

Symantec Backup Exec™ 9.2 *for NetWare Servers*

MAXIMIZING NETWARE-HOSTED DATA PROTECTION

TABLE OF CONTENTS

MAXIMIZING NETWORK-HOSTED DATA PROTECTION	1
EXECUTIVE SUMMARY	3
THE PROBLEM: INFORMATION TECHNOLOGY- DOING MORE WITH LESS	3
SOLUTION: SYMANTEC BACKUP EXEC™ FOR NETWARE	3
MAXIMUM RELIABILITY	4
MARKET LEADER IN DATA PROTECTION	4
SYMANTEC AND NOVELL PARTNERSHIP	4
ENHANCING NOVELL NETWARE 6.X	4
MAXIMUM FLEXIBILITY	5
ARCHITECTURE	5
BACKUP EXEC FOR <i>NETWARE SERVERS</i> COMPONENTS	5
Administration Console	5
Media Server	5
Storage Devices	6
ARCSERVEIT TAPE READER	6
BACKUP EXEC FOR <i>NETWARE SERVERS</i> AND STORAGE MANAGEMENT SERVICES (SMS)	6
PROTOCOLS	7
Internet Protocol (IP)	7
Simple Mail Transport Protocol (SMTP)	7
Simple Network Management Protocol (SNMP)	7
PRINTING	7
MAXIMUM MANAGEABILITY	7
INSTALLATION	7
JAVA-BASED ADMINISTRATION CONSOLE	7
WIZARDS	8
BACKUP OPERATIONS	8
Backup-to-Disk	9
Duplication of Backup Data	9
MANAGING DEVICES, DRIVE POOLS AND PARTITIONS IN BACKUP EXEC FOR NETWARE SERVERS	9
Media Management Mode vs. Partition Management Mode	9
MEDIA MANAGEMENT	9
Multiple Slot Utility Operations	10
Label Media Utility	10
MEDIA ROTATION	10
EXECVIEW 3.1 - CROSS-PLATFORM CENTRALIZED MONITORING	11
NOVELL NETWARE CLUSTER SERVICES	11
MAXIMUM SCALABILITY	11
REMOTE CLIENT ACCESS LICENSE (CAL) OPTIONS	11
Remote Agent (CAL) for <i>NetWare Servers</i>	11
Remote Agent (CAL) for <i>Windows Servers</i>	11
LIBRARY EXPANSION OPTION (LEO)	12
INTELLIGENT DISASTER RECOVERY OPTION (IDR)	12
SAN SHARED STORAGE OPTION (SAN SSO)	13
OPEN FILE OPTION	13
SPECIFIED BACKUP NETWORK	14
SUMMARY	14

EXECUTIVE SUMMARY

THE PROBLEM: INFORMATION TECHNOLOGY- DOING MORE WITH LESS

Today's IT administrators are faced with the daunting challenge of providing 100% uptime with fewer resources. They must back up more data with less hardware, less software, less time, and in most cases, with fewer administrators. IT administrators are also challenged by consolidating NetWare servers and growing volumes; diminishing backup windows and constrained network bandwidth; distributed servers and limited expertise at remote branch locations; protecting applications and databases such as GroupWise and Novell Directory Services (NDS), all while ensuring continuous information availability.

Doing more with less means NetWare Administrators must optimize their data protection strategy by taking full advantage of the features and functionality available with their backup and recovery software.

SOLUTION: SYMANTEC BACKUP EXEC™ FOR NETWARE

Symantec Backup Exec™ 9.2 for NetWare Servers delivers the latest backup and restore technology for quickly, reliably and simply protecting server and workstation data. Furthermore, Backup Exec protects non-volume objects associated with both servers and workstations, such as Novell Directory Services and registries. Backup Exec provides maximum data protection while offering:

- Reliability – Symantec is the industry standard in data protection and is committed to the NetWare platform
- Flexibility – Backup Exec is compatible with existing Novell networks, yet flexible enough to support future network needs
- Manageability – Backup Exec features provide enhanced functionality and intuitive manageability
- Scalability – From Storage Area Networks to remote servers, Backup Exec Agents and Options provide additional performance and customization for all data protection technologies found in a network

KEY BENEFITS

- Certified Solution for protecting Novell NetWare – “Yes, Tested and Approved”
- Improved efficiency with Faster Backup Performance
- Complete Data Protection and Recovery
- Full Integration with Novell Applications
- Enhanced Media Management

MAXIMUM RELIABILITY

A solution you can count on. With the release of Backup Exec 9.2 for NetWare, Symantec continues a strong tradition of providing reliable backup solutions for Novell's NetWare platform.

