

Managing Distributed Backup Servers

VERITAS Backup Exec™ 9.0 for Windows Servers

Admin Plus Pack Option

ExecView Web Console

Backup Exec Admin Console

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EXECUTIVE SUMMARY

VALUE PROPOSITION

Companies today are facing the ever-increasing challenge of protecting and managing the explosive growth of valuable data residing on servers outside the data center. Remote offices, or distributed networks offer a different set of challenges to those companies unable or unwilling to consolidate their storage management to a central location. Consistently and efficiently installing data protection applications, proactive monitoring of media server activities, and the ability to report on storage management activities are key to an administrator's ability to effectively manage a highly distributed storage network.

Backup Exec™ 9.0 for Windows Servers provides a number of advanced management features and options, when used together, with the Backup Exec Admin Plus Pack Option™ provide a robust and scalable solution for managing remote backup servers. The combined functionality provides today's storage administrator the ability to efficiently install, monitor, manage remote Backup Exec servers distributed throughout the network without the cost of expensive hardware and software needed by multi-tiered storage solutions.

KEY BENEFITS

- Efficient and cost-effective deployment and management of remote Backup Exec servers
- Centralized single and multi-server historical and quality of service (QOS) reporting
- Centralized management and reporting reduces costs while maximizing control and job consistency.

PRODUCT HIGHLIGHTS

Admin Plus Pack

- Create a consistent Backup Exec image for remote backup servers using push-install technology via the network or silent local installs using a custom installation CDs.
- Streamline job creation and job distribution for remote servers using the Job Templates and Job Copy features
- 24 additional reports consolidate information for single and multi-server Backup Exec deployments
- Advanced alerting and reporting can be scheduled and sent to distribution lists via email

ExecView and Admin Console

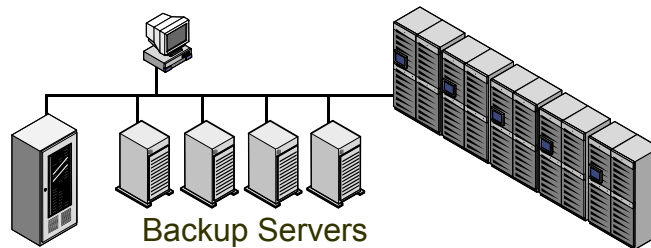
- Web monitoring and basic management of one to hundreds of Backup Exec servers from any computer with access to the internet
- Customize "Management by exception" views of Backup Exec servers on the network by creating views for grouped backup servers, alerts to be highlighted, or devices to be monitored
- Remote access of any Backup Exec server via the Admin console provides direct control of the Backup Exec functions from any other Backup Exec server on the network

INTRODUCTION

EVOLVING DATA DISTRIBUTION

Traditionally, server-computing environments in the enterprise-sized business and the small to medium-sized (SMB) business have been physically consolidated. That is, storage hardware, including backup servers and their associated storage devices have been located together in close proximity in the same data center or server room. However, several factors have contributed to the growth of backup and recovery servers being deployed outside an organization's data center to remote locations.

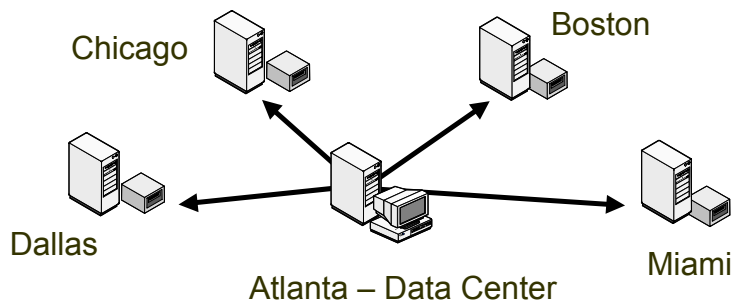
The Traditional Data Center- backup servers are in close proximity



First, server hardware and software has become integral to the successful daily operation of most organizations including their remote branch offices. These branches include financial institutions, insurance companies, retail stores and distribution centers, and local, state, and federal government agency locations.

Secondly, new products are available allowing the deployment of servers in these many remote distributed locations to be more effective with a quicker return on investment. New wide area networking (WAN) and storage area networking (SAN) technologies combined with advanced point-of-sale computing and internet-connected computing have promoted servers being deployed in geographically distributed workgroup and branch office environments.

