BrightStor® ARCserve® Backup for Linux

Release Summary

r11.5

Contents

Chapter 1: New Features

This document provides a brief overview of the new features and enhancements, to help you identify what has changed and begin taking advantage of the powerful new functionality of BrightStor ARCserve Backup.

BrightStor ARCserve Backup delivers comprehensive data protection for distributed environments. It provides assured virus-free backup and restore operations. An extensive set of options and agents extends data protection throughout the workgroup and delivers enhanced functionality, including online hot backup and restore of application and data files, advanced device and media management, and seamless disaster recovery.

This chapter summarizes the new features that have been introduced with BrightStor® ARCserve® Backup for Linux r11.5 SP1 and r11.5.

New Features for BrightStor ARCserve Backup r11.5 SP1

These sections provide an overview of the new features added to BrightStor ARCserve Backup, to help you identify and utilize the powerful new functionality of BrightStor ARCserve Backup.

This release of BrightStor ARCserve Backup for Linux provides support for:

- Novell Open Enterprise Server
- File System Agent for FreeBSD

Novell Open Enterprise Server Support

This release BrightStor ARCserve Backup will extend support to protect OES services. The enhancements discussed here refer only to OES SP1 Server installations.

You are able to completely protect the OES servers (traditional file systems as well as NSS file systems) by deploying the existing Client Agent for Linux as well as a newly introduced BAB OES agent.

The OES agent has a configurable capability to protect traditional file systems. However, due to certain limitations pertaining to protection of ACL's and extended attributes, it is recommended that users deploy and use the regular file system agent to backup file systems other than NSS.

File System Agent for FreeBSD

BrightStor ARCserve Backup Agent for FreeBSD provides basic backup and restore functionality, as well as support of FreeBSD specific features. The File System Agent for FreeBSD supports FreeBSD versions 4.11, 5.3 and 5.4. The specific FreeBSD features include:

- Backup and restore of FreeBSD Access Control Lists (5.3 and 5.4)

- Backup and restore of Extended Attributes (5.3 and 5.4)

- Backup and restore of File System Flags (4.11, 5.3 and 5.4)

- Backup and restore of Special Attribute Flags

- Backup and restore support for Fast File Systems

- Backup and restore support for Virtual Hosts

- Backup and restore support for VINUM Logical Volume

New Features for BrightStor ARCserve Backup r11.5

These sections provide an overview of the new features added to BrightStor ARCserve Backup, to help you identify and utilize the powerful new functionality of BrightStor ARCserve Backup.

This release of BrightStor ARCserve Backup for Linux provides support for:

- Smart Restore

- Optimize Restore Option

- Disk Staging Option
    - File System Device Capacity Management
    - Multistreaming
    - SnapLock™ Support
    - Command Line Support

- Application and Platform Currency

- Lotus Domino Agent on Linux Intel

- NEC CLUSTERPRO/ExpressCluster Clusters

Smart Restore

Smart Restore is an automated process that BrightStor ARCserve Backup deploys to ensure that restore jobs continue without interruption, even when a media error occurs. Media or tape drive errors or hardware problems can cause a restore job to fail. If this occurs, BrightStor ARCserve Backup immediately scans your environment to find duplicate copies of the backup session that was being restored. This functionality is available when back up is performed using the Disk Staging Option or tapecopy. If a duplicate, or clone, of the backup session exists, BrightStor ARCserve Backup uses the copied session to complete the restore job automatically.

Optimize Restore Option

BrightStor ARCserve Backup discovers duplicate backup sessions, where one session resides on tape media and another session resides on a file system device, the Optimize Restore option directs BrightStor ARCserve Backup to restore the data from the session that resides on the file system device. This functionality is available when back up is performed using the Disk Staging Option or tapecopy.

Under most circumstances, restoring data from a file system device is faster than restoring from tape media. However, you may wish to consider disabling the Optimize Restore option if you are using tape media or a library with high-speed reading capabilities.

The Optimize Restore option is a global setting that is applied to all restore operations, and is enabled by default. To disable the Optimize Restore option, clear the check mark from the Optimize Restore check box.

Disk Staging Option

Using the Disk Staging Option you can back up data to a temporary data storage location, migrate (copy) the data to permanent storage media, and purge the data from the staging area at a later time. When necessary, the Disk Staging Option lets you restore data directly from the staging device.

