



TOLIS Group, Inc.

The Backup & Recovery Experts

PRODUCT DATASHEET

BRU SERVER FOR LINUX

Data Protection for Client/Server Backup

BRU SERVER FOR LINUX

BRU Server for Linux is a robust data backup and recovery application that supports client/server computing served by a Linux server system. The fabled reliabilities of Linux and BRU™ technology form a data protection system of unparalleled performance and availability to your archived data. BRU Backup & Restore Utility was the first end-user (non-development) application to support Linux at kernel 0.99pl12 in 1994, and BRU Server continues the tradition of providing leadership data protection services on Linux systems.

BACKUP, YOUR WAY

Pressures on computing resources to provide greater direct support of an organization are begging non-traditional approaches to backing up data. The time available (the backup window) to protect critical data is fast shrinking, and this poses a challenge. BRU Server allows data to be committed directly to tape, the traditional approach, or can it can be "staged" in a centralized disk farm attached to the server to virtually eliminate the perceived backup window at the client system level. Staging the data prior to commitment to tape also provides near instantaneous access when recovering data contained in these near-line disk volumes.

THE BRU ADVANTAGE

The unique BRU format is the foundation of its industry-leading reliability. Each and every bit taken off disks is audited until written to the disk stage or onto the media of the archive device. Users have multiple options to verify the backup's accuracy—including even performing the verification on a different machine. The BRU format also supports the maximum recovery of data should bits become corrupt during storage of the media. Unlike other products, BRU does not abort the recovery when bad bits are detected. Rather, the specific location detail is reported and mechanisms are employed to read past the corrupted data, and continue the restore.

INVESTMENT PROTECTION

BRU Server for Linux provides investment protection. BRU's native support of all tape library technology configurations, without the need for special software drivers and their attendant cost, means BRU Server will integrate seamlessly into your current system environment and support your hardware when you upgrade in the future. BRU Server's low overhead allows multiple, simultaneous streams of non-interleaved data to be written with little impact on the performance of the server system, allowing you to realize the maximum performance your hardware can deliver. Bottom Line - Your organization's data is critical, and how to protect it is an important decision. BRU Server for Linux delivers the reliability, functionality, flexibility, scalability and overall excellent value necessary to provide you with backup peace-of-mind.

PRODUCT HIGHLIGHTS



Linux

Straightforward installation; client systems and tape devices are automatically recognized and configured

Intuitive graphical user interface provides point-and-click operation to the rich feature set.

Character-based and graphical management consoles as well as command line access provide local and remote controls

Headless backup and restore operations can be managed via telnet or ssh sessions

Fully scriptable from the command line

Scalability is limited only by the performance of the network

Industry's shortest backup window (fully verified backups) by using Data Staging and out-of-band data verification

Proven data restorability of BRU technology - corrupt data is reported, circumvented, and the restore continues unless the tape drive is physically unable to proceed

Supports disk-to-disk, disk-to-tape, and disk-to-disk-to-tape backup strategies

Backups can be committed to a disk staging area at primary storage subsystem performance levels - virtually eliminating perceived backup windows at the client system level

Low overhead allows multiple BRU processes to write to multiple storage devices simultaneously with very little impact on system performance

Intelligent cataloguing provides a powerful query capability to recover select files quickly from tape

Pre and post scripts may be run on a client system to freeze the state of a database running on that machine or export its state to an intermediate file

E-mail notification of all operations including interact requirements and job status

Protects data on systems (like laptops) that are intermittently-attached to the network

Catalogs copied to tape in addition to the server HDD to provide enhanced availability to backup data should the server system HDD fail

Supports virtually all Linux distributions

Supports multiple libraries attached to the system running BRU Server—no special licensing is required

LEADERSHIP DATA PROTECTION

- Native Linux client/server backup software
- Ultra-reliable BRU™ engine delivers industry-leading data protection reliability and ultimate restorability of the protected data
- Backups can be 100% verified without access to the original filesystems
- Anytime Verify™ and Inspect Mode backup verification options can be run as an out-of-band process, freeing up the server faster
- Broad compatibility - backups can be verified on a different system, and even on a different platform
- Provides broadest Linux tape library support available
- Performance that streams modern tape drives
- Client system data is not interleaved with other client system data
- Client-side data encryption provides secure communication between client systems and the server
- Network traffic data compression is configurable and can provide better utilization of available network bandwidth

FLEXIBLE BACKUPS AND RESTORES

- Flexibility to define how the backup operation should be performed because very few sites have the same backup requirements
- Lights-out, automated backup operations are scheduled from the user interfaces
- Transport layer agnostic - whether Fibre Channel, SCSI, iSCSI, Gigabit Ethernet, Wireless LAN, etc.
- Provides data backup and restore services within NAS, SAN and wireless environments
- QFA (Quick File Access) provides fast access to files contained on the tape device
- Files and directories can be excluded from the backup from the client system (excluding mp3 files, for example)
- Remote log-in and administration

BRU SERVER'S DISK STAGING (DISK-TO-DISK-TO-TAPE)

The Challenge - To minimize the interruption of normal system activity while, at the same time, providing mechanisms to protect and reliably restore data lost when either the primary server system or a client system fails.

