

Protecting Windows 2000: VERITAS Backup Exec

By John Michael Garcia

VERITAS Backup Exec protects millions of servers and workstations, from small businesses and workgroups to highly distributed environments. VERITAS now supports customers who upgrade their Windows NT environments to the Professional, Server, Advanced Server, or Datacenter Server editions of Microsoft Windows 2000. Backup Exec for Windows 2000 offers comprehensive data protection, automated disaster recovery, and is the first product to deliver automatic cluster failover for backup and open file protection for the Windows 2000 environment.

Microsoft Windows 2000 is the most comprehensive operating system release ever by Microsoft, with integrated support for client/server and peer-to-peer networks. It incorporates technologies to reduce the total cost of ownership, provide directory service, improve security and performance, and enhance scalability from a small business to a large enterprise network.

With the broad scalability of Windows 2000, the dependency on the availability of information is even more intense for all critical operations of a company than ever before. IS organizations are required to support application servers that are accessed by remote employees, suppliers, and customers with stringent uptime requirements that have visibility at the highest levels of the company. The growth of e-business applications in Windows environments has only exponentially increased these stringent requirements.

VERITAS Software Corporation offers enterprise-class, application storage management technologies that meet the demanding data management needs of business-critical

applications, such as e-business, in a variety of ways. Database-aware backup solutions integrated with database management systems ensure transactionally consistent backup copies. Data migration allows data to be moved while it is being used. Hierarchical Storage Management (HSM) discovers little-used data and moves it off-line, freeing online storage and I/O resources to run the business. Additionally, monitoring technology provides an objective basis for making storage management policy decisions.

Backup Technology in Windows 2000

VERITAS Software has a long history with Microsoft. Working closely with Microsoft to develop backup utilities for Windows NT since 1991, VERITAS Software is the provider of three storage management components shipping with Windows 2000, including the backup application (based on VERITAS Backup Exec technology), Remote Storage Services (RSS), and Logical Disk Manager. Additionally, Microsoft licensed VERITAS WinINSTALL™

LE (Limited Edition) to provide Microsoft Software Installer (MSI) repackaging capabilities for the Windows Installer services shipping in Windows 2000.

The new version of VERITAS Backup Exec for Windows NT/Windows 2000 has been designed to support both Microsoft's Windows 2000 and Windows NT Server 4.0 environments. As the first shipping, third-party data protection solution certified by Microsoft to fully support Microsoft Windows 2000, Version 8.0 of VERITAS Backup Exec for Windows NT/Windows 2000 offers comprehensive data protection and automated disaster recovery.

Additionally, VERITAS Backup Exec is the first product to deliver automatic cluster failover for backup and open file protection for the Windows 2000 environment. VERITAS Backup Exec for Windows NT/Windows 2000 supplies customers with a world-class storage management product already extensively tested and deployed for worldwide data protection at Microsoft Corporation.

Windows 2000: Specific Backup Considerations

Windows 2000 introduces several new features and architectural enhancements that affect how users protect, access, and manage their applications. Many of these features require direct changes to storage management applications and how they interact with the operating system. These new features may require changes in how companies utilize third-party data protection products in conjunction with built-in operating system functions to protect their overall environment.

Version 8.0 of VERITAS Backup Exec for Windows NT/Windows 2000 offers complete data protection for the Windows 2000 operating system, including the system state, which is comprised of the Active Directory, COM+ Class Registration Database, Registry, System Volume, and System Files. Additionally, new Windows 2000 file system changes (including disk quotas, encrypted files, distributed file system, and reparse points utilized by volume mount points, directory junctions, and remote storage service) are fully protected with VERITAS Backup Exec for Windows NT/Windows 2000.

NTFS has a new on-disk file system structure featured in Windows 2000. This new structure is required to support many storage enhancements, including volume mount points, file system encryption, sparse files, and disk quotas.

Windows 2000 volume mount points are used to graft new volumes into the existing file system namespace without requiring the use of a drive letter. When backing up mount points and links within VERITAS Backup Exec, users have the

flexibility to back up files and directories by following all links and junctions or to not follow all links and junctions.

When restoring mount points and links, users have the flexibility of several choices:

- Restore mount points, directories, and files from the backup media which will overwrite the existing information
- Choose to not overwrite the existing mount points, directories, and files
- If a mount point does not exist, the mount point data will be restored as directories and files from the backup media

The VERITAS Backup Exec user interface makes it simple to select these protection parameters. The Backup | Windows 2000, Backup Job Properties tab offers options for backing up the contents of Windows 2000 mounted volumes and off-line files. With VERITAS Backup Exec, users can select a check box to back up mount points that direct a file or directory to a local disk or directory path. This option allows users to back up data that is linked to local files, but stored on another device, without having to actually select the device.

Remote Storage Management

Remote Storage Services is a storage management service designed to lower storage costs by trading latency for media cost. As providers of the RSS applet to Microsoft for inclusion within the Windows 2000 operating system, VERITAS Software is able to provide complete and reliable protection of the RSS database.