MARKET LEADER IN DATA PROTECTION

Symantec is the leading provider of storage management software for data protection, application availability, and disaster recovery. Over 86 percent of the Fortune 500 companies rely on Symantec storage management solutions to deliver proven interoperability across diverse applications, servers, storage hardware, and appliances.

SYMANTEC AND NOVELL PARTNERSHIP

Backup Exec™ 9.2 for NetWare Servers is built upon a solid foundation based on over 15 years of experience developing NetWare solutions and a strong partnership with the developer of the operating system, Novell.

Symantec is clearly recognized as a market leader dedicated to supporting the needs for the NetWare community by consistently being the first, and in some cases, the only certified "YES Tested and Approved" backup and restore solution for Novell NetWare 3.x, 4.x, 5.x and 6.x. This provides Novell NetWare users a reliable solution that has been tested and proven to work without fail.

ENHANCING NOVELL NETWARE 6.X

Backup Exec for NetWare Servers is the backup solution of choice to protect ALL of the data in a NetWare environment. In the event of data loss due to end-user or administrator error, Backup Exec can restore previously backed up data with a few mouse clicks. Some enterprises have vast NDS trees that span Wide Area Networks to manage network resources and user rights. If an administrator removes a section of that NDS tree by accident, reconstructing the deleted portion of the tree can be extremely complicated. Novell Directory Services (NDS) replication capabilities can replicate deletions over time. Backup Exec can easily restore the deleted portion of the NDS tree with just a few mouse clicks.

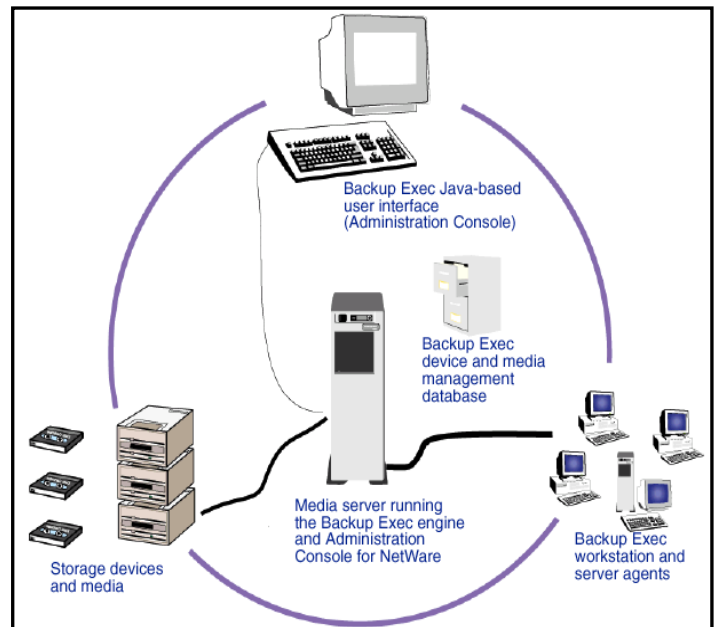
From simple file restoration to more complicated restoration of an entire NetWare 6.x system, Backup Exec for NetWare Servers offers reliable data protection for all users in an enterprise.

MAXIMUM FLEXIBILITY

Symantec Backup Exec for NetWare Servers maximizes data protection for existing and growing networks, eliminating the need for a separate backup solution to protect each platform on a network.

ARCHITECTURE

Backup Exec for NetWare Servers is a versatile, heterogeneous backup solution that allows an administrator to back up virtually any server or workstation from a NetWare server, regardless of platform. Backup Exec's network architecture is designed for maximum flexibility. From a Windows workstation, Backup Exec for Windows Servers is loaded on to a NetWare media server. A data storage device is attached to the media server capable of backing up and restoring remote NetWare and Windows NT, Windows 2000 and Windows 2003 servers via the optional Remote Agents. Backup Exec includes agents allowing administrators to back up and restore Windows 98/Me/XP Professional, Windows NT, and Windows 2000 workstations as well as UNIX, Linux and Macintosh systems.



This diagram illustrates how the components work together to provide a complete backup and restore functionality to the entire network

BACKUP EXEC FOR NETWARE SERVERS COMPONENTS

Administration Console

A Java-based Administration Console offers administrators the flexibility to manage a media server remotely from a Microsoft Windows workstation or locally from the NetWare console running the Java Runtime Environment. Features of the Administration Console include the use of nodes and sub-nodes, right-mouse button context menus, tabbed property pages, and wizards for common operations.

From the Administration Console, administrators can launch backup, restore, and utility operations; view scheduled and active jobs; and configure default options for the media server. Additionally, administrators can manage devices and media, view catalog data, obtain histories of completed backup and restore jobs, and run reports.

