NetVault
Data Recovery Solutions

BakBone®

Challenges in Today's Business Environment

The Importance of Data
Businesses today rely increasingly on data to help them make crucial decisions. Without current and accurate information, every transaction and business process would quickly grind to a halt. However, the amount and growing complexity of data, as well as the IT environment in which it lives, is making it increasingly difficult to maintain both availability and reliability.

Data Growth and Complexity
Businesses are dealing not only with data that is growing exponentially, but with different kinds of data (including structured and unstructured) from various applications across multiple platforms. The result is an IT infrastructure consisting of hundreds of servers filled with disparate technologies from a wide range of storage providers. As the need to make data available 24/7 becomes the norm, businesses must also contend with shrinking backup windows, demands for faster recovery times, new regulatory compliance issues mandating how and for how long data must be kept, and constantly constrained budgets and resources.

Data Protection
Resolving data growth and complexity issues requires careful planning and a well-defined data protection strategy. With so much at stake and so many things to consider (databases, applications, operating systems, devices, locations, etc.), finding the right solution can be a daunting task. Some well-known software and hardware companies have addressed these issues by adding a plethora of data protection products to their business/IT solution offerings. However, in truth, these products actually only solve part of the problem, and often require patching together a "complete" solution, which can result in spiraling management costs and increased compatibility risk. In addition, many of these products are difficult to integrate, hard to learn and use, and lack the flexibility to work across heterogeneous environments.

With the operational management of storage, not the actual storage hardware, accounting for between 70 and 80 percent of total storage related costs (Gartner Group), finding the right software to implement an effective data protection strategy is crucial to every business.

Redefining Data Management
When computers and data were in their infancy, the main concern of businesses was to protect data from deletion or corruption, and to be able to restore it if something did happen. To accomplish this, all that was needed was a simple and reliable backup software package and tape drive, which could run at night and ensure data was safe and protected.

With today's reality of diverse IT environments, the intricate nature of modern data, and the criticality of data to keeping a business operating, a new approach to data management is emerging. The new model for effective data management is based on data protection, data availability and data retention – and must be flexible, cost-effective, and easy to integrate and manage. This is not a quick-fix strategy.

Accomplishing effective long-term data protection, data availability and data retention requires reducing complexity – not just in your data protection solution, but also in the way in which business is conducted. BakBone embraces this in everything we do.

Effective Data Protection - The New Model

BakBone's data protection framework, Integrated Data Protection™ (IDP), embraces the new model of data protection, data availability and data retention that is flexible, cost-effective, and easy to integrate and manage. A comprehensive suite of heterogeneous data protection technologies that are seamlessly managed from a centralized console, IDP takes an integrated "building block" approach to help you achieve your data protection objectives, increase business value and reduce risk.

IDP also addresses the issues of reducing complexity and costs, while delivering on the core concepts of the new data protection model:

Data Protection

IDP's fully integrated applications and core service components work in the most complex heterogeneous environments and make it easy to proactively control, configure and administer data protection requirements. With IDP's backup, disaster recovery, replication and management capabilities, data is fully protected against loss. BakBone will continue to fully support this portfolio as it expands into continuous data protection (CDP) with the industry's only CDP solution for heterogeneous environments.
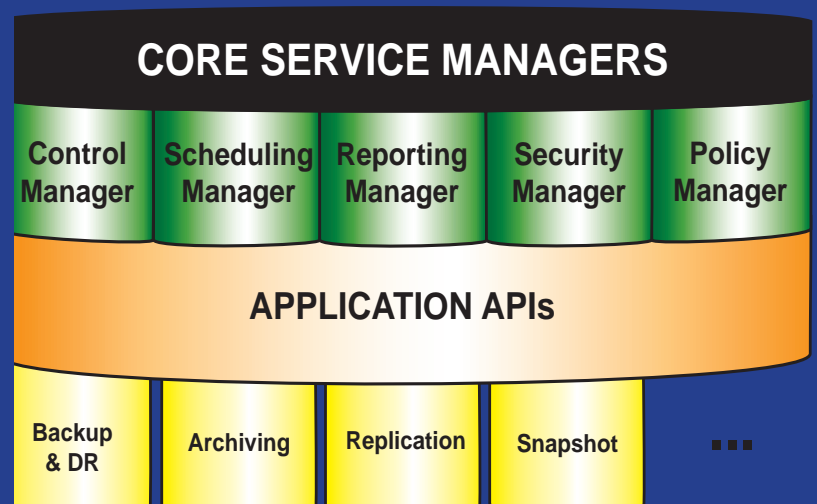
Data Availability

IDP enforces data policy management to ensure accurate, up-to-date information is available to support people, processes and transactions. Because IDP is fully integrated and supports every element of the IT environment, it is the ideal solution for guaranteeing business continuity by ensuring data is always accessible.