Remote Branch Offices – backup servers are geographically distributed



THE REMOTE BRANCH OFFICE ENVIRONMENT IS UNIQUE

As an organization's business becomes distributed using the remote office model, so does their valuable data. The data at these remote locations is changing constantly and must be protected daily. The organization's IT management needs a backup and restore solution that will protect the data at these remote sites with the same high degree of reliability they have achieved in the data center. However, the consolidated data center environment and the geographically distributed workgroup, retail store, or branch office environment are not identical.

For example, the data center employs server-knowledgeable and application-literate administrators on-site. When backup software, tape libraries or media must be installed or maintained an administrator can quickly do the job. However, this expertise is usually not available at the branch office or retail store hundreds of miles away. Furthermore, employees at the remote site are usually not trained to create maintain, and monitor backup jobs or investigate or trouble-shoot issues associated with backup job failure.

The data center's IT personnel could visit every remote business site periodically, or on an as-needed basis, but this can be prohibitively expensive when all travel costs are considered; especially when an organization includes dozens or even hundreds of remote locations. In addition, this approach can quickly translate into requirements for more costly, and hard-to-find IT employees.

WHAT IT ADMINISTRATORS NEED

In these situations, IT backup administrators need a backup solution allowing them to manage all their distributed backup servers from a single data center console; eliminating the need to travel to any remote site. Ideally, such a solution will include:

- Complete backup server deployment
- Backup job development and setup
- Backup job and server monitoring
- Alert and notification
- Remote problem investigation
- Remote server administration
- Single and multi-server historical reporting

Aside from the many management functions required, a distributed backup server network solution must also address reliability and cost concerns. A significant difference between the data center and distributed environment involves data transmission. In the data center, dedicated high bandwidth network hardware carries data from server to server. However data transmission lines between many remote sites and the data center are not all T-class. Many are low-bandwidth (56K-256K) and unreliable for consistent network traffic. The solution must be designed without the need for a persistent connection between the remote backup server and any other backup server. The remote backup server must be intelligent and capable of working independently when lines go down.

A distributed storage solution must be deployable and operated with no special, extraordinary hardware requirements or expensive, front-end loaded software requirements. This allows the solution to be cost-effective for smaller organizations as well as larger ones.

The solution must be scalable, executing the deployment and allowing monitoring and management of hundreds of remote backup server from a single console. Because an organization's many remote sites may be "cookie-cutter" images of themselves, the solution should have features that minimize an administrator's repetitive deployment and management tasks.

THE BACKUP EXEC SOLUTION

VERITAS Backup Exec 9.0 *for Windows Servers* addresses an organization's needs for managing distributed backup server networks. Several Backup Exec components can be used in concert to allow for the total life cycle management of local and remote Backup Exec servers and their daily operations. These components include:

- Backup Exec 9.0 *for Windows Servers*
- The Admin Plus Pack Option
- The ExecView Console
- The Backup Exec Remote Administrator

The Admin Plus Pack Option is a new option for Backup Exec 9.0 *for Windows Servers*. It contains a number of features designed to assist the administrator tasked with the software deployment and job setup of multiple backup servers. It also includes advanced reporting with automated report scheduling and distribution.

ExecView is a web-based user interface that allows an administrator to monitor all Backup Exec media servers and the jobs for those servers from a single console. It also contains powerful server grouping capabilities, alert and notification features, and basic administrative functions.

The Backup Exec Remote Administrator allows an operator to directly access the local interface of any remote Backup Exec server from the operator's location. With Remote Administrator, a user can quickly investigate and address issues associated with distant backup servers, or perform routine maintenance.

BACKUP SERVER DEPLOYMENT

Initial server deployment and setup can be one of the most time consuming and labor-intensive backup-related tasks for an IT organization. The expense associated with these activities is compounded as the number of backup servers increase and particularly when backup servers are distributed in different locations, perhaps hundreds of miles away from one another. In these situations, IT administrators are generally faced with one of two choices.

The first involves pre-configuring backup servers and their jobs at a central IT site and then shipping them to the remote branch office for installation. Here, most of the work is performed centrally but the server installation still requires some expertise at the remote office. The second choice involves an IT administrator traveling to each remote office. In this situation the administrator installs the backup application and configures the backup server, and then creates and schedules backup jobs. Both scenarios are very labor-intensive and can involve high travel-related expenses.