Backing up to a file system device is generally faster than backing up to tape media. Faster backups require smaller backup windows. In addition, you can further decrease the backup window by streaming jobs simultaneously to a file system device.

BrightStor ARCserve Backup provides you with the capability of streaming multiple jobs simultaneously to the FSD. The base product allows you to write a maximum of two streams per job simultaneously. Licensing the Disk Staging Option enables you to increase the simultaneous streams to 32 (for each job and each staging group).

The Disk Staging Option also reduces the restore window. Restoring data from disk is generally faster than restoring from a tape, because there are no delays due to tape load and seek latency. When you back up data to a staging device, you can create policies so that the data can remain on the staging device after it is copied to tape media. If you need to restore data that exists in two locations (on the device and on tape), you can reduce the restore window by restoring your data directly from the staging device rather than retrieving the data from a tape stored in an off-site vault.

The Disk Staging Option provides you with the flexibility to change your backup destination by defining staging policies. For example, if your tape library is disabled, you can divert the backup job to an alternate file system device or library. Similarly, if a file system device reaches its storage threshold or is disabled, you can divert the backup job to a tape library.

Note: You cannot change the backup destination once the job has been created.

In addition, staging provides you with the following features:

- File System Capacity Management

- Multistreaming

- SnapLock Support

- Command Line Support

File System Device Capacity Management

Using the Disk Staging Option you can specify file system device capacity thresholds. The threshold can be represented as either the total volume used or as a percentage of the disk's total capacity used. This feature affords the following benefits:

- To ensure that BrightStor ARCserve Backup does not exhaust the full capacity of a disk, backup jobs fail when writing to a file system device when the total disk space used exceeds the threshold.

- To increase overall backup success rate, you can define staging policies that direct BrightStor ARCserve Backup to create a makeup job on Hold when data migration fails or create makeup jobs that will back up data to a final destination under disk full conditions.

- You can perform full, incremental, and differential backups.

Multistreaming

The Disk Staging Option lets you back up multiple jobs to the same file system device simultaneously, decreasing the backup window. Multistreaming provides you with the ability to restore data while backup jobs are running.

The BrightStor ARCserve Backup base product allows you to stream two jobs simultaneously. To stream more than two jobs, you must license the Disk Staging Option. After you license the Disk Staging Option, you can transmit up to 32 streams of data to the staging device.

SnapLock Support

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 at a minimum ONTAP™ version 6.4.1.

When you back up data using SnapLock protection, you cannot purge or over-write the backed up data until the specified retention date elapses. This ability helps to ensure that your enterprise complies with regulatory data-retention requirements.

Command Line Support

BrightStor ARCserve Backup lets you create backup to staging device jobs using either the graphical user interface or the command line utility. In the event a copy to tape operation fails, you can use the Query tool to analyze the file and session contents on the staging device. You can purge sessions from a staging device, using the Purge tool to remove data and free disk space from a staging device.

Application and Platform Currency

BrightStor ARCserve Backup r11.5 provides support for the following processors:

- Commercial Linux 2.6 Kernel operating systems:
    - RHEL 4
    - SLES 9
    - Turbolinux 10 Server
- Linux support on IA-64 processors
- Linux on AMD64 processors
- Ingres 3.0 Agent support where applicable (including cluster and OCFS support on Linux for x86 32-bits)

Lotus Domino Agent on Linux

Among the agents BrightStor ARCserve Backup offers is the BrightStor® ARCserve® Backup Agent for Lotus Domino. This agent communicates with Lotus Domino and BrightStor ARCserve Backup to back up the Lotus Domino database on a local or remote server. The agent handles all communication and transfer of data packets between BrightStor ARCserve Backup and the Lotus Domino database server.

The agent uses the Lotus Domino (Release 6) Backup and Recovery Application Programming Interface (API) to back up Lotus Domino databases and transaction logs using either a graphical user interface (GUI) or a command line.

The agent provides the following benefits:

- Flexible backup capabilities when creating and managing backups.

- Complete data protection for your Lotus Domino databases, configuration files, and transaction logs.

- Incremental backup of your Lotus Domino databases.

- Flexible scheduling capabilities. For example, you can submit a job for a date you specify and select a repeat method, or you can select a rotation scheme (a preset weekly backup strategy consisting of full backup jobs)

Lotus Domino Agent Features

The Agent for Lotus Domino offers these features:

Online or Offline Full Backup--The Agent for Lotus Domino copies databases to a staging area on disk, captures any changes made during the backup, and sends these changes with the backup files to the BrightStor ARCserve Backup server. Transaction logs and configuration files are sent directly to the BrightStor ARCserve Backup server from their original location.

