SCALE8

Storage Without Limits

NAS System N2200

A high-capacity NAS system with exceptional economics

KEY BENEFITS

- **Cost-effective**

  From 6 to 108 TB of storage on industry-standard building blocks with ATA disk technology.

- **Seamless Expansion**

  Expand system storage capacity without system downtime.

- **High Availability**

  Sub one-minute head fail-over and twin layers of fault resiliency via Dual Data Protection maximize data availability.

- **Easy Integration**

  Turnkey NAS system with standard NFS interfaces simplifies implementation.

Overview

The NAS System N2200 is an advanced Network-Attached Storage (NAS) system utilizing Scale8's patent-pending Distributed Storage Software (DSS) technology and low-cost industry-standard building blocks to provide large-scale storage capacity. With Scale8 DSS, the N2200 brings new levels of scalability and data protection to customers requiring quick and convenient access to large amounts of low-cost file storage. The N2200 is an excellent fit for a wide variety of applications, including Internet file serving and reference data repositories for multiple terabytes of file-based information such as seismic data, video, CAD designs, film animation elements, photographs, scanned documents and medical images.

Cost-Effective Large-Scale Storage

Using Scale8's S70 storage nodes with ATA disk technology, the N2200 enables creation of storage systems with exceptional economics beginning as small as 6 TB and scaling as high as 108 TB. Its flexible, modular architecture allows you to grow in economical increments as needs increase, while maintaining a single view across all storage within the system to lower management costs. The N2200 combines the capacity of multiple systems with the simplicity of managing one system.

Seamless, Modular Expansion

Compared to traditional NAS systems, a key advantage of the N2200 is the ability to expand storage capacity without downtime. The patent-pending Scale8 Distributed Logical Volume Manager (DLVM) transparently distributes files across all modular storage nodes in the system within a framework that allows dynamic changes. New storage nodes can be easily added to the N2200 on the fly and configured as incremental storage for use with new or existing file systems. File system capacity can be increased without service interruption, eliminating the need to pre-allocate extra file system space in anticipation of potential expansion needs.

Increased Data Availability

Another key feature of the Scale8 DLVM is a unique Dual Data Protection capability that extends data protection far beyond traditional disk array technologies. Using Dual Data Protection, the DLVM provides two layers of RAID 5 protection, allowing the N2200 to tolerate multiple disk failures, or the complete failure of a storage node due to any other hardware or software fault. In addition, should the file system head node fail for any reason, the N2200 can automatically transfer control to one of the active storage nodes and resume file system activity within one minute.

Easy Implementation and Management

The N2200 comes ready to run as a factory-integrated turnkey NAS system configured to your specifications. With standard NFS interfaces and all necessary software included, there is no need for third-party software on the N2200 or on client computers, making implementation of the N2200 extremely quick and easy. The N2200's single system capacity of 100+ TB enables it to be used in lieu of multiple, smaller capacity NAS systems, simplifying system deployment and day-to-day management. In addition, for applications that have previously utilized near-line tape storage, the N2200 can be quicker and far more convenient than tape storage for retrieval of reference or archived information.