Administrators who prefer to manage the server from a character-based server console can take advantage of the user-friendly Administration Console for NetWare which combines many of the features and functions formerly included in previous versions of Backup Exec for NetWare Servers, including the Job Manager and NetWare Client into a single, easy-to-use, menu-based interface.

Media Server

A media server is a NetWare server with the Backup Exec software and storage devices installed. Backup and restore jobs are processed by the job engine, which runs on the media server. Making selections and submitting a backup based on those selections, creates a job. A job is a task that has been scheduled for processing by the media server.

By utilizing the optional remote agents, Backup Exec can protect media servers running NetWare versions 4.2 and above as well as remote NetWare, Windows NT, Windows 2000 and Windows 2003 servers.

Backup Exec eliminated the possibility of data corruption by using a proprietary index sequential access method (ISAM) database. Policies, job schedules, job logs, partitions, and device and media management are stored in this database and are maintained on the media server. Information from these databases is used in various reports available on the Administration Console.

Storage Devices

Symantec conducts in-depth product testing to ensure Backup Exec's compatibility with specific devices from all the major tape drive, library, and autoloader vendors. For a complete list of supported devices, log on to the Symantec web site at: http://support.veritas.com/menu_ddProduct_BENWARE.htm

ARCserveIT TAPE READER

Backup Exec *for NetWare Servers* has the ability to read ARCserveIT tapes, allowing users to easily migrate or restore data from ARCserveIT to Backup Exec.

- ARCserveIT for NetWare versions 4.x, 5.x, and 6
- ARCserveIT for Windows NT and Windows 2000
- ARCserveIT's native tape format
- ARCserveIT's embedded Storage Management Services (SMS) tape format

When backing up a NetWare server, ARCserveIT 7 by default includes Novell's Storage Management Services (SMS) data streams within the ARCserveIT format, allowing ARCserveIT to get its data stream from a Novell Target Service Agent (TSA). ARCserveIT then packages this data stream within the ARCserveIT format and places the data on tape. To read the data, Backup Exec unpackages the original TSA data and sends it back to the Novell TSA for interpretation. The NetWare server files and directories backed up by ARCserveIT can thus be fully restored by Backup Exec.

Limitations

Backup Exec cannot read the following:

- ARCserveIT backup sets that are software compressed, software encrypted, or interleaved
- ARCserveIT backups of NDS data sets
- ARCserveIT backups of the NT registry
- ARCserveIT backups of Microsoft Exchange or Microsoft SQL data

A growing trend in networks today is the consolidation of backup servers or the use of various backup applications. In addition to reading ARCserveIT tapes, Backup Exec also reads and writes data in the industry standard tape format, Microsoft Tape Format (MTF), providing administrators the ability to read past, present, and future tapes for easy backup server consolidation.

BACKUP EXEC FOR NETWARE SERVERS AND STORAGE MANAGEMENT SERVICES (SMS)

Backup Exec *for NetWare Servers* installs on top of the NetWare operating system and uses Novell's Storage Management Services (SMS) for its operations. Using the SMS framework, Backup Exec makes requests to Novell's Target Service Agent (TSA) in order to access data residing on a NetWare storage device. Additionally, Backup Exec uses the ASPI layer to communicate with a tape drive. A backup job makes a request to the backup source via SMS and sends it to the tape drive on the ASPI layer. The TSA either allows or denies the request. A properly loaded TSA is a required for Backup Exec to perform a back up or restore. Using Novell TSA's, Backup Exec ensures full compatibility with the NetWare operating system requirements, simplifying interoperability and maintaining consistency across different versions of NetWare.

PROTOCOLS

Internet Protocol (IP)

Backup Exec *for NetWare Servers* can be administered from a workstation running Windows Server 2003, Windows 2000, Windows NT 4.0, Windows Me, Windows 98 enabling remote manageability in a pure IP environment. Pure IP environments are highly efficient in reducing routing hardware and software requirements, freeing up scarce network bandwidth by up to 30 percent, eliminating the need to support other client protocols, and creating greater opportunity for remote connectivity. With Pure IP support, administrators manage a single protocol, delivering higher service levels without costly infrastructure upgrades. Backup Exec continues to support IPX on DOS workstations (, 98, Me).

Simple Mail Transport Protocol (SMTP)

Alerts can be forwarded over e-mail using Simple Mail Transport Protocol (SMTP), a standard protocol used by most e-mail applications, including Microsoft Exchange and Novell GroupWise.

Simple Network Management Protocol (SNMP)

Simple Network Management Protocol (SNMP) allows a network to be managed from a central location and enables applications like Backup Exec to report messages regarding status and error conditions to an SNMP Console (a management workstation). SNMP allows Backup Exec *for NetWare Servers* to support Tape Alert plug-ins for Hewlett Packard's OpenView Management Consoles for Windows and UNIX programs.

