

BrightStor[®] ARCserve[®] Backup for UNIX

Release Summary

r11.5



Computer Associates*

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Chapter 1: New Features

This chapter summarizes the new features that have been introduced with BrightStor® ARCserve® Backup for UNIX 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 UNIX r11.5 SP1 provides support for:

- Novell Open Enterprise Server
- Tru64 Support
- 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.

Tru64 Support

This release of BrightStor ARCserve Backup now supports Tru64 operating systems. The following options are supported on the Tru64 server:

- Tape Library Option
- Backup Option for Storage ACSLS
- SAN Option
- Disk Staging Option

This release will be backward compatible with the following BrightStor ARCserve Backup r10.5 agents:

- All supported file system/OS agents
- Oracle
- Informix

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 UNIX r11.5 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

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 overwrite 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 new support for the following platforms:

- Solaris 10 on SPARC, AMD64 and Intel EM64T processors

Note: The BAB Client Agent is supported by Solaris 10 platforms running with AMD64 processors.

- Solaris 9 on x86 32-bit (file-system and Oracle Agents only)

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
- FSD Catalog Merge
- Extended Path Support
- Informix 10 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 been 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.

Informix 10 Support

BrightStor ARCserve Backup now provides support for Informix 10 on HP-IA64.

Modified Features in BrightStor ARCserve Backup r11.5

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:

- Disaster Recovery for Solaris 10
- Cross-Platform GroupWise Browsing/Backup/Restore
- Single Object Restore in NDS
- Vulnerability Enhancements

Disaster Recovery for Solaris 10

BrightStor ARCserve Backup r11.5 supports DR for Solaris 10 on SPARC.

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.

Vulnerability Enhancements

BrightStor ARCserve Backup r11.5 has been updated to correct the following vulnerability issues:

- BrightStor ARCserve/Enterprise Backup Discovery Service SERVICEPC Remote Buffer Overflow Vulnerability
- BrightStor ARCserve/Enterprise Backup UDP Probe Remote Buffer Overflow Vulnerability
- BrightStor ARCserve/Enterprise Backup Agent for SQL Buffer Overflow Vulnerability
- BrightStor ARCserve/Enterprise Backup Default Backdoor Account Vulnerability
- BrightStor ARCserve Backup home directory access has been limited for non-administrators
- Usage of 3DES encryption is used for internal data

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 UNIX. 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

- [T348173] The tapecopy function now properly moves tapes into drives even if there are two tapes in the inventory with the same random ID.
- [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.
- [T37E086] [T37E091] 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.
- [T457002] [T457008] The cprocess.cfg configuration file has been updated to ensure that the Number of Missed Files Allowed parameter works properly.
- [T30A188] [T30A189] The tape server had been enhanced to check for the existence of the duplicate random ids when the tape formatted.
- [T380112] The configuration of the adapter section of comediad.cfg has been updated.
- [T37E093] The ca_dbmgr has been updated to ensure there proper error handling when querying the database.
- [T37E099] BrightStor ARCserve Backup now restores directories with a large number of files.
- [T456012] The tape server ACSLS volume configuration script has been updated to prevent BrightStor SAN servers from getting black flagged when failing to nlo_volcfg.sh 'rm' command.
- [T37E062] [T37E078] The slot information has been updated to ensure that tapecopy now properly exports data.

- [T457021] The Device Manager no longer displays inappropriate information or random, nonsense characters for slots and drives that are empty or contain blank media.
- [T37E096] When configuring libraries, BrightStor ARCserve Backup now provides complete serial numbers for SCSI IDs greater than nine.
- [T380101] BrightStor Enterprise Backup 10.5 SP2 for TRU64 has been updated so that compression is on after installation.
- [T380098] The `ca_dbmgr -show jobs` function has been enhanced to show pool name for custom jobs.
- [T348139] BrightStor Enterprise Backup Client agent has been enhanced to wait the specified `uag.cfg` parameter `"-P"` (Pre/Post script timeout) minutes after launching the post backup script.
- [T380097] BrightStor ARCserve tape server is now able to start reliably when the AIX host server is rebooted.
- [T348161] BrightStor ARCserve MMO server is now able to execute the vault cycle reliably when spanned media exist in the list of media to be vaulted.
- [T348154] BrightStor Enterprise Backup no longer shows a false fail when doing an RMAN restore.
- [T348091] BrightStor ARCserve Oracle agent is now able to reliably execute RMAN backup/restore jobs binding to a user specified hostname. A new switch `"SBT_SOURCE_NAME="` had been added to the RMAN configuration file `sbt.cfg` to allow the user to specify a hostname for BAB oracle agent to bind to in the case multiple NIC environment.
- [T457007] This fix addresses the following issues for AIX:
 - 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.
- [T348138] The `camediad` file has been enhanced to recognize the IBM DDS GEN5 tape drive.
- [T37E080] Tapecopy jobs now allow two tapes with the same random id, to be copied without failing.
- [T457002] The `cprocess.cfg` file now properly maintains the `NUMBER_OF_MISSED_FILES_ALLOWED`.
- [T348106] The Oracle agent now properly restores to an alternate server. Previously, the agent was attempting to shutdown and already down or nonexisting tablespace.

