



The power of Virtual Servers, Storage Provisioning, and Single Point Management

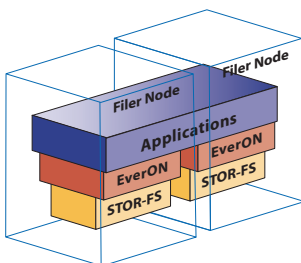
A **software** platform
purpose-built for
scalable NAS.

- Virtual servers for seamless scalability
- N-way clustering with near-linear performance growth
- Snapshot and data mirroring technologies
- Automated capacity provisioning

ONStor NAS systems deliver NAS for the enterprise. Built on a powerful yet compact software platform, this appliance-based solution integrates virtualization for both the processor and storage resources. With the ability to grow seamlessly from 1TB to 40,000TB and to non-disruptively expand throughput on demand, ONStor delivers the industry's first enterprise-enabled NAS.

All ONStor NAS systems include the integrated ONStor EverON™ software platform. Optional ONStor software modules expand the solution's capabilities.

ONStor Software



The highly robust EverON software platform is at the core of all ONStor NAS systems. Within EverON is STOR-FS, a highly scalable 64-bit file system. Software applications provide multi-device management, high-availability, and load balancing.

EverON Software Platform

Found at the core of all ONStor NAS systems, the EverON software platform is compact and exceptionally efficient. This robust platform was designed for one purpose: to deliver enterprise-scalable, multi-protocol file services. With this singular mission, it is the first to virtualize both storage and processing power to deliver the industry's most scalable NAS Gateway.

STOR-FS™ File System

ONStor's STOR-FS, an integral element of the EverON platform, is a 64-bit file system designed specifically to leverage the capabilities of FC-attached, multi-vendor storage. Scalable to 40 petabytes, STOR-FS includes unique capabilities that deliver fault-tolerance and scalable performance.

ONStor Applications

ONStor applications extend the multi-device capabilities of the ONStor NAS system. Four applications are offered in the suite:

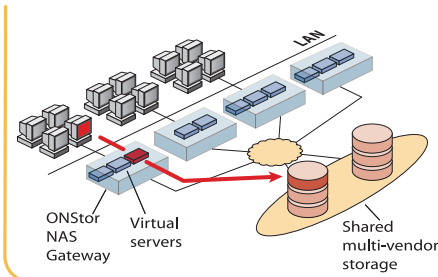
- **ONStor High Availability:** Ensures continuous system availability by managing switchover scenarios among multiple filer nodes.
- **ONStor Mirror:** Delivers asynchronous data replication between multi-vendor storage arrays. Ensures business continuance through instant data restore.
- **ONStor NAS Cluster Manager:** This intuitive graphical user interface provides single-pane-of-glass management for multiple filer nodes.
- **ONStor Data Restore:** Provides quick recovery by reverting selected file systems to an earlier image.

Virtual Servers

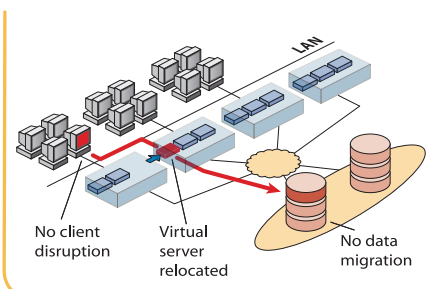
Seamless
growth.
Transparent
load **balancing.**

Virtual Servers

Before Move



After Move



To clients, virtual servers appear to be a complete NAS device. For performance scaling or load balancing, virtual servers can be moved from one NAS Gateway to another without user disruption or data migration.

Creating the Enterprise-Enabled NAS

ONStor's virtual servers address the most significant issue with today's NAS: limited scalability.

Conventional NAS devices create an inflexible link between specific disk resources and specific NAS heads. When either the disk is full or the bandwidth of the NAS head is saturated, the remedy is to add an additional NAS device. Then begins the painful process of migrating users and data to the new device.

Virtual servers eliminate that pain. To clients and servers on the LAN, a virtual server (or "vServer") appears to be a complete NAS device, with a unique identity, IP address and security authentications. To administrators, the vServer delivers exceptional management power and flexibility.

The elegance of the vServer is its mobility. A single NAS Gateway can simultaneously host up to 255 vServers, any of which can be relocated from one NAS Gateway to another at any time without disrupting either clients or storage. This delivers the flexibility to quickly scale performance and balance loads. Plus it lets you perform anytime system maintenance with no user disruption.

Virtual Server Benefits

Seamlessly scalable performance

With vServers, expanding performance is easy. Simply add an ONStor NAS Gateway to an existing cluster and relocate selected vServers to the new device. The move is a quick one-touch operation that requires no data migration and no disruption to clients and servers on the LAN.

Linear performance growth

ONStor's clustering architecture is exceptionally low overhead, so when a NAS Gateway is added to an existing cluster the result is nearly linear growth of system throughput. If more system throughput is needed, it's immediately available simply by adding a NAS Gateway and relocating vServers to the new device.

Real time load balancing

Address performance hot spots as they occur. ONStor makes it easy to maintain high system responsiveness for your users by redistributing heavy workloads with one-touch vServer relocation. ONStor's vServers make this process transparent to users on the LAN.

