

BrightStor[®] ARCserve[®] Backup for Windows

Getting Started

r11.5



Computer Associates®

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Chapter 1: Introducing BrightStor ARCserve Backup

BrightStor® ARCserve® Backup is a high-performance data-protection solution that addresses the needs of businesses with heterogeneous environments. It provides flexible backup and restore performance, easy administration, broad device compatibility, and unsurpassed reliability. It helps you to maximize your data-storage abilities by allowing you to customize your data protection strategies based on your particular storage requirements. In addition, the flexible user interface allows advanced configurations and provides an easy, cost-effective way for users at all levels of technical expertise to deploy and maintain an extensive range of agents and options.

BrightStor ARCserve Backup r11.5 for Windows is the next generation in the BrightStor ARCserve Backup family of products. It builds upon the features of both BrightStor ARCserve Backup and BrightStor Enterprise Backup while providing new functionality to help you maximize your backup and restore performance. BrightStor ARCserve Backup delivers comprehensive data protection for distributed environments and provides assured virus-free backup and restore operations. An extensive set of options and agents extends data protection throughout the enterprise and delivers enhanced functionality, including online hot backup and restore of application and data files, advanced device and media management, and seamless disaster recovery.

Storage Requirements on the Rise

As businesses grow, so do their storage requirements and data-protection environments can become extremely complex. As a result, businesses demand exceptional flexibility from software tools. To meet the rising demand to manage data growth and round-the-clock availability, many organizations are looking to deploy the latest storage technology, such as Storage Area Networks (SANs) and Network Attached Storage (NAS). The ideal data protection solution must address the business demands of performance and availability, scale with the environment, and leverage new storage paradigms such as NAS, SANs, and Serverless SAN backup.

BrightStor ARCserve Backup offers the performance, security, flexibility, and capacity needed to back up today's databases, applications, networks, and file systems across LANs and SANs. It performs backup tasks without impacting production systems and imposes minimal CPU overhead, ensuring anytime, anywhere access to critical systems.

BrightStor ARCserve Backup provides the following benefits:

- **Centralized Cross-platform Management:** The easy-to-use Graphical User Interface (GUI) facilitates simplified administration for cross-platform and remote environments. Advanced management functionality allows you to monitor and administer consistent backup policies throughout the environment. From one centralized console, you can back up, copy, and restore any machine and other servers in your network, group preferred BrightStor ARCserve Backup servers, view job status, monitor active jobs, view activity logs, administer BrightStor ARCserve Backup host database systems, and customize reports.
- **Unmatched Performance:** BrightStor ARCserve Backup is the fastest backup solution in the industry. Its innovative data movement methods have recorded minimal CPU utilization, ensuring the ongoing availability of mission-critical application processing time.

- **Unlimited Scalability:** The BrightStor ARCserve Backup solution grows seamlessly with your environment. Its extensive set of options, file system and application agents, support for large storage systems, and highly-scalable index database, with the capacity to hold billions of transaction records, all contribute to its superior scalability.
- **Unparalleled Flexibility:** BrightStor ARCserve Backup is simple to install, configure, and use. In addition to its easy-to-use GUI, BrightStor ARCserve Backup provides a comprehensive command line interface. These features, the large set of available options, and the ability to field-enable media devices on site during deployment, give you the flexibility to customize a solution that best suits your storage needs.
- **Minimized System Downtime:** Whether you need to restore a disk, a directory, a specific version of a single file, a complete file system, or a mission-critical application, BrightStor ARCserve Backup restores your data quickly and easily, ensuring the availability of your critical data.
- **Non-Disruptive Application Protection:** Application availability is crucial to business success. BrightStor ARCserve Backup delivers all of the components you need for a complete data-protection solution. These components are critical when backing up databases, as database availability can determine business continuity.

Purpose of This Guide

This guide introduces you to BrightStor ARCserve Backup. By the time you have finished reading this guide, you will have an overview of the wide scope of the product and its usability will be familiar to you. It is important to us that you feel comfortable with BrightStor ARCserve Backup before you begin to use it.

Enhanced Functionality

BrightStor ARCserve Backup includes the Enterprise Module, giving you the ability to deploy features previously included in BrightStor Enterprise Backup.

The Enterprise Module is required to use the following separately available options:

- BrightStor®ARCserve®Backup Enterprise Option for VSS Hardware Snap-Shot
- BrightStor®ARCserve®Backup Enterprise Option for IBM 3494
- BrightStor®ARCserve®Backup Enterprise Option for Microsoft SQL using HDS Snap-Shot
- BrightStor®ARCserve®Backup Enterprise Option for Microsoft SQL using HP-XP Snap-Shot
- BrightStor®ARCserve®Backup Enterprise Option for StorageTek ACSLS

In addition, the Enterprise Module provides you with the ability to deploy a number of enhanced features, including the following:

- Multistreaming
- Multiplexing up to 32 streams
- Multistriping Microsoft SQL Server backup and restore
- Dynamic device sharing between SAN and NAS servers
- Media Management Option

Distinctive BrightStor ARCserve Backup Features

BrightStor ARCserve Backup offers a number of key features to improve performance, increase data availability, simplify administration, and improve data protection.

Centralized Monitoring and Administration

BrightStor ARCserve Backup gives you the ability to monitor all of your data protection tasks. Its domain management architecture helps you to configure and manage environment security and administer consistent organization-wide policies from a single console.

Extensive Platform Support

Using a wide range of client agents, BrightStor ARCserve Backup protects file systems on virtually every platform. BrightStor ARCserve Backup features optional client agents for the following:

- Windows 98, Windows ME, Windows NT 4.0, Windows 2000, Windows XP, Windows 2003, Windows 2003 64-bit Edition, and Windows XP 64-bit Edition
- All major UNIX derivatives are supported, including SUN Solaris, IBM AIX, HP-UX, and HP Tru64
- Major Linux distributions, including Red Hat, SuSE, Turbo Linux, Red Flag, Miracle Linux, SCO Linux, Asianux, and Debian
- NetWare
- Apple Mac OS X
- AS/400
- OpenVMS

In addition, it offers the optional BrightStor® ARCserve® Backup Agent for Open Files, delivering a high-performance host backup solution for Windows 98, Windows ME, Windows NT 4.0, Windows 2000, Windows XP Professional, Windows 2003, and NetWare file systems.

Comprehensive Application Protection

BrightStor ARCserve Backup helps you to protect mission-critical database and messaging applications. With its extensive set of options, including application-aware backup and restore agents for Oracle, Microsoft SQL, Microsoft Exchange, Lotus Domino, SAP R/3, Sybase, and Informix, BrightStor ARCserve Backup delivers the most comprehensive solution in the marketplace, providing high-performance backup and restore without compromising application availability.

In addition, the BrightStor® ARCserve® Backup Agent for Microsoft Exchange-Premium Add-on provides the following extended protection for Microsoft Exchange:

- Document-level restore capability allows you to restore a storage group, a mailbox, a folder, or a single message.
- Attachments shared among multiple messages are backed up only once, maximizing backup efficiency.
- Multi-threaded backup processing increases backup performance by reducing media idle time.

The BrightStor ARCserve Backup Agent for Microsoft Exchange-Premium Add-on also offers you the ability to automatically prune documents based on age, providing improved performance for Microsoft Exchange users.

Enhanced Automation

BrightStor ARCserve Backup gives you the ability to automate a number of tasks:

- Job Redirection automatically detects jobs that fail due to a media or device error and redirects those jobs to another media or device group. The BrightStor ARCserve Backup Server Admin GUI allows you to enable job redirection for specific device groups.

- Command line utilities, such as `ca_backup.exe` and `cabatch.exe`, can wait to receive a return code indicating the success or failure of a backup job before executing. In addition, you can access the functionality of the Database Manager from the command line, using the `ca_dbmgr` command.
- When you install the BrightStor ARCserve Backup Agent for Microsoft Exchange and the BrightStor ARCserve Backup Agent for Microsoft Exchange-Premium Add-on to Exchange Virtual Servers on a Windows Cluster, it automatically creates the BrightStor ARCserve Backup Agent for Microsoft Exchange Agent Notifier resource for you, so that additional configuration is not necessary.
- Job templates allow you to predefine destination and schedule information for backup jobs. You can save common job types as templates to streamline job creation. Once defined, templates allow you to create backup jobs simply by defining the backup source and submitting the job. BrightStor ARCserve Backup provides several default templates.

Improved Manageability

Several features have been added to enhance the manageability of BrightStor ARCserve Backup.

Hardware Errors

BrightStor ARCserve Backup provides support for DLTSage. DLTSage reports detailed information, warnings, and error messages for device and media status, pinpointing the source of hardware errors and making error handling easier and more accurate. In addition, DLTSage enables BrightStor ARCserve Backup to distinguish hardware faults from media errors and handle them separately.

Report Management

The Report Writer allows you to design report templates you can use to generate meaningful reports in Comma Separated Value (CSV) or eXtensible Markup Language (XML) format. You can schedule custom report generation using the Job Scheduler Wizard or initiate reports manually using the Report Writer. In addition, you can email reports as necessary.

Default Report Set

A comprehensive set of default reports can be launched directly from the Report Manager.

New reports include:

- Disk Staging Migration Report: Provides migration status of data backed up using the Disk Staging Option.
- Disk Staging Purge Failed Report: Provides information about backup sessions that did not purge from the staging device.
- Disk Staging SnapLock Status Report: Provides information about backup sessions on the staging device with SnapLock protection enabled.
- Disk Staging Summary Report: Provides information about a specific job or a group of jobs based upon a user-specified range of dates.

Job Preflight Check

The Job Preflight Check allows you to find and correct problems in jobs on local and remote servers before the jobs run, allowing you to proactively reduce the number of job failures due to problems with security, network connection, or media availability.

Log Enhancements

The following enhancements have been made to various BrightStor ARCserve Backup logs:

- You can now prune the Activity Log to remove entries based on date and time, allowing you to manage Activity Log entries more easily and reduce the size of the Activity Log.
- You can prune the Job Log to remove records created before a specified date and time, allowing you to reduce the size of the Job Log for greater manageability.
- You can now configure the location of the Tape Log to locate it on a non-critical volume. Using a new registry key, you can override the default Tape Log location. The key value, a string containing the path to be used, can be found at:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\BrightStor  
ARCserve Backup\Base\TapeEngine\Debug\LogPath.
```

If the key does not exist, the default path, the \log subdirectory under the product installation directory, is used.

- Using the Server Admin, you can configure the server to place catalog files in the server's home directory rather than merging them into the database to prevent the BrightStor ARCserve Backup database from growing too large, affecting performance.

First Time Home Page and User Tutorial

The first time you start BrightStor ARCserve Backup, a tutorial called My First Backup introduces you to the product and its major functions. The tutorial guides you through the steps needed to set up a file system device and perform your first backup and restore operations.

Backup Wizard Supports Tape Library Backups

You can now create backup jobs using tape libraries from the Backup Wizard.

Library Level Tape Eject Option

You can now specify in Device Configuration to eject media after backup jobs finish. The default setting is Off (do not eject). Tapecopy jobs are also governed by this configuration option. This option protects against data loss by preventing multiple jobs from using the same media.

Device Filters

Some devices that can be installed on a backup server cannot be controlled by BrightStor ARCserve Backup. The Device Manager now allows you to filter these devices from control by the Tape Engine.

Increased Media Flexibility

Several new features and enhancements increase the media flexibility available with BrightStor ARCserve Backup:

Write Once Read Many (WORM) Support

BrightStor ARCserve Backup allows you to back up your data either to rewriteable media or WORM media. WORM media, with significantly longer shelf life than magnetic media, manifests secure, long-term storage for data you do not want to erase.

BrightStor ARCserve Backup lets you mix WORM and non-WORM media in a library. From the Device Manager, you can identify WORM media by an icon with the letter "W" inside a red circle. In addition, BrightStor ARCserve Backup lets you specify WORM media for custom backup jobs.

The Backup Manager contains three options for Daily, Weekly, and Monthly WORM media rotations for use with GFS rotations. You can locate these options on the Backup Manager, Schedule tab, when you specify the Use Rotation Scheme option.

WORM Media Supported

BrightStor ARCserve Backup supports backing up data to the following WORM media:

- DLT WORM (DLTIce)
- STK Volsafe
- IBM 3592 WORM
- LTO3 WORM
- SAIT WORM

WORM Media Considerations

The following list describes situations that can occur when using a DLT WORM device with DLT WORM media and how BrightStor ARCserve Backup responds to such situations.

- When a backup job spans tapes and the media is WORM media, BrightStor ARCserve Backup needs WORM media to complete the job.
 - If a blank WORM media is not available, and a blank DLT WORM-capable media is available, BrightStor ARCserve Backup automatically converts blank DLT media to DLT WORM media and then completes the backup job.
 - If WORM media is not available for a WORM job to continue, BrightStor ARCserve Backup does not convert non-blank media to WORM media.
- When you are running a backup job that specifies Use WORM Media and there is no WORM media available, BrightStor ARCserve Backup may convert blank WORM-capable media to WORM media for the job.

Note: For these scenarios, the available WORM media must be DLT SDLT-II or higher.

WORM Media Limitations

If you use WORM media, certain BrightStor ARCserve Backup features, specifically those involving media pools, reformatting, and overwriting or reusing media, are disabled because of the nature of the media. These limitations include the following:

- You cannot erase WORM media.
- You cannot submit an Overwrite job to WORM media.
- You cannot format WORM media unless the media is blank.
- You cannot use WORM media for multiplexing jobs.
- BrightStor ARCserve Backup does not automatically assign WORM media to the Scratch Set in a media pool. WORM media cannot be recycled and as such, is always assigned to the Save Set in a media pool.
- BrightStor ARCserve Backup cannot use WORM media with optical devices, file system devices, and the BrightStor ARCserve Backup Tape RAID Option.
- In cross-platform SAN environments, UNIX and NetWare do not support WORM media.

Shared Media Pool

The Shared Media Pool helps you to maximize usage for your rewriteable media. When multiple backup jobs share the same media pool, backup jobs can append to more of the available media rather than overwriting new media.

Global Scratch Set

The Global Scratch Set allows you to share the rewriteable media in the Scratch Set of any media pool with all backup jobs utilizing Scratch Set media. Any custom, simple rotation, or Grandfather-Father-Son (GFS) rotation backup operation can access the media in the Global Scratch Set, allowing you to use media more efficiently and ensuring media availability.

Tapecopy Options

The Tapecopy command has been enhanced to increase the tapecopy options available. Copy methods have been expanded to include disk-to-tape copy capabilities. You can now copy individual sessions, as well as entire tapes, allowing you to take advantage of session-level tape-to-tape, tape-to-disk, and disk-to-tape copying. In addition, you can now specify tapecopy operations to overwrite existing tapes or to append data to the destination media, and destination media can be multiplexed.

Remote File System Device Support

File system device support has been extended to include remote devices. You can now create file system devices accessible through a network share.

Bare Metal Disaster Recovery

BrightStor ARCserve Backup is the only high-performance data protection solution to offer complete bare metal disk-based disaster recovery for Windows. Unlike most solutions that require users to recover servers manually, BrightStor ARCserve Backup enables you to recover Windows servers with a set of disaster recovery disks. This feature enables you to reboot the server, reinstall the operating system, and recover the system seamlessly, using the last full backup tape, in a matter of minutes. In the event of a disaster in a business environment requiring round-the-clock systems availability, the ability to recover quickly can translate into millions of dollars of savings.

BrightStor ARCserve Backup provides high performance data recovery with BrightStor® ARCserve® Backup Disaster Recovery Option. This option allows you to recover your systems quickly, easily, and reliably in the event of a disaster. BrightStor ARCserve Backup Disaster Recovery Option dramatically reduces the time it takes to recover your data after a disaster.

Multiplexing

Multiplexing allows multiple jobs to write to the same media simultaneously, keeping your backup hardware running at maximum capacity for the entire backup process. With multiplexing, you can back up your data quickly, with minimal server or application impact, to stay within shrinking backup windows. Multiplexing also allows you to use tape libraries, tape drives, and tape cartridges more efficiently.

Multiplexing tape devices are identified by an icon with the letter M in a blue circle. While in use, the blue circle remains stationary while the tape icon rotates.

Note: Multiplexing jobs are not supported on WORM media.

eTrust Antivirus

BrightStor ARCserve Backup protects your critical data with eTrust™ Antivirus, the award-winning antivirus solution from Computer Associates, providing superior protection against today's most prevalent security threat—viruses.

Unicenter Network and Systems Management Integration

Integration with Unicenter® Network and Systems Management enables BrightStor ARCserve Backup to send messages to Unicenter consoles and World View repositories when messages concerning events occurring during backup and restore operations are generated.

Laptop and Mobile User Protection

BrightStor ARCserve Backup is now integrated with BrightStor® ARCserve® Backup for Laptops & Desktops (formerly BrightStor® Mobile Backup), the innovative backup solution for laptop and mobile users from Computer Associates.

BrightStor ARCserve Backup for Laptops & Desktops users can now use BrightStor ARCserve Backup to maximize their data-protection strategy:

- You can schedule backup jobs to reliably and consistently protect the data on your BrightStor ARCserve Backup for Laptops & Desktops server.
- You can use BrightStor ARCserve Backup to move data from your BrightStor ARCserve Backup for Laptops & Desktops server to backup media, maximizing your BrightStor ARCserve Backup for Laptops & Desktops server disk space and archiving your data. If a BrightStor ARCserve Backup for Laptops & Desktops client requests a restore of the archived data, BrightStor ARCserve Backup initiates the restore operation.

BrightStor Portal Integration

By default, BrightStor ARCserve Backup installs the BrightStor® Portal iGateway and iSponsor to facilitate communication between BrightStor Portal and BrightStor ARCserve Backup. Integration with BrightStor® Portal r11.1 offers you more control and reporting functions to help you collect information from BrightStor ARCserve Backup to be managed by BrightStor Portal.

SAN Option

The BrightStor® ARCserve® Backup Storage Area Network (SAN) Option lets you fully exploit leading-edge Fibre Channel technology. SANs offer numerous benefits to organizations, including high-speed backup and restore over a fast, fiber-optic storage backbone, extended distances for storage devices, advanced device management tools, total scalability of the storage network, and the ability to have multiple servers share storage devices. The BrightStor ARCserve Backup SAN Option can be configured to work across firewalls by allowing you to define your own system ports and IP addresses.

BrightStor ARCserve Backup can dynamically utilize the backup devices shared across a SAN between a Network Attached Storage (NAS) server and the BrightStor ARCserve Backup server for native BrightStor ARCserve Backup operations and Network Data Management Protocol (NDMP) backup jobs.

In addition, you can configure BrightStor ARCserve Backup SAN servers as primary or distributed servers in Microsoft Cluster environments, providing enhanced fault tolerance for device operations.

Note: The BrightStor ARCserve Backup SAN Option requires the BrightStor® ARCserve® Backup Tape Library Option.

NAS Support

With the BrightStor® ARCserve® Backup NDMP NAS Option, BrightStor ARCserve Backup provides a reliable backup and restore tool for NAS devices with Network Data Management Protocol (NDMP). As businesses continue to leverage different topologies to manage the Internet-driven data explosion, NAS plays a significant role, due to its reliability, availability, and low total cost of ownership.

BrightStor ARCserve Backup now includes Windows-powered NAS/Windows Storage Server 2003 support, so that all messages for the manager appear in all Terminal Services sessions for informational purposes. This allows you to manage headless servers (Windows based NAS devices) from Terminal Services. In addition, you can now start the manager from a Terminal Services session and you can start the BrightStor ARCserve Backup console from the Windows console.

Enhancements have also been made to the BrightStor ARCserve Backup NDMP NAS Option to dramatically reduce the backup window by shortening the time needed to add file records and lessening the CPU requirement when generating the list of files. In addition, the option lets you utilize backup devices shared across a SAN between a NAS server and the BrightStor ARCserve Backup server for NDMP-based backup operations.

Image Backup

The BrightStor® ARCserve® Backup Image Backup Option enables high-speed backups by creating a snapshot image of the drive, bypassing the file system, and reading data from the disk as though the entire drive were a single large file.

If a volume cannot be frozen or locked for backup, the backup operation fails by default. The BrightStor ARCserve Backup Image Backup Option has been enhanced to allow you to specify that BrightStor ARCserve Backup Image Backup Option should attempt to finish the backup or retry the backup a number of times, with a specified delay interval between each retry. You can configure this behavior through the GUI.

Oracle Databases

The BrightStor® ARCserve® Backup Agent for Oracle provides you with the ability to back up and restore your Oracle databases using multistreaming. This Enterprise Module feature allows you to back up and restore multiple tablespaces simultaneously, by breaking up your backup and restore jobs into multiple jobs and running these jobs on different media in different drives at the same time. This ability is especially useful when tape drives are faster than the backup source.

In addition, BrightStor ARCserve Backup performs serverless backups of your Oracle databases in SAN environments, delivering the fastest and most reliable data protection solution available for Oracle. With its high-performance backup agents leveraging Recovery Manager (RMAN)-like interfaces, BrightStor ARCserve Backup offers the most comprehensive Oracle solution in the marketplace.

BrightStor ARCserve Backup Agent for Oracle supports Oracle 10g installations. Because legacy backups are not supported on Oracle 10g, the agent detects the Oracle 10g installation and disables agent browsing and backups.

Microsoft SQL Server Agent

The BrightStor® ARCserve® Backup Agent for Microsoft SQL Server provides you with the ability to back up and restore databases using single or multiple data stripes, depending on your storage device configuration. The MS SQL backup and restore interface is called Virtual Device Interface (VDI). Using multiple stripes from VDI can dramatically reduce backup and restore time, and multiple stripes can be received using multiple processes.

Note: To use multistriping, your storage hardware must be able to support this feature and must deliver the multiple stripes with high throughput. Check with your storage hardware vendor to ensure that this feature is supported on your storage devices. In addition, you must have the BrightStor ARCserve Backup Enterprise Module to use multistriping.

Microsoft SharePoint Agent

The BrightStor ARCserve Backup Agent for Microsoft SharePoint provides the ability to back up and restore Microsoft SharePoint Portal Server 2003 and Microsoft Windows SharePoint Services data.

Although SharePoint environments can be complex and distributed across a number of machines, the agent provides full protection of SharePoint installations by consolidating all SharePoint data into a single node in the interface on the BrightStor ARCserve Backup server. SharePoint content consists of distributed SharePoint databases, backward-compatible document libraries, Single Sign-On (SSO), and search indexes. The agent lets you use the features of BrightStor ARCserve Backup to easily manage the back up and restore of all SharePoint data on your network.

Support for Multiple Instances of Sybase

The BrightStor® ARCserve® Backup Agent for Sybase provides application-aware backup and restore functionality for Sybase. The option allows you to back up and restore multiple instances of Sybase Adaptive Server on computers running Windows 2000 or Windows 2003.

Lotus Domino

The BrightStor® ARCserve® Backup Agent for Lotus Domino provides application-aware backup and restore operations for Lotus Domino. The agent offers support for Domino Server partitioning, enabling you to back up and restore multiple instances of Domino Server running on a single computer. On a partitioned Domino Server, all partitions share the same Domino program directory and set of Domino executable files, although each partition has its own Domino data directory, NOTES.INI file, and other administrative databases.

In addition, the agent supports backup filtering of Lotus Domino database files, allowing you to exclude particular files from backup operations. Backup filtering also allows you to back up a Domino server using multiple BrightStor ARCserve Backup servers, with each BrightStor ARCserve Backup server backing up only certain types of files.

Advantage Ingres Database Support

The BrightStor® ARCserve® Backup Enterprise Option for Advantage™ Ingres® provides protection for your Advantage Ingres databases. The option enables you to back up, restore, and archive data from your Advantage Ingres databases quickly and efficiently, and lets you recover your data easily after a disaster.

64-Bit Platform Support

You can install BrightStor ARCserve Backup on a variety of Windows 64-bit operating systems. This includes installation on the BrightStor ARCserve Backup server and any other computer in your environment. For information about the 64-bit Windows platforms supported and BrightStor ARCserve Backup Agents and Options supported by 64-bit Windows platforms, see the readme file.

Due to architectural differences between 64-bit and 32-bit Windows platforms, various elements of 64-bit operating systems cannot be accessed by 32-bit applications. These elements include areas of the Windows System Registry, system settings files included in a System State backup, and Volume Shadow Copy Service writers. To overcome these limitations, and to successfully perform backup and restore operations when the BrightStor ARCserve Backup server is running a 64-bit version of Windows, you must install the 64-bit version of the BrightStor ARCserve Backup Client Agent on the BrightStor ARCserve Backup server.

For information about performing backup and restore operations on 64-bit Windows platforms, see the *Administrator Guide*.

Disk Staging Option

Using the Disk Staging Option you can back up data to a temporary disk storage location, known as a staging area, and then copy data to permanent storage media, or purge sessions from the staging device at a later time. When necessary, the disk staging option lets you restore data directly from the device.

BrightStor ARCserve Backup lets you define copy and purge policies for your staging groups. Additionally, you can perform disk staging backup and restore operations using either the Backup Manager, the Restore Manager, or the manager's corresponding command line utilities.

The Disk Staging Option provides you with the capability of streaming up to two jobs simultaneously. To stream more than two jobs simultaneously, you must license the Disk Staging Option. The licensed version of the Disk Staging Option lets you stream up to 32 simultaneous streams of data.

To help ensure that your enterprise complies with regulatory data-retention requirements, you can perform backup to disk staging device operation using SnapLock protection. SnapLock protection prevents you from purging and over-writing backup data until the specified retention date elapses.

Note: SnapLock™ is technology from Network Appliance that provides non-erasable, non-rewritable, Write Once, Read Many (WORM) data security. SnapLock is available on any network attached storage (NAS) device from Network Appliance that supports ONTAP™ version 7.0 or later.

For more information about performing backup and restore operations using the Disk Staging Option, see the *Administrator Guide*.

CA Technology Services: Delivering Business Value On Your Terms

CA Technology Services is a global organization of highly trained, experienced professionals who are determined to provide you with the technical expertise you need, when and how you need it. From implementing a CA solution to helping you get the most out of the CA technology that you have, CA Technology Services is committed to delivering business value to you on your terms.

Our professionals understand your unique business needs and work closely with you to assess which technology is right for your business. Whether the assignment is large or small or you need a custom, stand-alone, or packaged solution, we tailor our efforts to meet your business demands.

By offering a broad range of flexible services, we help you maximize your investment in our technology, achieve more efficient IT performance, and better manage your infrastructure, security, storage, applications, and data. Such flexibility ensures that you reach your time-to-market goals while improving your business performance.

Why not ask your CA representative for more information about how a CA Technology Services professional can help your organization get the most out of your CA business solutions?

Education and Training: Maximizing the Business Value of CA Technology

CA Technology Services education and training is focused on helping you realize streamlined implementations, reduced time-to-value, and improved productivity to maximize the business value of CA technology. We deliver instructor-led, self-paced, and extended learning solutions across CA's complete, integrated, and open solutions for enterprise IT management (EIM) and partner with leading value-added education providers to extend our course offerings in enterprise systems management, security management, storage management, and business service optimization. Our dynamic team of certified and experienced professionals transfers real-time expertise in optimizing CA software products and leveraging proven IT process models that educates your organization about how to make practical application of best practices in your IT environment.

For a complete list of education and training courses, visit <http://ca.com/education>.

Computer Associates: Commitment, Quality, Innovation

For more than a quarter century, CA has been developing and supporting software solutions that are currently used by more than 99 percent of the Fortune 500 companies in more than 100 countries. CA is committed to offering leading technologies in flexible partnerships to help you derive full value from your software investments.

At Computer Associates, we are committed to offering simple and meaningful solutions to your complex problems, and to delivering management solutions that offer security, reliability, availability, and performance. We work hard to achieve the highest levels of quality in our solutions to help you meet your changing business needs.

To meet these needs, CA's world-class solutions address all aspects of process management, information management, and infrastructure management with six focus areas:

- Enterprise management
- Security
- Storage
- Portal and business intelligence
- Database management
- Application life cycle management and application development

In addition, our innovative approach to technology is carried over into our innovative business solutions. From a revolutionary new business model to a dedicated customer relationship organization, CA is responding to your changing business needs.

We know what it takes to deliver and support valuable solutions 24 hours a day, 7 days a week, 365 days a year while maintaining the highest standards for quality and innovation:

- We are the first global enterprise software company to meet the exacting standards for worldwide ISO 9001:2000 certification.
- We have earned over 150 patents for innovative software solutions.
- We have the highest caliber software developers and consultants in the industry.

We also know you expect us to stand by our commitments. And we do.

For More Information

After reading this *Getting Started*, you can refer to the numerous resources available to you for additional information. Your product CD contains instructional documents that showcase your software and provide detailed explanations about the product's comprehensive, feature-rich components.

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Customer Support at <http://ca.com/support>.

Chapter 2: Installing BrightStor ARCserve Backup

BrightStor ARCserve Backup provides unrivaled data storage management capabilities for an entire spectrum of users on most system platforms with its powerful storage technology.

This chapter provides information on installing, upgrading, and licensing BrightStor ARCserve Backup. In addition, it provides information on integrating BrightStor ARCserve Backup with BrightStor® High Availability (formerly SurviveIT™) and with Microsoft Management Console.

Preinstallation Considerations

Before you install BrightStor ARCserve Backup:

- Ensure that you are running, at minimum, Internet Explorer 6.0 with the latest service packs applied.
- Connect your storage devices to the machine you designate as your BrightStor ARCserve Backup server.
- If you are using a fibre or SCSI device, ensure that your BrightStor ARCserve Backup server has a SCSI/Fibre controller or adapter supported by both Windows and BrightStor ARCserve Backup. BrightStor ARCserve Backup can support an unlimited number of installed SCSI controllers.

Note: To ensure that your hardware devices are compatible and that BrightStor ARCserve Backup can communicate with your system, obtain the latest Certified Device List from the Computer Associates web site, ca.com.

- If you are installing BrightStor ARCserve Backup Database Backup Agents on a machine on which you are running eTrust™ InoculateIT® or eTrust Antivirus, you must apply the following driver update to both the BrightStor ARCserve Backup server and the client machine:

<http://supportconnectw.ca.com/premium/antivirus/downloads/nt/4.5/ildrvupdate.asp>

BrightStor High Availability Integration

If you are currently using BrightStor® High Availability, you must apply the latest patches for BrightStor High Availability before installing BrightStor ARCserve Backup.

You must install BrightStor High Availability before you install BrightStor ARCserve Backup. If BrightStor ARCserve Backup is already installed, contact Computer Associates Customer Support.

When you install BrightStor ARCserve Backup on a system on which BrightStor High Availability/Survive™ /IT is installed and running, you must stop the Replication Task before restarting the system to allow BrightStor ARCserve Backup to update shared files. Because of this requirement, your system is unprotected by BrightStor High Availability/SurviveIT while it restarts.

Upgrade Considerations

If you are currently using one of the following versions of BrightStor ARCserve Backup or BrightStor Enterprise Backup, you can upgrade your existing environment with ease:

Note: We recommend using the Master Setup when upgrading.

- BrightStor® ARCserve® 2000 Service Pack 5
- BrightStor® ARCserve® Backup Version 9.01
- BrightStor® ARCserve® Backup r11
- BrightStor® ARCserve® Backup r11.1
- BrightStor® Enterprise Backup Version 10 Service Pack 5 (English) or Service Pack 4 (International)
- BrightStor® Enterprise Backup Version 10.5 Service Pack 1

Note: If you had previously installed BrightStor ARCserve Backup for Windows r11 and the BrightStor ARCserve Backup for Windows Agent for Open Files for VSS support only, you can upgrade BrightStor ARCserve Backup r11, install the new BrightStor ARCserve Backup for Windows Client for VSS Software Snap-Shot and manually uninstall the BrightStor ARCserve Backup Agent for Open Files after the upgrade is complete.

Recent Version Automatic Upgrades

You can automatically upgrade from BrightStor ARCserve 2000, BrightStor ARCserve Backup r11, and BrightStor ARCserve Backup r11.1 during the installation of BrightStor ARCserve Backup r11.5.

Older Version Upgrades Require Uninstall

If you are currently using BrightStor® ARCserve® 2000, you can upgrade the client and database agents. Although the Setup program uninstalls BrightStor ARCserve 2000 prior to installing BrightStor ARCserve Backup r11.5, your existing database files will be retained.

BrightStor Enterprise Backup Migration

If you are currently using BrightStor Enterprise Backup Version 10.0 (Service Pack 4 or Service Pack 5) or BrightStor Enterprise Backup Version 10.5, you can automatically migrate your environment to BrightStor ARCserve Backup r11.5.

After migrating from BrightStor Enterprise Backup Version 10.0 or BrightStor Enterprise Backup Version 10.5, you must apply new licensing using the mergeolf.exe file in the C:\Program Files\CA\SharedComponents\CA_LIC directory. Contact your account representative to obtain a new license.

Backward Compatibility

The BrightStor ARCserve Backup r11.5 server can back up data using agents from BrightStor ARCserve Backup r11.1, BrightStor ARCserve Backup r11, BrightStor ARCserve Backup Version 9.01, BrightStor ARCserve 2000 Service Pack 5, BrightStor Enterprise Backup Version 10.5 Service Pack 1, and BrightStor Enterprise Backup 10.0 Service Pack 5.

You can use the BrightStor ARCserve Backup r11.5 Manager to view and manage servers using BrightStor ARCserve Backup Version 9.01, BrightStor ARCserve Backup r11, BrightStor ARCserve Backup r11.1, or BrightStor Enterprise Backup Version 10.5.

In addition, you can restore data from backup tapes and load job scripts created using all previous versions BrightStor ARCserve Backup and BrightStor Enterprise Backup.

When backing up using agents, the version of BrightStor ARCserve Backup you use must be equal to or greater than the version of the agent you want to back up. You cannot use agents from BrightStor ARCserve Backup r11.5 with any previous version of the BrightStor ARCserve Backup server, including BrightStor ARCserve Backup r11.1 and BrightStor ARCserve Backup r11.

Installation Methods

You can install BrightStor ARCserve Backup in three ways:

- **Setup Wizard:** The intuitive Setup Wizard allows you to install BrightStor ARCserve Backup effortlessly.
- **Silent Installation:** The silent installation process eliminates the need for user interaction.
- **Unicenter® Software Delivery:** Unicenter Software Delivery is a flexible tool for distributing, installing, verifying, updating, and uninstalling software from a central location.

For more information on silent installation and Unicenter Software Delivery installation, see the appendix "Using Alternate Installation Methods."

Product License Requirements

BrightStor ARCserve Backup requires that you license your product to receive authorized and uninterrupted access to the components, options, and agents. If you do not license BrightStor ARCserve Backup, it stops working 31 days after you begin using it.

There are different methods for entering license information, depending on how you purchased BrightStor ARCserve Backup. You can easily determine the method you must use by where your licensing information is located. You can find licensing information in one of the following locations:

- On the back of the product CD sleeve
- On a certificate received from the CA License Program
- On an ALP Key Certificate

The method you use to enter your licensing information differs depending on where your licensing information is located. If your licensing information is on the product CD sleeve or certificate from the CA License Program, you must use one method. If your license information is on an ALP Key Certificate, you must use another method. The following sections include information about each method.

License Key Requirements

If your licensing information is in the form of a 25-character key on the back of the product CD or on a certificate from the CA License Program, simply input the key when prompted during installation. Each component you are installing (the base product, option, or agent) requires a license key. Also, since licenses are checked on the machine where the components are running, license keys must be installed on the same machine on which you install the components. The only exception to this is BrightStor ARCserve Backup client agent licenses.

The BrightStor ARCserve Backup client agent licenses are checked by the BrightStor ARCserve Backup Server component by matching the number of systems being backed up with the number of client agent licenses it has installed. Therefore, when you install the BrightStor ARCserve Backup Server component, you are prompted to enter a license for the following components in addition to the license key for the backup server:

- BrightStor ARCserve Backup Client Agent for Windows
- BrightStor ARCserve Backup Client Agent for Linux
- BrightStor ARCserve Backup Client Agent for NetWare
- BrightStor ARCserve Backup Client Agent for UNIX
- BrightStor ARCserve Backup Client Agent for Mac OS X
- BrightStor ARCserve Backup Enterprise Option for VSS Hardware Snap-Shot

If you initially install BrightStor ARCserve Backup as a trial and have not purchased a license for any of these client agents, you need not enter a license for them. If you do have a license, it includes a count of the maximum number of agents per platform type.

The license dialogs allow you to add more licenses as your needs expand. Simply purchase the additional needed licenses and add them using one of the following methods:

- Access the License Verification Dialog by clicking the License button in the Manager Help/About dialog.
- Run CALicnse.exe, which can be found in the following directory:

`%ProgramFiles%\CA\SharedComponents\CA_LIC`

Note: You can also use calicnse.exe to view the number of client agents that you are entitled to use.

If you have not installed the base product, you can run the `bablicnse.exe` program to enter licenses for database and application agents. You can locate this program in the individual installation directories for each database agent. The `bablicnse.exe` program displays the BrightStor ARCserve Backup components and lets you enter the necessary license keys to license any components that you want to install.

Note: To add database and application agent licenses, you can also use `calicnse.exe`.

After you license your product, registration is recommended. You can register at the end of the installation process or after the product has been installed. If you choose to register after the product has been installed, use the Manager Help/About dialog to access the registration dialogs or run `CAregit.exe` located in your `CA_LIC` directory.

ALP Key Certificate

If you receive an ALP Key Certificate, your licensing information is an Execution Key found in the certificate that must be placed in the `ca.olf` file on each of the machines that are running your Computer Associates software. To simplify the process, you can obtain your current `ca.olf` file by going to `ca.com` and downloading the license file. Otherwise, you must manually edit your `ca.olf` files. For more information, see your ALP Key Certificate.

To use BrightStor ARCserve Backup client agents, you need to enter the licenses for these agents into the `ca.olf` file on the backup server you use to protect remote servers. The backup server checks to make sure client agents are licensed.

Install BrightStor ARCserve Backup

To install BrightStor ARCserve Backup:

Note: To install a cross-platform agent, you must have the BrightStor ARCserve Backup r11.5 Agent CD available to you during the installation session.

1. Insert the BrightStor ARCserve Backup CD into your CD drive, select BrightStor ARCserve Backup and click Launch.
2. From the left column on the Product Installation Browser, click Install Products. From the right column on the Installation Browser, Install BrightStor ARCserve Backup, agents, options and more to start the Master Setup executable. If Master Setup does not start, run setup.exe from the base directory on the CD-ROM.
3. The License Agreement dialog opens. You must scroll down and accept the terms of the license agreement and click I Agree to continue the installation.
4. The Customer Information dialog appears. Enter information about yourself and click Next.
5. Choose one of the following Product Licensing and Registration options:
 - Click the 25-character Key option if you possess a 25-character license key. For more information, see the section "License Key Requirements."
 - Click the ALP Certificate option if you have an ALP License certificate. For more information, see the section "ALP Key Certificate."

6. If you select the 25-character Key option, the License Key Entry dialog opens, prompting you to enter a license key for BrightStor ARCserve Backup. Enter your license key and then click Next.

If you are installing BrightStor ARCserve Backup and one or more of its agents or options, enter the license key for BrightStor ARCserve Backup. At a later point in the installation you are prompted to enter the license keys for the agents and options you are installing.

For more information about license keys, see License Key Requirements.

7. Select Local or Remote Install to access the Select Products dialog. To perform a silent installation, select the Create a Response File option. For more information on silent installation, see the appendix "Using Alternate Installation Methods."

Note: During remote installation, you may be prompted to restart your machine. You must restart the remote machine manually for remote installation to be successful.

8. To install specific components, such as agents or options, click the name of a component to view information about it in the Description field. Click the box to the left of a component to select it for installation.

Important! *If you are installing BrightStor ARCserve Backup and any of its agents or options, you should review the agent or option guide provided with BrightStor ARCserve Backup. These guides include information about any special installation procedures or configuration the agent or option requires. For example, if you are installing BrightStor ARCserve Backup on a Storage Area Network (SAN), see the Storage Area Network (SAN) Option Guide for important information on installing BrightStor ARCserve Backup on a SAN.*

- Two components, the BrightStor Portal iGateway and iSponsor, are installed by default. These components facilitate communication between BrightStor Portal and BrightStor ARCserve Backup, allowing you to collect information from BrightStor ARCserve Backup and manage it using BrightStor Portal.
- The Diagnostic Utility is also installed by default. This utility tool lets you to collect and view configuration and other information pertaining to BrightStor ARCserve Backup products to assist Computer Associates Technical Support.

If any components you select require configuration, the Setup Wizard displays the necessary configuration dialogs at the end of the installation. You can configure the component immediately or configure it later using Device Configuration. For example, if you are using a single-drive autoloader, you can direct the Setup Wizard to start Device Configuration by double-clicking the message for it on the Install Summary dialog.

9. Click Disk Information to verify that there is sufficient space on your hard drive to install a component.
10. In the Install Summary dialog, click Finish to begin copying files to your machine.
11. When prompted, enter the license key for the agent or option you are installing.

For information on installing BrightStor ARCserve Backup client agents, see the *Client Agents Guide*.

Installation Progress Logs

After you install BrightStor ARCserve Backup and any agents and options, BrightStor ARCserve Backup creates installation progress logs that you can refer to in the event that an interactive, silent, or unattended installation fails. Installation progress logs can be useful to Computer Associates Customer Support personnel if you need to contact us about an installation problem.

- Interactive installations—If installation of the BrightStor ARCserve Backup base product or any agent or option fails, you access the installation progress log from the Install Summary dialog. To open the installation progress log, double-click the error icon next to the application on the Install Summary dialog.
- Silent and unattended installations—You can access the installation progress logs from the following directory:

```
<system drive>\WINDOWS\Temp\_BS*.tmp
```

For each installation session, BrightStor ARCserve Backup creates a unique `_BS*.tmp` directory (where `*` represents a random number). Within this directory you will find a directory labeled `MACHINENAME` and a text file labeled `ProdWiz.log`. `MACHINENAME` is the machine name of the computer where you installed BrightStor ARCserve Backup.

- ProdWiz.log—Master Setup log.
- *MACHINENAME* directory—Includes log files created when you installed BrightStor ARCserve Backup and any agents and options.

For example, BrightStor.log is the log file created when you installed the BrightStor ARCserve Backup base product. If you installed the Tape and Optical Library Option, you can access the installation progress log, labeled OPTTLO.LOG, in the *MACHINENAME* directory.

Integrate with Microsoft Management Console

If you are using Windows 2000, Windows XP, or Windows 2003, BrightStor ARCserve Backup seamlessly integrates with Microsoft Management Console, allowing you to customize your access to BrightStor ARCserve Backup. Using Microsoft Management Console, you can create shortcuts so that you can quickly open the powerful BrightStor ARCserve Backup components you need, rather than accessing them using the program group.

Important! *You must install BrightStor ARCserve Backup and restart your system before you can use Microsoft Management Console to customize your access.*

To integrate with Microsoft Management Console:

1. Open a command prompt, enter mmc and press Enter or click OK. The Console screen appears.
2. From the File menu (the Console menu on Windows), select Add/Remove Snap-in.
3. In the Add/Remove Snap-in dialog, click Add. The Add Standalone Snap-in dialog appears.
4. From the Add Standalone Snap-in dialog, select BrightStor ARCserve Backup, click Add, and click Close. BrightStor ARCserve Backup appears in the Snap-ins field in the Add/Remove Snap-in dialog.

5. Click OK.
6. From the File menu (the Console menu on Windows), select Save As and enter a name for your console.

You can now access BrightStor ARCserve Backup using the customized console you created. Once you have saved and closed your console, you can access it again using the command prompt. To do so, enter mmc and press the Enter key or click OK. When the Console screen appears, from the File menu (the Console menu on Windows 2000), select Open, select the name of your console, and click Open.

Chapter 3: Understanding BrightStor ARCserve Backup Basics

This chapter discusses the concepts that form the BrightStor ARCserve Backup system, its key components, and the manner in which these components interact with one another and the surrounding environment.

Start the Program

To begin using BrightStor ARCserve Backup, you must start the program. To start BrightStor ARCserve Backup:

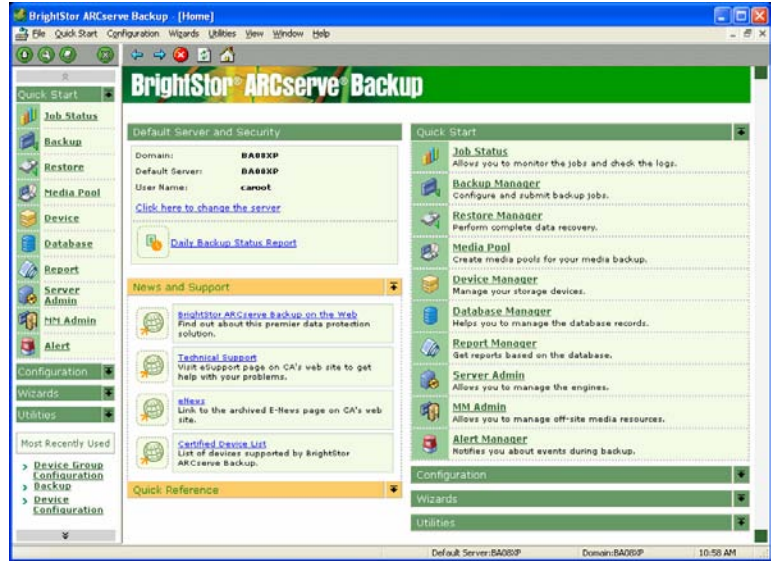
- From the Windows Start menu, point to Programs, Computer Associates, BrightStor, ARCserve Backup, and click Manager.

The BrightStor ARCserve Backup Home Page opens.

Note: The My First Backup tutorial opens the first time you use BrightStor ARCserve Backup.

BrightStor ARCserve Backup Home Page

The Home Page is the central location from which you can access all of the BrightStor ARCserve Backup managers, wizards, and utilities.



The News & Support section provides quick access to the following support tools:

- **BrightStor ARCserve Backup on the Web:** Links you to the Computer Associates web site that provides product information about BrightStor ARCserve Backup.
- **Technical Support:** Offers the latest news and information from Technical Support, including white papers, how-to documents, troubleshooting guides, patches, and more.
- **eNews:** Links you to the Storage E-News Archive page, allowing you to access technical newsletter archives providing helpful technical information from service packs, hints and tips, product updates/upgrades, and more.
- **Certified Device List:** Links you to an up-to-date list of all devices currently supported by BrightStor ARCserve Backup.

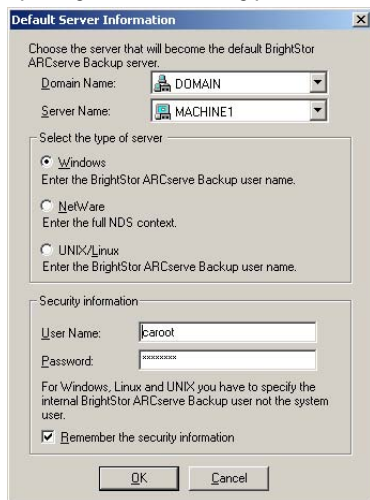
Log On

From the Home Page, you can log on to BrightStor ARCserve Backup. The first time you log on to BrightStor ARCserve Backup, you must log on as caroot (which automatically has administrator privileges) and provide the appropriate password in the password field. If you do not log on as caroot, you cannot use wizards, managers, or utilities, or perform any action.

Once you have logged on, you can change the password for the caroot user and add new users using the BrightStor ARCserve Backup command line utility, `ca_auth.exe`. For more information on caroot and managing user profiles, see `ca_auth` in the appendix "Using Command Line Utilities" in the *Administrator Guide*.

To log on to BrightStor ARCserve Backup, perform the following steps:

1. Select the Click Here to Change Server link on the upper left side of the BrightStor ARCserve Backup Home Page. The Default Server Information page appears.
2. To change the default server, select a new server, and specify the server type.



The screenshot shows a dialog box titled "Default Server Information" with a close button (X) in the top right corner. The dialog contains the following fields and options:

- Domain Name: A dropdown menu showing "DOMAIN".
- Server Name: A dropdown menu showing "MACHINE1".
- Select the type of server:
 - Windows: Enter the BrightStor ARCserve Backup user name.
 - NetWare: Enter the full NDS context.
 - UNIX/Linux: Enter the BrightStor ARCserve Backup user name.
- Security information:
 - User Name: A text box containing "caroot".
 - Password: A text box with masked characters (dots).
 - For Windows, Linux and UNIX you have to specify the internal BrightStor ARCserve Backup user not the system user.
 - Remember the security information.

At the bottom of the dialog are "OK" and "Cancel" buttons.

3. To save the user name and password information you enter for this server, select the option Remember the Security Information. If you do not save this information, a server security dialog appears the first time you open a manager, and you are required to enter a user name and password.
4. Enter caroot in the User Name field, the appropriate password in the Password field, and click OK.

Note: If you encounter login problems, see the appendix "Frequently Asked Questions" or the online help.

The first time you log on to BrightStor ARCserve Backup, a tutorial, called My First Backup, appears. This tutorial allows you to acquaint yourself with the basics of backing up and restoring data in a controlled and directed way. This tutorial only appears automatically the first time you log on. However, you can access My First Backup from the Help menu.

Easy-to-Use Interface

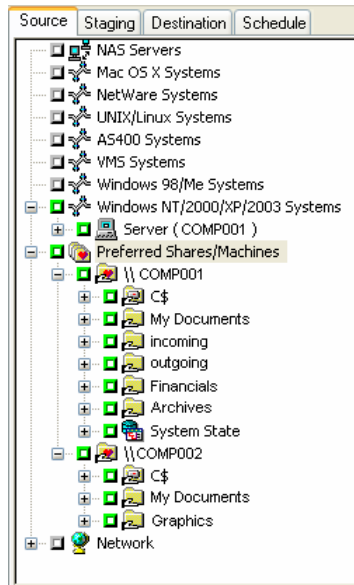
Once you log on to BrightStor ARCserve Backup, you can begin navigating its easy-to-use interface.

Each manager window provides detailed information about your BrightStor ARCserve Backup job.

In addition, the left pane of each manager offers the Most Recently Used section, which keeps track of recently visited pages so that you can quickly return to them.

Package Your Jobs

When you submit a job using the Backup Manager, you can easily select the items you want to back up and restore, and the location to which you want to back up and restore, by clicking the boxes next to each item on the Source and Destination tabs.



In addition to making it easy to specify what you want to select, the BrightStor ARCserve Backup interface was designed with the power and flexibility to customize the way your job is packaged simply by the way you select items.

Dynamic Job Packaging

If you click the box next to an item and the box turns completely green, this item is packaged dynamically. Dynamic job packaging means that the content of your selection is determined when the job runs. For example, if you choose to back up an entire server and the volumes listed on that server change between the time you scheduled the job and the time the job runs, the volumes from the time the job actually runs are backed up.

When you dynamically select a parent item, all of its associated (or child) items are automatically packaged dynamically as well.

Explicit Job Packaging

If you click the box next to a child item and its parent's box appears half green, the parent item is packaged explicitly. If you explicitly select the entire server, the volumes included in the backup are determined at the time the job is packaged. Explicit job packaging means that, in a parent object, you select only certain child items to include in your job. As a result, the content of what is packaged from the parent item is determined when you schedule the job rather than when the job runs.

When a parent item is explicitly selected, it applies only to its child items (the level that immediately follows). It does not apply to any selection you may make in the child items (for example, if you choose to back up only certain files within your child items).

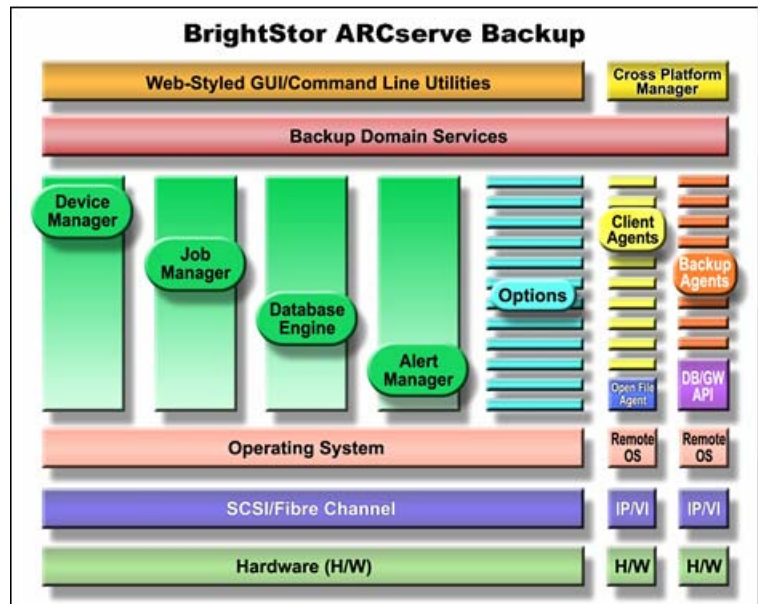
For example, if you back up only the C and E drives on your server, the server is explicitly packaged. If you add another drive to your server between the time you scheduled your job and the time it runs, the new drive is not included in this job. In contrast, if you dynamically back up your C and E drives, any changes to the contents of these drives between the time you scheduled your job and the time it runs are included in the job when the job actually runs.

Explicit job packaging is beneficial because it gives you the power to customize local backup options per volume. For example, if you back up the C and E drives on your server, you can select the option Compress Files before Backup on the C drive and the option Encrypt Files before Backup on your E drive.

Note: To customize volume or database options, a parent item must be explicitly selected.

BrightStor ARCserve Backup Components

BrightStor ARCserve Backup has a flexible design that allows you to manage and protect your environment. It provides powerful components that work together to accomplish critical administrative tasks seamlessly.



Wizards and Helpful Tools

BrightStor ARCserve Backup wizards are intuitive and easy to use. Start them from the BrightStor ARCserve Backup Home Page or from the Wizard menu and you are instantly guided through your primary data-storage functions.

- **Backup Wizard:** Allows you to select the server and files you want to back up and quickly and easily takes you through the remaining steps to allow you to back up data in your network.
- **Restore Wizard:** Provides a quick and efficient way to submit restore jobs. It allows you to select one of two restore methods, the files you want to restore, a destination, and restore options.
- **Device Wizard:** Displays the devices you have installed on a local or remote system and allows you to format, erase, compress, and eject your storage media with ease.
- **Device Group Configuration:** Allows you to create, remove, or rename groups as well as assign and remove devices from groups. It also lets you configure Staging Groups and set staging properties.
- **Create Boot Kit:** Allows you to create and update machine-specific boot kits so that you can recover your data quickly if a disaster occurs.

Note: You must install the BrightStor ARCserve Backup Disaster Recovery Option to use this wizard.

- **Device Configuration:** Allows you to configure backup devices, such as tape libraries, Redundant Array of Inexpensive Devices (RAID) devices, removable drives, virtual libraries, and file system devices easily. It also lets you enable or disable devices for Removable Storage Management (RSM).
- **Central Database Configuration:** Allows you to configure the BrightStor ARCserve Backup host database systems.

- **Job Scheduler Wizard:** Provides a quick and easy way to package and submit jobs you would typically submit from the Command Prompt window. In addition to the commands associated with BrightStor ARCserve Backup, you can use this wizard for virtually any executable.
- **Diagnostic Wizard:** Allows you to configure BrightStor ARCserve Backup to collect information about the server to help you to address any problems with Computer Associates Customer Support.

Managers

Managers access and control BrightStor ARCserve Backup core functions. To open a manager, select it from the BrightStor ARCserve Backup Home Page or from the Manager menu.

- **Job Status:** Allows you to monitor, reschedule, and submit all pending, completed, and active jobs. It also allows you to group multiple servers so that you can monitor their status.
- **Backup Manager:** Performs BrightStor ARCserve Backup core functions, allowing you to schedule and submit system backups of all your machines.
- **Restore Manager:** Allows you to perform a complete or partial restore of your crucial data. It also lets you schedule restore jobs from previously backed up data.
- **Media Pool:** Lets you create logical groupings of media to quickly identify and maintain the retention period of its data. You can also choose specific media-rotation schemes to suit your archive needs.
- **Device Manager:** Displays information about storage devices and media, and allows you to compress, format, erase, and eject media. You can also manage media rotations using this manager by assigning unique serial numbers.

- Database Manager: Allows you to view and maintain information about the jobs processed by BrightStor ARCserve Backup, the media used, data backed up, session information, disk usage, and client information.
- Report Manager: Interfaces with the BrightStor ARCserve Backup database to supply the reports you need relating to BrightStor ARCserve Backup activity. The Report Manager provides reports on jobs, media errors, sessions, backup devices, and media pools.
- Server Admin: Configures the Job, Tape, and Database Engines, allowing you to change the system account, configure multiple Network Interface Cards (NIC), set up alerts, and specify which messages should be written in the event log.
- Alert Manager: Sends messages about events that occur during backup operations. BrightStor ARCserve Backup can send alerts through several different means, including pager, mail, network broadcast, SNMP traps, and the Unicenter® Network and Systems Management (Unicenter NSM) Console. Each message is stored in the Alert Event Log, from which you can view, print, and clear the messages.
- Media Management Administrator: Lets you protect, track, and manage your media, organize tape movements to off-site storage locations, define retention rules to protect tapes from premature overwriting, secure access to tape-resident files, and maintain an inventory of media.

Note: To use the Media Management Administrator, you must install the BrightStor ARCserve Backup Enterprise Module.

Utilities

BrightStor ARCserve Backup utilities perform some of the tasks you need to manage data storage. To access a utility, select it from the BrightStor ARCserve Backup Home Page or from the Utilities menu.

- **Recover Database:** Allows you to recover the BrightStor ARCserve Backup database from the latest backup on your backup media.
- **Merge:** Allows you to merge information from BrightStor ARCserve Backup media into the BrightStor ARCserve Backup database.
- **Scan:** Allows you to scan media for information on backup sessions.
- **Compare:** Allows you to compare the contents of media to the files on your machine.
- **Count:** Allows you to count files and directories on a machine.
- **Copy:** Allows you to copy or move files and directories from one machine to another.
- **Purge:** Allows you to delete files and directories from a machine.
- **Report Writer:** Allows you to create custom reports.

Server Components

From the BrightStor ARCserve Backup Server Admin, you can access the components that perform the background labor for the BrightStor ARCserve Backup managers.

The Server Admin contains the Job, Tape, and Database Engines. These engines process and monitor all backup and restore operations and update information about performance in the BrightStor ARCserve Backup activity logs and databases.

- Job Engine: Processes your jobs at the specified date and time. The Job Engine scans the job queue for jobs that are ready to run and sends them to the appropriate handler.
- Tape Engine: Responsible for communicating with and controlling your storage devices. The Tape Engine selects the device needed for each BrightStor ARCserve Backup job.
- Database Engine: Collects all data and places it in the database, enabling you to run centralized reports, review job logs, and manage device shares on all BrightStor ARCserve Backup operations. Database information includes:
 - Files, directories, drives, and machines that BrightStor ARCserve Backup has backed up or copied.
 - Job type, logs, final result, and start and end time of jobs processed by BrightStor ARCserve Backup.
 - Information about media used by BrightStor ARCserve Backup, such as its type, its name, the date it was first formatted, the date it expires, and the sessions stored on that media.
 - Storage devices used by BrightStor ARCserve Backup.

Service Icon State Indicators

The toolbar at the top of each BrightStor ARCserve Backup manager displays an icon for each of the back-end services—Job Engine, Tape Engine, and Database Engine. Depending upon the color, the icons indicate one of the following three states:

- Green indicates that the service is running
- Red indicates that the service is down
- Gray indicates that the service cannot be connected or is in an unknown state

You can use the status icons to control the selected service. Right-click an icon to start or stop the engine, to start all engines, or to stop all engines.

Subsequent chapters guide you through other core functions of BrightStor ARCserve Backup and offer suggestions on how to use your new software. You will soon see how the wide scope of features combines with its ease of use to make BrightStor ARCserve Backup an indispensable part of your organization's infrastructure.

Start and Stop Individual Services Using the Command Line

To start or stop the BrightStor ARCserve Backup services using the command line, do the following:

1. Start the Windows command line.
2. After the command line opens, enter one of the following commands: NET START [enginename] or NET STOP [enginename] and substitute one of the following for [enginename]:
 - CASJobEngine: Job Engine
 - CASTapeEngine: Tape Engine
 - CASDbEngine: Database Engine
 - CASMsgengine: Message Engine
 - CASDiscoverySvc: Discovery Service
 - CasSvcControlSvr: Service Controller
 - CasUnivDomainSvr: Domain Server
 - Catirpc: CA Remote Procedure call server
 - "Alert Notification Server": Alert service

Note: For this service, you must provide quotation marks.
3. Repeat the previous step for each BrightStor ARCserve Backup Server component.

Important! *If you manually stop and restart the CA Remote Procedure Call service (Catirpc) using the Command Line (or the Computer Management console), the service cannot communicate with its port assignments properly. This can prevent a user account with caroot equivalence from logging in to the BrightStor ARCserve Backup domain. To remedy the inability to log in to the BrightStor ARCserve Backup domain, run the cstop command and then run the cstart command. This enables the service to communicate properly and lets the user account with caroot equivalence log in to the BrightStor ARCserve Backup domain.*

Stop and Start All Services Using a Single Command

There are two methods that you can use to manually stop and start the Job Engine, the Tape Engine, and the Database Engine. The first method is to click the corresponding service status icon on any BrightStor ARCserve Backup manager window. The other method is to click the Stop and Start toolbar buttons on the BrightStor ARCserve Backup Server Admin. However, circumstances may arise that require you to stop all BrightStor ARCserve Backup services. For example, you need to apply a level two patch to BrightStor ARCserve Backup.

The `cstop` and the `cstart` commands let you shut down and restart all BrightStor ARCserve Backup services sequentially, based upon their dependencies to the other BrightStor ARCserve Backup services. This process ensures that there is no loss of data while the services are shutting down, and that all BrightStor ARCserve Backup services are running properly when your system restarts.

To stop or start all BrightStor ARCserve Backup services using a single command, use the file `cstop.bat` or `cstart.bat` located in the BrightStor ARCserve Backup home directory.

When you run `cstop.bat`, BrightStor ARCserve Backup stops the services in the following order:

1. CASTapeEngine
2. CASJobEngine
3. CASDbEngine
4. CASMsgengine
5. CASDiscoverySvc
6. CasUnivDomainSvr
7. CasSvcControlSvr
8. Catirpc
9. Alert Notification Server

When you run cstart.bat, BrightStor ARCserve Backup starts the services in the following order:

1. Alert Notification Server
2. CASDiscoverySvc
3. Catirpc
4. CasSvcControlSvr
5. CasUnivDomainSvr
6. CASDbEngine
7. CASMsgengine
8. CASTapeEngine
9. CASJobEngine

Chapter 4: Backing Up and Restoring Data

Backing up and restoring your data is essential to the success of your organization. By efficiently and dependably protecting and retrieving files, BrightStor ARCserve Backup helps you to ensure that your most valuable asset, your data, is protected.

This chapter introduces you to the essential BrightStor ARCserve Backup functions of backing up and restoring and describes how to submit jobs using the intuitive Backup and Restore Wizards.

Backup Requirements Plan

Before you use BrightStor ARCserve Backup for the first time, we recommend that you plan your backup requirements. You should consider the following:

- How much data do you need to back up?
 - What is the current disk capacity in your environment?
 - What is the server and data growth you anticipate over the next year?
- How do you want to manage the media you are using for backup?
- How do you plan to store your data? Are you using magnetic tape or does the stability of WORM media better suit your needs?

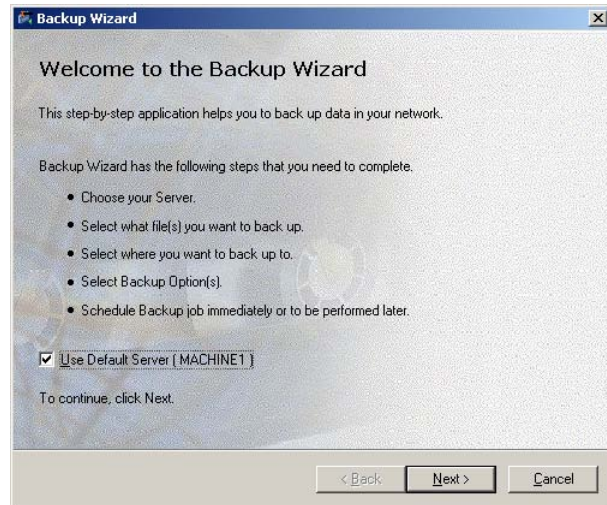
Wizards

With BrightStor ARCserve Backup, performing backup and restore operations is quick, easy, and foolproof. BrightStor ARCserve Backup wizards guide you smoothly through each step. The following sections provide the basic steps required to back up and restore files from your local machine.

Back Up Data Using the Backup Wizard

The Backup Wizard guides you through the steps required to perform the most basic of the BrightStor ARCserve Backup functions - backing up your files - quickly and simply. To use the Backup Wizard, perform the following procedure:

1. Select Wizards from the BrightStor ARCserve Backup Home Page and click Backup Wizard. The Backup Wizard Welcome screen appears.



2. On the Welcome screen, the Use Default Server option is enabled by default. If you leave this option enabled and click Next, you skip the login screen. If you disable the option and click Next, the login screen appears.

3. Select the server to which you want to connect, and enter your user name and password. Click Next.
4. Select the files you want to back up. The Browser displays the machine tree from which you can select domains, machines, volumes (drives), shares, directories, and files for backup. To select data to back up, click the green box next to your selection.

Select the BrightStor ARCserve Backup home directory to back up the database automatically.

5. To back up your machine, highlight My Computer, click the green box next to it, and click Next.
6. The Backup Wizard prompts you to choose the backup destination by selecting the media for the backup. Select the appropriate media and click Next.

Note: You can use any type of media for your backup job. If you are using WORM media, BrightStor ARCserve Backup appends the backup sessions to the existing data on the media, because you cannot overwrite or erase WORM media.

7. The Backup Options screen allows you to customize your backup job. You can choose a full backup or an incremental backup, and you can back up with verification and compression. Select the appropriate Backup Method, and click Next.
