



STORAGE SOLUTIONS

NETWORK APPLIANCE™ V-SERIES FOR SAN STORAGE ENVIRONMENTS



KEY FEATURES

Heterogeneous Virtualization

Provides industry's most comprehensive storage virtualization system for multiprotocol, multivendor storage environments.

Storage Consolidation

Enables organizations to consolidate UNIX®, Windows®, and Web workloads with existing SAN storage, thereby maximizing storage utilization.

Utilize Existing SAN Infrastructure

Integrates into existing SAN storage environments, maximizing investment protection and ROI.

Proven Data Management

Provides advanced data management solutions that maximize availability and significantly reduce operational cost.

Proven Leadership

Enables unified NAS and SAN data access for SAN storage based on more than 10 years of industry-leading experience providing reliable, fast, and scalable storage solutions to the enterprise.

The industry's most comprehensive and only virtualization solution to unify NAS, SAN, and IP SAN under a common architecture.

THE CHALLENGE:

Maximizing Storage Utilization and Access

As enterprise storage requirements evolved from direct-attached to networked storage, many enterprises made significant investments in multiple storage architectures—DAS, SAN, and NAS—to support the different access methods required by business solutions. The result was often an inefficient and underutilized storage environment. A critical IT management challenge is to maximize the usage of existing storage to improve efficiency and return on investment (ROI) yet continue to support different access methods for different business solutions throughout the enterprise.

File-level usage and distributed enterprise usage of the SAN environment are ways to maximize access and usage of storage resources. Many enterprises, however, are not ready to replace their existing storage systems with new, unified storage systems—such as the NetApp FAS series of storage servers. Instead, companies with extensive SAN storage networks are looking for ways to broaden the use of their infrastructures and achieve a greater ROI by provisioning SAN capacity for new business solutions that require NAS shared data access and remote access.

THE SOLUTION:

NetApp V-Series Systems

The NetApp V-Series product line, an evolution of NetApp gFiler™, is a network-based solution that virtualizes tiered, heterogeneous storage arrays. This allows you to leverage the dynamic virtualization capabilities of Data ONTAP® 7G software across your existing Fibre Channel SAN infrastructure to support an expanded set of business applications. Like all NetApp storage appliances, the V-Series product line is based on the industry-proven Data ONTAP microkernel operating system, which unifies block and file storage networking paradigms under a common architecture. It offers a complete suite of NetApp advanced data management capabilities for consolidating, protecting, and recovering mission-critical data for enterprise applications and users.

The NetApp V-Series product line offers the performance and capacity to meet access requirements for enterprises of all sizes. V-Series systems deliver industry-leading performance, offer terabytes of managed capacity, and can be configured for simultaneous active/active access with secure failover across two independent systems in a cluster. Massive SAN and NAS consolidation is now a reality using

multiple V-Series systems and SAN storage systems configured in a scalable SAN infrastructure.

The V-Series product line supports multiple enterprise storage systems. Enterprise-class Hitachi Freedom Storage™ systems provide a common storage pool for the consolidated solution. Powered by the Hi-Star™ switched architecture, Lightning 9900™ V and 9900™ series storage systems provide massive storage scalability and consolidation for open systems and mainframe servers. Thunder 9500™ V series storage systems provide high-performance and easy-to-manage storage in a small-footprint, modular package.

The NetApp V-Series product line also supports a broad range of IBM, Hitachi Limited, and HP storage subsystems, including the IBM Enterprise Storage Server (ESS) series, IBM TotalStorage DS8000 and DS4000 series, Hitachi Limited SANRISE, and HP StorageWorks XP series. These enterprise-class and modular storage systems support diverse business applications across the enterprise and provide highly scalable solutions. Customers with these storage subsystems in their SAN environments can now take advantage of the V-Series capabilities to dramatically improve business efficiency and reduce data management complexity. The V-Series product line for IBM storage has received Comprehensive IBM TotalStorage Proven™ certification and is listed on the IBM Global Solutions Directory.

CONSOLIDATING STORAGE TO INCREASE UTILIZATION

The V-Series product line enables new business solutions that require NAS or SAN access to utilize SAN storage. The resulting consolidation of storage improves utilization and maximizes flexibility in planning storage growth. This solution enhances existing SAN solutions by enabling you to create a consolidated storage infrastructure that supports the entire range of enterprise workloads and allowing you the flexibility to select and easily provision the optimal data access approach for current and future storage needs. This solution also facilitates file sharing by enabling simultaneous access among heterogeneous clients and servers throughout the enterprise while consolidating servers by eliminating the need for standalone or SAN-attached file servers.

MAXIMIZING INVESTMENT PROTECTION BY LEVERAGING EXISTING INFRASTRUCTURE

NetApp V-Series systems seamlessly integrate into mission-critical enterprise-class SAN infrastructures, allowing you to deliver NAS as well as block solutions, while dramatically increasing utilization of your infrastructure. Companies gain the advantages of enterprise Fibre Channel storage connectivity without the costs of physically connecting each host to the SAN infrastructure, thereby optimizing storage usage and preserving future scalability.

PROVEN DATA MANAGEMENT FOR REDUCED TCO

NetApp storage solutions are based on Data ONTAP, a highly optimized, scalable, and flexible operating system that integrates seamlessly into UNIX, Windows, and Web environments. Data ONTAP delivers proven multiprotocol access, scalable performance, and flexible data management capabilities while minimizing management complexity and reducing your total cost of ownership (TCO).

INCREASED STORAGE UTILIZATION

Heterogeneous Access Provides transport-independent data access using standard network protocols such as CIFS, NFS, HTTP, FTP, iSCSI, and FCP and ensures cost-effective heterogeneous data sharing without compromising security, compatibility, or performance using SecureShare® cross-protocol locking.

