



Sun StorEdge™ NAS OS

and optional software



The Sun StorEdge™ NAS OS is a highly optimized operating system for storing and serving files and for interoperability between Unix® and Windows environments. In combination with the reliable hardware platform of the StorEdge NAS Appliance, the NAS OS delivers high data availability, ease of use and manageability, flexible scalability, and high-performance capabilities. Optional software features such as the StorEdge File Replicator provide remote data mirroring for business continuance, and the StorEdge Compliance Archiving Software protects regulated and reference data for regulatory and business compliance.

Highlights

- Multi-protocol file sharing
- iSCSI support
- Clustering
- Remote mirroring
- Mandatory and advisory compliance
- 64-bit journaling file system
- Dynamic file system expansion
- Real-time antivirus protection
- User, group, and directory quotas
- Unified security
- Autohome shares
- File system checkpoints
- Network failover and load balancing
- IP aliasing
- Multiple directory support
- NDMP backup
- GUI, wizards, and CLI
- Management Interfaces
- SNMP and SMTP support

Sun StorEdge NAS OS — standard features

The Sun StorEdge NAS Operating System provides file storage and enables file sharing across heterogeneous clients. In addition to the basic file storing and sharing capability, the Sun StorEdge NAS OS enables high-availability features such as network port failover, multiple data paths, load balancing, and unified security. The Sun StorEdge NAS OS also provides facilities for creating virtual point-in-time copies, remote copies, and physical archive copies on tape in cooperation with standard third-party data archival products.

Protocols

The Sun StorEdge NAS OS provides support for NFS version 2 and NFS version 3, typically used by UNIX clients, as well as CIFS/SMB, commonly used by Microsoft Windows clients. It also supports FTP, enabling the exchange of files over the Internet. Finally, the NAS OS provides an iSCSI capability that enables Microsoft Windows clients to access block-level storage when equipped with the Microsoft iSCSI Initiator version 2.0.

File system

A key element of the Sun StorEdge NAS OS is a 64-bit journaling file system that supports file system sizes up to 16 terabytes. The logical volume manager allows up to sixty-four 256-gigabyte volume segments to be distributed across the entire NAS filer thus enabling vertical and horizontal striping. This improves performance and also allows for dynamic volume expansion on-the-fly thus avoiding

costly loss of data availability. Disk-based file system journaling guarantees file system integrity and rapid recovery during and after outage and failover events.

Network-attached storage antivirus

The Sun StorEdge NAS OS includes real-time, as well as schedulable, file system antivirus support and is certified with antivirus vendors such as Symantec with the Network-attached Storage AntiVirus solution. Certification with other vendors is ongoing and will be released as they are certified to interoperate with the StorEdge real-time antivirus scan capability.

User, group, and directory quotas

Quota usage can be contained by user, group, or directory tree allowing for both “soft” and “hard” quotas.

Unified security

The Sun StorEdge 5310 NAS OS delivers secure file services for CIFS and NFS clients. It provides an integrated security model in which Windows ACLs and UNIX permissions are simultaneously maintained for file system objects, and which preserves the semantics and features of the native security models.

Home directory storage consolidation

To eliminate the need for system administrators to manually create and manage home directory shares and mounts for the user community, the Sun StorEdge NAS OS provides an autohome CIFS/SMB share and NFS mount facility that automatically creates shares and NFS mounts when a user logs into the domain.

File system checkpoints

To ensure data protection with minimal space usage and ease of recovery, the Sun StorEdge NAS OS file system provides a checkpoint facility that enables virtual point-in-time copies of a given file system. Space usage is minimized by only storing changed blocks, and checkpoints can be mounted for end-user restores as well as used in conjunction with backup for minimizing application quiesce times.

iSCSI support

For reliable block-level access to network data, iSCSI support is available for Microsoft Windows-based clients. The NAS OS has been qualified at the Microsoft Hardware Qualification Lab and provides support for Microsoft applications that interface with iSCSI using the Microsoft iSCSI software Initiator version 2.0.

Network failover and load balancing

The Sun StorEdge NAS OS provides facilities to aggregate network ports for increased bandwidth as well as for failover.

IP aliasing

To support multiple network segments as well as legacy network infrastructures, the Sun StorEdge NAS OS provides support for nine IP addresses per NIC port.

Directory and name services

To simplify the management of user identification and access permissions, the Sun StorEdge NAS OS interoperates with numerous directory systems and name services including Active Directory, DNS, WINS, LDAP, NIS, and NIS+.

Backup

To facilitate backup, the Sun StorEdge NAS OS includes a network data management protocol (NDMP) agent to allow integration and interoperability with third-party backup and restore software that supports the NDMP protocol. Backups can be performed with tape attached directly to the Sun StorEdge NAS

appliance (local), or to the backup server itself (remote), or to another Sun StorEdge NAS appliance (three-way).

System management user interface

The Sun StorEdge NAS OS provides for a Web GUI, telnet alpha-numeric console as well as command line interface, all of which provide appliance-like simplicity and flexibility to manage your data as well as for system installation, customization, and management which also includes wizards for system setup and volume management.

SNMP

To provide integration with centralized management platforms, Sun StorEdge NAS systems provide an SNMP management information base (MIB) that includes commonly used information as well as traps.

SMTP

To support e-mail notification of events, SMTP is supported with the ability to specify multiple recipients of alerts via e-mail.

System monitoring

All Sun StorEdge NAS systems provide network monitoring for traffic and performance, environmental monitoring for fans, power supplies, temperatures, and voltages, and UPS monitoring to ensure higher data reliability when on battery backup, and controlled shutdown when the battery time is nearly exhausted. Sun StorEdge NAS appliances provide the additional ability to monitor the disk storage subsystems that are included with the appliances.

Sun StorEdge NAS OS — optional software clustering

The Sun StorEdge 5310 Clustered NAS Appliance and the Sun StorEdge 5310 Clustered NAS Gateway System include the optional clustering software as part of the system delivery. Clustering software provides for active-active

failover of systems in the event of a system failure. When a failover occurs, the surviving system assumes control of the failed system's IP addresses and file system volumes to provide near-continuous service in such events.

Sun StorEdge File Replicator

To provide for disaster recovery situations over distance, the Sun StorEdge File Replicator provides mirroring for file systems between Sun StorEdge NAS systems. Source systems and target systems can be any Sun StorEdge NAS system allowing larger capacity systems to provide backup for numerous smaller capacity systems that may be deployed in remote offices. In the event of a source system failure or disaster, the mirrored file system on the target system can be promoted to a production level to take over the responsibility of delivering data during the failure.

StorEdge Compliance Archiving Software

The StorEdge Compliance Archiving Software meets requirements for stringent mandatory enforcement compliance archiving requirements as well as less stringent advisory-level enforcement requirements. Mandatory compliance archiving includes support for requirements associated with SEC 17a-4 requirements. Sun StorEdge NAS systems can optionally include write once, read many (WORM) functionality for file systems that allow the specification of minimum retention periods. Also included with the Sun StorEdge Compliance Archiving Software are administrative lockdown facilities that ensure that files marked as WORM cannot be inadvertently removed prior to their retention period. With advisory-level compliance enforcement, WORM-enabled volumes, file systems, and files can be removed as well as have retention periods adjusted to an earlier date and time.