Symantec NetBackup™

Better Backup for a Virtual World

Data Sheet: Data Protection

Enterprise-class data protection

Long recognized as the market leader of enterprise backup and recovery software, Symantec NetBackup™ is built to protect the largest and most demanding data center environments. Engineered with Symantec™ V-Ray technology, NetBackup delivers breakthrough capabilities for virtualized systems that go well beyond what traditional backup practices can achieve. A single, intuitive management console reveals all backup and recovery activity, allowing consistent policies and service levels to be enforced across the enterprise.

- **Comprehensive**–As a single solution to protect all of your data assets, NetBackup provides support for virtually every popular server, storage, hypervisor, database, and application platform used in the enterprise today.[1]
- **Scalable**–High performance, elastic automation, and centralized management based on a flexible, multitier architecture enables NetBackup to adapt to the growing needs of a fast-paced, modern enterprise data center.
- **Integrated**–From backup appliances to big data platforms, NetBackup integrates at every point in the technology stack to improve reliability and performance. OpenStorage Technology (OST) provides even tighter integration with third-party storage and snapshot solutions.
- **Innovative**–With hundreds of patents awarded in areas including backup, recovery, virtualization, deduplication, and snapshot management, NetBackup continues a long tradition of bringing advanced technologies to market first. No backup software has won Best of VMworld as many times as NetBackup.[2]
- **Proven**–For over a decade, NetBackup has led the industry as the most popular enterprise data protection software by market share and is used by many of the largest enterprises on the planet. When you need your data back, you can trust NetBackup.

Figure 1. NetBackup offers reliable, scalable data protection across the enterprise with a single, comprehensive solution.

Feature highlights in NetBackup 7.6

- **Instant Recovery for VMware®**–Recover virtual machines (VMs) by simply booting the VM directly from backup disk. After the VM is running, use VMware Storage vMotion® to move the VM back to primary storage. Even very large VMs can be online within a few minutes.
- **Accelerator for VMware**–Eliminate full VM backups once and for all. With NetBackup Accelerator, only changed blocks are backed up each time. These blocks are combined with previous backups to synthesize a current full backup image for quick recovery.
- **Replication Director for VMware**–Let your NetApp® system run backups for you. With NetBackup Replication Director, VM snapshots are orchestrated, cataloged, and replicated by NetBackup using NetApp Snapshot™, NetApp SnapMirror®, and NetApp SnapVault®.
- **VMware vCloud Director® integration**–Protect the metadata that defines the virtual data center, including the relationships between vApps and VMs. Automatically discover new VMs and break through the abstraction layer to preserve file level restore.
- **Intelligent Policy for Oracle®**–Automatically discover new Oracle® instances and include them in future backups to help ensure all data is protected. RMAN scripts are generated dynamically so there is no longer any need to maintain scripts on client systems.

1. For more information, please refer to the NetBackup Master Compatibility List.
2. Best of VMworld, Business Continuity and Data Protection category: 2007, 2008, 2010.

Confidence in a connected world. Symantec.

Protect any workload

One of the hallmarks of enterprise IT is its heterogeneity. The wide variety of platforms, applications, and infrastructure often grows with the size of the enterprise. NetBackup supports a vast array of environments and integrates with every layer of the infrastructure stack to help assure reliable, consistent backups every time.

- **Operating systems**–NetBackup integrates with dozens of server operating system (OS) versions, including Microsoft Windows®, Linux®, and UNIX® files, directories, attributes, system states, and other metadata. In most cases, files can be protected while open and in use.
- **Virtual systems**–NetBackup integrates with leading hypervisors including VMware® and Microsoft Hyper-V®. With award-winning Symantec™ V-Ray technology, backup operators won't notice the difference between physical and virtual systems as files are restored without mounting and browsing the VM. Backups occur without agents at the image level, and with V-Ray the complete contents of the VM are visible and indexed for restore.
- **Databases and applications**–To preserve transactional consistency and manage log truncation during hot backup, NetBackup integrates with leading relational database, messaging, application, and big data platforms, including IBM DB2®, IBM Informix, IBM Lotus Domino®, Microsoft Active Directory®, Microsoft® Exchange Server, Microsoft Office SharePoint® Server, Microsoft SQL Server®, Oracle, SAP HANA, SAP R/3, SAP Sybase®, and others.
- **Storage systems**–NetBackup protects data at the storage system level by integrating with various snapshot, replication, and NDMP facilities available on storage systems from EMC, HP, Hitachi, IBM, NetApp, and others.
- **Cloud platforms**–NetBackup integrates with VMware vCloud Suite to protect the metadata catalog that defines the virtual data center and the various relationships between vApps and virtual machines within the cloud.