Online or Offline Incremental Backup--The Agent for Lotus Domino backs up the full log segments and reports to Lotus Domino when the backup is complete. Lotus Domino then chooses to either rename and reuse these log segments or delete them when the server is shut down. This feature requires that the Archive Transaction Logging option be enabled by the Lotus Domino administrator.

Online or Offline Restore--The Agent for Lotus Domino restores databases, transaction log files, and configuration files. Databases are brought from the BrightStor ARCserve Backup server to a temporary directory (which serves as a staging area) where they remain until a recovery is initiated. Transaction log files and configuration files are brought from the BrightStor ARCserve Backup server and restored to their original location, eventually overwriting and replacing the original files.

Online or Offline Recovery--The Agent for Lotus Domino allows you to recover databases that have been restored to a temporary directory (staging area). The recovery process uses the transaction logs to roll the database forward to its current state (full automatic recovery) or to a specified point in time (point-in-time automatic recovery).

During a full recovery, the agent recovers the backup file using the rolled back information added to it, the transaction logs used during, and since, the backup, and the current transaction logs.

During a point-in-time recovery, the agent recovers the database up to the specified date using the transaction log active during the backup, any transaction logs that were archived since the backup was performed (up to the specified point in time) and, if necessary, the current transaction logs (also up to the specified point in time.)

Note: When operating from a command line, the agent always performs full recoveries. When operating from a GUI, you can choose the recovery type; you can either perform a full recovery or a point-in-time recovery, or you can disable the recovery process.

Supporting NEC CLUSTERPRO/ExpressCluster Clusters

BrightStor ARCserve Backup can be installed and configured in a cluster environment either as a CLUSTERPRO/ExpressCluster-aware application or as a CLUSTERPRO/ExpressCluster unaware application.

BrightStor ARCserve Backup is a fault-tolerant application, capable of handling failover and providing backup and restore capabilities for data residing in cluster environments.

NEC Cluster Server (CLUSTERPRO/ExpressCluster) allows multiple Linux-based servers to connect with one another so that they appear to network clients to be a single, highly available system. BrightStor ARCserve Backup supports NEC CLUSTERPRO/ExpressCluster version 3.1 SE and LE.

BrightStor ARCserve Backup support for NEC CLUSTERPRO/ExpressCluster offers the following advantages:

- Ability to run on NEC CLUSTERPRO/ExpressCluster and take advantage of high availability features such as:

  – Automatic failover of BrightStor ARCserve Backup services from one node in a cluster to another node

  – Ability to fail jobs over from one BrightStor ARCserve Backup node in a cluster to another node when BrightStor ARCserve Backup failover occurs

  – Ability to restart jobs after failover

  – Ability to use NEC cluster management tools

- Data backup and restore functionality for NEC cluster nodes.

Chapter 2: Changes to Existing Features

BrightStor ARCserve Backup r11.5 SP1 includes all of the features and functionality available in BrightStor ARCserve Backup r11.5 and includes multiple enhancements to that functionality, in addition to its many new features, to help you maximize backup and restore performance. The following Chapter provides information about the enhancements to existing features included in this release.

Modified Features in BrightStor ARCserve Backup r11.5 SP1

This section describes the following enhancements to the existing features.

Enhancements to Existing Features

The following areas have been enhanced for BrightStor ARCserve Backup r11.5 SP1:

- FSD Session Chunking Support
- FSD Catalog Merge Support
- Extended Path Support

FSD Session Chunking Support

BrightStor ARCserve Backup has been enhanced to backup to a file system device (FSD). A backup job to a FSD can be a large session. However, depending upon the limitations of the operating system, the maximum file size for a single backup session may be restricted. To overcome this file size limitation, BrightStor ARCserve Backup chunks these excessively large sessions into smaller session slices so that the size of each slice is less than the maximum supported size.

FSD Catalog Merge Support

The catalog merge functionality has been extended to sessions that are created on file system devices. This feature allows FSD to merge sessions in a more efficiently.

Extended Path Support

In this release of BrightStor ARCserve Backup file path support has be increased from 256 bytes to 512 bytes.

Note: Longer path names will be available starting with BAB r11.5 SP1. Previous versions will still have path name limitations.