Anytime system maintenance

For many IT managers, system maintenance too often means working nights and weekends. Thanks to vServers, ONStor's NAS Gateway provides a better option: rolling updates. By simply relocating vServers, workload can be completely offloaded from any of the NAS Gateways without disrupting users. This allows maintenance to be performed quickly and easily during normal work hours.

EverON Software Platform

The Platform for Scalability and Superior Uptime

ONStor NAS systems ship with an unlimited client license for EverON, ONStor's powerful real-time operating system. Optimized for one task – providing scalable, multi-protocol file services – the EverON platform is compact and robust. This symmetric multiprocessing operating system unleashes the power of ONStor NAS systems with superior business flexibility, data protection, and management automation.

EverON Benefits

File system scalability

ONStor's robust 64-bit file system, STOR-FS, is at the core of EverON. This file system delivers exceptional scalability: up to 100TB per file system, up to 400 file systems within a cluster (for a total capacity of 40 petabytes), and no limitation on the number of files. The unique n-way clustering architecture delivers availability and seamless performance scalability.

Virtual servers

Integrated virtual servers deliver performance scalability and flexible resource management.

Automated capacity provisioning

Simplify capacity management and put an end to wasted space with ONStor's virtualized storage. Within a cluster, all ONStor filer nodes share capacity that is provisioned from a single pool. There is no need for zoning, so all added capacity is accessible to all nodes. If desired, the policy-driven AutoGrow feature can automatically assign available capacity to volumes, file sets, and file systems based on administrator-set soft and hard capacity limits. The capacity available to users can expand automatically by preset amounts while the administrator is kept apprised of changes.

Snapshots

The DataSnap snapshot feature allows up to 48 point-in-time images of each hosted file system to be recorded on either a scheduled or on-demand basis. To minimize storage requirements, only file system differences from the previous image are recorded. For fault tolerance, the images may be accessed by any of the ONStor filer nodes in the cluster.

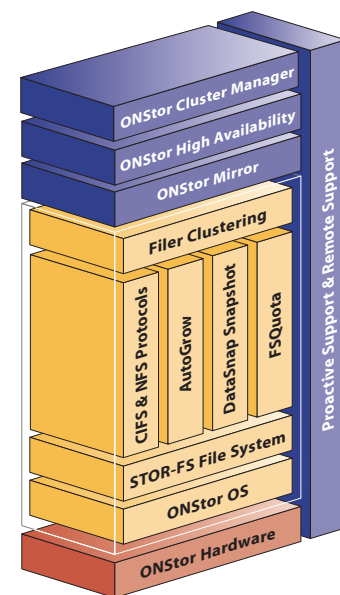
Windows, Linux, UNIX interoperability

Designed for multi-protocol file sharing, EverON includes native support for Windows, Linux, and UNIX. The full-featured CIFS implementation incorporates broad support for Windows, including Active Directory and Access Control Lists.

NDMP support

Optional support for NDMP v3 and v4 ensures compatibility with widely deployed backup applications. Since the ONStor NAS systems includes both Ethernet and Fibre Channel connectivity, backup may be either LAN-based or SAN-based for maximum flexibility.

ONStor Software



EverON Software Family

EverON software provides a rich feature set and the petabyte-class scalability of ONStor's STOR-FS. The ONStor software suite also includes ONStor Mirror for remote data protection.

ONStor software modules extend the NAS Gateway's **performance, availability, and management.**

These software applications extend the capabilities of the ONStor NAS system with device management, n-way cluster management, and data replication.

ONStor NAS Cluster Manager¹

Single point of management

This Windows application enables single-pane-of-glass management for multiple ONStor filer nodes. The intuitive graphical user interface incorporates drag-and-drop ease to simplify tasks and speed learning.

ONStor High Availability²

Scalable system availability

Prevent unexpected loss of data access by adding automated failover capability to the ONStor NAS systems environment. Should the connection to any of the filer nodes be lost, client file services will be automatically transferred to one of the remaining filer nodes. Up to eight nodes may participate in a single cluster. With automatic failover and multiple levels of redundancy, uptime in excess of 99.999% becomes a reality.

ONStor Mirror²

Disk-to-disk data protection for fast backup and quick restore

Get fast disk-based backup and near instantaneous data restore, without the need for a costly near-line storage device. ONStor Mirror software replicates data between ONStor NAS systems that may be either across the campus or across the globe. Cost-effective storage (including SATA arrays) can be deployed as the replication target. ONStor delivers better data protection at unbeatable cost.

ONStor Data Restore²

Fast roll back in time

Complementing ONStor's DataSnap¹ point-in-time snapshot feature, ONStor Data Restore lets you revert a selected file system entirely back to an earlier image. The snapshot becomes the currently active file system for a complete roll-back in time.

About ONStor

ONStor NAS systems consolidate information from multiple Windows, Linux, and UNIX servers into a single, highly scalable environment. Offering the industry's broadest interoperability, ONStor's open-storage approach lets IT managers deploy the storage of their choice and re-use the storage they have. N-way clustering and virtual server technologies let users migrate workloads on-the-fly for load balancing and seamless performance growth. Proven in data centers worldwide, ONStor delivers the enterprise approach to NAS. More information about ONStor can be found at www.onstor.com or by calling toll-free 877-2ON-STOR (877-266-7867).

NOTES:

1. Standard Feature
2. Optional Feature

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