- Skips files entirely!
 - Retries skipped files...but continues to skip them if they're still open!
 - Forces backup
 - ◆ Locks users out!
- OR
- ◆ Corrupt data on tape if file is changing, especially with relational files!

But...Your most important files are always *open* !

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Open File Management Benefits

- Ensures a complete backup of all open files
- Manages relational files correctly
- Backups can now run at any time
- Users have continuous access to their files; even if backups are running
- An 'Open Technology'
 - Separate from applications, ...Works with all applications
 - Separate from backup, ...Works with all backup packages
 - Allows changes to applications and backup packages without having to change products
- Easy to install and maintain

Open File Management Technology

■ Intercepts I/O operations

- NT file system filter driver
- NetWare hook OS entry points

■ Detects backup application execution

- Recognizes executable, thread, or USER performing I/O operation
- Defines which are treated as backup application

■ Synchronizes the file system

- Related files are synchronized automatically (entire server is synchronized)

■ Enables access to Open Files

- To backup application, if file is open
- To other application, if file is being backed up

Open File Management Technology

- Monitors disk level read/write activity during a backup
 - Saves original copy of changed data on first change in cache
 - Caches only the data that is changing on open files
 - Caching is at block level for storage/performance savings
- Distinguishes between backup application and other application file I/O
 - Provides backup application original data
 - Allows other applications normal access
- Caching can be maintained through backup verify or duration of the backup job, if preferred

The Ideal Environment to deploy Open File Management

- Mission critical applications
 - Databases, Web hosting, email, groupware
- Data centers running "Around-The-Clock" applications
- Cluster servers
- High access, high volume servers

Standardize on Open File Management...
All industries.....All applications...All Servers

Backup Programs & Applications

Supported backup programs

- ◆ BackupExec
- ◆ CA ARCserveIT
- ◆ CommVault Backup
- ◆ EMC EDM
- ◆ HPOmniBack II
- ◆ IBM ADSM
- ◆ Legato Networker
- ◆ Microsoft NT Backup
- ◆ NovaStor NovaNet
- ◆ Seagate Backup Exec
- ◆ Veritas NetBackup
- ◆ and more. . .

Supported applications

- ◆ MS Exchange
- ◆ MS SQL Server
- ◆ MS Mail
- ◆ Lotus Notes
- ◆ Lotus cc:Mail
- ◆ GroupWise
- ◆ Oracle databases
- ◆ Pervasive databases
- ◆ Novell GroupWise
- ◆ Word processors
- ◆ Spreadsheets
- ◆ and more. . .

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Open File Backup Providers

Who are the players in Open File Management?

- Application Specific Agents – backup vendors
- CA - Agent for Open Files (OFA)
- Seagate - Open File Option (OFO)
- Open File Manager from St. Bernard Software



Application-Specific Agents

- Security Blanket for your most critical applications
- Each agent works with only one database application/version
- Does not support heterogeneous backup environments
- Differing UI means a greater learning curve for every application
- Each agent works with only one backup software solution/version
- Expensive solutions: Agents cost \$695 to \$2,995 depending on configuration



CA - Agent for Open Files (OFA)

- Supports CA's ARCServeIT
- Handles all open files
- Manual grouping of files or directories for data consistency of related files
- Separate product for NT and NetWare
- Individual server installation installation
- Costs \$695 NT / \$795 NW



Seagate - Open File Option (OFO)

- Supports Seagate Backup Exec
- Separate product for NT and NetWare
- Performs 'volume by volume' synchronization (as opposed to grouping files – groups by server volume)
- Embedded into Backup Exec
- Costs \$695

What Should You Do About This?

- Becoming aware of real backup requirements
 - Charter of IT group
 - End users' needs and expectations
- Assessing application status
 - Don't miss any
 - Ever changing versions
- Determining platform profiles
 - Unix, Win NT, and NetWare
- Getting a complete backup - Devices, O/Ss, open and closed files / applications

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