Backup server deployment related expenses are minimized using the Admin Plus Pack Option. The Admin Plus Pack Option allows Backup Exec, and all desired agents, options and settings to be efficiently installed to other remote servers in one of two ways – Push Installation or Local Silent Install via CD.

Push Installation

From a single Backup Exec server's console, the desired Backup Exec configuration can be created and then remotely installed or "pushed" to multiple remote and distributed servers. There are several methods for the administrator to choose from.

The first is to push install to a remote server manually. This would most often be used for installing "one-off configurations" to a single remote server on the network and is accomplished by selecting the "Remote install with serialized options".

The second option is "Remote install with cloned local settings". This option is selected when it is desired to duplicate the installation and settings that are configured on the local Backup Exec server, from where the "push"

is performed. In effect, mirroring the current server so that whatever is installed on the local server, is installed on the specified remote server.

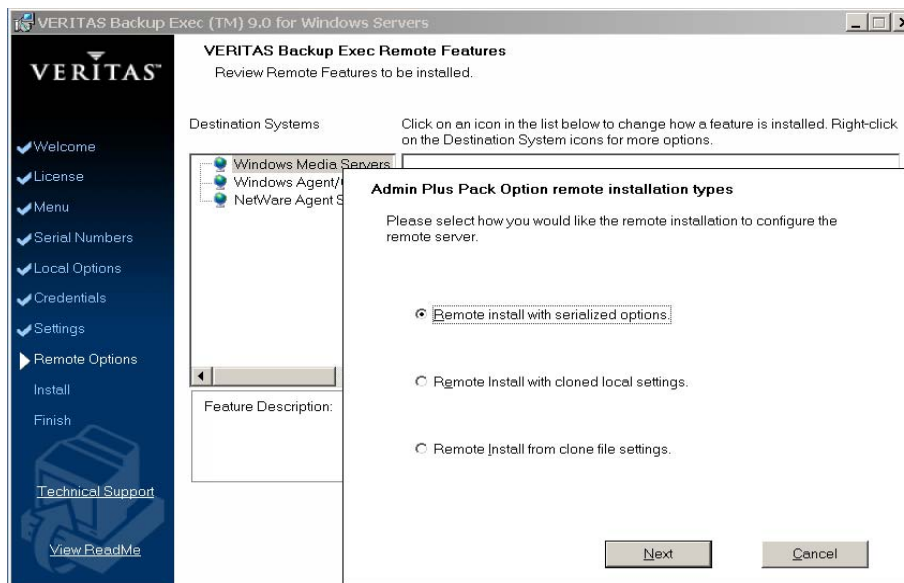
The last technique involves pushing a previously created clone image of a unique Backup Exec configuration to another server. To perform this, a cloned image of a specific, Backup Exec installation is first created. The Admin Plus Pack Option captures the Backup Exec application and installation program, and the specific Backup Exec agents and options desired, together with account information and destination directory. This clone image can be named and stored alongside other “install images”. This method of remote installation is particularly useful to organizations rolling out many “like” backup servers. Different types of backup servers (i.e. Exchange, SQL, Lotus Domino, etc.) can each possess the unique Backup Exec agents, options, and settings required, with new backup servers deployed on-demand via their saved image.

Local Silent Installation

This deployment alternative is done locally at the remote server using a CD image created at the “host” that contains the desired Backup Exec configuration. This CD can then be used locally at the remote server site for an automated CD-based silent installation.

Local silent installations are also accomplished utilizing the same process of creating the clone image files and then burning it to a CD file format. After the image is copied to CD it is simply placed in the drive of the target machine. As soon as the CD is inserted, the Windows Explorer Auto-start function initiates a silent install script and deploys the Backup Exec configuration to the machine. This same CD can be reused to install multiple Backup Exec servers possessing the exact same configuration.