Figure 2. NetBackup with V-Ray unifies backup and recovery tasks across physical and virtual machine environments.

Break the backup window

It's not uncommon for IT organizations to report data growth of 40-60 percent per year. To keep up, you need backups that run as fast as possible without disrupting production activity. NetBackup combines innovative design with the latest technical advancements to deliver impressive performance numbers with minimal impact.

- **Accelerator**–Eliminate full backups once and for all. With NetBackup Accelerator, only changed blocks are backed up each time. These blocks are combined with previous backups to synthesize a new full backup for quick recovery.
- **Snapshots**–Let the storage system run backups for you. With NetBackup Replication Director, snapshots are orchestrated, cataloged, and replicated using storage technologies from vendors such as NetApp.
- **Near-continuous data protection (CDP)**–By scheduling frequent Accelerator or snapshot backups every few minutes, it is possible to achieve near-CDP, thereby limiting data loss and improving recovery point objectives (RPO).
- **Scale up with high speed interconnects**–NetBackup supports all major network topologies, including Fibre Channel, iSCSI, and Infiniband for high performance.
- **Scale out through multitasking**–Circumvent performance bottlenecks with multistreaming, multiplexing, and automatic load balancing.

Backup nondisruptively

In today's online world, enterprises don't sleep. Customers expect responsiveness, not sluggishness, so backups must not interfere with critical operations. NetBackup is engineered to help you minimize disruption to your production environment without compromising your data.

- **VM load balancing**–NetBackup VM Intelligent Policies (VIP) automatically avoid overloading hypervisors or VM hosts by preventing too many VM backups from running concurrently.
- **Limit network utilization**–Restrict network usage by setting bandwidth limits within NetBackup. If that's not enough, totally eliminate network impacts by configuring a private Ethernet or switching to Fibre Channel. NetBackup supports a variety of possible network topologies.
- **Off-host backup with snapshots**–For systems that cannot tolerate even the slightest impact, use hardware snapshots to perform an off-host backup on an alternate server, all orchestrated by NetBackup.

Backup over low bandwidth networks

Whether backing up a remote office, a cloud-hosted workload, or a customer site as part of a backup service, backups over a wide area network (WAN) or the Internet must be as efficient as possible. NetBackup leverages the latest change tracking and deduplication technologies to make these backups not just possible, but practical.

- **Extreme data reduction**–By combining NetBackup Accelerator change tracking with NetBackup Intelligent Client Deduplication, backup traffic is further reduced and full backup seeding is noticeably faster.
- **WAN optimization with Symantec NetBackup™ Appliance**–By staging backups at the remote location on a NetBackup appliance, WAN optimization can further increase performance by as much as ten times when backups are transferred to the primary site.

Figure 3. Symantec NetBackup™ 5230 is an integrated enterprise backup appliance with expandable storage and intelligent deduplication.

Choose your storage

A lot has changed since the days of traditional tape backup. Enterprises now have many choices where they store backups. NetBackup integrates this diverse collection of storage targets without compromising manageability.