PRINTING

Backup Exec leverages Novell Distributed Print Services (NDPS) including iPrint as well as traditional queue-based methods for printing job logs.

MAXIMUM MANAGEABILITY

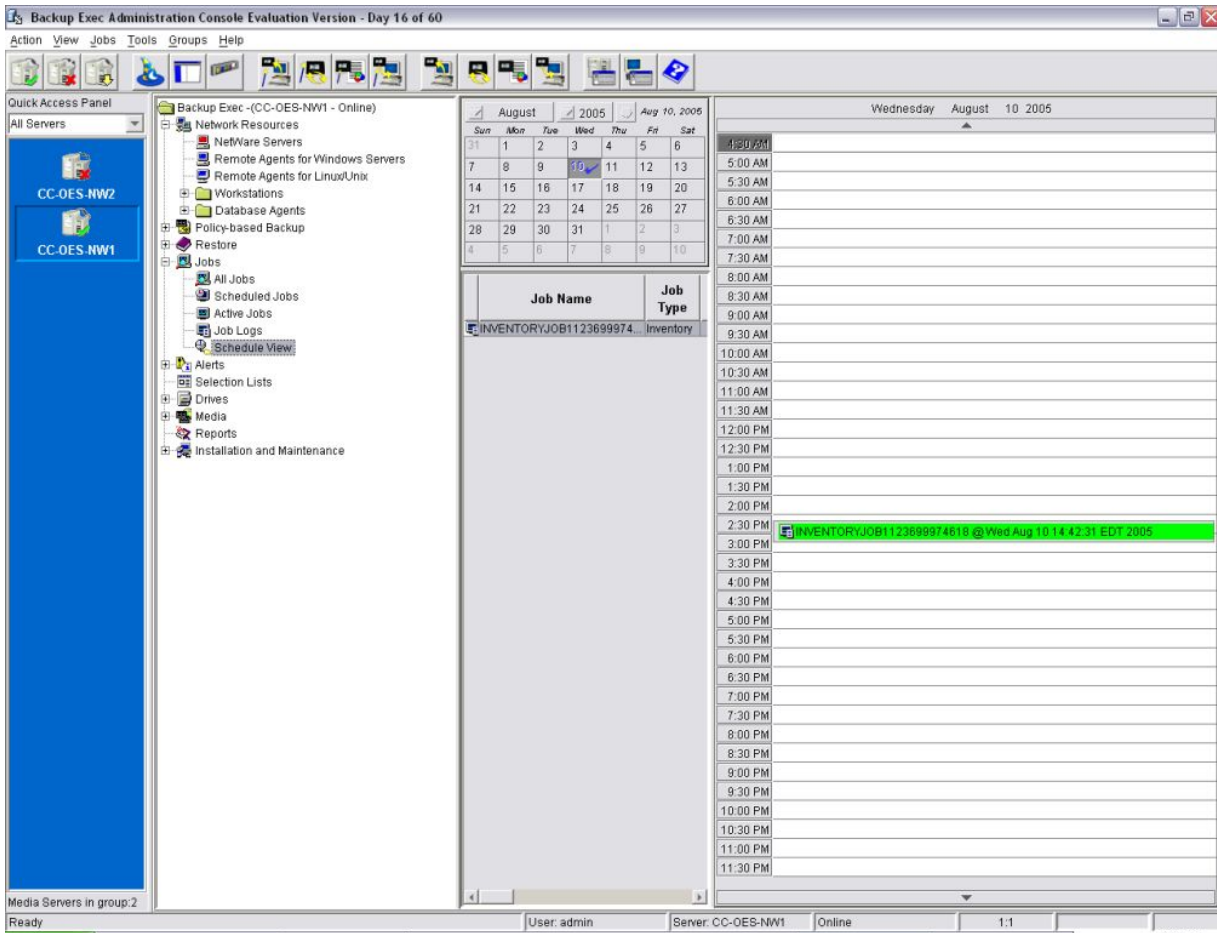
IT administrators managing more data with fewer resources are drawn to Symantec Backup Exec™ *for NetWare Servers*' easy to use backup and restore features such as: the Administration Console with wizards, simple job operations, enhanced media management and cross-platform monitoring via ExecView. Backup Exec reduces or eliminates human error by simplifying the complexity of backup operations with key functionality displayed on the Administration Console.

INSTALLATION

Backup Exec *for NetWare Servers* installation is simplified by trouble-free push installation capabilities that enable Backup Exec *for NetWare Servers* to be installed on remote NetWare systems across an enterprise from a single Windows workstation or NetWare server. This feature allows a user to install thousands of servers from one central location and significantly reduces the time to rollout the Backup Exec for NetWare Servers data protection solution.