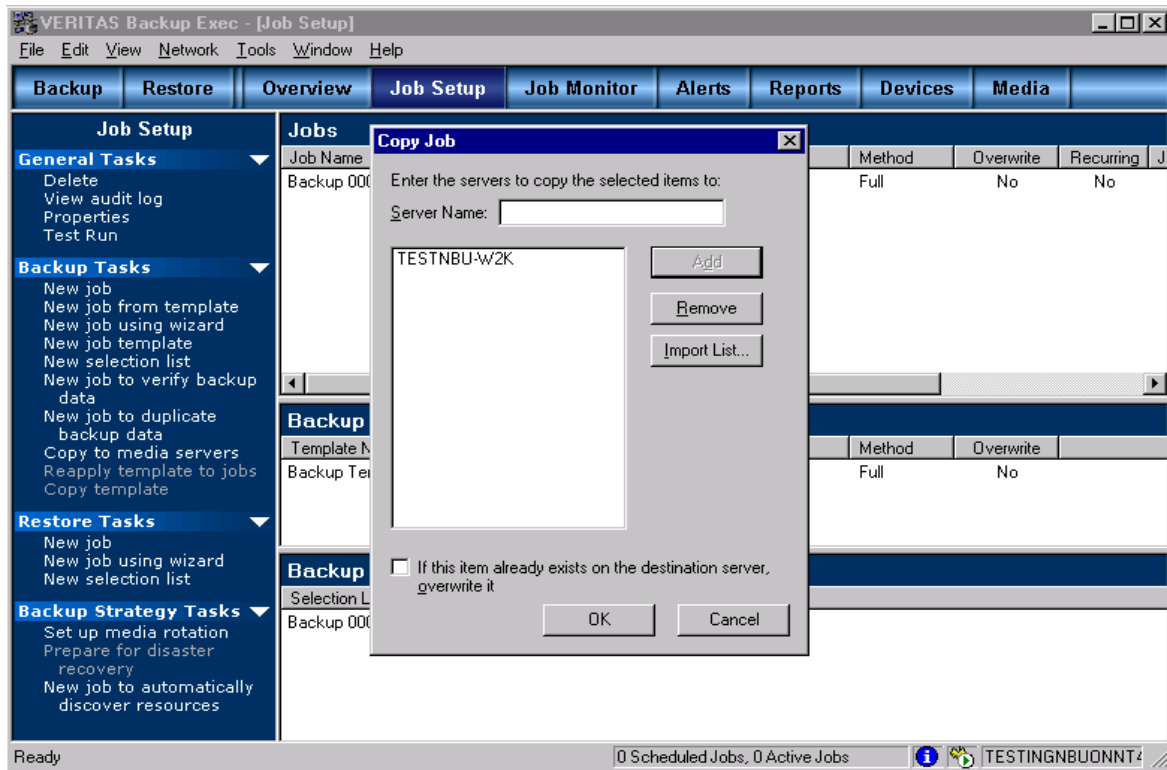
Backup Exec Remote Installation Features



BACKUP JOB DEVELOPMENT AND SETUP

The development and setup of backup jobs can be extremely time consuming when a large number of backup servers are deployed and the effort is magnified when backup servers are remotely distributed. In situations where many backup servers are similar in function, the Admin Plus Pack Option makes this task easier and faster by allowing jobs, job templates, and selection lists to be copied between Backup Exec 9.0 servers. Any of these three components can be created on one backup server and then copied to one or multiple other remote backup servers on the network.

Pushing a copied job to a remote server.



In addition, using a one-to-many algorithm, routine job maintenance and customization for multiple backup servers is possible via a single Backup Exec media server. Job components, including selections and scheduling can be modified as required and copied out to the remote servers, overwriting and updating existing jobs, templates and selection lists. Each of the copy operations from one backup server to another are confirmed via an alert with success or failure status, along with a log file for viewing the results assuring the new changes are in place and performing as expected.