Data Retention

IDP's management capabilities give you maximum flexibility to design, implement and control data policies that meet the most stringent regulatory compliance requirements. IDP makes it easy to leverage existing tape or other archival technologies to meet long-term data storage needs.

BakBone's IDP framework is made up of a comprehensive set of data protection technologies, including:

- NetVault®: Backup
- NetVault®: Backup Application Plugin Modules
- NetVault®: Replicator
- NetVault®: Report Manager for Backup
- NetVault®: Report Manager for Disk Space

CORE SERVICE MANAGERS

Control Manager	Scheduling Manager	Reporting Manager	Security Manager	Policy Manager

APPLICATION APIs

| Backup & DR	Archiving	Replication	Snapshot	...

Maximize Performance with Modular Design

Having the ability to protect, backup and restore data has never been more important. Whether you are responsible for a small departmental workgroup or a large corporation's multi-site network, the challenges of providing needed services are ever-present.

The NetVault®: Backup product line helps you meet these challenges by providing enterprise-class data protection for complex heterogeneous IT environments, regardless of size. The key is NetVault: Backup's flexible modular architecture, which delivers proven reliability and high-performance, with an unmatched combination of features. This design provides a unique flexibility that reduces deployment costs and total cost of ownership (TCO) by enabling the user to implement a solution designed to meet current as well as future needs.

NetVault: Backup offers a number of business-critical benefits:

- ◆ Supports business growth and management of complex environments
- ◆ Reduces implementation costs and TCO with flexible configuration options
- ◆ Supports application investment and growth with cost-effective scaling
- ◆ Optimizes data availability by maximizing existing resources
- ◆ Enhances business continuity by reducing system downtime
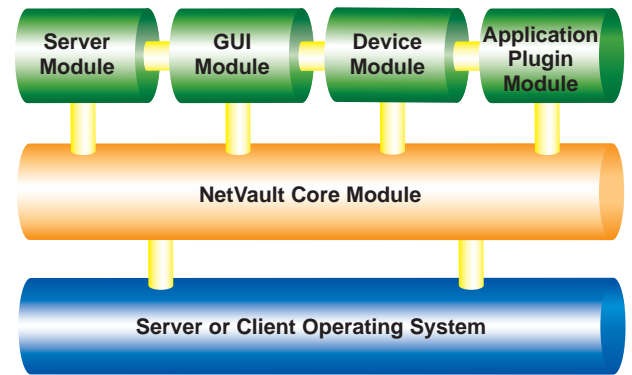
Unlimited Flexibility with Plugin Modules

There are a number of scalable NetVault: Backup solutions available, as well as a variety of optional plugin modules to address your specific needs, including:
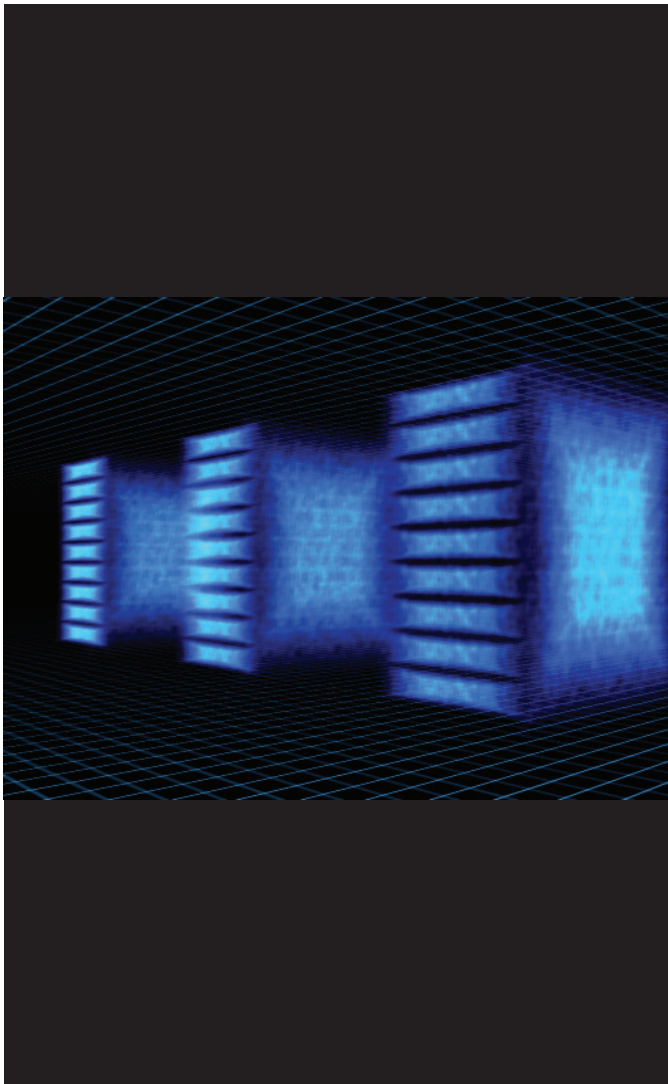
NetVault: Backup Encryption Plugin Module
Provides an effective and efficient means to guard against leakage of sensitive personal and company data, whether due to network packet capture or loss of backup media. All data, either transmitted over the network or stored in backup media is encrypted and secure.