The Solution - BRU Server Disk Staging in concert with core BRU™ functionality reduces the perceived backup window at the client level, reduces the backup verification window at the server level, and provides the near instantaneous recovery of recently created files from disk, rather than tape.

BRU Server Disk Staging - The concept of disk staging is the writing of backup data to hard disk first rather than directly to tape, traditionally a slower technology. Then, at the system administrator's discretion, the data contained in the disk staging area is committed to tape in a background process.

BRU Server Disk Staging uses a centralized disk farm attached to the system running BRU Server. The Disk Staging area can be configured as all, or part of an attached RAID subsystem, or a JBOD (Just a Bunch of Disks) subsystem. The Disk Stage can be split over multiple directories or volumes, and the discrete volumes can be allotted to different workgroups, departments, or divisions. This "stacking effect" allows multiple client systems to send their backup data streams to the Disk Stage simultaneously to minimize the effect of backup window downtime. Backup performance is limited only by the network's bandwidth.

Data written to the BRU Disk Stage can be fully verified in the same manner as verifying a tape archive to assure accuracy. Additionally, a single file can be retrieved from tape when the data has been up-staged from the BRU Disk Stage to the tape archive. Other backup tools write multiple file images to tape from their disk stages and require the complete image be restored from tape back to the disk stage prior to retrieving a target file.

WHAT IS THE VALUE OF PLACING CATALOGS ON BOTH SERVER HARD DRIVE AND TAPES?

In short—huge if the catalogs on the backup server hard disk are either lost or altered. The catalogs are the roadmap to your data. When lost, they must be manually re-created - a painful and time-consuming effort. If the catalog is lost, simply use BRU Server's Scan feature and the catalogs will be automatically re-created on the server's hard disk from the catalogs contained on the tapes. The process takes minutes versus the hours/days of manual re-creation.

BRU SERVER SUPPORT OF TAPE TECHNOLOGY

- Compatibility with all SCSI, Fibre Channel, Firewire and USB tape drives
- Compatibility with all tape technologies (i.e. LTO, DLT, AIT, VXA)
- Compatibility with all SCSI and Fibre Channel libraries containing any number of tape drives
- Supports any number of tape slots in a library
- The ability to define "Destinations" as a fixed set of slots
- The assignment of Destinations from a pool of free slots as needed
- The allocation of slots within a tape library in an arbitrary manner
- Ability to define and exclude sets of tape cartridge slots from use
- Ability to write concurrent, non-interleaved data streams to multiple tape drives within a tape library.
- Ability to write to multiple tape libraries attached to the server.
- Support of variable block mode to allow modern tape drives to achieve their maximum performance potential.
- TapeAlert™ to monitor and report connectivity issues, dirty tape drives, bad tape drives, and bad tapes
- Alerts users to manually insert a cleaning cartridge into a standalone tape drive
- Automatically inserts a tape cleaning cartridge into a tape drive in a tape library
- Tape bar code reader support
- Unique Drive Autobalancing™ that spreads loads across multiple drives within a library to assure enhanced library hardware uptime
- An efficient data layout on tape to optimize utilization of tape cartridge capacity

SEAMLESS SUPPORT FOR LINUX-SERVER NETWORKS

- Client system backups are not interleaved, thereby further shortening the time to restore selected client system files
- Highly scalable—limited only by network bandwidth:
 - 10baseT = 25 client systems
 - 100baseT =250 client systems
 - 1000baseT (gigabit ethernet) = 1000 client systems

AUTOMATIC BACKUP OF INTERMITTENTLY-ATTACHED SYSTEMS

Enabling technologies such as SAN, LAN, WAN, Wireless, IR and TCP/IP now support mobile computing environments that allow systems to be easily deployed from one place to another. These systems include the ever more powerful laptops that are increasingly replacing traditional desktop systems

While the mobility of systems is a boon to more efficiently conducted business, it presents a significant challenge to be able to protect the critical data contained on these mobile systems. The data contained on these systems is typically at the greatest risk of loss.

BRU Server for Linux supports the backing up of these mobile systems, whenever they are physically plugged into the network or are configured to run wireless and are brought within an organization's wireless area of coverage.