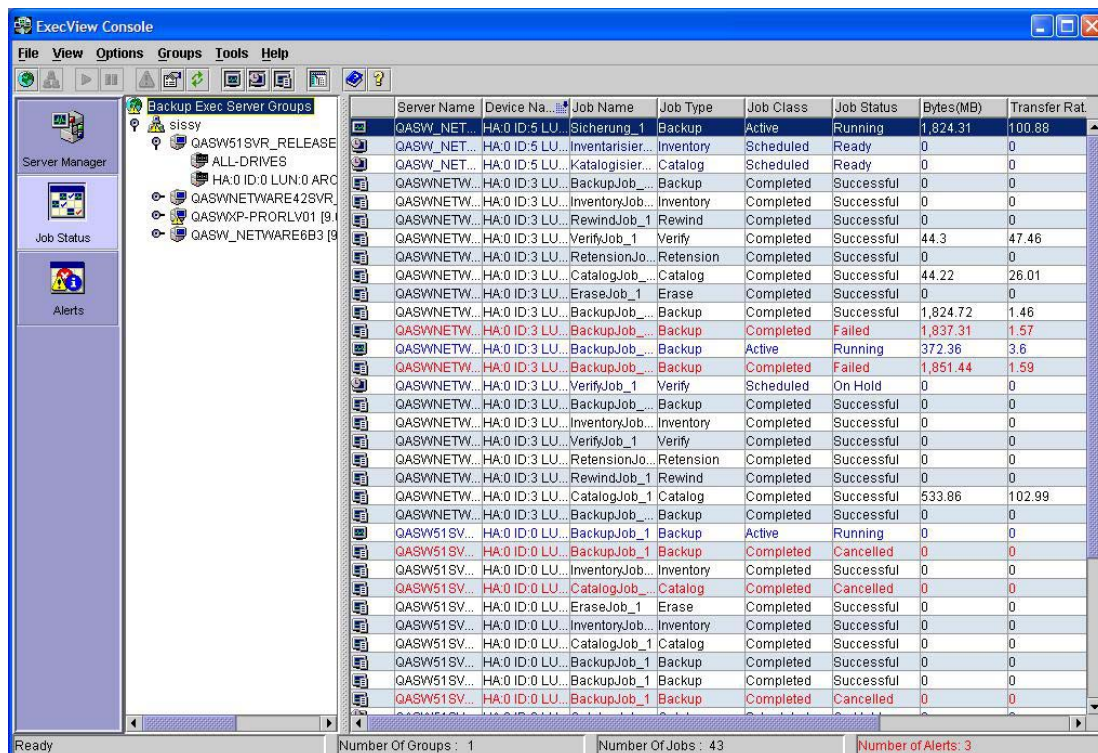
BACKUP MONITORING

Following the completion of backup server deployment and job setup, backup operations can begin. The standard Backup Exec interface allows backup operations of just the local backup server to be monitored. When multiple backup servers must be monitored, the Backup Exec ExecView™ web-based console is used. ExecView can monitor jobs, devices, and alerts from one to hundreds of Backup Exec servers on the network simultaneously, in real-time.

Through the ExecView console an administrator can:

- Monitor any backup server's active, scheduled, and completed jobs.
- Pause and resume media servers and devices.
- Start scheduled jobs and cancel jobs.
- Create backup server groups.
- Receive and respond to alerts.
- Receive e-mail or pager notification of events.
- View CPU, OS, and memory statistics of a backup server.
- Create individual user profiles.

The ExecView Management Console



Server Name	Device Name	Job Name	Job Type	Job Class	Job Status	Bytes(MB)	Transfer Rat.
QASW_NET...	HA:0 ID:5 LU...	Sicherung_1	Backup	Active	Running	1,824.31	100.88
QASW_NET...	HA:0 ID:5 LU...	Inventarisier...	Inventory	Scheduled	Ready	0	0
QASW_NET...	HA:0 ID:5 LU...	Katalogisier...	Catalog	Scheduled	Ready	0	0
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	InventoryJob...	Inventory	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	RewindJob_1	Rewind	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	VerifyJob_1	Verify	Completed	Successful	44.3	47.46
QASWNETW...	HA:0 ID:3 LU...	RetentionJo...	Retention	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	CatalogJob_...	Catalog	Completed	Successful	44.22	26.01
QASWNETW...	HA:0 ID:3 LU...	EraseJob_1	Erase	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Successful	1,824.72	1.46
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Failed	1,837.31	1.57
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Active	Running	372.36	3.6
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Failed	1,851.44	1.59
QASWNETW...	HA:0 ID:3 LU...	VerifyJob_1	Verify	Scheduled	On Hold	0	0
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	InventoryJob...	Inventory	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	VerifyJob_1	Verify	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	RetentionJo...	Retention	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	RewindJob_1	Rewind	Completed	Successful	0	0
QASWNETW...	HA:0 ID:3 LU...	CatalogJob_1	Catalog	Completed	Successful	533.86	102.99
QASWNETW...	HA:0 ID:3 LU...	BackupJob_...	Backup	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	BackupJob_1	Backup	Active	Running	0	0
QASW51SV...	HA:0 ID:0 LU...	BackupJob_1	Backup	Completed	Cancelled	0	0
QASW51SV...	HA:0 ID:0 LU...	InventoryJob...	Inventory	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	CatalogJob_...	Catalog	Completed	Cancelled	0	0
QASW51SV...	HA:0 ID:0 LU...	EraseJob_1	Erase	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	InventoryJob...	Inventory	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	CatalogJob_1	Catalog	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	BackupJob_1	Backup	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	BackupJob_1	Backup	Completed	Successful	0	0
QASW51SV...	HA:0 ID:0 LU...	BackupJob_1	Backup	Completed	Cancelled	0	0

