

Backup Express for Novell Environments

Syncsort Backup Express is the only enterprise data protection software that reduces storage, bandwidth and CPU requirements, while enabling server and site recovery in just minutes. It provides fast server backup, reliable disaster recovery and business continuity. This robust, proven solution is easily managed across heterogeneous operating systems, including NetWare, OES and OES2 NetWare, OES and OES2 Linux, UNIX, and Windows.

Advanced Backup Express architecture makes Backup Express uniquely effective in all Novell environments. Backup Express was the first solution to offer data protection for clustered OES environments and continues to provide a full range of robust backup and recovery features for Novell systems.

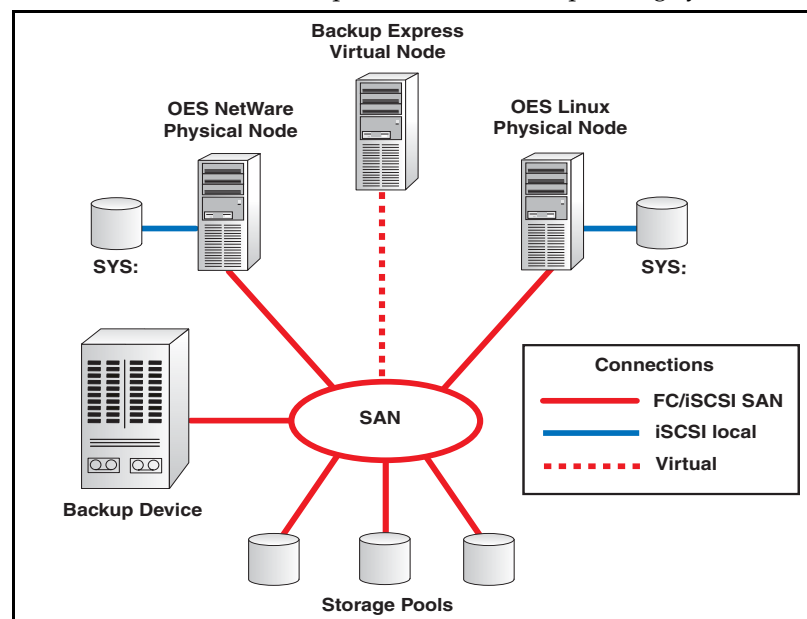
Features described in this document may be optional separately licensable components. For details contact your Backup Express representative.

Industry Leading Novell Support

- **SLES master server.** Supports Backup Express master servers running SUSE LINUX Enterprise Server (SLES) with or without OES or OES2.
- **OES clients.** Backs up nodes running NetWare, OES and OES2 NetWare, OES and OES2 Linux, and SLES.
- **OES device servers.** Supports storage devices attached to NetWare, OES and OES2 NetWare, OES and OES2 Linux, and SLES device servers, enabling direct control of robotics and media.
- **NSS.** Supports Novell Storage Services (NSS) on NetWare, OES and OES2 NetWare, as well as OES and OES2 Linux. NSS volumes can be restored to any of the three systems, as supported by Novell, assuring protection and easy transfer of critical security and permissions metadata.
- **Backup through SMS.** Provides dependable backups and restores via Novell Storage Management Services (SMS), including NetWare NDS/eDirectory, GroupWise backup, and files to disk or tape.
- **Netware to OES Migration.** Supports ability to back up data exposed by file system, GroupWise, and eDirectory Target Service Agents (TSAs) on NetWare prior to migration, and restore data to OES and OES2 Linux after migration.
- **Advanced Cluster Support.** Supports OES NetWare clusters, OES Linux clusters, 32-bit and 64-bit OES2 clusters, and OES mixed clusters conforming to Novell guidelines and recommendations. Backup Express provides job-in-progress automatic failover/failback intelligence for clustered NetWare, OES NetWare, and OES Linux servers. The cluster-aware Backup Express management interface uses Single System Image (SSI) to intelligently display the shared resources as one virtual entity (see diagram), ensuring data will not be skipped or backed up multiple times as volumes migrate. Backup Express supports both active-passive and active-active clustering.
- **eDirectory Support.** Provides online data protection for Novell eDirectory, including incremental backups of eDirectory 8.7+ on

NetWare, OES, and OES2 of the whole tree at object level through TSANDS and at eDirectory database level of an individual server through eMTool.