BRU Server periodically polls for configured client systems. When one connects to the network and is recognized, the backup server initiates the backup. During the next poll, following completion of the backup, BRU Server recognizes the system has already been backed up and will poll the system again in 24 hours.

Initially, a full backup of the intermittently attached system would be a done to capture the entire contents of the system. Thereafter, either incremental or differential backups can be done and are virtually transparent to the user.

Following the initial full backup, the subsequent automatic backups are typically completed in 2-3 seconds: without manual intervention by the user. The time to complete the backup is dependent on how much data has changed and the type of network in use.

BRU SERVER CLIENT SUPPORT

- Virtually all Linux Distributions
- Solaris
- FreeBSD
- SCO OpenServer
- AIX
- IRIX
- HP-UX
- Mac OS X
- x86-based Windows
 - * 98 SE
 - * Me
 - * XP Home/Professional (Includes SP2)
 - * NT 4.0 Workstation/Server/Enterprise Edition (Requires SP6)
 - * 2000 Professional/Server/Advanced Server (Requires SP4)
 - * Server 2003
 - Web/Standard/Enterprise/Datacenter

BRU SERVER SYSTEM REQUIREMENTS

Minimum Requirements

- Linux x86 operating system (libc2.1 or libc2.3 based)
- 2.4.24+ kernel or 2.6.7+
- 1 GHz processor
- 256 MB RAM

Recommended Requirements

- 2.4.25 or 2.4.26 Kernel (or 2.6.8 if running Fedora Core 2)
- 1.5GHz Processor
- 512MB RAM

Disk Requirements

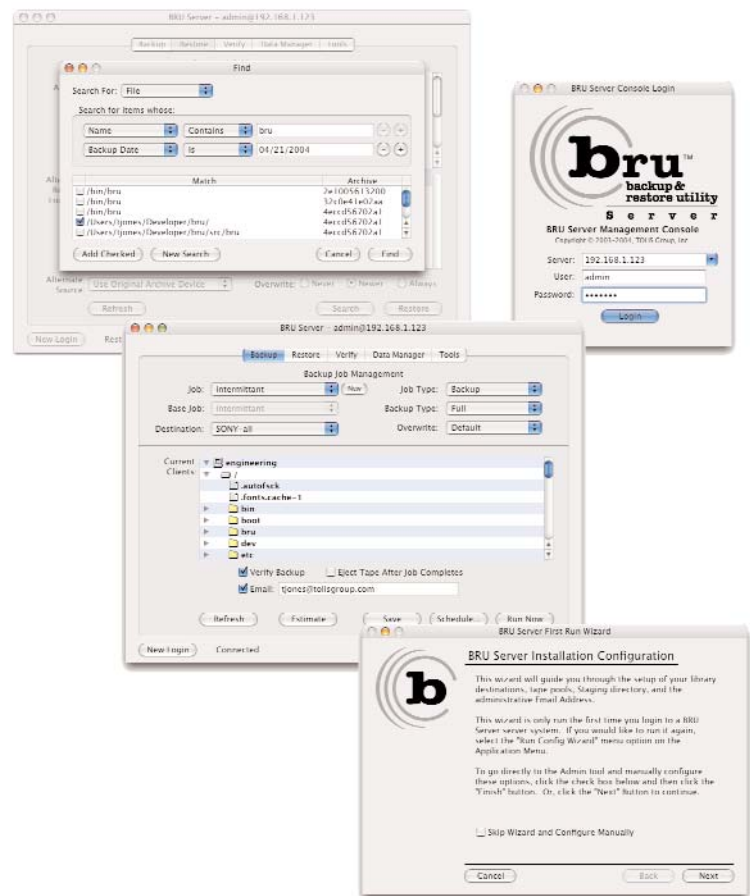
- BRU Server, 55 MB of disk for full install (server software, user interface, server agent)
- 15 MB of disk on client systems
- 3 MB of disk per 100,000 files backed up
- All transport layers are supported (SCSI, Fibre-Channel, USB, or Firewire)
- Disk Staging: disk requirements defined by Administrator

Network Requirements

BRU Server requires ports 14441 to 14450 open for bi-directional TCP traffic

EASY-TO-ACCESS SUPPORT

- Built-In help Pages. Useful when you can't find the manual.
- Backup Assistance Hotline. If you need assistance, we're here to help. Expert technical support FREE for the first 30 days, renewable in low-cost, one-year increments.
- Annual support agreements provide unlimited phone, fax and e-mail support as well as free updates and special discounts on product upgrades.



BRU Server provides a graphical user interface and a character-based interface, both of which provide access to BRU Server's robust functionality. An easy to use graphical Installation Configuration Wizard is available for simplified set-up.



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