JAVA-BASED ADMINISTRATION CONSOLE

The Administration Console has many features that make it simple for users to perform operations, such as scheduling jobs. A good backup program will include an easy-to-understand scheduling feature that allows the data protection process to take place at the user's discretion. Backup Exec for NetWare Servers includes a calendar-based scheduler for quick and straightforward backup and restore procedures. From the Calendar View, a user can schedule backup and restore jobs and view previous, active, and future jobs. Customizable color-coding of jobs increases the user's ability to manage job scheduling more effectively. The Holiday scheduler allows users to easily exclude days when they do not want jobs to execute.



Backup Exec for NetWare Server's easy-to-use Administration Console offers administrators calendar-view scheduling of backup and restore jobs.

WIZARDS

From product installation to restoring a job, Symantec Backup Exec™ for NetWare Servers offers pre-defined wizards for easy administration of common operations. Integrated wizard technology provides step-by-step guidance for reliable data protection. Wizards remove guesswork and facilitate the data protection process. Available wizards include:

- Policy Wizard
- Backup Job Wizard
- Restore Job Wizard
- User Media Set Wizard
- Drive Pool Wizard
- Cascaded Drive Pool Wizard
- Mirrored Drive Pool Wizard
- Media Rotation Wizard
- Startup Wizard
- Intelligent Disaster Recovery Wizard

BACKUP OPERATIONS

Combined with numerous backup options, Symantec Backup Exec™ for NetWare Servers delivers simple backup, restore, media management, creation of backup strategies and media rotation for maximum flexibility and data protection. New features such as Backup-to-Disk, duplication of backup data, disk-staging and off-site storage of critical data, further simplify the backup and restore process.

Backup-to-Disk

Backup-to-Disk delivers faster backup and recovery performance by allowing data to be backed up to and restored from non-removable storage devices such as hard drives. Backups of critical data can be done more frequently and later staged to removable media such as tape. Backup-to-Disk backups can be combined with Duplicate Backup Data jobs to provide full data protection.

Duplication of Backup Data

Duplication of backup data allows administrators to automatically copy existing backup sets or those being created during a scheduled backup job, providing redundant backups, which may be used for offsite storage. This feature also allows migration of data between different media types. By selecting to duplicate existing backup sets, the backup sets selected from catalogs are read from the source media and written to the selected destination, such as a drive, drive pool, or backup folder. By selecting to duplicate backup sets following a job, the backup job runs first and the backup sets created are copied to the destination selected for the duplicate job.

MANAGING DEVICES, DRIVE POOLS AND PARTITIONS IN BACKUP EXEC FOR NETWARE SERVERS

Backup Exec enables administrators to organize storage devices in physical and logical units called drive pools, or to assign one or more drives to a partition for processing jobs by type (backup, restore, media rotation, and utilities).

Backup Exec's device management capabilities simplify organization and allocation of storage devices attached to the media server. Media management mode facilitates organization of drives in to drive pools, allowing backup jobs to be routed to the first available drive or cascaded drive pools, where drives from the same vendor and with the same product ID, are linked together and appear logically as one group. Backups routed to cascaded drive pools allow large backup jobs that exceed media capacity in one drive, to automatically continue on the available media in the next drive within the cascaded drive pool.

Creation of mirrored drive pools allows two or more similar drives that are bundled or grouped, to be used for the purpose of creating multiple copies of a backup without having to create multiple jobs. *

After Backup Exec is installed, all configured storage devices connected to the media server are automatically recognized as either robots (changers or autoloaders) or stand-alone drives.

Media Management Mode vs. Partition Management Mode

During installation of Backup Exec, administrators must select to run in either media management or partition management mode. In media management mode, the tree pane on the administration console displays devices organized logically in drive pools or drives arranged physically on servers. All devices appearing under the Drives node are selectable, including drive pools, stand-alone drives, robotic libraries, and cascaded drive pools.

All of the physical drives' logical groupings are displayed under Drive Pools, Cascaded Drive Pools, or Mirrored Drive Pools. Cascaded and mirrored drive pools are displayed under servers because they only consist of drives from that server; they effectively act as a single device under that server.

In partition management mode, drives are organized into partitions. After installation, each storage device connected to the media server is automatically assigned its own partition. Robots have one partition per drive and the slots are divided equally between the partitions; multi-drive support is only provided through the Library Expansion Option.

MEDIA MANAGEMENT

Most administrators are responsible tracking media, making sure backups are written to the appropriate media, and ensuring media is not accidentally overwritten. Backup Exec *for NetWare Servers* automates these tasks by

categorizing media and tracking media as it is used. Backup Exec uses media in storage devices for overwrite and append jobs according to criteria selected, including:

- *Overwrite protection period.* The length of time that data is retained on a specific media before the media is available for overwriting.
- *Append period.* The length of time that data can be added to a media.
- *Media set overwrite protection level.* The level of overwrite protection assigned to media sets.