- **Purpose-Built Backup Appliances (PBBA)**–NetBackup uses its OpenStorage (OST) interface to integrate with a wide range PBBAs to enable capabilities such as Optimized Synthetics and Auto Image Replication (AIR).
- **Disk**–Ordinary disk volumes can be organized into disk pools under NetBackup control. Policies automatically distribute job load and manage capacity so that jobs do not fail due to out of space conditions.
- **Storage system snapshots**–NetBackup can orchestrate hardware snapshots using proprietary capabilities from vendors such as NetApp and EMC. Available for lightning-fast recovery, snapshots can be replicated or duplicated to other storage targets using NetBackup policies.
- **Tape**–The workhorse for traditional backup architectures of the past, tape has evolved into the default choice for long term archival. NetBackup brings mainframe-class media management to a massive selection of supported tape drive and robotic hardware configurations.
- **Cloud**–Ideal for archival, cloud storage offers a cost-effective alternative to tape that also obviates the need for offsite media management. NetBackup supports a growing list of third-party cloud storage providers that can be easily incorporated into NetBackup policies.

Store efficiently

It is estimated that as much as 60 percent of enterprise disk storage is consumed by copy data. It doesn't have to be that way. NetBackup can help you reduce disk storage requirements without sacrificing recoverability.

- **Intelligent Deduplication**–NetBackup deduplication can shrink backups by as much as 99 percent, significantly reducing disk storage requirements. NetBackup doesn't blindly treat all streams equally, but intelligently recognizes object boundaries to enable higher deduplication rates.
- **Dedupe Everywhere**–NetBackup gives you the flexibility to deduplicate at the source or target. Client deduplication shrinks data before it travels over the network, while media server deduplication shifts processing off production servers.
- **Storage tiering**–Storage tiering reduces storage costs by moving data to cheaper storage as it ages. NetBackup Storage Lifecycle Policies automate this entire process, managing schedules and retention times for each tier.

Store securely

Backups can be one of the most overlooked security vulnerabilities, especially when those backups are transported or stored off-site by a third-party. Whether those backups are held by a records management vendor or cloud storage provider, NetBackup provides that extra level of security you need to keep your data safe from prying eyes.

- **Client encryption**–Encrypt data at the client or source with AES 256-bit encryption to help secure data from the moment it takes flight over the network.
- **Media server encryption**–Shift processing off production systems by encrypting data after it reaches the media server or storage target.
- **Key management service(KMS)**–Encrypt data on tape using hardware-based encryption capabilities available on certain tape drives supporting the SCSI T10 encryption standard.

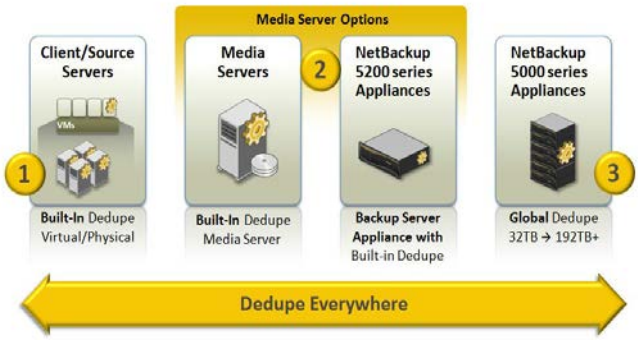

Figure 4. NetBackup gives you the flexibility to deduplicate everywhere, including at the source or target.

Store off-site for disaster recovery

No business will survive if it keeps its data in one place. Protect your business from natural disasters and site outages by keeping a copy off-site. NetBackup can help you automate disaster recovery (DR) readiness by storing backups off-site regardless of what storage or transport is used.

- **Auto Image Replication (AIR)**–With NetBackup AIR, backup images and catalogs are automatically replicated over a network to other NetBackup domains according to preset policies. Daily changes are imported and ready for restore or deduplication to tape. AIR images can have different retention settings and be replicated in many-to-one or one-to-many for virtually unlimited DR possibilities.
- **Snapshot replication**–Hardware snapshots created using NetBackup Replication Director can be automatically replicated to other storage systems at off-site locations, all under the control of NetBackup. These replicas follow NetBackup retention policies and are available for recovery, replication, or duplication to tape or dedupe disk.
- **Tape vaulting**–NetBackup Vault automates the tedious process of offsite tape management. Vault automatically ejects the proper tapes from a robotic library, tracks the movement of tapes to and from off-site storage facilities, and prints daily reports to include with the daily shipment or email to your records management vendor.