REMOTE BACKUP SERVER PROBLEM INVESTIGATION AND ADMINISTRATION

Administrators will use the ExecView Console as their window into how network-wide backup operations are proceeding. When problems occur, ExecView will alert and notify visually via the console and physically through MAPI-compliant telecommunications. When problems in the field warrant further investigation the remote server where the issues reside can be accessed directly via the Backup Exec Remote Administrator.

The Backup Exec Remote Administrator allows any Backup Exec server to be administered remotely from any other Backup Exec server. In the case of a distributed backup server network, IT personnel will connect to the remote backup server from the central IT site via the server dialog box. Complete login information is required for system security. Once connected, the remote administration console will connect to the services running on the backup server. IT personnel will now be able to operate the remote backup server as though they were running that server's administrative console locally.

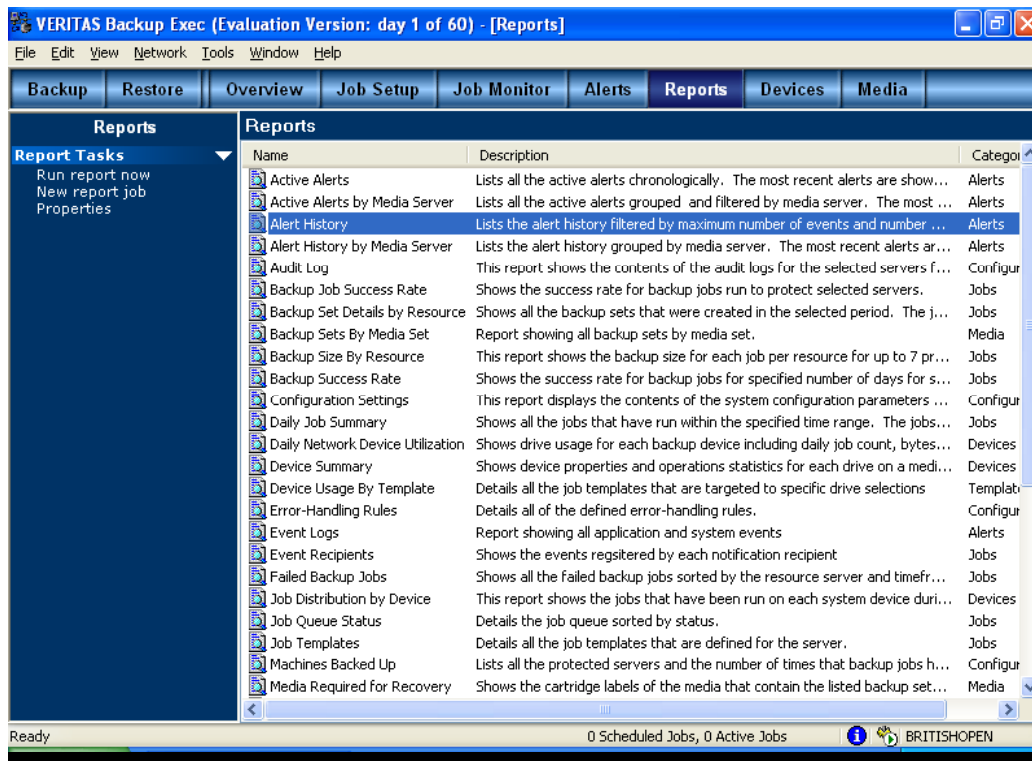
SINGLE AND MULTI-SERVER REPORTING

Backup Exec 9.0 for Windows Servers includes 14 standard reports that provide detailed information about the single local server on which it's installed. Some of these reports are generated immediately on demand by the user but cannot be scheduled. When the report is generated, it is viewable on the job monitor and is saved in the Backup Exec database.