When submitting a backup or archive job, administrators must select the drive, drive pool or, if in partition management mode, the partition that the job will run on and the media set where the job will be written. A media set is a grouping of media that have the same overwrite protection period and append period.

With new features such as multiple slot utility operations and label media, common media management functions are further simplified.

Multiple Slot Utility Operations

Backup Exec decreases administration time by allowing catalog, erase, inventory, verify and label utility jobs to be submitted to multiple slots using either the Java-based Administration Console or the character-based Administration Console for NetWare.

Label Media Utility

Backup Exec gives offers the flexibility to replace the cartridge label generated by Backup Exec with a user-created media label. This functionality allows media to be readily identified.

MEDIA ROTATION

Symantec Backup Exec™ 9.2 for NetWare Servers includes Media Rotation to simplify protection of vital data.

Media Rotation benefits include:

- Reliability - Jobs are automatically scheduled and tracked
- Manageability – creation of a single job enables automation of daily, weekly, and monthly backups
- Enhanced job tracking - No multiple jobs to track

Creating a media rotation job differs from creating a regular backup job. A backup job can be created in either media management or the partition management mode. During creation of the backup job, a specific media set and drive/drive pool or partition must be selected followed by the policy to be used with the job. A media rotation job can be created only in the media management mode and does not require specification of a policy to be used. Instead of targeting a specific media set, a media rotation job creates three media sets:

- *Daily media set* - The overwrite protection period for media in this media set is seven days. This media set would be used for non-full backups performed, such as daily incremental backups.
- *Weekly media set* - The overwrite protection period for media in this media set is one month. Full backups that need to be retained for more than 30 days but less than one year would be run on media in this media set.
- *Monthly media set* - The overwrite protection period for media in this media set is one year. Full backups that need to be retained for one year or longer would be run on media in this media set.

The minimum amount of media needed to perform a media rotation scheme can vary depending on:

- The amount of data being backed up. The data being backed up could require more than one media for each job instance.
- The drive or drive pool selected as the destination. Selection of a drive pool that includes different types of drives requires one type of media for one day and then a second type of media the next time it runs. If the destination is a single drive or contains only drives of one type, then the same media can be used.

- The backup methods selected. Differential backups will require more media than full or incremental backups.

EXECVIEW 3.1 - CROSS-PLATFORM CENTRALIZED MONITORING

VERITAS ExecView 3.1 allows IT administrators to monitor multiple Backup Exec for NetWare Servers and Backup Exec for Windows media servers from a central location via a web console. ExecView allows administrators to:

- View all scheduled, active and completed backup jobs
- Respond to minor alerts
- Launch the ExecView console from Microsoft Internet Explorer or Netscape browser allowing easy monitoring access from anywhere

NOVELL NETWARE CLUSTER SERVICES

Symantec Backup Exec™ *for NetWare Servers* was the first backup solution to support Novell NetWare Cluster Services (NCS). NCS allows Backup Exec to protect data on the cluster volumes by backing up and restoring data stored on any node in the cluster and provides cluster awareness.

Server clusters provide high availability and manageability of critical network resources, including data (volumes), applications, server licenses, and services. In a server cluster, two or more servers (called nodes) are linked in a network, and run cluster software that allows network resources to be tied to a cluster rather than to individual network servers. With cluster-enabled volumes, such as NSS volumes, data and applications appear to be provided by a single system, even though the cluster may be composed of several network servers.

When one node fails, the failed node's applications and volumes are transparently restarted on a surviving node (called failover). During failover, Backup Exec *for NetWare Servers* can be manually configured to back up the failed server volumes. When failed node returns to service, the volumes newly acquired by the failover node are migrated to the controlling node (called fail back).

When using NetWare 5.1 or 6.x, Backup Exec provides enhanced cluster support. For these remote systems, Backup Exec provides checkpoint restart on cluster failover. With checkpoint restart, backup jobs running when a failover occurs will restart from the last successfully backed up file, directory, or backup set rather than restarting from the beginning. This shortens the time required to complete the backup and amount of media required.

MAXIMUM SCALABILITY

Symantec Backup Exec™ *for NetWare Servers* offers many options that assist in maximizing data protection performance, including product options such as remote agent accelerator technology for NetWare and Windows, Library Expansion Option, Intelligent Disaster Recovery, SAN Shared Storage Option, and Open File Option. The availability of these options combined with the many other essential network functions provided by Backup Exec *for NetWare Servers* makes it a simple yet powerful, high performance, full-featured storage management solution.