Rescue your business

The unthinkable happens. Services are down and the clock is ticking. There's no time to waste: it's time to recover from backup. NetBackup is ready with fast, reliable recovery options to get your systems up and running as quickly as possible.

- **Instant Recovery for VMware**–Recover VMs by booting them directly from backup disk. After the VM is running you can use vMotion to move the VM back to primary storage. Even very large VMs can be online within a few minutes.
- **Snapshot recovery**–Roll systems back to an earlier point in time by recovering an online hardware snapshot orchestrated by NetBackup Replication Director.
- **Optimized synthetics**–Synthesize equivalent full backups from previous backups, eliminating the need for actual full backups and allowing full restores to quickly stream from a single backup image.
- **NetBackup Bare Metal Restore™**–Quickly prepare a physical system for restore, eliminating the need to reinstall an OS or manually configure hardware and install drivers.
- **Blue sky recovery**–Recover your physical Windows systems into a virtual environment or "blue sky" with NetBackup physical-to-virtual (P2V) image conversion.
- **Other recovery features**–True image restore speeds recovery by preventing obsolete data from being restored. Application-consistent backups ensure application recovery is faster by eliminating the need for lengthy database consistency repairs.

Restore only what you need

Why recover an entire database to restore one email, or mount an entire VM or snapshot to restore one file? With NetBackup you don't have to. NetBackup Granular Recovery Technology (GRT) indexes the contents of data sources, making it easy to restore specific items without endless trial-and-error guesses at which backups hold the data you need.

- **GRT for applications**–NetBackup application agents index Exchange, SharePoint, and Active Directory backups to enable restores at the email, document, or object level.
- **GRT for VMs**–V-Ray gives NetBackup unique visibility within VMs, allowing the file contents to be indexed and restored from a VM image backup without first recovering or mounting the entire VM.
- **GRT for hardware snapshots**–NetBackup Replication Director indexes storage system snapshots allowing the file contents to be selectable and restorable with NetBackup.

Archive for compliance

Laws or regulations may require data be retained for a long time, even years, while audits or litigation may require data be placed on legal hold for a period of time. To comply with these requirements, NetBackup helps you manage archival and data retention in a reliable yet cost effective manner.

- **Storage Lifecycle Policy**–NetBackup policies allow you to set unique retention times for each backup copy. Moving long-term data to archival media (such as tape or cloud storage) is completely automated using Storage Lifecycle Policies (SLP). For example, a SLP could automate an initial backup to disk which is retained for one week, then moved to tape to be retained for one year.
- **Search and hold**–When a legal hold on backup data is declared, NetBackup Search can help you find the relevant data and place a hold on it to override the retention policy and prevent the data from expiring and being removed from backup storage.

Deploy quickly

Experienced IT professionals know how difficult it can be to deploy or upgrade backup systems. Not only do backup servers and storage require their own care and feeding, but backups interact with just about every server, storage, or network component in the data center. NetBackup eases this burden and offers a fully integrated, turnkey appliance that combines software with server and storage.

- **Agentless backup for VMs**–V-Ray makes agents within VMs unnecessary for backups, greatly simplifying the deployment and maintenance of backup software across a virtual environment.
- **Agent software distribution**–Agent deployment, upgrade, and maintenance operations are simplified with agent push install tools.
- **Automated hardware configuration**–NetBackup wizards assist setup, discover hardware, verify connectivity, and check for the most common problems within a variety of hardware, snapshot, and robotic tape drive environments.
- **Symantec NetBackup™ 5200 Series**–For the fastest deployments, consider deploying the Symantec NetBackup™ 5200 Series appliance. NetBackup appliances come preinstalled with all necessary hardware and software components and can be set up within minutes. Much of the hassle of integration, testing, and performance tuning are eliminated, while support for the entire hardware and software environment is provided by one vendor: Symantec.

Streamline operations

With constant pressures of relentless data growth and escalating service requests, IT is always challenged to do more with less. NetBackup helps you maximize staff productivity so you can invest more in your core business.