8. Verify that the security information is correct, and click Next.
9. The schedule screen lets you choose to run the backup job immediately or schedule it for a later date and time. To start the job immediately, select Run Now, and click Next.

Note: If you choose to schedule your job, BrightStor ARCserve Backup allows you to establish a schedule so that your backup repeats at regular intervals, permitting you to be miles away when BrightStor ARCserve Backup is managing your data. When you return, you can check the Activity Log to review the details of the backup.

10. The last screen allows you to enter a description for your job and specify whether you want to track your job from the Job Monitor. This option is enabled by default.
11. Click Finish to submit. The Job Monitor appears, allowing you to monitor the progress of your job.

You have just completed performing a basic backup operation. You can see firsthand how easy it is to use BrightStor ARCserve Backup to accomplish your most important tasks.

Restore Data Using the Restore Wizard

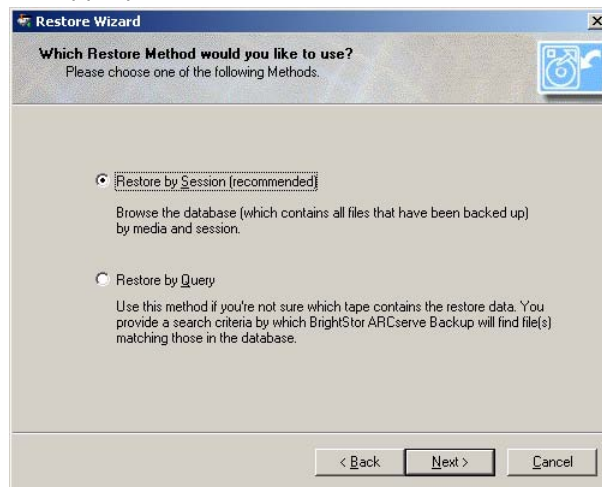
The BrightStor ARCserve Backup Restore Wizard makes the second portion of the data storage process - restoring your files - quick and easy. Before you restore, verify the status of your backup job to make sure it is complete. Once you have verified that you have a complete backup, you are ready to restore your data.

To use the Restore Wizard:

1. Select Wizards from the BrightStor ARCserve Backup Home Page, and click Restore Wizard. The Restore Wizard Welcome screen appears.



2. On the Welcome screen the Use Default Server option is enabled by default. If you leave this option enabled and click Next, you skip the login screen. If you disable the option and click Next, the login dialog appears.
3. In the login dialog, select the server to which you want to connect, enter your user name and password, and click Next.
4. The next screen allows you to choose a restore method. You can choose to Restore by Session or Restore by Query. The Restore by Query option is useful if you do not know the exact location of the data you want to restore. Select the appropriate restore method, and click Next.



5. The next screen lets you browse the database to find the backup sessions you want to restore. Identify the media containing your backup, click the green box next to it to select it, and click Next.

6. The destination screen allows you to specify whether you want to restore to the original location or select a new location to which to restore the data.

The Restore to the Following Location option allows you to compare the restored data to the original. This is not a required procedure, but it allows you to verify that BrightStor ARCserve Backup has backed up and restored everything on your computer.

Choose a location option, and click Next.

7. The next screen lets you specify whether to overwrite files that already exist. BrightStor ARCserve Backup provides the following options:

- Overwrite All Files replaces all existing files with the files you are restoring.
- Rename Files from Tape retains both copies of the files and renames the restored file.
- Skip Existing Files does not restore or overwrite existing files.
- Overwrite with Newer Files Only specifies that existing files are to be overwritten only if the restored file has a newer date.
- Confirm Overwrites prompts you to confirm files should be overwritten during the restore operation. This option cannot be enabled for scheduled restore operations and is not supported for agents.

Select an overwrite option, and click Next.

8. In the next screen, verify that the security information is correct, and click Next.
9. The schedule screen lets you choose to run the restore job immediately or schedule it for a later date and time. To run your job immediately, select Run Now, and click Next.

The Schedule option allows you to specify a future start date and time for the job and lets you specify whether BrightStor ARCserve Backup should repeat the job.

10. The last screen allows you to enter a description for your job and specify whether you want to track your job from the Job Monitor. The Start Job Monitor option is enabled by default. Verify the information displayed in the Restore Wizard Summary fields, and click Finish to submit your restore job. The Job Monitor starts, allowing you to monitor the real-time progress of your job.

Automatic Back Up

You have already seen the benefits of using the Backup Wizard to perform a simple backup. Now you are ready to take advantage of the built-in, automatic backup system that lets you set up a backup scheme that, once established, repeatedly performs without any further intervention needed.

Backup Media Rotations and Scheduling Options

Typically, the most convenient time for you to schedule backup operations is after business hours, when backup processing does not use valuable network bandwidth. BrightStor ARCserve Backup provides you with the tools you need to automate your backup operations.

BrightStor ARCserve Backup allows you to establish a schedule so that your backup automatically repeats at regular intervals, allowing you to regularly and reliably back up your data at any time. The Backup Manager provides you with scheduling options and rotation schemes to help you establish your automatic backup strategy.

Note: If you are using WORM media, you cannot use rotation schemes. By definition, WORM media cannot be overwritten, so you cannot recycle it in a rotation scheme or a media pool.

Rotation Schemes

You can configure backup jobs using custom schedules, using the pre-defined rotation schemes provided by BrightStor ARCserve Backup, or specifying your own rotation parameters. You can select a repeat method and choose from among the following three backup methods in your rotation scheme:

- **Full Backup:** Backs up all of your files. This backup method requires more time to process compared to incremental or differential backups. However, because all of your data is backed up, this strategy requires only the last backup media to restore your data completely.
- **Incremental Backup:** Backs up only those files that have changed since the last full or incremental backup was performed. Since this strategy backs up only new or newly changed files, incremental backups require less time to process. However, this strategy requires the full media set and every incremental set, including the latest set, to fully restore your data after a disaster.
- **Differential Backup:** Backs up only those files that have changed since the last full backup was performed. Since files that were backed up in the last differential job are backed up again, differential backup jobs require more time to process than incremental backup jobs. However, this strategy requires only two sets of media to restore a differential backup, the full media set, and the differential media set.

Note: For any rotation scheme that you use, you should include at least one full backup per week.

Media Pools

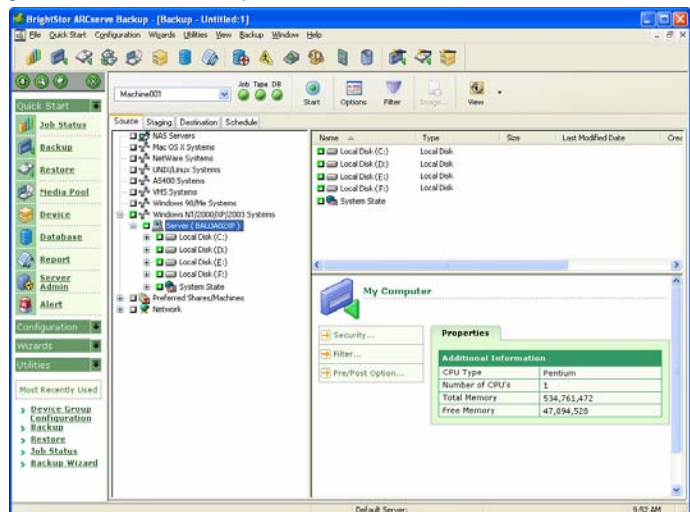
To prevent the accidental overwriting of needed data, BrightStor ARCserve Backup manages media for rotation schemes in media pools. Media pools are logical collections of rewriteable, removable storage media managed as a single unit.

Each media pool is divided in two sets, the Save Set and the Scratch Set. The Scratch Set contains media that can be used, while the Save Set protects your media from being overwritten. Once the media has passed certain criteria, such as a minimum number of media in the Save Set and a minimum retention period, the media is moved to the Scratch Set. The retention period is the number of days media is kept in the Save Set of a media pool. When these criteria are met, the media is moved from the Save Set to the Scratch Set and is made available for use.

Create Repeating Backups

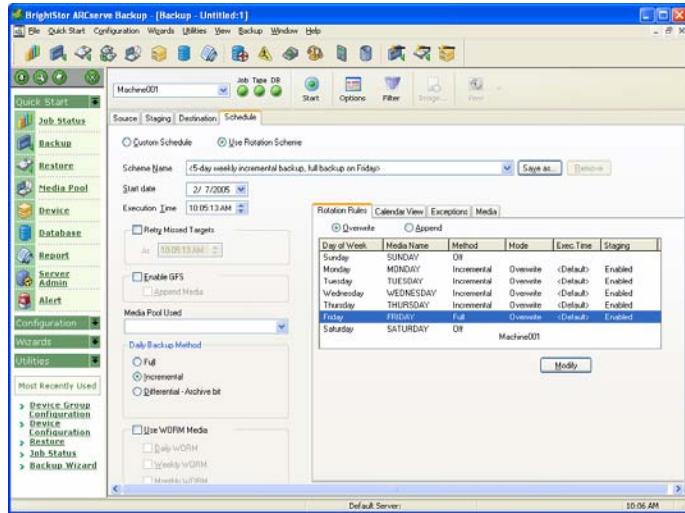
To create repeating backups:

1. From the BrightStor ARCserve Backup Home Page, select Backup from the Quick Start menu.
2. Select the Source tab. On the Source tab, select the files you want to back up.



3. If you will be using the Disk Staging Option, select the Staging tab, click the Enable Staging check box, and then choose a staging group.
4. Click the Destination tab to choose the group to which you want to back up your data.

- Click the Schedule tab, and select Use Rotation Scheme to use one of the pre-designed backup schemes. You can choose a five or seven day schedule using incremental, differential, or full backups.



- If using a media pool, you must specify a media pool or media pool prefix before the job runs.
- To modify a rotation scheme, highlight the day you want to change and click Modify. For example, you might want to change a routine to initiate a full backup on Saturday.
- Make the necessary modification to your schedule, and click OK.
- Use the calendar to review the backup plan you selected. Click the Calendar View tab to see a calendar view of your rotation scheme.
- Select the Start Date and Execute Time as required.

11. In the Media Pool Used field, enter the name of the media pool that you want to use.
12. After you finish revising your backup schedule, click the Start button on the Backup Manager toolbar to submit the job.

Note: You can also make or view changes to your backup schedule by clicking the Exceptions tab. To make additional exceptions to your schedule, click the Add button to open the Exceptions dialog. Click the Date drop-down menu to open a calendar from which you can select the date you want to change.

GFS Rotations

The Grandfather-Father-Son (GFS) rotation strategy is a method of maintaining backups on a daily, weekly, and monthly basis. GFS backup schemes are based on a seven-day weekly schedule, beginning on any day of your choice. The primary purpose of the GFS scheme is to maintain a minimum standard and consistent interval at which to rotate and retire media. This scheme always uses the oldest media first.

You should perform a full backup at least once a week. On all other days, you can perform full or partial backups or no backup at all. The advantage of setting up a GFS rotation scheme is that once it is configured, you need only make sure the right media is in the drive for each day of the week. From that time on, GFS tells you which media to use and manages the backups for you.

- Daily backups are the Son media
- A full backup is performed at least once a week. The last full backup of the week is the Father media
- The last full backup of the month (monthly backup) is the Grandfather media

Note: Monthly backups are saved throughout the year and the media on which they are stored should be taken off-site for safekeeping. You can track these media using the Media Management Admin.

GFS Rotation Scheme Media Example

The following example illustrates how to determine the number of media you need for a GFS rotation scheme:

Your company's business hours are from Monday to Friday. You have specified daily incremental backups from Monday through Thursday, with a full backup on Friday. You have decided to retain monthly full backup data for six months before you recycle your media, and have specified that at least six monthly tapes are to be maintained in the Save Set of your media pool. In addition, you have specified that a minimum of four weekly tapes are to be retained in the Save Set.

In the GFS rotation scheme you have selected, the incremental backups are the Son, the weekly full backups are the Father, and the monthly full backups are the Grandfather.

Your rotation scheme requires four daily incremental backups, requiring one tape for each day. Because the data these tapes contain is maintained on the weekly full backup, these tapes are recycled each week. Therefore, your scheme requires four daily (Son) tapes.

The backup performed each Friday, the weekly full backup, requires one tape for each week of the month. These tapes are retained for one month before they are recycled, and you have specified that a minimum of four tapes are to be maintained in the media pool Save Set. Therefore, you require a minimum of five weekly (Father) tapes.

The last full backup performed each month is the monthly backup. You specified that these tapes are to be retained for six months, and that six tapes are to be maintained in the media pool Save Set. The minimum number of monthly tapes required before the media recycles is six. Therefore, you need seven monthly (Grandfather) tapes.

The total media you need for this rotation scheme is 16.

Create GFS Rotation Schemes

To set up a GFS Rotation Scheme, perform the following procedure:

1. From the Backup Manager, select a source and destination, and click the Schedule tab.
2. Enable the Use Rotation Scheme option. From the Scheme Name drop-down menu, choose one of the backup schemes.

Note: The Enable GFS option is automatically checked when a GFS scheme is selected.

3. If you want to add the data from one incremental or differential backup session to the same media as the previous backup session, enable the Append Media option.
4. In the Media Pool Name Prefix field, enter the prefix for all of your media names. BrightStor ARCserve Backup automatically creates and names your backup media using the name you designate.
5. Specify the Start Date and the Execute Time as required.
6. Click the Start button. The backup job now runs precisely as you specified, and your media is recycled as you determined.

Media Pool Manager

You can use automatic rotation schemes to control the media you use during backups. However, if you choose not to use the automatic features, the Media Pool Manager is an indispensable tool to efficiently schedule the maintenance and recycling of media. The Media Pool Manager helps you to organize your media into media pools, similar to those used in rotation schemes. Just as in rotation schemes, the media pools you create are collections of rewriteable storage media managed as a single unit.

Note: If you are using WORM media, media pool options are disabled. By definition, WORM media cannot be overwritten, so you cannot recycle it in a rotation scheme or a media pool.

For more information about media pools, see the section "Media Pools" in this guide or the *Administrator Guide*.

To create a new media pool:

1. From the BrightStor ARCserve Backup Home Page, select Media Pool from the Quick Start menu. The Media Pool Manager window appears.
2. From the Media Pool Manager, click New. The Media Pool Configuration dialog appears.

Note: BrightStor ARCserve Backup automatically assigns media serial numbers when media is formatted and placed in a specific media pool.

3. Enter a name for the media pool in the Pool Name field. Fill in the remaining fields appropriately.
4. Click OK when you are finished.

The new media pool you created appears in the Media Pool Manager. You can now assign media to the Save Sets and Scratch Sets of this media pool.

Chapter 5: Managing Storage Throughout Your Organization

You have seen how quick and easy it is to back up and restore your machine. You are now ready to extend your expertise by taking advantage of the convenience and flexibility of centralized management. First, you will see how simple it is to back up and manage a remote server. Then, you will learn to manage multiple BrightStor ARCserve Backup servers from one central location.

Back Up Remote Servers

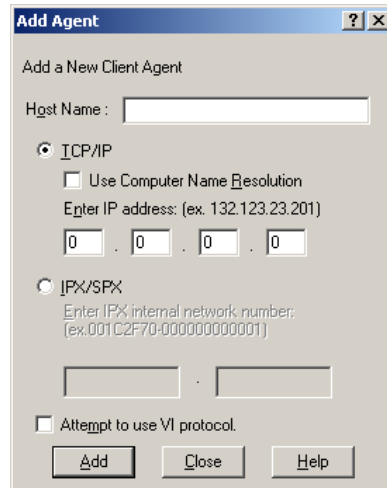
Before you can back up a remote machine, you must have BrightStor ARCserve Backup installed and running on your server, and you must install the appropriate agent (in this case, the BrightStor ARCserve Backup Client Agent for Windows) on the remote machine.

The following scenario backs up a server running Windows 2003.

1. From the Backup Manager, select Windows NT/Windows 2000/XP/2003 Systems. Right-click, and select Add Machine/Object from the menu.

Note: Alternately, you can use Auto Discovery to find machines with the selected agents installed.

The Add Agent dialog appears.



2. Enter the host name of the remote machine in the Host Name field. Check the Use Computer Name Resolution check box or specify the IP address of the computer. Click Add to include the remote server for backup, and click Close.

Note: BrightStor ARCserve Backup allows you to treat the backup of multiple servers as one job. If you choose this method, BrightStor ARCserve Backup automatically submits the tasks in the job queue as one job and backs up the servers one after the other. Alternatively, you can select the Schedule tab and specify when each job should run to have BrightStor ARCserve Backup back up each machine as a separate job.

3. Select the remote machine, and click the + to the left of it. The Security dialog appears, prompting you for security and agent information.

Enter your user name and password. You must supply this information to verify that you have sufficient rights to browse the machine and perform a backup. Click OK.

4. Repeat Steps 1, 2, and 3 for each machine you want to add.
5. Choose the sources and a destination for each machine you want to include in the backup.

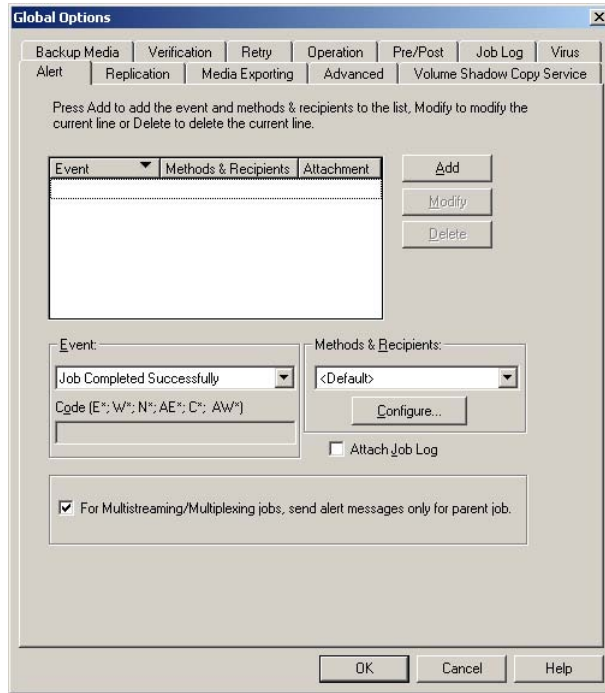
Before you click Start and begin the backup job, you can set up an Alert to send you notification after the job runs.

Set Up Alerts

You can use Alert as part of the BrightStor ARCserve Backup notification system to transmit messages through email, broadcast, pager, SNMP, printer, and Lotus Notes. You can, for example, configure Alert to broadcast a message when a backup job finishes successfully.

To start Alert:

1. From the Backup Manager, click Options, and select the Alert tab.



2. Click Configure to specify the transmission method.
The Methods & Recipients Configuration dialog appears.
3. In the Methods & Recipients Configuration dialog, click New. Enter a name for the configuration in the Configuration Name field and then click OK.
4. Select Broadcast, and click Add.
The Modify Broadcast Recipient screen appears.
5. In the Group/Machine field, select your machine from the network, and click Add to add it to the Recipients field. Click OK.

6. Click OK to save the configuration.
7. From the Methods & Recipients drop-down menu, select the saved configuration.
8. Select an Event from the Event drop-down menu, and click Add.
9. Now that you have set up Alert, you can proceed with your backup. Click OK and click Start to submit your job.
10. When the Security and Agent Information dialog appears, select the job you want to run.

If the user name and password do not appear, click the Security button and enter the appropriate user name and password.

11. Review the security information and click OK. The Submit Job screen opens.
12. Enter a description for your backup job (optional), and click OK to submit the job.

Your job, which is now active, appears on the Job Queue tab in the Job Status window. If the job is active, you can view its status by double-clicking it on the Job Queue tab to invoke the Job Properties dialog.

When the job finishes, Alert notifies you, using the specified method.

Manage Multiple Servers

One of the major benefits of BrightStor ARCserve Backup is its ability to monitor and manage multiple BrightStor ARCserve Backup servers from one central location, the Job Status Manager.

To begin taking advantage of centralized management, you must first perform the proper configuration. By default, when you open the Job Status Manager, you can see only your machine. To add a remote BrightStor ARCserve Backup server, you must create a new server group.

To create a new server group:

1. From the BrightStor ARCserve Backup server, select the Job Status Manager from the BrightStor ARCserve Backup Home Page.
2. From the Job Status Manager, select BrightStor ARCserve Backup Servers, right-click, and select New Server Group.
3. When the server group appears in the tree, enter a name for the group.
4. To add a member to this server group, right-click the group, and select Add Member. The Add Group Members dialog appears.
5. Select a machine from the list or enter the name of the remote machine you want to add. Click Add.
6. Select the server type, enter the user name and password when prompted, and click OK.

After you configure server groups and add group members, you can use the Job Status Manager to:

- View all available BrightStor ARCserve Backup servers, job queues, and activity logs.
- Manage jobs (add, delete, modify, and reschedule jobs).
- Monitor the progress of active jobs by viewing the real-time status of active jobs in the queue.
- View job-detail and job-log information for all jobs that have been executed.
- View activity and media logs.
- Stop an active job.
- Modify a user name.

Chapter 6: Managing Media

Effective media management provides valuable preparation for reliable backup and recovery performance. The type of media can be most types of SCSI or Fibre-attached removable storage.

Because functions such as tracking files to specific storage media are important requirements of your organization's daily production routine, effective media management requires that you know the contents and location of all removable media, such as magnetic tape. BrightStor ARCserve Backup allows you to track your media through the Device Wizard and the Device Manager. Both the Device Manager and the Device Wizard allow you to manage and track your media easily.

Configure Devices Using the Device Wizard

You can start the Device Wizard from the Wizards menu. The Device Wizard helps you see all of the devices connected to your machine.

1. Click Device Wizard from the BrightStor ARCserve Backup Wizards menu. The Device Wizard Welcome screen appears.



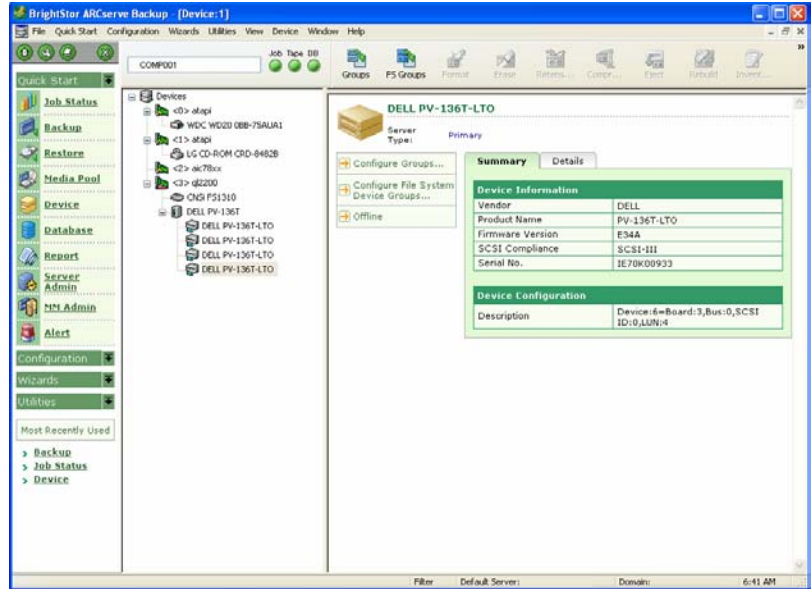
2. On the Device Wizard Welcome screen, the Use Default Server option is enabled by default. If you leave this option enabled and click Next, you skip the login screen. If you disable the option and click Next, the login screen appears.
3. Enter or select the server you want the device command to operate on, enter your user name and password, and click Next.
4. Select the device you want to target. Click More Information to view more information about the device.

5. Click OK, and click Next.
6. Select a device operation, and click Next. For this example, we selected Format.
7. Enter a new media name and expiration date for the media BrightStor ARCserve Backup is about to format, and click Next.
8. The schedule screen that appears lets you choose to run the device command immediately or schedule it for a later date and time. Select Run Now, and click Next to run the job immediately.

To schedule your job for a later time, select the Schedule option, and enter a date and time for the job to run.
9. Click Finish to execute the job.
10. You are prompted to confirm the action you are about to take. Click OK to start the device operation and display its status.
11. A message appears to notify you that BrightStor ARCserve Backup has completed the device operation. Click Next to work with another device, or click Exit to close the Device Wizard.

Configure a Device Group

The Device Manager provides you with information about standalone Tape Drives, on the right side of the Device Manager window, as shown in the following example.



If you have more than one storage device connected to your network machine, BrightStor ARCserve Backup lets you group the devices. This allows you to have one group perform a backup, while another group performs a restore operation, in a process known as parallel streaming.

If you have several devices in a group, and your job spans more than one media, the Device Manager can automatically span the media for you. You can then submit large backup jobs to BrightStor ARCserve Backup and automatically span multiple media until the jobs are complete.

For example, if you have two media groups, GROUP1 (consisting of one storage device) and GROUP2 (consisting of two storage devices), and you have a large backup job that requires more than one media, you can insert blank (formatted) media into each GROUP2 drive and BrightStor ARCserve Backup automates the media spanning for you. Without media spanning, you must change the media manually.

To configure a Device Group:

1. In the Device Manager, click Configure Groups to open the Device Group Configuration dialog.