REMOTE CLIENT ACCESS LICENSE (CAL) OPTIONS

Remote Client Access License Options connect and protect remote NetWare and Windows servers on the network.

Remote Agent (CAL) for NetWare Servers

Incorporate remote NetWare server data protection and recovery into daily backup and recovery activities. The agent offers 100 percent Systems Management Server (SMS) compatibility and NetWare Directory Services (NDS) bindery information for NetWare 4.x, 5.x, and 6.x servers.

Remote Agent (CAL) for Windows Servers

Expand network-wide data protection and optimize data transfers for remote Windows servers, including local Registry and System State information.

Remote Agent (CAL) for Linux or UNIX Servers

Provides high performance network-wide data protection for remote Linux and UNIX servers. The agent extends Backup Exec software's advanced agent technology beyond Windows and Netware to meet the need of the emerging business applications on Linux operating systems.

LIBRARY EXPANSION OPTION (LEO)

Symantec Backup Exec for NetWare Servers Library Expansion Option (LEO) expands storage capacity by adding support for additional drives within tape library(s). The advanced capabilities of LEO are ideally suited for unattended "lights-out" enterprise backup and restore operations, including fault-tolerant device pooling, scheduled cleaning operations, bar code reader and portal support. LEO supports a broad range of tape libraries and devices.

LEO's advanced robotic library support for Backup Exec offers the following features:

- Support for multiple drive libraries
- Concurrent processing on multiple drive libraries
- Support for libraries with bar code labeling systems
- Support for libraries with portals

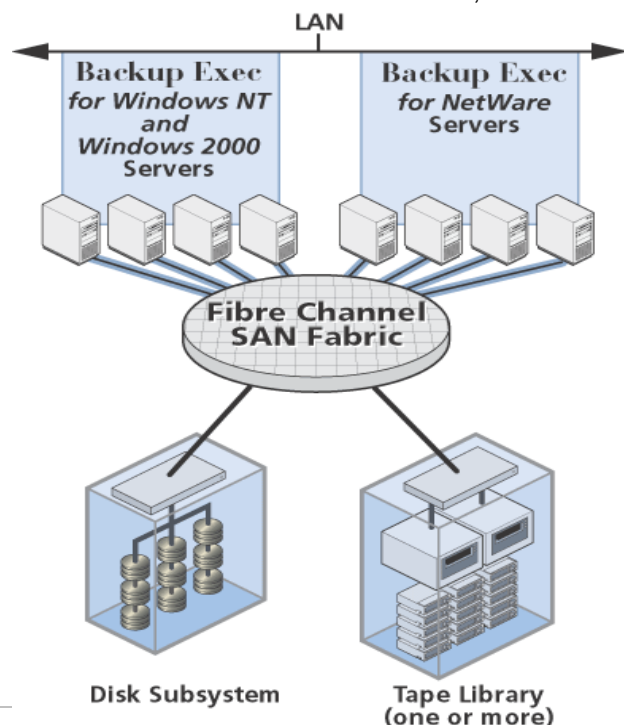
INTELLIGENT DISASTER RECOVERY OPTION (IDR)

A good backup solution will walk the user through each step of the restore process, ensuring that lost files are replaced properly using the most recent backup set. With the right solution and a well functioning server, restoring lost information is simple and easy. If the server must be repaired or replaced due to a fire or flood, then the restore process will take longer and may be a little more complex. The best backup solutions have remedies for these types of disasters.

Symantec Backup Exec™ for NetWare Servers Intelligent Disaster Recovery (IDR) Option provides complete peace-of-mind and flexibility to selectively recover data ensuring data availability when and where it is needed. IDR provides a simplified "point-in-time" recovery solution for both local and remote NetWare 4.2, 5.x and 6 servers that may have been physically damaged or reconfigured during an upgrade. Using either the diskette-based, CD-R/RW or bootable tape solutions, the Intelligent Disaster Recovery Option reduces downtime in the event of server failure, allowing data to be restore from the last complete backup set — including full, incremental, differential, and working set backups. An automated, step-by-step process allows the administrator to get your system back to the state of the last backup, by selecting defaults or reconfiguring it to control the recovery operation.

Booting from tape requires a tape drive that supports OBDR (One Button Disaster Recovery). This feature allows recovery from a disaster in minutes rather than hours.

For remote server support, the Intelligent Disaster Recovery Option must be installed on each server.



SAN SHARED STORAGE OPTION (SAN SSO)

Symantec Backup Exec™ *for NetWare Servers* SAN Shared Storage Option (SAN SSO) provides the industry's first heterogeneous storage area network solution that allows tape libraries connected over a fibre-channel SAN to be shared dynamically between multiple Backup Exec *for NetWare* and Backup Exec *for Windows media servers*.