Modified Features in BrightStor ARCserve Backup r11.5

This section describes the following:

- Enhancements to the existing features
- Features not supported

Enhancements to Existing Features

The following areas have been enhanced for BrightStor ARCserve Backup r11.5:

- Disaster Recovery
  - Enhanced Driver Support
  - Support for XFS/JFS File Systems
  - Support for Logical Volume Manager and Software RAID
  - Recovery time logging enhancements
  - ACL Support
  - Improved user interface
  - Localized Recovery Environment
  - Maintaining Disaster Recovery information in an alternate location
- Clustered Ingres Support on Linux Intel
- Cross-Platform GroupWise Browsing/Backup/Restore
- Single Object Restore in NDS

Disaster Recovery

The Disaster Recovery Option for Linux provides a full system data protection for the Linux backup server. It has been enhanced with the following features:

Enhanced Driver Support

This feature provides enhanced out of the box support for SCSI, FC, RAID, and NIC adapters. You will be able to add extra drivers to the disaster recovery environment as long as the drivers are compatible with the recovery environment kernel and continue with the recovery. Modifications will enable higher number LUNs to be visible in recovery mode. Higher number LUNs are especially important for supporting FC environments. RAID, SCSI and Fiber adapters including the items below will be available for installation.

- HP RAID

- Dell RAID

- Common Adaptec SCSI adapters

- Emulex LP9000

- QLogic 2300 Adapters

Enhanced Restore Options

The Disaster Recovery option enhances the restore capabilities in the following ways:

- Support for all file systems that ship in Linux CD including XFS and JFS

- Capability to restore software RAID partitions (LVM2 partitions) in disaster recovery mode

- Restore ACL

Recovery Time Logging Enhancements

Recovery time logging will be enhanced by the following:

- Improved ability to collect and send logs to CA support

- Improved logs allow you to take corrective actions without getting back to CA support

- Additional log messages at all relevant location

- Recovery environment should have a running console log.

- All disaster recovery are saved in a specific location

- Minimize the number of log files

- Logs are in verbose mode by default

- Automatically configure network in recovery environment

- Disaster recovery logs can be copied to a NFS share

- Allow DRStart to read disaster recovery information from a specific path rather than floppy

Improved User Interface

The user interface has been improved to facilitate the use of the Disaster Recovery option. The following areas have been addressed:

- Error messages
- Addition of on-line help
- Replace status bar
- Improve setting of the automatic mode and interactive mode

Localized Recovery Environment

The Disaster Recovery environment is now localized in all languages supported by the BrightStor ARCserve Backup base product in Linux. Once a language is selected, text messages will be displayed according to the selected language. The language of the backup system will also be stored as part of the Disaster Recovery information. The default language is English.

Maintaining Disaster Recovery Information

Product documentation will be enhanced in the following ways:

- On-screen text messages will be improved
- Help messages will be provided in the recovery environment as needed

Cross-Platform GroupWise Browsing/Backup/Restore

BrightStor ARCserve Backup now provides an enhanced Client Agent for NetWare, allowing you to browse, back up, and restore GroupWise resources. The agent now consolidates and displays File System and GroupWise TSA resources under their respective servers, allowing BrightStor ARCserve Backup for Windows, BrightStor ARCserve Backup for UNIX, and BrightStor ARCserve Backup for Linux to browse, back up, and restore NetWare GroupWise resources.

Single Object Restore in NDS

A single object can now be selected from the NDS tree for Restore operation.

Clustered Ingres Support on Linux Intel

BrightStor ARCserve Backup for Linux now supports Clustered Ingres. Clustered Ingres is an extension to the base Ingres product which allows Ingres to operate on a cluster as a distributed application, providing transparent access to databases residing on shared storage devices.

Features Not Supported

The following operating systems are no longer supported by BrightStor ARCserve Backup for Linux r11.5:

- Red Hat 2.1 (ES, AS)

- Miracle Linux 2.1

- Red Flag Data Center Server 4.0 (Ingres r3)

Chapter 3: Fixes Included in this Release

The following sections provide information regarding fixes included in this release of BrightStor ARCserve Backup r11.5 SP1 and r11.5 for Linux. Each item in the following sections includes a fix number and a brief synopsis of the fix.

All items in the following sections beginning with [Txxxxxx] or [Qxxxxxx], where xxxxxx is the test or published fix number, are included in this update. If you received a test fix not listed in any of the following sections, contact Computer Associates Customer Support to determine how the fix can be reapplied.