VaultDR™ Plugin Module
Ensures that your data will be available quickly in the event of a catastrophe or disk failure. All operations can be managed from the central NetVault: Backup server, allowing administrators to quickly and easily re-establish network communication. Using the provided recovery tools eliminates the need to reinstall operating systems and applications, thereby saving valuable time when it is needed most.

NDMP™ Plugin Module
Provides users a highly efficient and robust storage management solution for Network Attached Storage (NAS) devices including local backup, automation control, direct access restores and Dynamically Shared Devices. Leveraging data transfer over the network while maintaining centralized backup administration, NDMP provides fast, online backup and recovery of data.

Virtual Disk Library (VDL) / Shared Virtual Disk Library (SVDL)
For disaster recovery and business continuity, the VDL and SVDL options provide enhanced backup and recovery performance by creating a virtual tape library on disk. NetVault: Backup's disk-to-disk technology allows for flexible configuration of customized virtual libraries, each with its own specific number of tape drives, slots and capacity.

NetVault: Backup SmartClients™
SmartClients add intelligence to a Storage Area Network (SAN) or NAS environment. Enabled with the ability to control a locally attached media device, a SmartClient can call data from all clients on a network and move that data to a storage device without having to go through the NetVault: Backup server.

Complete Integration and Heterogeneous Support

As organizations become more dependent on electronic data and communications, protecting business-critical information and applications has become a central concern. NetVault: Backup's family of Application Plugin Modules (APMs) sets new standards in application data protection with simple point-and-click installation and centralized administration of critical operations.

For data protection, disaster recovery and business continuity, NetVault: Backup's APMs provide online protection capabilities for critical applications. Available for UNIX, Linux, Windows and MAC OS X, NetVault: Backup's unique architecture provides the flexibility for growth and continued enhancement as your information storage needs expand and change. NetVault supports SAN and NAS backups easily and effortlessly, provides a common easy-to-use Graphical User Interface (GUI), delivers enterprise-wide control in distributed and centralized environments, and is able to operate in multi-vendor networks, supporting a broad range of servers, clients, databases, applications, storage media and high performance devices.

Ease of Deployment and Management with Online APMs

Microsoft Exchange
NetVault: Backup APM for Microsoft Exchange Server

Provides a powerful data protection solution, including multiple storage groups, mailbox stores and public folder stores. Performs full, copy, incremental and differential backups. Provides parallel backup support for storage groups. Allows the user to restore only what is needed, down to the individual mailbox level, thereby reducing the potential for data loss.

SQL Server
NetVault: Backup APM for SQL Server

Performs complete, incremental, differential, file and file group backups while data is online and accessible. Provides snapshot capabilities. Point-in-time functionality allows more granular restores, letting users restore to a precise point, significantly reducing potential data-loss.

MySQL
### NetVault: Backup APM for MySQL

Utilizes an intuitive GUI to consolidate the backup and recovery of multiple MySQL storage engines or instances into a single job without complex scripting. Performs full or incremental MySQL backups while data is online and accessible. Improved point-in-time functionality allows the MySQL APM to perform more granular restores letting users restore to a precise point and significantly reducing data loss.