- **NLSBS.** Protects Novell Linux Small Business Suite (NLSBS), a suite of products that provides the advantages of Linux to small business.
- **Open Files and Snapshots.** Provides file-level Open File management for NetWare 6.0. Uses the native NSS pool snapshot functionality for NetWare 6.5, including OES and OES2, to preserve a point-in-time view of all files on volumes and eliminates the need for third-party agents to manage open files. Supports pre- and post-snapshot scripts.
- **Flexible SAN Management.** Dynamically allocates drives in a SAN, with any combination of platforms including NetWare, OES and OES2 NetWare, OES and OES2 Linux, other Linux systems, Windows, UNIX, and NDMP/NAS -- all in the same SAN. Dynamically shares drives across all these platforms at the same time in the same SAN including iSCSI SAN.
- **Shared Storage Devices.** Efficiently manages devices and media used to back up and restore NetWare, OES, OES2, and SLES servers. Runs backups in the same SIFD tape format as other operating systems



Open Enterprise Server Cluster

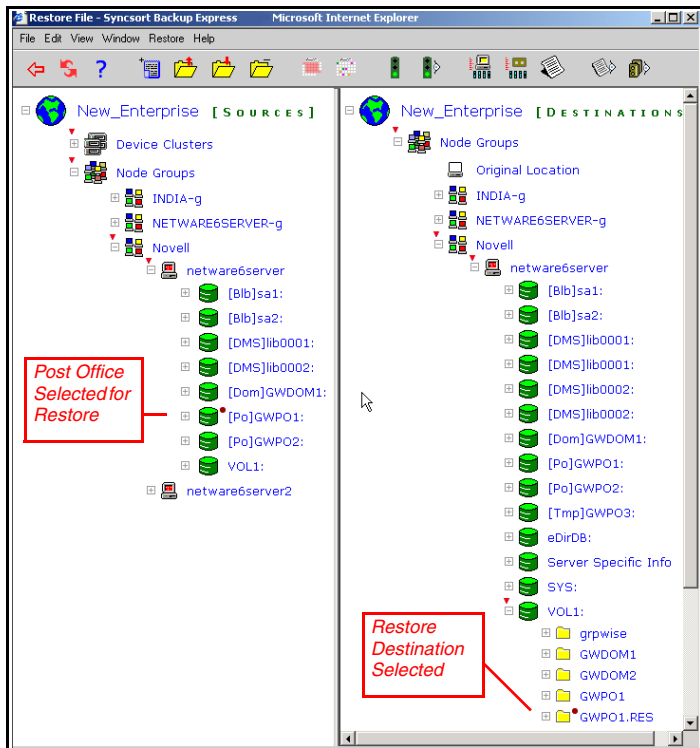


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such as Windows and UNIX. Shares storage devices, including automated libraries, among NetWare, OES, OES2, SLES, and other device servers. Netware and OES device servers directly control robotics.

- **Simple Installation.** Utilizes graphical InstallAnywhere process to simplify installation of OES and OES2 Linux master servers as well as OES and OES2 NetWare clients, including OES clusters.
- **GroupWise Support.** Provides online protection for GroupWise 6.5+/7.x+, including domains, post offices, libraries, and binary large objects on NetWare, OES and OES2 NetWare, OES and OES2 Linux. Uses GW TSA and TSAFSGW to back up GroupWise 6.5. and 7.0 respectively. Backup Express restores entire databases or specific database files to any file system supported by TSAFS.

- **Script Facilities.** Enable Backup Express to automatically run customized commands, such as shutting down or reviving a database, before or after a job.
- **Intelligent Device Management.** Optimizes device selection and intelligent SCSI reserve/release features, enabling the use of SAN paths whenever possible, keeping data off the LAN. Device persistency ensures backups run if servers are rebooted and drives are reordered in the SAN.
- **Multiple Server Support.** Allows many backups to be run concurrently, dramatically accelerating processing and sharing the load among servers, so no machine is I/O bound.
- **Parallel Backup and Device Spanning.** Significantly reduces backup time via concurrent backups of multiple volumes to multiple drives. Ensures a backup automatically continues on another device when a tape is filled.
- **Tape Drives.** Uses all tape drives supported by Novell, including LTO, DLT, and SuperAIT (SAIT) drives.



Backup Express GroupWise Restore

Requirements/Compatibility

- **Syncsort Software.** OES support requires Backup Express 2.35 or higher. OES2 support requires Backup Express 3.0 or higher. The Backup Express master server can run on 32-bit Windows 2000/2003 32-bit, Windows 2003 x64, UNIX, and Linux, including OES and OES2 Linux. Only one master server is required per Backup Express Enterprise. The Management Interface requires Internet Explorer 6.0 SP1 or higher.
- **Novell Software.** NetWare 6+, OES and OES2 NetWare, OES and OES2 Linux, SLES8/9/10+, GroupWise 6.5+/7.x+. Appropriate TSAs must be installed and loaded on each NetWare, OES or OES2 Linux node to be backed up.
- **Supported Peripherals.** Backup Express is fully certified with most SAN, NAS, disk, library, switch, and operating system vendors and supports most storage media and automated tape libraries.

For additional information, see the *Backup Express Technical Specifications*. For current specific compatibility information visit www.syncsort.com/SuppTech.

Other Capabilities

Syncsort's Backup Express provides an end-to-end data protection solution that is easily managed from a single interface and catalog for centralized control of both disk-based and traditional tape-based data protection strategies.

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