SAN SSO supports the sharing of secondary storage devices that are not directly connected to a single server, but, as an example, could be attached to a fibre-channel fabric, a high speed storage network in which all devices are linked together in a group. SAN SSO provides LAN-free backup to increase backup performance and LAN bandwidth for high traffic, data intensive networks.

In a shared storage environment, all media servers have access to all of the backup devices on the shared storage network. This allows greater flexibility for secondary storage operations. However, it also means that the media servers need to coordinate their activities. To aid in this coordination, one server is designated as the Primary Group Server. This Primary Group Server is responsible for coordinating access by the other Backup Exec servers, or group servers.

The servers cooperate primarily through a reserve and release mechanism, which ensures orderly access to the devices and partitions. Just as a hotel uses reservations to ensure two guests are not assigned to the same room at the same time, the Group Servers reserve devices and partitions before using them.

In partition management mode, the partition definitions for the shared devices are centralized on the Primary Group Server so that all Group servers connected to this database see a single, unified view of all partitions and devices that are being shared.

Every SAN attached server must have Backup Exec installed for their respective platforms. Moreover, each server must have SAN SSO installed and the Library Expansion Option for each additional drive in a tape library.

OPEN FILE OPTION

In today's fast-paced, competitive business environment, a company's network must be operational around the clock. Web sites, e-mail systems, and other databases must be available 24 X 7 X 365. Companies don't have time to bring down these systems to back them up. Backup Exec's Open File Option (OFO) ensures that all files on NetWare or Windows server are protected, even if they are in use.

Backup Exec provides two Open File Options. The Backup Exec Open File Option allows back up of open files from a media server or from remote NetWare servers. The Backup Exec Advanced Open File Option allows back up of open files on remote Windows NT, Windows 2000 or Windows Server 2003 systems. Together, these options protect open files.

The Backup Exec Open File Option must be installed on each NetWare system to be protected. The Remote Agent for NetWare must also be installed on each remote NetWare system to be protected using the Open File Option. Installation of the Backup Exec Advanced Open File Option automatically installs the Remote Agent Client Access License (CAL) *for Windows Servers* on the system to be protected using the Advanced Open File Option.

After the Open File Option is installed, it runs in the background of the server, waiting for a job using a policy with the "Use Open File Option if available" option selected.

When a job is submitted for backup with the Open File Option selected, a virtual point-in-time view of each volume is created. Original data is buffered on the static volume when changes are made to the files during a backup. Buffered data is then backed up, not the changed data. If the files selected for backup reside on more than one volume, Backup Exec creates a static volume for each volume containing data to be backed up. For example, if the data to be backed up resides on a single volume, a single static volume is created. Data residing on four volumes will create four static volumes. After the selected files have been backed up, the static volumes are deleted.

Backup Exec automatically calculates the sizes of the static volumes needed for the backup, as well as the location of the static volumes.

SPECIFIED BACKUP NETWORK

Many companies want to clear up network traffic and increase their bandwidth. Backup and restore applications significantly affect network resources. Costly Storage Area Networks can reduce the network bandwidth burdens of backup and restore. However, many companies do not have the financial resources to implement a storage area network. Backup Exec *for NetWare Servers* includes the ability to operate a dedicated backup network, or subnet, utilizing the servers Network Interface Card (NIC). A dedicated backup network is an inexpensive alternative to a Storage Area Network. It reduces network traffic by allowing users to reroute traffic off the general production LAN to a dedicated LAN. An administrator can choose a dedicated backup network by selecting NIC IP Address. One disadvantage in utilizing a dedicated backup network is the inability to share a library between Windows and NetWare servers. To obtain this functionality a user must install a storage area network.

SUMMARY

Do more with less. That is the demand placed on IT administrators today. Administrators are faced with the insurmountable task of providing 100 percent uptime in network environments that are constantly changing and growing. Furthermore, they must be able to recover in the event of a disaster or the business may never be able to recuperate. IT administrators must be able to rely on a backup and restore solution that can deliver comprehensive data protection.

Symantec Backup Exec™ *for NetWare Servers* is a comprehensive data protection solution designed to operate in a dynamic network hardware and software environment. Backup Exec *for NetWare Servers* maximizes data protection for NetWare environments by providing an industry standard, reliable backup and restore solution that is architected for current and future networks. Backup Exec offers users and administrators a simple, intuitive interface and flexible operations including the use of wizard technology. Furthermore, Backup Exec *for NetWare Servers* offers many options and agents to accommodate the most advanced data protection technologies available.

Symantec Corporation
World Headquarters
20330 Stevens Creek Blvd
Cupertino, CA 95014
408-517-8000 or 866-837-4827

For additional information about Symantec, its products, or the location of an office near you, please call our corporate headquarters or visit our Web site at www.symantec.com.