- [T4D9036] You can now successfully move media to a tape drive in distributed server without generating the error MOVE FAILED, RET = 161.
- [T30A190] Lotus Notes agent now successfully backs up files when the lotusacli input file is larger than 32 KB.
- [T4D9008] The Backup Manager now retains a previously selected raw partition in an open job as a checked (selected) option in the Open job script dialog.
- [T4D9012] The comediad.pre script is now able to get device information from Cambex adapters.
- [T380106] The SNMP traps no longer have an 80 character limitation for the jobid on the SNMP trap string.
- [T348185] The Oracle agent has been enhanced to allow users to restore their previously backed up Oracle files (created using the GUI before r11.5) to an alternate directory location, without interrupting the Oracle server.
- [T457015] [T457025] BrightStor ARCserve tape server is now able to reliably perform drive cleaning on HP 36/72GB DAT 6 AL tape drives.
- [T457028] New drives or drives that are commented back into comediad.cfg or if the \$BAB_HOME/data/nnnnnnnnn.dtscsi1015 is corrupted, are not be used in initialization.
- [T457029] The comediad initialization for the IBM 36232SX tape library with firmware version 1.30 no longer fails.
- [T37E098] ca_mmomgr with the export option now waits until slots are emptied to continue with other tapes that need to be exported. Previously, when running ca_mmomgr with the export option, the ca_mmomgr would export only as many tapes as available slots in the library and then exit.
- [T380100] [T380104] The SNMP message was re-organized to include the job id.
- [T348180] [T348182] You are now able to successfully restore of many individually selected files with long path names (over 61 characters total). Also, the uag.log size has been increased to 100M before it rolls over.
- [T457026] Core dump no longer occurs when running "comediad_setup". Previously, core dump occurred after one of the two conditions: (1) power off/on library, (2) cstart, cstop, offline/export/online on library panel.
- [T348175] BrightStor ARCserve filesystem agent no longer prints the following message unnecessarily to the uag.log at the end of a backup job to a BrightStor ARCserve Windows server. "CheckAnyInShm) Failed in semaphore operation (Identifier removed)"

- [T457019] The changer initialization is no longer slowed down when a drive is commented out of the `camediad.cfg` file.
- [T348112] Restore no longer fails when restoring to an alternate host from an online, multistreamed backup. Previously, the restore failed with "DSARestore() Job Aborted due to system error. Failed in DSARestore() for instance <SID>, E9900 The Restore of DB Object xxx failed." This happened on the second session with Oracle as the alternate host and started in no mount state. This fix is for Tru64 machines with the Oracle Agent from BEB 10.5 SP2.

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.
- [T380095] BrightStor ARCserve Backup has been enhanced to ensure that the `sanclrlock` process reliably clears semaphore locks for drives on AIX.
- [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 UNIX 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 UNIX 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 autoloaders, which, under certain conditions, can cause 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)
- [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.
- [T30A169] Ownership attributes are now preserved when restoring symbolic links in AIX.
- [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.
- [T380078] StorageTek ACSLS library tape device adapter numbers are now configured correctly in camediad.cfg.
- [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.
- [T380086] You can now reliably retrieve reports without receiving an error message. Previously, after applying AIX maintenance level 01 (5200-01), requests to open reports incorrectly generated error messages.
- [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.

- [T348090] You can now reliably back up and restore large files (over 2 GB) using the BrightStor® ARCserve® Backup Agent for SAP R/3.
- [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 UNIX tapecopy functionality previously released in BrightStor ARCserve Backup and BrightStor Enterprise Backup 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.