- **Centralized, policy-based management**–All NetBackup policies, schedules, and other settings are configured from a single management console enforced by the NetBackup master server which controls a number of media servers (data movers).
- **Elastic automation**–NetBackup intelligent policies for virtual machines and Oracle databases automatically discover new VMs and Oracle instances, including them in future backups to help you ensure all data is protected.
- **Cross-domain management**–Bridge together multiple NetBackup domains and multiple product versions for easier management and control.
- **Customized alerting and real-time monitoring**–Manage by exception with easy-to-use sort and filter capabilities for better troubleshooting, work prioritization, and control of the backup environment.
- **NetBackup appliance monitoring**–Extensive monitoring and alert notification on the status and health of any NetBackup Appliances under management.
- **Operational Restore**–A single Web portal for self-service restores, NetBackup Operational Restore allows you to search across all backups and all systems simultaneously. Search results appear within seconds and users can refine or cancel them as needed to find and restore files fast.
- **Other management features**–A robust command line interface and pre/post command operations allow for extensive automation through scripting.

Plan for the future

No successful organization stands still. There are always improvements to make, processes to optimize, and costs to reduce. NetBackup provides extensive reporting and analytics to help understand past results and clarify the road ahead.

- **Point-and-click operational reporting**–NetBackup OpsCenter quickly identifies tape drive utilization, success rates, and unprotected areas across NetBackup.
- **Advanced business-context reporting**–NetBackup OpsCenter Analytics provides contextual reporting based on line-of-business, geography, or application across a heterogeneous environment.
- **Long-term trending and analysis**–Better predict backup storage consumption by tracking growth rates over time, including pre- and post-deduplication, for easier ROI tracking, and deduplication rates.
- **Service-level compliance and chargeback**–Threshold-based reporting helps ensure service level compliance and the ability to consolidate and allocate costs across backup and archive services using pricing models that are defined to help meet the business need.

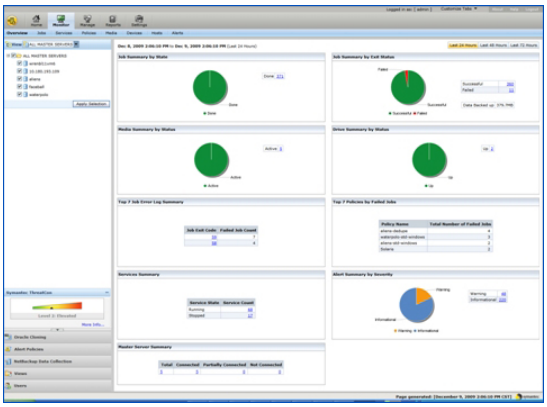

Figure 5. OpsCenter Analytics provides hierarchical, business-level views for better forecasting, cost analysis, and service level attainment.

Better backup for a virtual world

The future of enterprise-class virtual data protection is here. Symantec NetBackup™ 7.6 with V-Ray technology delivers the performance, automation, and manageability necessary to protect virtualized deployments at scale where thousands of VMs and petabytes of data are the norm today, and where software-defined data centers and IT-as-a-service become the norm tomorrow. Enterprises trust Symantec.

Learn more about NetBackup

Whether you are new to NetBackup or a seasoned veteran, Symantec Connect is an online community of fellow IT professionals and Symantec employees who can teach you how to get the most out of NetBackup. Visit Symantec Connect today and start learning more about NetBackup from the people who know it best!

More Information

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About Symantec

Symantec protects the world's information, and is a global leader in security, backup, and availability solutions. Our innovative products and services protect people and information in any environment – from the smallest mobile device, to the enterprise data center, to cloud-based systems. Our world-renowned expertise in protecting data, identities, and interactions gives our customers confidence in a connected world. More information is available at www.symantec.com or by connecting with Symantec at go.symantec.com/socialmedia.

Symantec World Headquarters

350 Ellis St.
Mountain View, CA 94043 USA
+1 (650) 527 8000
1 (800) 721 3934
www.symantec.com

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