Oracle
NetVault: Backup APM for Oracle Online

Supports full, incremental, differential, and incremental cumulative backups for both UNIX and Windows environments. Using a single interface

NetVault Application Plugin Modules (APMs) are available for a variety of databases and email systems. With features such as increased application availability through fast online backup, hot backup, support for multiple database servers on a single machine, a variety of backup operations and numerous selectable backup options you are sure to find the right APM for your network.
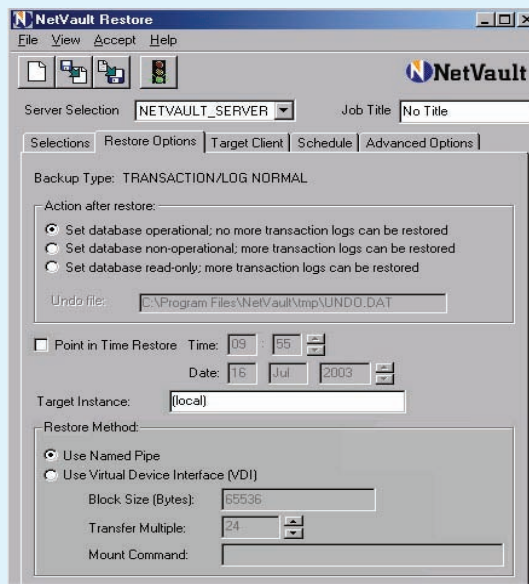
The NetVault Graphical User Interface (GUI) provides easy access for selecting specific items to restore
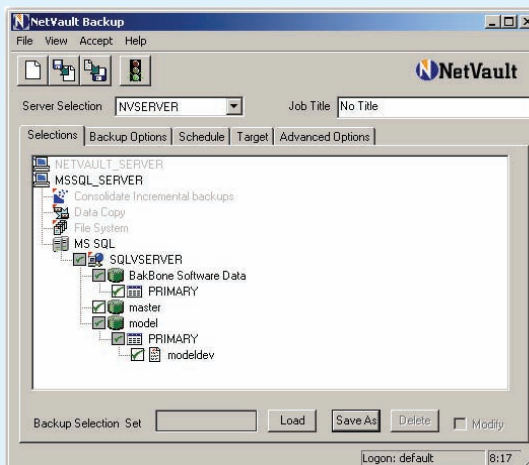
An easy-to-use point-and-click interface provides precise tuning of the backup and restore sets

for operations, regardless of platform, allows administrators to leverage their operational investments, manage migrations and maintain consistency in their backup solutions.

NetVault: Backup APM for Oracle RMAN

Provides increased control over Oracle backups by integrating the NetVault: Backup protection and granular control of Oracle RMAN with your backup strategies. Both the Oracle Online and Oracle RMAN APMs empower administrators with a single click select to backup all of the tablespaces in the entire Oracle database simplifying backup, including those that use an RMAN recovery catalog. As desired, you may include in the same backup, the database control file and/or the archive logs.

Other APMs
Informix™ APM

Supports backup of Informix databases in UNIX and Windows™ NT environments.

DB2™ APM

Supports backup of DB2 databases in UNIX, Linux, and Windows™ environments.

Lotus® Notes/Domino APM

Provides fast online backup and recovery of Lotus Notes/Domino environments, with the added ability to schedule automatic, unattended backups for local or remote domino servers across the network.

PostgreSQL APM

Provides excellent functionality and compatibility among open source databases.

Cross-platform Access and Availability

For the highest levels of availability, disaster recovery and business continuity, the NetVault®: Replicator product line provides continuous, cross-platform data replication for heterogeneous IT environments over standard IP networks. NetVault: Replicator offers centralized management of both real-time and scheduled replication across multiple sites for a wide variety of server platforms, storage devices, and applications. This unique flexibility reduces deployment costs and TCO by allowing customers to create a tiered solution that matches system and network resources to the value of the data.

NetVault: Replicator

◆ **Provides Continuous Protection of Mission-Critical Data**
Businesses require rapid, reliable and uninterrupted replication to avoid the risks associated with any critical data loss. NetVault: Replicator provides patent-pending hybrid semi-synchronous replication technology that combines the security of synchronous mirroring with the reliability of journaling technology. This delivers immediate byte-level replication over both local and wide area networks with assured write-order consistency and transactional integrity – so the business is constantly protected.