Storage Consolidation using MultiStore Software Enables multidomain server and storage consolidation with simplified tiered management by logically partitioning the network and V-Series storage resources.

Optimized System Throughput using SnapMover® Software Provides a no-copy data migration solution for workload distribution among V-Series systems sharing a RAID array, with no or minimal user disruption.

Optimized Resource Utilization using FlexClone™ Software Enables near-instantaneous no-copy cloning of flexible volumes for fast multiple-version data replication with substantial storage space savings.

ENHANCED ENTERPRISE DATA AVAILABILITY

Clustered Failover Software Enables continuous access to data by automatically failing over to an additional V-Series appliance without data loss. Provides protection against planned and unplanned system outages.

SyncMirror® Software Provides increased protection against multiple storage component failures by synchronously replicating mission-critical application data in a local data center environment.

MetroCluster Software Provides a highly available business continuance solution that enables the customer to quickly and easily resume mission-critical operation at a remote site within a campus or metropolitan area with no data loss and minimal downtime.

IMPROVED ENTERPRISE DATA PROTECTION

Snapshot™ Technology Enables near-instantaneous, transparent on-disk backup by storing multiple read-only versions of each data volume. The Snapshot function uses minimal processing overhead, requires minimal disk space, and causes no disruption of service.

SnapRestore® Software Allows any system to revert to a specified point in time for instant file system or file recovery. Terabytes can be recovered in minutes rather than hours, without going to tape.

SnapMirror® Software Provides transport-independent synchronous, semisynchronous, and asynchronous remote heterogeneous replication at high speeds over a LAN, WAN, MAN, or SAN for use across a range of solutions, including disaster recovery, replication, backup, or testing on a nonproduction system.

SnapVault® Software Enhances data protection by frequently backing up changed data from multiple NetApp storage systems or other storage platforms to a common Snapshot file on a central online repository, thereby enabling faster tapeless restores and lowering the cost of data protection.

SnapLock® Enterprise Software Provides nonrewritable data permanence storage that enables compliance with government records retention and business records-keeping best practices.

REDUCED ENTERPRISE DATA MANAGEMENT COMPLEXITY

SnapDrive® Software Provides host-based provisioning, Snapshot consistency, and dynamic volume management for simplifying SAN management.

SnapManager® Software Provides a comprehensive data management solution for hosting and automating near-instantaneous hot backups and near-online restoration of Microsoft® Exchange and Microsoft SQL environments.

Single Mailbox Recovery Software Single mailbox recovery functionality, along with NetApp SnapManager for Exchange, enables near-instantaneous, accurate, cost-effective backups and the ability to recover Microsoft Exchange data at any level of granularity—storage group, database, folder, single mailbox, or single message.

Easy to Deploy Data ONTAP seamlessly integrates into existing UNIX and Windows environments by utilizing standard naming and authentication services, including native support for Microsoft Active Directory and Kerberos authentication.

Easy to Administer Data ONTAP includes FilerView®, a powerful remote administration solution for today's open storage networks that enables IT administrators to use Web browsers to access a consistent, easy-to-use graphical user interface for everyday administration tasks. For added security, the SecureAdmin™ software option provides strong encryption for command-line and HTTP-based administration and management sessions.

Operations Manager (formerly DataFabric® Manager) provides a simple, centralized administration tool that enables comprehensive management of the NetApp enterprise storage and content delivery infrastructure. With a rich set of capabilities, Operations Manager allows an organization to rapidly deploy, provision, and manage a complete enterprise storage network.

Easy to Manage ApplianceWatch™ software reduces training costs through specialized plug-ins that support leading systems management frameworks, including Tivoli Enterprise and HP OpenView. VFM™ (Virtual File Manager) software provides a highly scalable, highly available file-virtualization solution that enables storage administrators to easily manage and optimize storage in distributed, multiprotocol environments.

ABOUT NETWORK APPLIANCE

Network Appliance is a world leader in unified storage solutions for today's data intensive enterprise. Since its inception in 1992, Network Appliance has delivered technology, product, and partner firsts that simplify data management. Information about Network Appliance™ solutions and services is available at www.netapp.com.

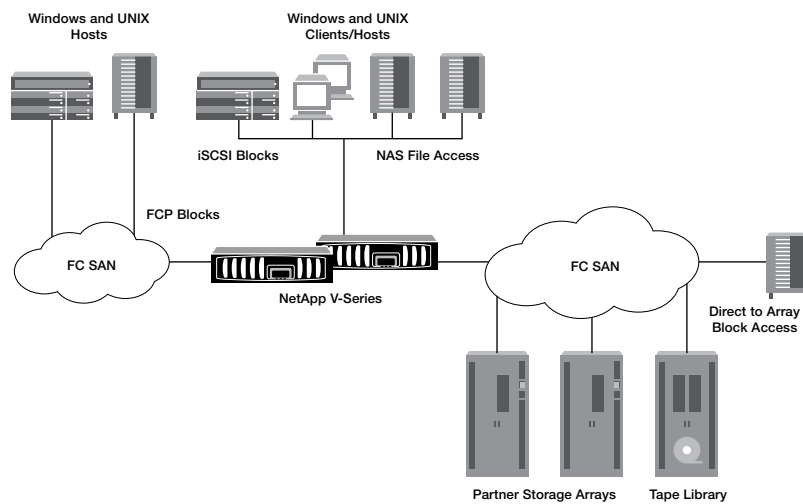


Figure 1) NetApp V-Series Solution

Improve consolidation by extending SAN functionality with industry-proven data access and data management functionality.