Included Fixes for BrightStor ARCserve Backup r11.5 SP1

- [T380113] Adapter number for the changer section of camediad.cfg file has been updated.

- [T457016] When the cleaning tape is worn out for HP StorageWork 72x6 Autoloader a cleaning alert message is displayed.

- [T348170] You can now successfully launch a custom job on a 7 day repeat interval including the day the backup is launched on. The caqd will no longer run at 95% cpu.

- [T348160] BrightStor ARCserve Backup has been updated with the following:

    - Backup no longer causes a system hang or system panic at the end of the backup on RedHat 3.0.

    - Restore of a tar format backup no longer causes long file names to miss the the last character in their name.

- [T348148] the inventory of the HP 36/72GB DAT AL 6 library now reflects an accurate inventory of all slots.

- [T348150] [T348151] BrightStor ARCserve Backup has been updated to ensure that library inventories or tape mounting operations on Sony LIB-162 libraries with 2 drives no longer stall.

- [T245066] BrightStor ARCserve Backup no longer fails in error with the message "E9131 File <filename> is truncated on the WS."

- [T380093] The BrightStor ARCserve Backup tape server has been enhanced to prevent filesystem group daemons from issuing test unit ready scsi commands to the autoloader, which, under certain conditions, can cause the jobs to fail.

- [T348143] The camediad now successfully finds the the IBM 36232L(S/X) library (changer) in the supported device list on the first attempt.

- [T348126] The BrightStor ARCserve Backup (BAB) Common Agent has been enhanced to prevent security vulnerability.

- [T348119] BrightStor ARCserve Backup no longer overwrites your Monday-Wed Differential backups when backing up an additional full backup.

- [T348100] When restoring a symbolic link, Restore no longer changes ownership of links form original owner to user.

- [T348107] BrightStor ARCserve Backup has been enhanced with the following:

  - MergeCat no longer fails and core dumps when dbclean is running.

  - Non-root restore to "original location" no longer fails.

  - When a new host is added to a BrightStor Server a message is visible in cadbd.log.

- [T3F9012] BrightStor ARCserve Backup has been updated to time-out in 30 minutes during a remote backup, if a network disconnection takes place generating a incomplete or failed status.

- [T348087][QO48118] BrightStor ARCserve Backup has been enhanced to include support for the HP 20/40 DAT AutoLoader HP 36/72 DAT Autoloader 300 SDLT drive ADIC FASTOR ARCHIVE PYTHON VS 160 EXABYTE VXA QUANTUM Valueloader SONY CSM and others. This enhancement also eliminates the need for a Tape Library Option License for single drive libraries with over 20 slots.

- [T348071] Camediad now properly supports COMPAQ 20/40GB DAT AL and ADIC FASTSTOR libraries.

- [T348076] Camediad now successfully detects the HP C9572CB in the supported device list. This is the alternate inquiry string for the HP THINSTOR, which is listed as supported in the CDL..

- [T348093] BrightStor ARCserve Backup has been updated to ensure security when using jobscripts during QUI and command line interactions with the scheduling daemon (caqd).

- [T348136] Csetup (cadbase_setup) no longer fails to install Ingres when a logical volume manager is used with Linux.

- [T348127] BrightStor ARCserve Backup (BAB) Common Agent has been enhanced to reliably login.

- [T348103] You can now perform a force inventory while mounting a new tape, and the new tapes will not take on the name and serial number of the tape in the previous slot. Also Auto-cleaning of the drive now executes at the time specified AUTO_CLEAN_TIME in the camediad.cfg

- [T3EE052] Backup and restore using POSIX TAR format can now successfully create the file name, without the last character being lost.

- [T348070] BrightStor ARCserve Backup has been enhanced to address a library with two drives.

- [T348075] The device list has been updated to include IBM DDS GEN5. Also included in devlist.dat is support for ADIC FASTSTOR and the HP 20/40GB DAT AL 6 library and HP 20/40GB DAT drive.

- [T348059] BrightStor ARCserve Backup has been updated to append the next day's backup to the prior day's seq 2 tape when running a custom rotation job to a stand-alone drive with append media option set.

- [T348050] BrightStor ARCserve Backup has been updated to reliably restore more than 5000 hard linked files (as in email attachments).

- [T380109] The Restore Ingres database no longer fails at the end of the job.

- [T4D9010] The Linux server backup no longer fails with status "echec" when spanning to a second tape.