◆ **Supports Business Growth and Consolidation of Diverse Environments**
Growing businesses with multiple branch offices, business units, and merged or acquired operations, often have different IT environments. These diverse environments can make unified data protection either impossible or prohibitively costly, and often hampers the agility of the organization. NetVault: Replicator allows true cross-platform data replication between Microsoft Windows, Linux, UNIX and MAC OS X servers, significantly reducing the cost and complexity of data protection. This ability differentiates NetVault: Replicator, making it the ideal solution for mixed server environments and enabling it to support business expansion and IT efficiency initiatives.

◆ **Reduces Implementation Costs and TCO with Flexible Configuration Options**
To minimize the time, resources and costs to implement a data protection solution, NetVault: Replicator installs on existing production servers without downtime and has no special requirements for file systems, volume managers, applications or storage hardware.

◆ **Reduces Server and Network Traffic**
NetVault: Replicator replicates data at the logical file level, mirroring only data changes to reduce network traffic. The real-time software also provides unique adaptive data compression, bandwidth limit throttling and configurable replication data streams to minimize the impact to the local server while effectively using network bandwidth.

NetVault: Replicator OnDemand

For increased data protection and availability, the NetVault: Replicator OnDemand product line provides complete or incremental snapshots of data, based upon administrative requests.

NetVault: Replicator

Provides Continuous Protection of Mission-Critical Data

Supports Business Growth and Consolidation of Diverse Environments

Reduces Implementation Costs and TCO with Flexible Configuration Options

Reduces Server and Network Traffic

Reduce Complexity with Centralized Administration

As the amount of data continues to grow and become more critical to every day activities, the new technologies designed to guarantee the access and availability of that data has increased in complexity. This complexity has in turn increased risk and administration needs, and has left IT administrators with the challenge of ensuring that data is not only properly protected, but that the costs and resources required to manage it do not get out of control.

NetVault®: Report Manager (NRM) addresses these issues by centralizing administration, increasing staff productivity, and improving operational efficiencies with enterprise-class monitoring and reporting functionality. Powerful, yet easy-to-use and deploy, NRM is comprised of two components, NetVault®: Report Manager for Backup (NRMB) and NetVault®: Report Manager for Disk Space (NRMD), that can be licensed either separately or together.

NetVault: Report Manager for Backup (NRMB)
Uses real time notification and trend analysis to create a single view into enterprise NetVault: Backup operations.

- ◆ Predicts and eliminates problems before they occur with trend analysis
- ◆ Runs comprehensive reports with an interactive visual diagnostic tool

NetVault: Report Manager for Disk Space (NRMD)
Monitors and analyses storage and file system data for more efficient use of storage resources.

- ◆ Reclaims wasted disk space by finding free space, unaccessed files, duplicate files and old data
- ◆ Reduces downtime by monitoring disk capacity and file system I/O activity

NRMD Data Manager Option (DMO)
DMO adds the ability to move, copy or delete files based on a NRMD report. DMO integrates with NetVault: Backup and NRMD to enable file system archiving through the existing NetVault: Backup infrastructure. The NRMD DMO gives backup administrators a powerful automation tool by allowing them to take action directly from NRMD reports, and reduces administrator time by automating vital data management functions.

NetVault® Solutions

Backup and Recovery Technologies
NetVault®: Backup

NetVault®: Backup Plugin Modules

     Encryption Plugin Module

     VaultDR™ Plugin Module

     NDMP™ Plugin Module

Virtual Disk Library (VDL) / Shared Virtual Disk Library (SVDL)

NetVault: Backup SmartClients™

Application Data Protection
NetVault®: Backup Application Plugin Modules (APMs)

     NetVault: Backup APM for Microsoft Exchange Server

     NetVault: Backup APM for SQL Server

     NetVault: Backup APM for MySQL

     NetVault: Backup APM for Oracle Online

     NetVault: Backup APM for Oracle RMAN

     NetVault: Backup APM for Informix™

     NetVault: Backup APM for DB2™

     NetVault: Backup APM for Lotus® Notes/Domino

     NetVault: Backup APM for PostgreSQL

High Availability Technologies
     NetVault: Replicator

     NetVault: Replicator on Demand

Reporting and Monitoring
     NetVault: Report Manager for Backup (NRMB)

     NetVault: Report Manager for Disk Space (NRMD)

     NRMD Data Manager Option (DMO)

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