VERITAS Backup Exec, an RSS-aware application, automatically protects the RSS database when users select the system directory for backup, per Microsoft's development guidelines. It provides the ability to protect RSS reparse points without generating a recall of migrated data.

Users can select a check box to back up data that has been migrated from primary storage to secondary storage. The data will not be recalled to its original location; it will be backed up directly to the backup media. If this check box is cleared, only the placeholder that stores the location of the data on secondary storage will be backed up, not the data itself.

Encrypted File Services

The Encrypted File Systems' (EFS) integrated operating system service allows data to be stored encrypted on NTFS volumes. VERITAS Backup Exec protects encrypted files by moving the data to tape in its fully encrypted form. The users' security, therefore, is fully maintained on the backup media.

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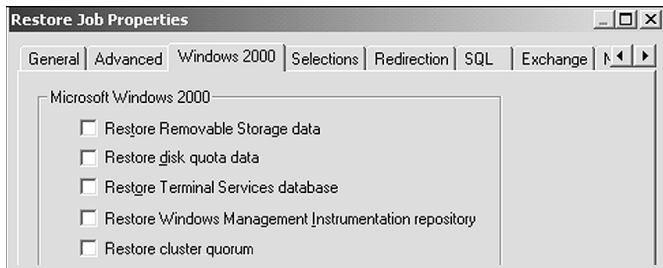


Figure 1. Restore Windows 2000 Tab

Disk quotas are a new feature in NTFS designed to provide more granular control of server-resident storage. VERITAS Backup Exec provides versatility in handling protection of disk quotas in the VERITAS Backup Exec Restore Windows 2000 tab, shown in Figure 1. This feature tracks and controls disk usage on a “per user, per volume” basis. This means that values can be restored to limits that were set before backup. In addition, the disk quota data is automatically backed up when the root directory of the volume is selected for backup.

Restoring Windows 2000 Features

A view of the VERITAS Backup Exec Restore tab illustrates the ease of navigation and granularity that users have in determining their Windows 2000 protection strategies.

To restore the Removable Storage database, disk quota data, Terminal Services database, Windows Management Instrumentation (WMI) repository, a cluster quorum, SYSVOL in system state, and Windows 2000 mounted volumes, users select options from the Restore | Windows 2000, Restore Job Properties tab.

Additional restore features that provide users the ability to customize their data protection strategy with VERITAS Backup Exec include:

Restore Terminal Services database. VERITAS Backup Exec provides the ability to restore the Terminal Services database, which contains licensing data for client licenses. The database is automatically backed up when the system directory is selected for backup. Terminal Services allows client applications to run on a server so those client computers can function as terminals rather than independent systems.

Restore Windows Management Instrumentation repository. Users can restore the WMI repository that is automatically backed up when the system directory is selected for backup. The WMI repository provides support for monitoring and controlling system resources, and provides a consistent view of a managed environment.

Restore cluster quorum. VERITAS Backup Exec can restore the cluster configuration. Users also have the option

to force the recovery of the cluster quorum, even if other nodes are online and/or disk signatures do not match.

Restore SYSVOL in System State. When restoring SYSVOL in system state, the restored data may be used as the primary data to be replicated to all domain controllers. If an organization has more than one domain controller and the user wants to ensure that the restored data is replicated to other servers, this option may be used. If the user does not select this option, the restored data will appear to be older than the data that currently exists on the domain controllers, which may cause the servers to overwrite the restored data.

Mount points restore mount points, directories, and files from backup media. This option may be used to overwrite existing mount points on a system.

Retain existing mount points, and restore directories and files from backup media. If a mount point does not exist, it will be created as a directory with all directories and files being restored normally. VERITAS Backup Exec provides flexibility to prevent the mount point data on the backup media from overwriting the existing mount points on a system. If a mount point does not exist, the mount point data will be restored as directories and files from the backup media.

Windows 2000 Data Protection for Businesses of All Sizes

Microsoft Windows 2000 offers users an operating system built for businesses of all sizes, along with the comprehensive set of Web services, performance enhancements, and administration advantages over Windows NT Server 4.0. These changes provide significant user benefits, but bring new challenges for all backup applications to secure.

VERITAS Backup Exec already protects millions of servers and workstations, from small businesses and workgroups to highly distributed Windows NT environments, including those running the Professional, Server, Advanced Server, or Datacenter Server editions of Microsoft Windows 2000. It uses a licensing structure that scales from entry-level to high-end servers, as well as stand-alone storage devices, library storage systems, and storage area network (SAN) technology that maximizes a company’s hardware investment.

Combined with the wide array of options, including disaster recovery for Windows NT/Windows 2000 servers, “best of breed” database agents for SQL Server, Exchange database, and individual mailbox-level protection, Version 8.0 of VERITAS Backup Exec, with its balance of power and simplicity, ensures continuous availability of user data and applications, providing “Business Without Interruption.” ♦

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