- [T4D9030] During backup additional media is added in drives when the first drive is full.

- [T4D9033] Rotation backup job starts when failing to locate media.

- [T348192] The MySQL agent backup no longer fails after the 60th database with the MySQL error 1040: "Too Many Connections".

- [T348188] You can now perform a RMAN restore from a merged tape session(s) without generating an error message. Previously, attempts to restore Oracle database files using RMAN restore failed with an oragent "failed to start" error and on the BAB server the RMAN job was put in READY state (observed by running: ca_qmgr -list).

- [T348179] You can now run RMAN backups from a remote machine to a BAB server when the remote machine has two or more Network Interface cards. Previously, if the uname -a of the machine was not the name associated with the Network Interface card used for backups then backups and restores would fail since the -source option in the ca_restore and ca_backup commands will reflect the uname of the machine, not the name of the desired NIC card.

- [T348187] The camediad file has been enhanced to find the HP C9572CB in the supported device list. This is the string for the HP THINSTOR, which is listed as supported in the CDL.

- [T4D9004] After performing backups and restores for directories with ACL inside on Linux the Default ACLs are the same as the original backup.

- [T4D9002] The "ca_devmgr -deviceinfo" command has been updated to accurately reflects the status of the changer. Using command line utility ca_devmgr -offlinechanger <adapter> <scsi > <lun>.

- [T348183] Backup of files with over 1012 character directory path no longer fails with error "E9014 Failed to receive Header packet". Previously, this failure occurred when the Node directory excluded/included filter patterns.

- [T457027] Restore no longer hangs when applying qfa restore for sessions larger than 2 GB.

- [T348182] The restore of many individually selected files with long path names (over 61 characters total), no longer fails. Previously, the restore of selected files failed with the job log (BrightStor.log) error: "Failed to Read Media for Relative Path". Also, the uag.log size has been increased to 100M before it rolls over.

Included Fixes for BrightStor ARCserve Backup r11.5

The following section provides information about the fixes included in this release:

- [T457011] BrightStor ARCserve Backup has been enhanced so that you are no longer required to delete tape records completely (twice) from the database before you can reliably merge those tapes back into the database.

- [T348150] BrightStor ARCserve Backup has been updated to ensure that library inventories or tape mounting operations on Sony LIB-162 libraries with 2 drives no longer stall.

- [T348137] The cadbase_setup script has been updated to ensure that it accurately reports the space available to install Advantage Ingres on Linux or Solaris machines with LVM installed.

- [T380094] The Unicenter Network and Systems Management console now displays the correct integration message for BrightStor ARCserve Backup r11.1.

- [T37E084] Backup jobs now wait for pre-script jobs to finish before running.

- [T457005] The Add Job field in the Restore Manager now properly displays the job descriptions of restore scripts.

- [T457006] The ca_dbmgr –mediapool applyRetention command now runs correctly.

- [T457002] [T457008] The cprocess.cfg configuration file has been updated to ensure that the Number of Missed Files Allowed parameter works properly.

- [T380089] BrightStor ARCserve Backup has been enhanced to ensure that you can successfully restore data when the Client Agent for Linux is in single user mode and you have selected the Restore to original location option.

- [T30A181] From the Backup Manager, you are no longer asked to enter credentials such as username and password when the Client Agent for Linux is in single user mode.

- [T37E086] BrightStor ARCserve Backup tape selection criteria have been enhanced to minimize unnecessary tape movement (for example, loading and unloading) for Grandfather-Father-Son rotation jobs and custom rotation jobs.

- [T457009] BrightStor ARCserve Backup has been updated to enhance the performance of the queue server when a large number of job records exist in the job table.

- [T457010] Jobs and sessions in which the number of backed up files is zero are properly identified with a job or session status of Incomplete.

- [T348124] BrightStor ARCserve Backup has been enhanced so that Qualstart TLS library initialization no longer fails during the device mapping phase if there are more available drive bays than actual physical drives in the library.

- [T380093] The BrightStor ARCserve Backup tape server has been enhanced to prevent filesystem group daemons from issuing test unit ready scsi commands to the autoloader, which, under certain conditions, can cause the jobs to fail.