The Admin Plus Pack Option includes 24 advanced reports with the ability to schedule report generation to run as a job at specified times or on a recurring schedule and the ability to distribute reports to users via e-mail or printer. This capability is key for those responsible to demonstrate a quality of service (QOS) standard has been met and that business-critical data has been effectively protected. As demonstrated in a recent online survey performed by InfoStor in August 2002, 36% of the respondents said that not knowing whether they were adequately backing up their data was their biggest problem. Another 25% cited the difficulty of managing multiple backup platforms or the ability to restore data.

Today's business climate requires many companies to meet corporate, local, and federal government standards for protecting their assets and proving to management and shareholders that data-loss risks have been minimized. Storage administrators may use the Admin Plus Pack Option capabilities to track their protection and recovery services and even bill-back individual departments on a regular basis.

All reports are generated using Crystal Reports and can be viewed and printed in an HTML format.



The fourteen reports included standard with Backup Exec deal with information generally confined to a single Backup Exec server. These reports include Active Alerts, Alert History, Configuration Settings, Device Summary, Event Logs, Media Vault Contents, and Robotic Library Inventory. The twenty-four additional reports included with

APPO generate information applicable to multiple Backup Exec servers and are designed specifically to assist with the management of distributed backup server networks. These twenty-four additional reports include:

- Active Alerts by Media Server
- Alert History by Media Server
- Backup Job Success rate
- Backup Size by Resource
- Backup Success Rate by Resource
- Daily Job Summary
- Backup Set Details by Resource
- Daily Network Device Utilization
- Event Recipients
- Failed Backup Jobs
- Job Distribution by Device
- Job Queue Status
- Job Templates
- Machines Backed Up
- Media Required for Recovery
- Move Media to Vault
- Overnight Summary
- Problem Files
- Recently Written Media
- Resource Risk Assessment
- Retrieve Media from Vault
- Scheduled Server Workload
- Template Definition Usage
- Template Drive Usage

EASY AND CONVENIENT ANY-TO-MANY OPERATION

The Backup Exec solution for managing distributed backup server networks allows any Backup Exec server licensed with the Admin Plus Pack Option to deploy Backup Exec, copy jobs, templates, and selection lists, and report on any other Backup Exec server(s) also licensed with the Admin Plus Pack Option. In addition, any Backup Exec server can monitor any other Backup Exec server(s) using the ExecView Console. Finally, any Backup Exec server can directly manage any other Backup Exec server using the Backup Exec Remote Administrator.

No special, costly “central management” server software is required that forces backup operators to work exclusively from a fixed server console. The solution only requires all backup servers that use or receive the benefits of the Admin Plus Pack Option to be licensed with Backup Exec 9.0 for Windows Servers and the Admin Plus Pack Option. The ExecView Console and the Backup Exec Remote Administrator are included free-of-charge with Backup Exec 9.0 *for Windows Servers*.

SUMMARY

For many organizations with servers deployed in different remote locations, Backup Exec 9.0 for Windows Servers offers a complete data protection and backup server deployment and management solution when teamed with the Admin Plus Pack Option. This Backup Exec solution allows IT backup administrators to manage all distributed backup servers from a single data center console eliminating the need to travel to any remote site. The Backup Exec solution is highly scalable and designed for reliability in lower-quality data transmission environments. The solution set is also extremely cost-effective – the software costs are licenses for Backup Exec and the Admin Plus Pack Option, and no additional hardware is required beyond what Backup Exec is currently installed on. Organizations that must deploy a large number of distributed remote backup servers that are “cookie-cutter” images of themselves, will see the greatest cost benefits as the solution minimizes an administrator’s repetitive deployment and management tasks.

In summary, the Backup Exec 9.0 for Windows Servers solution includes:

1. Complete backup server deployment
2. Backup job development and setup
3. Backup job and server monitoring
4. Alert and notification
5. Remote problem investigation
6. Remote server administration
7. Single and multi-server historical reporting

VERITAS Software Corporation
Corporate Headquarters
350 Ellis Street
Mountain View, CA 94043
650-527-8000 or 866-837-4827

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