2. To assign a device to a new group, highlight it, and click Remove.
3. Click New to create a new group.
4. Enter a name for the new group, and click OK. The new group appears in the Groups field.
5. Highlight both the device and the new group, and click Assign to assign the device to the new group.
6. Click OK.

Important! *If you are managing devices that are connected to remote UNIX or Linux servers, the Device Group Configuration dialog opens in read-only mode.*

Chapter 7: Taking Advantage of Your Disk Space

BrightStor ARCserve Backup allows you to use your local disk or a remote disk in the network as a backup device. Device Configuration makes it easy to set up your disk or a disk array to back up important data throughout your organization.

Configure Your Disk or Disk Array as a File System Device

Whether you want to back up files from your local machine or from a remote machine in your network, Device Configuration lets you take advantage of a large disk or disk array to use it as a back up resource.

To configure your disk or disk array as a file system device:

1. From the BrightStor ARCserve Backup Home Page, under Configuration, select Device Configuration. Device Configuration appears.
2. Click Next.
3. Select File System Devices, and click Next.
4. You are prompted that the Tape Engine will be stopped. Click Yes to continue.
5. Click Add to create a new file system device. The new device appears in the File System Devices window.

6. Select the highlighted file system device under the File Device Name column, and enter a name for it. Enter a description in the Description column, and enter a unique location in the Location column (for example, C:\FSD1, C:\FSD2, etc.). For remote file system devices, click Security and enter the user name, domain, and password for the remote computer. Click Finish.
7. Click Exit to close Device Configuration.
8. Click Yes when the confirmation dialog appears.
9. From the Quick Start menu, select Device Manager.
10. Right-click the red service icon under Tape, and select Start Engine. When the Tape Engine is running, the button turns green, and your new file system device appears in the Device Tree.

You can choose the file system device you created as your backup media when you perform backups. BrightStor ARCserve Backup lets you create multiple file system devices and treats them as additional media devices.

The user tutorial, My First Backup, provides information and a tutorial to guide you through the steps to configure your local disk as a backup device. My First Backup appears the first time you use BrightStor ARCserve Backup and can also be accessed from the Help menu on the menu bar.

Chapter 8: Analyzing Your Storage Environment

Three behind-the-scenes components contribute greatly to the strength of BrightStor ARCserve Backup—the Database Manager, the Report Manager, and the Job Status Manager.

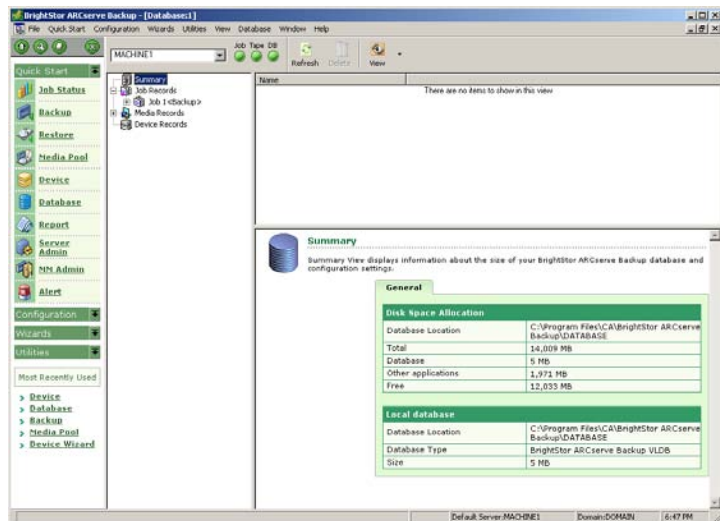
The Database Manager collects all data pertaining to BrightStor ARCserve Backup. It allows you to view and maintain information such as the jobs processed by BrightStor ARCserve Backup, the media used, applications data backed up, session information, disk usage, and client information.

The Report Manager interfaces with the BrightStor ARCserve Backup database and supplies reports allowing you to track activity including data on jobs, media errors, sessions, backup devices, and media pools.

The Job Status Manager lets you monitor, reschedule, and submit all pending, completed, and active jobs. It also allows you to group multiple servers so you can monitor their status.

Database Manager

The Database Manager makes it easy for you to perform intelligent restores by maintaining records on each file and the media to which each file was backed up. It informs the Device Manager where the media is located and when to retire old media. The Database Manager helps you to maintain an efficient system by deleting old records. It also allows you to view information about the jobs BrightStor ARCserve Backup has run.



Open the Database Manager from the Quick Start menu and select one of the following views in the left pane:

- **Job Records:** Displays information about jobs processed by BrightStor ARCserve Backup.
- **Media Records:** Provides information about media used by BrightStor ARCserve Backup.
- **Device Records:** Furnishes information about devices used by BrightStor ARCserve Backup.
- **Summary:** Displays information about the space the database uses on your hard disk, the database type, and other database settings.

You can prune old database records to keep your database from growing too large. The Database Engine tab in the BrightStor ARCserve Backup Server Admin allows you to enable or disable pruning, specify the number of days after which records will be pruned, and schedule the time at which pruning will take place.

To enable database pruning, perform the following procedure:

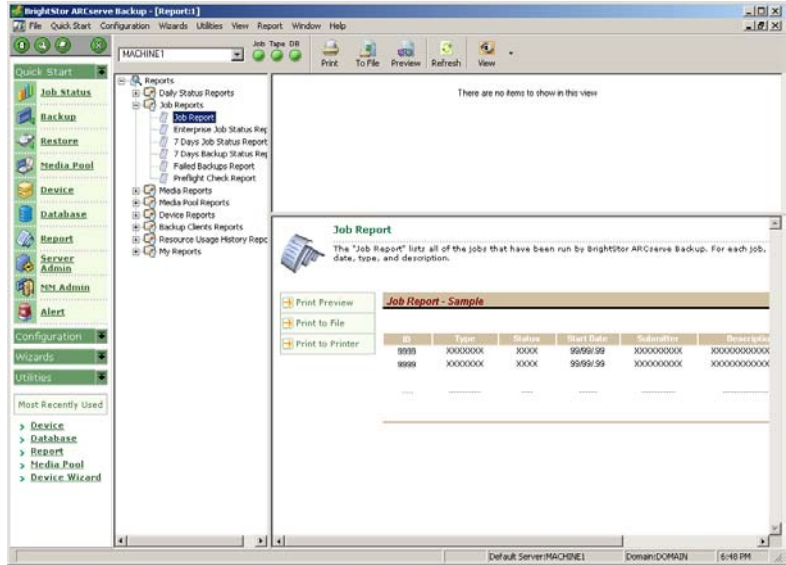
1. Select Server Admin from the Quick Start menu to start the BrightStor ARCserve Backup Server Admin.
2. Select the Database Engine tab. If necessary, change the server using the Server icon.
3. Click the Configuration icon to invoke the Configuration dialog.
4. Select the Enable Database Pruning option.
5. Enter or change the number of days after which records will be pruned. The default is 30 days.
6. Specify a time at which the pruning operation will take place. Alternatively, you can select the Submit Prune Job option to begin the pruning operation immediately.
7. Click OK.

In addition to enabling pruning, you can use the Database Engine tab of the Server Admin to view database statistics such as buffer size, the number of active jobs, and the number of database records processed.

Report Manager

After the Database Manager has collected specific BrightStor ARCserve Backup information, you can view or print the reports produced by the Report Manager.

The Report Writer feature allows you to design report templates to generate custom reports in Comma Separated Value (CSV) or eXtensible Markup Language (XML) format. You can schedule report generation or initiate reports manually. In addition, you can email reports as necessary.



To access the Report Manager, select Report Manager from the Quick Start menu. The Report Manager provides the following categories of reports:

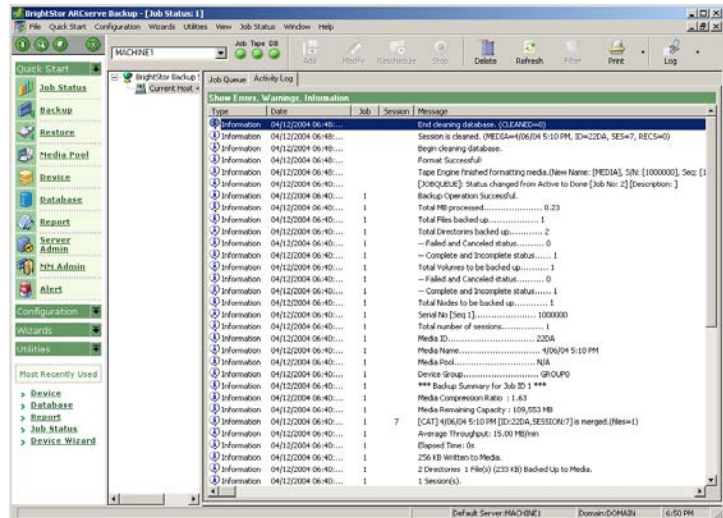
- Daily Status
- Job
- Media
- Media Pool

- Device
- Backup Clients
- Resource Usage History
- Disk Staging
- My Reports

You can create custom reports based on your individual reporting needs.

Job Status Manager

The Job Status Manager provides additional information on BrightStor ARCserve Backup job activity.



To access this information, select Job Status Manager from the Quick Start menu. You can view and print the following logs from the Job Status Manager:

- Activity Log: Records all BrightStor ARCserve Backup activity.
- Job Log: Furnishes activity related to a specific job.
- Tape Log: Details all tape activity for debugging purposes only. By default, recording is not enabled. To enable recording, perform the following procedure:
 1. From the Quick Start menu, select Server Admin to start the BrightStor ARCserve Backup Server Admin.
 2. Select the Tape Engine tab. If necessary, change the server using the Server icon.
 3. Click the Configuration icon to open the Configuration dialog.
 4. In the Configuration dialog, specify the level of detail for the messages and where the output will be displayed.
 5. Select the option Show Tape Log on the Job Status Manager.
 6. Click OK. When you restart the Job Status Manager, a new tab appears, displaying Tape Log information.

Chapter 9: Customize Your Storage Environment

BrightStor ARCserve Backup provides a comprehensive package of powerful features that enable automated scheduling, built-in virus detection and curing, comprehensive alert notification, centralized administration, and extensive reporting. If you need to further customize your BrightStor ARCserve Backup environment, separately-purchased agents and options can extend its management, protection, and performance capabilities.

This chapter provides a brief summary of these additional agents and options. In addition to the information in this chapter, separate guides provide specific information about each database agent and option available with BrightStor ARCserve Backup. For more BrightStor ARCserve Backup product information, visit <http://ca.com/storage>.

Client Agent Support

BrightStor ARCserve Backup extends data protection to heterogeneous client machines through high performance client agent support. Client agents provide advanced functionality, including compression before backups are initiated and increased security through Access Control Lists (ACLs). The ability of client agents to communicate with backup servers provides you with the deployment and management flexibility you require. These client agents extend backup and restore support to a wide variety of networked machines:

- Windows 98/ME
- Windows NT 4.0 (Workstation/Server)
- Windows 2000 (Professional, Server and Advanced Server)
- Windows Server 2003

- Windows XP (Professional/Home Edition)
- Windows XP Professional (64-bit)
- NetWare (4.2, 5.x, and 6.x)
- Apple Mac OS X
- AS/400
- OpenVMS
- Linux (Red Hat, SuSE, Turbo Linux, Debian, and Caldera distributions)
- UNIX (HP-UX, Solaris SPARC, Solaris Intel, IBM AIX, Compaq HP Tru64 UNIX, SCO Open Server, SCO UnixWare, SGI IRIX)

Note: You must use the same language for your base product and any agents you install. You cannot use agents from one language version with the base product from another language version. If you install the English version of BrightStor ARCserve Backup, you must install English-language agents.

High Performance Database and Messaging Agents

Database and backup applications have continued to evolve in response to round-the-clock availability demands. However, the bottlenecks that continue to exist in infrastructure have presented a challenge in light of ever-shrinking backup windows. BrightStor ARCserve Backup offers a viable solution for fast data movement through the network by providing significantly increased throughput. The BrightStor ARCserve Backup database and messaging agents leverage this emerging technology to offer customers a high-performance backup solution.

Database and messaging agents provide the reliable and flexible connection that allows BrightStor ARCserve Backup to efficiently back up and restore critical applications, even when they are open and in use.

The following database agents are available:

- BrightStor® ARCserve® Backup Agent for Microsoft SQL Server
- BrightStor® ARCserve® Backup Agent for Microsoft SharePoint
- BrightStor® ARCserve® Backup Agent for Oracle
- BrightStor® ARCserve® Backup Agent for IBM Informix
- BrightStor® ARCserve® Backup Agent for Sybase
- BrightStor® ARCserve® Backup Enterprise Option for SAP R/3
- BrightStor® ARCserve® Backup Enterprise Option for Advantage™ Ingres®

For more information about the database agents available with BrightStor ARCserve Backup, see the *Agent for Microsoft SQL Server Guide*, the *Agent for Oracle Guide*, the *Agent for IBM Informix Guide*, the *Enterprise Option for Advantage Ingres Guide*, the *Enterprise Option for SAP R/3 for Oracle Guide*, or the *Agent for Sybase Guide*.

The following messaging agents are available:

- BrightStor ARCserve Backup Agent for Microsoft Exchange
- BrightStor® ARCserve® Backup Agent for Microsoft Exchange-Premium Add-on
- BrightStor® ARCserve® Backup Agent for Lotus Domino

The BrightStor ARCserve Backup Agent for Microsoft Exchange-Premium Add-on provides extended protection for Microsoft Exchange, improved backup performance, maximum backup efficiency, and flexible restore capabilities. For more information about Microsoft Exchange support, see the *Agent for Microsoft Exchange Guide*. For information about Lotus Domino support, see the *Agent for Lotus Domino Guide*.

VSS Backup and Restore Support

BrightStor ARCserve Backup supports VSS backup and restore through the following solutions:

- The BrightStor®ARCserve®Backup Client for VSS Software Snap-Shot works with VSS-aware applications to provide a point-in-time backup and restore of Windows 2003 files and data sets. As changes are made to the original information, intermediate shadow copies are created for backing up the original information.
- The BrightStor®ARCserve®Backup Enterprise Option for VSS Hardware Snap-Shot works with the agent and VSS interfaces supplied by specific vendors of disk array equipment to create transportable hardware-based shadow copies. Transportable shadow copies allow greater flexibility when backing up and restoring your critical applications and files. They allow shadow copies to be imported onto other servers. The transported shadow copy volumes can then be used for additional tape backups, or for data mining or software development testing.

For more information about VSS backup and restore support, see the *Microsoft Volume Shadow Copy Service Guide*.

Flexible and Powerful Agents and Options

BrightStor ARCserve Backup provides a number of separately available agents and options offering powerful functionality for your storage and data protection needs.

Enterprise Module Options

The following options are available with the Enterprise Module:

- BrightStor®ARCserve®Backup Enterprise Option for StorageTek ACSLS
- BrightStor®ARCserve®Backup Enterprise Option for IBM 3494
- BrightStor®ARCserve®Backup Enterprise Option for Microsoft SQL using HDS Snap-Shot
- BrightStor®ARCserve®Backup Enterprise Option for Microsoft SQL using HP-XP Snap-Shot

For more information about the options available with the Enterprise Module, see the *Enterprise Option for StorageTek ACSLS Guide*, the *Enterprise Option for IBM 3494 Guide*, the *Enterprise Option for Microsoft SQL using HDS Snap-Shot Guide*, or the *Enterprise Option for Microsoft SQL using HP-XP Snap-Shot Guide*.

Support for Open File Backups

The BrightStor®ARCserve®Backup Agent for Open Files addresses one of the greatest obstacles to providing a complete backup solution—the problem of backing up files in use by other applications or users. The BrightStor ARCserve Backup Agent for Open Files ensures that all backups are complete without skipping files that are in use or locked by other applications. Our patented, state-of-the-art techniques ensure the integrity of the backed-up data and provide completely transparent operation.

For more information about the BrightStor ARCserve Backup Agent for Open Files, see the *Agent for Open Files Guide*.

Comprehensive SAN Support

The BrightStor®ARCserve®Backup SAN Option lets you fully utilize leading-edge Fibre Channel technology. Fibre Channel SAN support offers numerous benefits to your enterprise; it allows multiple servers to share storage devices, provides high-speed backups and restores over a fast fiber-optic storage backbone, adds the flexibility of extended distances for storage devices, gives you advanced device management tools, and provides total scalability of the storage network.

For more information about the BrightStor ARCserve Backup SAN Option, see the *Storage Area Network (SAN) Option Guide*.

NAS Support

The BrightStor®ARCserve®Backup NDMP NAS Option provides a reliable backup and restore tool for Network Attached Storage (NAS) devices that support Network Data Management Protocol (NDMP). As businesses continue to leverage different topologies to manage the Internet-driven data explosion, NAS plays a significant role due to its reliability, availability, and low total cost of ownership.

For more information about the BrightStor ARCserve Backup NDMP NAS Option, see the *NDMP NAS Option Guide*.

Disaster Recovery Support

Many tedious tasks, including the installation of the base operating systems and the setup of the server, are typically performed manually after a disaster and can take many hours. With the BrightStor ARCserve Backup Disaster Recovery Option, you can recover your server easily, quickly, and efficiently. BrightStor ARCserve Backup Disaster Recovery Option requires minimal user intervention while recovering your system, and reduces the time it takes you to recover from a disaster. Disaster recovery lets you conquer time, taking you from boot media, to backup media, to up-and-running, faster than any other solution.

For more information about the BrightStor ARCserve Backup Disaster Recovery Option, see the chapter "Getting Back Online Fast," and the *Disaster Recovery Option Guide*.

Tape and Optical Library Support

The BrightStor®ARCserve®Backup Tape and Optical Library Option provides flexible, unattended operations by optimizing the capabilities of media libraries or autoloaders. It supports multiple drive libraries and is required for the BrightStor ARCserve Backup SAN Option. The number of libraries that can be installed on one computer is limited only by your computer's available resources and system performance. Libraries and stand-alone media drives can be installed on the same computer or attached to the same or different host adapters. BrightStor ARCserve Backup can send simultaneous data streams to all drives to optimize throughput on any multiple drive library.

For more information about the BrightStor ARCserve Backup Tape and Optical Library Option, see the *Tape and Optical Library Option Guide*.

Tape RAID Support

The BrightStor®ARCserve®Backup Tape RAID Option uses Redundant Array of Inexpensive Devices (RAID) technology to increase backup performance by striping data across multiple drives. It supports RAID levels 0, 1, and 5, mirroring and striping with and without parity.

If you are using RAID 5 with three or more drives, the Tape RAID option provides fault tolerance, enabling data restoration even if media is lost or damaged. This option can also support individual tape drives (RAIT) or Tape RAID across multiple libraries (RAIL).

For more information about the BrightStor ARCserve Backup Tape RAID Option, see the *Tape RAID Option Guide*.

Image Backup Support

The BrightStor®ARCserve®Backup Image Backup Option performs ultra-high-speed backup and file-level restore by creating a block-level image of data, rather than processing file-by-file. The option retains ultimate data integrity and captures even open files or data in use with maximum integrity. This option simplifies super fast backups in SAN environments.

For more information about the BrightStor ARCserve Backup Image Backup Option, see the *Image Option Guide*.

Serverless Backup Support

The BrightStor® ARCserve® Backup Serverless Backup Option works with BrightStor ARCserve Backup to solve many traditional, backup-related issues for system administrators. It allows you to perform backups with little impact to the system CPU and allows applications on servers to continue to run while backups are in progress.

For more information about the BrightStor ARCserve Backup Serverless Backup Option, see the *Serverless Backup Option Guide*.

Chapter 10: Disaster Recovery

When a mission-critical server goes down, only one thing matters—time. Each tick of the clock means business lost, opportunities squandered, and efforts wasted. You need to get your system back online quickly, accurately, and safely. The BrightStor ARCserve Backup Disaster Recovery Option helps you to bring your systems back on line quickly and easily.

Disaster Recovery Option

Typically, the tasks you must perform manually after a disaster, including installing the base operating system and setting up the server, can take many hours. With the BrightStor ARCserve Backup Disaster Recovery Option, you can get your server back quickly and reliably with little effort. The BrightStor ARCserve Backup Disaster Recovery Option lets you conquer time, taking you from boot media, to tape, to an operational state faster than any other solution. Even novice users can have their servers back online in record time.

BrightStor ARCserve Backup provides quick and easy restoration of a downed server without requiring you to reinstall the operating system or BrightStor ARCserve Backup. With the BrightStor ARCserve Backup Disaster Recovery Option, you can save boot disk information to a set of floppy disks or have BrightStor ARCserve Backup collect and update the information automatically for you, allowing you to rebuild the entire system without reinstalling the operating system after a disaster.

How Disaster Recovery Works

Disaster recovery is based on the concept of collecting and saving machine-specific information before a disaster strikes. When a backup job on the BrightStor ARCserve Backup server is submitted, BrightStor ARCserve Backup automatically generates and saves emergency data information for the server. If a machine crashes, the BrightStor ARCserve Backup Disaster Recovery Option can recover the machine to the same state that existed when the last backup was performed. The recovery process depends on the availability of emergency and backup data.

You can use the BrightStor ARCserve Backup Disaster Recovery Option to recover servers on the Windows NT, Windows 2000, Windows 2003, and Windows XP Professional platforms.

Disaster Recovery Option Features

The following features are included in the BrightStor ARCserve Backup Disaster Recovery Option:

- Protection for your local BrightStor ARCserve Backup server and the remote Windows clients backed up by the BrightStor ARCserve Backup Client Agent.
- The ability to put a completely unusable system back online quickly, saving you substantial time.
- Protection for the server on which BrightStor ARCserve Backup and other important applications are running from disaster with minimal user input on any system that BrightStor ARCserve Backup supports.

Disaster Recovery Functionality on Windows

With the BrightStor ARCserve Backup Disaster Recovery Option, you can create recovery boot media to recover any machine locally or remotely, using the storage devices attached to your BrightStor ARCserve Backup server.

Wizards guide you through the steps needed to create recovery boot disks, partition and format hard drives, and restore data. You can recover any machine using a variety of methods, including floppy disk, CD-ROM, and bootable media drive.

The BrightStor ARCserve Backup Disaster Recovery Option supports:

- Full Tape RAID and media library-based restore procedures
- Multiple sessions and spanned media
- Use of media drives in autochangers
- BrightStor ARCserve Backup SAN Option (Fibre Channel)
- Bootable CD-ROM support
- Remote disaster recovery

For more information on this powerful tool, see the *Disaster Recovery Option Guide*. This guide provides specific instructions to help you get the most out of the functionality of the BrightStor ARCserve Backup Disaster Recovery Option.

Appendix A: Using Alternate Installation Methods

Master Setup is the main installation program for BrightStor ARCserve Backup. As an alternative to using Master Setup, you can perform a silent installation or use Unicenter Software Delivery to install BrightStor ARCserve Backup. The following sections include information about each of these alternate installation methods.

Silent Installation Response File

During an interactive installation, many BrightStor ARCserve Backup components require you to enter configuration information (for example, installation directory, user name, and password). During a silent installation, (a non-interactive installation) this information is read from a previously created response file. The default response file name is `setup.icf`, but can be renamed to suit your needs.

The response file is created using the `MasterSetup.exe` program located in the `\Install` directory on the BrightStor ARCserve Backup CD-ROM. Run this program and, from the Select Install Type dialog, select the option Create a Response File and specify a name and location for the response file. Click Next. Select the BrightStor ARCserve Backup components you want to install and change the installation path, if necessary. Click Next to generate the response file reflecting the components you selected.

Once you generate the response file, you can use it with MasterSetup.exe, to silently install the BrightStor ARCserve Backup components you selected. To view full details about the required parameters, execute the following command:

```
mastersetup /?
```

For example:

```
mastersetup.exe /I:"c:\temp\setup.icf"
```

where the response file is located in c:\temp\setup.icf.

You can edit the setup.icf file to change the InstallScanEng setting from 1 to 0 to indicate that the Scan Engine should not be installed.

Note: You may have to restart your machine after the installation completes. To determine if you have to restart your machine, check the ProdWiz.log for a restart message.

Unicenter Software Delivery

Unicenter Software Delivery is a flexible tool for distributing, installing, verifying, updating, and uninstalling software from a central location. Built on the world-class Computer Associates Unicenter management technology, Unicenter Software Delivery is an easy-to-use, powerful software delivery solution that saves you time and money by eliminating the need to manually install and configure software on individual machines.

If you have Unicenter Software Delivery, you can use this tool to distribute and install BrightStor ARCserve Backup. For more information on configuring and using Unicenter Software Delivery, see the Unicenter Software Delivery documentation.

Before you can use Unicenter Software Delivery to distribute and install BrightStor ARCserve Backup, you must register the software on the Unicenter Software Delivery server. To register, run the SDRegister.exe utility located on the CD in the SD Packages folder. Open SDRegister.exe and choose individual packages or choose the Select All option. You must agree to the license agreement to continue with the registration. Enter the Unicenter Software Delivery server information and click Next. All selected packages are registered and added to the Unicenter Software Delivery explorer.

Components and Prerequisites

The following sections list the components and prerequisites for the components you can register with Unicenter Software Delivery.

Base Components

- **Component:** BrightStor ARCserve Backup Server
Prerequisites: Microsoft Installer, CA License
- **Component:** CA License
Prerequisites: Microsoft Installer
- **Component:** Diagnostic Utilities
Prerequisites: Microsoft Installer
- **Component:** Microsoft Installer
Prerequisites: None
- **Component:** Unicenter Integration Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server

BrightStor ARCserve Backup Client Agents for Windows

- **Component:** Windows 64-bit Client Agent
Prerequisites: Microsoft Installer
- **Component:** Windows 9x/ME Client Agent
Prerequisites: Microsoft Installer
- **Component:** Windows NT/2000/XP/2003 Client Agent
Prerequisites: Microsoft Installer

BrightStor ARCserve Backup Agents

- **Component:** BrightStor ARCserve Backup Agent for Open Files
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Microsoft Exchange
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Microsoft Exchange-Premium Add-on
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup Agent for Microsoft Exchange
- **Component:** BrightStor ARCserve Backup Agent for IBM Informix
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Lotus Domino
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Oracle
Prerequisites: Microsoft Installer, CA License

- **Component:** BrightStor ARCserve Backup Agent for Microsoft SQL Server
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Sybase
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Agent for Microsoft SharePoint
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server

BrightStor ARCserve Backup Options

- **Component:** BrightStor ARCserve Backup Disaster Recovery Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup Image Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup NDMP NAS Option
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup Optical Library Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup Tape RAID Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server

- **Component:** BrightStor ARCserve Backup Storage Area Network (SAN) Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Tape Library Option
- **Component:** BrightStor ARCserve Backup Enterprise Option for Advantage Ingres
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Serverless Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Tape Library Option, BrightStor ARCserve Backup Storage Area Network (SAN) Option
- **Component:** BrightStor ARCserve Backup Tape Library Option
Prerequisites: Microsoft Installer, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup Enterprise Module
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server
- **Component:** BrightStor ARCserve Backup Enterprise Option for SAP R/3 for Oracle
Prerequisites: Microsoft Installer, CA License
- **Component:** BrightStor ARCserve Backup Client for VSS Software Snap-Shot
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server or BrightStor ARCserve Backup Client Agent for Windows

- **Component:** BrightStor ARCserve Backup Enterprise Option for IBM 3494
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Tape Library Option, BrightStor ARCserve Backup Enterprise Module
- **Component:** BrightStor ARCserve Backup Enterprise Option for StorageTek ACSLS
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Tape Library Option, BrightStor ARCserve Backup Enterprise Module
- **Component:** BrightStor ARCserve Backup Enterprise Option for Microsoft SQL using HDS Snap-Shot
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Enterprise Module
- **Component:** BrightStor ARCserve Backup Enterprise Option for Microsoft SQL using HP-XP Snap-Shot
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server, BrightStor ARCserve Backup Enterprise Module
- **Component:** BrightStor ARCserve Backup Disk Staging Option
Prerequisites: Microsoft Installer, CA License, BrightStor ARCserve Backup server

The installed components have various procedures defined. Most include the following:

- Local Installation: Installs the component
- Local Uninstallation: Uninstalls the component

Important! *Many of these components have prerequisites you must fulfill before they can be installed. You must ensure that the target machine has the correct configuration to install and run the component. This information is available in the documentation for the individual options.*

Response Files

During an interactive installation, many of the BrightStor ARCserve Backup components require you to enter configuration information such as an installation directory, user names, or passwords. During a Unicenter Software Delivery installation, this information is read from a previously created response file.

Response files are created using the MasterSetup.exe program located in the Install directory on the BrightStor ARCserve Backup CD-ROM. Run this program on the server, select Create a Response File, and specify a name and location for the response file. MasterSetup.exe also allows you to select the required option and to enter the configuration information.

Response files must be stored in a directory accessible to the machines on which the component is to be installed. The easiest way to do this is to create a sub-directory under the SDLIB\$ share on the Unicenter Software Delivery server and store the files there.

Run the Installation Procedure

To install a BrightStor ARCserve Backup component, the previously generated response file must be specified when the Unicenter Software Delivery Job is created. In Unicenter Software Delivery Explorer, right-click the installation procedure you want to use, drag it to the computer or group of computers you want to install it on, and select the Schedule Jobs option from the displayed menu. The Setup Jobs dialog appears.

Specify the response file in the User Parameters field on the Job Options tab, using the following syntax:

```
ICFPATH={fullpath to the response file}
```

For example:

```
ICFPATH=\\sdo-server\sdlib$\responsefiles\setup.icf.
```

where sdo-server is the Unicenter Software Delivery server and setup.icf is the response file, created using MasterSetup.exe.

When the job runs the installation program on the target computer, it reads the configuration information from the response file stored on the Unicenter Software Delivery server.

Appendix B: Frequently Asked Questions

This appendix includes frequently asked questions to help you quickly resolve issues that may arise when using BrightStor ARCserve Backup.

How does BrightStor ARCserve Backup fit into the BrightStor solution family?

Computer Associates has identified three essential components to its storage strategy—Storage Management, Storage Infrastructure, and Data Availability. All Computer Associates storage products fit into one of these three components and constitute the BrightStor family of solutions. The Data Availability component encompasses backup and recovery products in the BrightStor product family. BrightStor ARCserve Backup is a part of the Data Availability product suite.

What platforms does BrightStor ARCserve Backup for Windows server run on?

The backup server of BrightStor ARCserve Backup for Windows has been optimized to deliver high performance, scalability, reliability, and deployment flexibility on Windows 2000, Windows Small Business Server 2000, Windows XP, Windows XP Professional, Windows XP 64-bit Edition, Windows 2003, Windows 2003 64-bit Edition, and Windows Small Business Server 2003.

My corporate backup policies mandate that I maintain a near line backup of my data for faster recovery. How can I use BrightStor ARCserve Backup to meet this requirement?

Using the Disk Staging Option, you can back up data to a temporary disk storage location, known as a staging area, and then copy data to permanent storage media, or purge the data from the media at a later time. Before the data is purged, recovery from disk will be faster than restoring from tape. However, the Disk Staging Option lets you restore data directly from the device after the data has been purged from the disk.

What media format does BrightStor ARCserve Backup use?

BrightStor ARCserve Backup writes data to media using Computer Associates proprietary media format. The media format used in BrightStor ARCserve Backup is the same format Computer Associates uses in all of its storage products. BrightStor ARCserve Backup can read such media formats as SIDF, ASM, and MTF. In addition, BrightStor ARCserve Backup also has the ability to read Veritas NetBackup tapes.

My backup environment is unique and requires a reasonable amount of automation. Does BrightStor ARCserve Backup allow me to customize my backup jobs?

BrightStor ARCserve Backup features an extensive command line interface. Many backup, restore, and management functions performed using the web-styled GUI have an equivalent command line. This allows you to write consistent scripts that suit your environmental needs and automate your backup jobs.

How do I know how much memory is free on the system?

BrightStor ARCserve Backup uses free memory only when a backup or restore job runs. Memory is allocated when the job starts, and is freed when it finishes. To determine the available free memory, create an environment with all the applications running during the backup period and check the free available memory. To check free memory on Windows, use the Task Manager.

What should I know about security as it pertains to installing, configuring, and using BrightStor ARCserve Backup?

BrightStor ARCserve Backup utilizes Windows and third party security to establish secure connections when performing various storage-related functions. For instance, if a job backs up a remote server, the security entered for that job must meet the Windows security criteria to access that resource.

The security context under which the jobs are run varies depending on the resource being accessed. The security required to back up the local BrightStor ARCserve Backup server may be different from the security required when backing up a domain resource.

BrightStor ARCserve Backup also interacts with third party security such as Microsoft SQL, Oracle, and Lotus Notes. For more information, see the various option and agent guides on the BrightStor ARCserve Backup CD as well as the Computer Associates support web site.

What is the BrightStor ARCserve Backup System Account?

The BrightStor ARCserve Backup System Account is the account BrightStor ARCserve Backup uses to perform various storage-related functions on the local server. Local backup or restore jobs use the BrightStor ARCserve Backup System Account as the security to run the job.

The BrightStor ARCserve Backup System Account is entered into the System Account dialog when BrightStor ARCserve Backup is installed and must be established beforehand on the operating system level. It is not necessary to grant this account any special rights since BrightStor ARCserve Backup does this automatically.

The account you enter into the System Account dialog at installation is automatically added to the Administrators and Backup Operators Windows security groups.

How can I change BrightStor ARCserve Backup System Account information after installing BrightStor ARCserve Backup?

You can change the BrightStor ARCserve Backup System Account information in one of the two following ways:

- Establish a user account on the operating system and run `bconfig.exe`, located in your BrightStor ARCserve Backup Folder. Clear the Select Database option and the Password for Backup Server Logon and Administration option, leaving System Account selected. Click Next and enter the account you want to use as the BrightStor ARCserve Backup System Account.
- Establish a user account on the operating system and enter the information directly into the Server Admin console under Admin, BrightStor ARCserve Backup System Account.

This information is also important if you choose the Skip button during the System Account part of the installation process. You can skip this step and configure the System Account at a later time using one of the methods outlined.

Is the BrightStor ARCserve Backup System Account sufficient to be entered as job security for all of my backup and restore operations?

No, unless rights beyond local administrator and backup operator are granted to the BrightStor ARCserve Backup System Account. Typically, when you implement BrightStor ARCserve Backup you give the BrightStor ARCserve Backup System Account the following rights and use it as the main backup account:

- Group Rights: Administrators, Backup Operators, Domain Admins
- Advanced Rights: Act as part of operating system, Log on locally, Log on as a service

Note: The security rights listed here are only a reference and are not necessarily applicable to all scenarios.

I notice that the BrightStor ARCserve Backup folder is shared upon installation. How should the share permissions be set?

Set the permissions as follows:

- Administrators: Full Control
- Backup Operators: Change and Read

Does the BrightStor ARCserve Backup installation require me to restart the server on which I am installing?

You may be required to restart the server when installing BrightStor ARCserve Backup. This depends on whether all of the files, services, and registry settings have been updated on the Operating System level.

Is there a way to manipulate the security context contained in job scripts I have saved? For instance, I have packaged jobs with username or password information that have now changed.

If the security for a particular job script has changed, you can edit the job in one of two ways:

- Manually modify each job and resubmit it to repackage the job script with new security information.
- Use the ca_jobsecmgr.exe utility located in the BrightStor ARCserve Backup folder.

What does bconfig.exe do?

The bconfig.exe utility, located in the BrightStor ARCserve Backup directory, allows you to configure the following aspects of BrightStor ARCserve Backup quickly:

- System Account information
- Database setup
- Password for Backup Server Logon and Administration

As a BrightStor ARCserve Backup administrator, what utilities are available to manage the BrightStor ARCserve Backup database?

For VLDB, the BrightStor ARCserve Backup Database Manager provides the functionality you need. For Microsoft SQL Server 6.5, 7, or 2000, refer to your database software documentation for information on available utilities.

I installed BrightStor ARCserve Backup and I cannot log in to the BrightStor ARCserve Backup GUI Manager. Am I doing something wrong?

The services responsible for authenticating users may not be running. From the Control Panel, go to the Service Panel and see if the BrightStor ARCserve Backup Domain Server, BrightStor ARCserve Backup Service Controller, and CA Remote Procedure Call Server services are running. You can also check this by opening the Task Manager and looking for the application caauthd. If you do not find an instance of this application in the Task Manager, go to the Services Panel, stop and start the BrightStor ARCserve Backup Domain Server, and try to log in to the BrightStor ARCserve Backup GUI Manager again. If you still cannot log in, open the command window, change the directory to the BrightStor ARCserve Backup home directory, and run following commands:

```
ca_auth -user getall
```

The output on the screen should be similar to the following:

```
User names:  
caroot
```

If you do not see at least one user, caroot, or if you receive some other error when running the command, run the following debugging authentication commands so that you can send the logs to BrightStor ARCserve Backup support for investigation:

- ping the machine by name. For example:

```
ping.exe BAB_MACHINE
```

where BAB_MACHINE is your machine. If this does not work, resolve the name to an IP address by changing the etc/hosts file or on the DNS.

Enter the following command

```
ipconfig /all > ipconfig.log
```

- Enter the following command to tell Computer Associates Customer Support if the portmapper is running on your machine:

```
netstat -na >netstat.log
```

- Enter the following command to let Computer Associates Customer Support know which BrightStor ARCserve Backup services have registered with the rpc server running on the client machine:

```
rpcinfo.exe -p BAB_MACHINE >rpcinfo.log
```

where BAB_MACHINE is your machine.

- Enter the following command:

```
rpcinfo.exe -t BAB_MACHINE 395648 1 > caauthd.txt
```

where BAB_MACHINE is your machine.

Note: Using '>' to a file does not show the results on the screen.

- Create the following registry key:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociat  
es\BrightStor  
ARCserve Backup\Base\LogBrightStor\[DWORD]Debug  
Logs ==1.
```

This creates the rpc.log file in the BrightStor ARCserve Backup home directory under \log.

I changed the password for the caroot account. Why is it saying invalid password when I try to log in to BrightStor ARCserve Backup?

Your password did not change at the time of setup. There are various reasons for this; your machine name may have extended characters or you may have a machine name in a language other than English. If so, run the following debugging authentication commands (replace BAB_MACHINE with your machine name) so that you can send the logs to Computer Associates Customer Support for investigation:

- ping the machine by name. For example:

```
ping.exe BAB_MACHINE
```

where BAB_MACHINE is your machine. If this does not work, resolve the name to an IP address by changing the etc/hosts file or on the DNS.

- Enter the following command

```
ipconfig /all > ipconfig.log
```

- Enter the following command to tell Computer Associates Customer Support if the portmapper is running on your machine:

```
netstat -na >netstat.log
```

- Enter the following command to let Computer Associates Customer Support know which BrightStor ARCserve Backup services have registered with the rpc server running on the client machine:

```
rpcinfo.exe -p BAB_MACHINE >rpcinfo.log
```

where BAB_MACHINE is your machine.

- Enter the following command:

```
rpcinfo.exe -t BAB_MACHINE 395648 1 > caauthd.txt
```

where BAB_MACHINE is your machine.

Note: Using '>' to a file does not show the results on the screen.

- Set up the following registry key:

```
HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\BrightStor  
ARCserve Backup\Base\LogBrightStor\[DWORD]Debug  
Logs ==1.
```

This creates the rpc.log file in the BrightStor ARCserve Backup home directory under \log.

Why are my BrightStor ARCserve Backup services failing to initialize?

BrightStor ARCserve Backup requires a portmapper for its RPC engines. The Windows service, CA Remote Procedure Call Server, provides the portmapper functionality and uses the standard portmap, port 111.

If BrightStor ARCserve Backup detects port 111 conflicts, indicating that it is using the same port number for the CA Remote Procedure call server service as a previously installed portmapper, BrightStor ARCserve Backup automatically switches to another port number.

If you want other computers to be able to communicate with your computer, we recommend that you configure a specific port. To do so, use the portsconfig.cfg file in the Shared Components\BrightStor directory.

BrightStor ARCserve Backup can work with external portmappers (Microsoft Services for UNIX (SFU), Noblenet Portmapper, StorageTek LibAttach etc.). However, during the machine boot up sequence, BrightStor ARCserve Backup services may try to initialize before the external portmapper has fully initialized. Under these circumstances, BrightStor ARCserve Backup services then fail to initialize. To avoid this problem, perform the following steps:

1. Create the following registry key:

```
HKEY_LOCAL_MACHINE\Software\ComputerAssociates  
\BrightStor ARCserve Backup\Base\Portmap
```


2. Create the DWORD DelayedRegistration under this key.
3. Assign a decimal value for this key, indicating the number of minutes BrightStor ARCserve Backup services wait before initializing portmapper registration. For example, DelayedRegistration=1 causes all BrightStor ARCserve Backup services to start but not register with the portmapper for 1 minute after startup.

I changed the name of a machine that has BrightStor ARCserve Backup installed and rebooted it. Why can't I log in to the BrightStor ARCserve Backup Manager anymore?

When you change the name of a machine running BrightStor ARCserve Backup installed, you must make a few configuration changes, run a repair, log back in, and verify some information in the Manager. To do this:

1. Stop the BrightStor ARCserve Backup services using \cstop.bat. in the BrightStor ARCserve Backup home directory and exit the Manager.
2. Go to the \config folder in the BrightStor ARCserve Backup home directory.
3. Open the discovery.cfg file in Notepad and change the Primary name from the old machine name to the new machine name.

Note: You do not need to change the Domain name.

4. From the Start menu, open the Control Panel, open Add/Remove Programs, select BrightStor ARCserve Backup, click Change, and click Next. Then, select Repair, click Next, click Install, and click Finish.
5. Start the BrightStor ARCserve Backup services using \cstart.bat. in the BrightStor ARCserve Backup home directory or restart the system.
6. Open the Manager. If the previous system name appears as the Default Server name on the BrightStor ARCserve Backup Home page, change the default server name.

7. Open the Server Admin Manager. From the Admin menu, select BrightStor ARCserve Backup System Account to verify the server name listed is accurate. If you decide to change your login information while in this dialog, you must stop and restart the engines after making changes.

I cannot execute BrightStor ARCserve Backup commands on the console. Why does it say that I do not have access when I am the Administrator of the machine?

You may not have equivalence to the primary user (caroot) of BrightStor ARCserve Backup. You can check to see if you have equivalence by running the following command:

```
ca_auth -equiv getequiv Administrator [machine name]
```

If the output returned indicates that you have no equivalence, run the following command:

```
ca_auth -equiv whoami
```

This shows you the user name you are logged in as. For example, Administrator@machine1@192.168.255.255

To create equivalence, run the following command:

```
ca_auth -equiv add ntuser hostname BrightStorUser  
[caroot_username] [caroot_password]
```

For example:

```
ca_auth -equiv add Administrator machine1 caroot caroot  
password1
```

Note: Input is case-sensitive. Ensure that you enter user names and machine names exactly as they appear when returned using the -whoami command.

After you establish equivalence, you can submit commands from the console.

Can I utilize BrightStor ARCserve Backup media options together? Can I use the BrightStor ARCserve Backup Tape RAID Option, the BrightStor ARCserve Backup Image Option, and the BrightStor ARCserve Backup Tape Library Option together?

Yes. The BrightStor ARCserve Backup Tape RAID Option, the BrightStor ARCserve Backup Image Option, and the BrightStor ARCserve Backup Tape Library Option combine to get maximum throughput for your local backups.

Why is BrightStor ARCserve Backup not backing up my BrightStor ARCserve Backup Microsoft SQL database even though I have enabled the global option Back Up Database Files?

When using Microsoft SQL as the alternative database, the global option Back Up Database Files is not valid. Use the BrightStor ARCserve Backup Agent for MS SQL Server to back up the database.

How much disk space does each entry in the BrightStor ARCserve Backup database require when using MS SQL as the alternative database?

Every file (record) you back up consumes about 105 to 115 bytes of the database space. 150 MB of the SQL database contains approximately one million records.

I back up my remote computers under Network / Microsoft Network / Domain Name / Computer Name, but the backup is not very fast. Am I doing something wrong?

Increase backup speed by implementing the BrightStor ARCserve Backup Agent technology. This Agent uses push technology to distribute some of the processing to the local operating system of the target server or workstation. In this way, the data is pushed across the Network, saving BrightStor ARCserve Backup from some of the processing work.

What protocols can be used to back up a NetWare server under BrightStor ARCserve Backup?

BrightStor ARCserve Backup can use TCP/IP and IPX/SPX protocols to back up NetWare servers.

How can I be informed of the latest updates to BrightStor ARCserve Backup products?

All support patches are posted on ca.com when they are publicly released. In addition to checking the web site, you can also subscribe to E-News, a bi-weekly news update that focuses on support issues and covers the BrightStor ARCserve Backup family of products.

After my server crashed, in addition to replacing the hard disk, I also replaced some outdated hardware. I ran the BrightStor ARCserve Backup Disaster Recovery Option restore and it appears to write everything back to disk, but when I restart the server, I get a bluescreen crash. What is wrong?

Changing a hard drive is fine, but if you change a SCSI controller, network card, video controller, or drivers for new cards that did not exist on the old system, Windows can crash or behave erratically (for example, Windows may not see the network). Try to replace the faulty hardware with same or similar hardware. If you change hardware without installing new drivers and then try to boot to Windows, the result is unpredictable. In short, disaster recovery and hardware upgrades should not be combined. To restore your data, you should first reinstall the operating system and then reinstall BrightStor ARCserve Backup.

Which devices does BrightStor ARCserve Backup support?

Refer to the Computer Associates web site for a certified device list to confirm the firmware and model of the supported device. To access this information, open the BrightStor ARCserve Backup Home Page and click the Certified Device List link under News and Support.

I would like to be notified in case of a problem with my backup. How can I do this?

BrightStor ARCserve Backup provides the best alert notification in the industry.

BrightStor ARCserve Backup for Windows provides event-based notification through email, pager, SNMP, broadcast, event log, or through Unicenter Network and Systems Management views. If you have Unicenter installed, you can use its Monitoring Agent to monitor the status of the BrightStor ARCserve Backup processes and media, and report on the failure of backup jobs.

Does BrightStor ARCserve Backup allow me to restore a particular registry hive?

For Windows NT 4.0 backup sessions, you can restore the registry hive file individually. For Windows 2000, Windows 2003, or Windows XP, you must restore the registry hive file with a System State restore job.

I am receiving a media error on my backups, and the media in the drive are new. What can I do to get my problem resolved?

Refer to the following recommendations for the care and operation of media:

Media

- Check your drive's documentation to see which media types are approved. Media of an unapproved brand or type can fail consistently in a particular drive.
- Use only media of the proper length. Some media drives can use a variety of different-length tapes. Tapes vary in thickness, tension, and particle density, and a drive must be designed to handle those differences properly without causing damage to itself or the media.

Cleaning Cartridges

- Clean media drives using cleaning cartridges. Cleaning cartridges clean not only the heads, but also the full tape paths, preventing both read/write and tape positioning problems.
- Follow the media drive manufacturer recommendations. Use only recommended cleaning media and use them only according to the instructions.
- Some cleaning media are good only for a certain number of uses. If they are used more than specified, they come to the end and do nothing at all. Most manufactures recommend cleaning the drive after every 25 to 30 hours of use. Some also recommend cleaning the drive after using a new tape for the first time.

What is the difference between a GFS rotation job and a custom rotation job?

GFS, which stands for Grandfather-Father-Son, is a set rotation scheme that creates three media pools automatically, the daily, weekly, and monthly pools. You cannot entirely customize this rotation and the media used for the rotation scheme must be named automatically. Custom rotation schemes allow you to configure the properties of the scheme, such as the pool or pools involved, the days to back up, and other properties.

Can a custom backup job use a media pool?

Yes. When submitting a custom backup job from the Backup Manager, specify a media pool name on the Destination tab.

Using the BrightStor ARCserve Backup Manager, I connected to a BrightStor ARCserve Backup server and added several client agents. When I opened the BrightStor ARCserve Backup Manager on a different system and attempted to manage the BrightStor ARCserve Backup server from which I added the client agents, I did not see the agents that I previously added. Is this normal behavior?

Yes, this is normal behavior. When you add client agent systems to a BrightStor ARCserve Backup server, the information about the client agent systems is stored on the BrightStor ARCserve Backup server that creates the relationship. If you attempt to manage client agent systems added using a different BrightStor ARCserve Backup server, the network-based backup services cannot access the information for the client agent systems that is stored on the BrightStor ARCserve Backup server that created the relationship. As such, the Backup Manager on the other server cannot display the information about the client agent systems associated with the server that created the relationship.

I recently upgraded the operating system on the BrightStor ARCserve Backup server from Windows XP to Windows XP Service Pack 2. I am now experiencing communication problems through the firewall. What can I do to resolve the communication problems?

If you upgrade your Windows XP system with Windows XP Service Pack 2, the upgrade to Service Pack 2 enables the firewall and blocks all ports by default. You must perform one of the following procedures to use BrightStor ARCserve Backup with Windows XP Service Pack 2.

Note: These methods can be applied to Windows 2003 Server systems with Service Pack 1 and the firewall enabled.

Method 1 (recommended):

1. In the Start menu, click Run, enter gpedit.msc, and press Enter.

Note: This step does not apply to Windows 2003 Server SP1.

2. The Group Policy configuration GUI appears. In the Group Policy Configuration GUI, select Local Computer Policy, Computer Configuration, Windows Setting, Security Setting, Local Policy, Security Option.

Note: This step does not apply to Windows 2003 Server SP1.

3. Change the setting Network access: Sharing and security model for local accounts to Classic - local users authenticate as themselves.

Note: This step does not apply to Windows 2003 Server SP1.

4. The following key RPC and subkey RestrictRemoteClients must be created manually and the value set to 0:

```
[DWORD]HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows NT\RPC\RestrictRemoteClients
```

Note: This step does not apply to Windows 2003 Server SP1.

5. Access the Security Center (on Windows XP SP2) or Windows Firewall (on Windows 2003 Server SP1) and enable the firewall.

6. Add the following executables (if applicable) to the Security Center exception list (these can be found in the CA BrightStor ARCserve home directory):
 - caauthd.exe
 - cadiscovd.exe
 - caloggerd.exe
 - casdscsvc.exe
 - caserved.exe
 - casmrtbk.exe
 - catirpc.exe
 - dbeng.exe
 - jobeng.exe
 - ldbserver.exe
 - lqserver.exe
 - mediasvr.exe
 - msgeng.exe
 - tapeeng.exe
 - univagent.exe (if the Client Agent is installed)
 - carunjob.exe
 - dbasvr.exe (if any database agents are installed)
 - dbasqlr.exe (if the Agent for Microsoft SQL Server is installed)
 - dbaexchr.exe (if the Agent for Microsoft Exchange Server is installed)
7. If you have the Client Agent or any database agent installed, on the Exceptions tab, select File and Printer Sharing.
8. Restart the Windows XP Service Pack 2 machine and start BrightStor ARCserve Backup services.

Method 2:

1. In the Start menu, click Run, enter gpedit.msc, and press Enter.
2. The Group Policy configuration GUI appears. In the Group Policy Configuration GUI, select Local Computer Policy, Computer Configuration, Windows Setting, Security Setting, Local Policy, Security Option.
3. Change the setting Network access: Sharing and security model for local accounts to Classic - local users authenticate as themselves.

Note: This is the default setting on Windows 2003 Server SP1.

4. The following key RPC and subkey RestrictRemoteClients must be created manually and the value set to 0:

```
HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows  
NT\RPC\RestrictRemoteClients
```

Note: This is the default setting on Windows 2003 Server SP1.

5. Access the Security Center and turn the firewall off.
6. Restart the Windows XP Service Pack 2 machine and start the BrightStor ARCserve Backup services.