- [T348123] [T380090] [T380091] [T380066] [T380083] [T380056] [T380068] [T380081] [T380048] [T380049] BrightStor ARCserve Backup has been enhanced to resolve problems with daylight savings time in the following time zones:
  - Europe/Paris (T348123)
  - Hong Kong Daylight Savings (T380090)
  - Egypt Daylight Savings (T380091)
  - Turkey (T380066)
  - Time zone fix for TZ=NFT-1DFT,M3.5.0,M10.5.0 (T380083)
  - Time zone fix for GMT0BST,M3.5.0,M10.5.0 (T380056)
  - Time zone fix for GB (T380068)

- Time zone fix for GM0BST,M3.5.0/1:00:00,M10.5.0/2:00:00 (T380081)

- Time zone fix for MET (T380048)

- Time zone fix for MET-1METDST (T380049)

Note: Because Linux does not typically have the TZ variable, as other UNIX platforms do, this variable must be set manually to enable this fix. To set this variable, edit the /root/.bash_profile or the /etc/profile.d/bab.sh file and add the following:

export TZ=timezone

For example, for the time zone NFT-1DFT,M3.5.0,M10.5.0, add the following:

export TZ= NFT-1DFT,M3.5.0,M10.5.0

Source the new profile and restart the BrightStor ARCserve Backup services.

- [T30A182] The Database Manager no longer fails if the total number of files of all sessions exceeds 2147483647 files (2 GB).

- [T37E085] BrightStor ARCserve Backup now checks the version of the Advantage Ingres database you are using so that it no longer sends inappropriate warning messages about file size limitations to users of Advantage Ingres 2.6. These warning messages continue to be generated properly when users of earlier versions of the Advantage Ingres database approach the 2 GB file size limitation.

- [T348115] The E9032 error message "Failed to create file" now displays the name of the file that was not restored. In addition, the Activity Log now accurately reflects the job status.

- [T30A173] The sanutil utility now properly and reliably unlocks ranges of slots in SAN ACSLS environments.

- [T30A174] [T30A175] The tape server now uses the first available CAP during export operations in StorageTek ACSLS environments with multiple CAPs set in automatic mode, and memory corruption no longer causes camediad to dump the core in these environments. In addition, import and export performance has been enhanced, and initialization with volumes assigned to the ACS and in eject status now performs as expected.

- [T348113] You can now reliably and properly restore data to alternate hosts from online, multistreamed backups.

- [T37E074] Pre-script operations now reliably finish before backup operations begin.

- [T37E075] You are no longer required to reenter a username and password when using Job Status to modify a backup job that includes a NetWare client.

- [T380074] The last result reported for Rotation Ready jobs is now accurate even if the previous job has a last result of Unknown.

- [T380077] Successful backup jobs are now reliably and correctly identified in BrightStor.log.

- [T380084] SNMP alerts now correctly identify the server name and description OID.

- [T380085] You can now print the total number of archive logs backed up, rather than all archive logs.

- [T456010] The list of servers now refreshes properly in all managers.

- [T456013] The ca_restore command now properly recognizes and uses the –session and –tape switches.

- [T348098] Drives are now reliably cleaned at the appropriate time set in camediad.cfg using the AUTO_CLEAN_TIME parameter.

- [T348104] The BrightStor ARCserve Backup for Linux tapecopy functionality has been enhanced to ensure that the tapecopy function properly spans under the following circumstances:

  - Multiple media source to single media destination.

  - Multiple media source to multiple media destination.

  - Single media source to multiple media destination.

  Previously, up to a 64 KB block from any span operation (source or destination) might not have been properly copied from the source to the destination media, so that copies might not contain file data in the affected blocks. This meant that data from these blocks was unrecoverable from the tapecopy destination media.

- [T456008] Backup jobs no longer disappear after recycling the server.

- [T30A170] This fix addresses the following issues:

  - Media is now properly dismounted when the tape server starts with media already loaded in the drive.

  - The Device Manager no longer displays inappropriate information or random, nonsense characters for slots and drives that are empty or contain blank media.

  - StorageTek ACSLS now properly handles mount operations from all groups in the Device Manager.

- [T456011] BrightStor ARCserve Backup performance has been improved to ensure that distributed members in a SAN environment are no longer dropped from the SAN loop for RPC timeout errors while waiting for a MMO synchronization operation to execute.

- [T457006] Tape server group daemons no longer terminate abruptly during the course of an operation (for example, import or export). Previously, if the group daemon terminated, it left that group locked so that all subsequent jobs trying to use the same tape drive device failed.

- [T457001] The database server no longer hangs indefinitely waiting for the results of queries issued to the Advantage™ Ingres® database.