Key Features

- Scalable modular architecture, based on industry-standard computing technologies
- Two models to choose from:
  —N2200, configurable from three to 21 model S70 Intelligent Storage Nodes, providing 6-42 TB of raw storage capacity
  —N2200XL, configurable from three to 54 model S70 Intelligent Storage Nodes, providing 6-108 TB of raw storage capacity
- Single system image presented to applications, users, and administrators
- Patent-pending Distributed Logical Volume Manager (DLVM), providing:
  —Management of files across all storage nodes in the system
  —Online expansion of existing file systems
  —Online expansion of total storage capacity by adding storage nodes
- Dual Data Protection, providing the ability to remain online during failure of:
  —Any storage node
  —Two disks in a single distributed volume group (DVG)
  —Multiple disks across different DVGs
- Optional automated fail-over with sub one-minute recovery, ensuring no interruption to data availability in the event of file system head node failure
- Standard NFS protocols enable support for a broad range of clients without requiring specialized client software
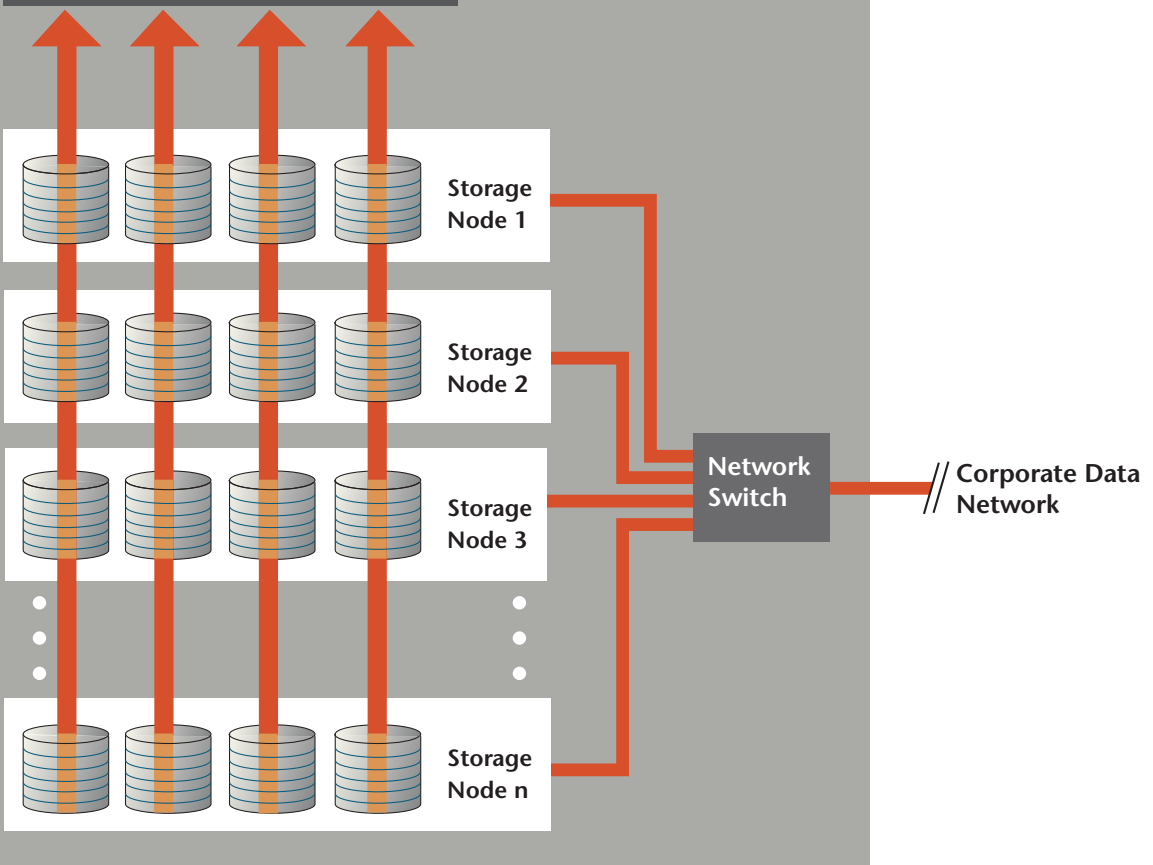
- Comprehensive Distributed Storage Manager (DSM) administration tool with a powerful and easy-to-use command line interface
- Automated notification of system events or failures via email or SNMP
- Remotely accessible system restart and troubleshooting tools
- Remote system diagnosis by Scale8 technical support

File Systems

DLVM

RAID Protected Level 2 Distributed Volume Group

DVG 1   DVG 2   DVG 3   DVG n

Storage Node 1

Storage Node 2

Storage Node 3

Storage Node n

Network Switch

Corporate Data Network

Scale8: Storage Without Limits

Scale8 provides file storage solutions based on patent-pending distributed systems technology. Scale8 delivers this technology in its Network-Attached Storage (NAS) product family and via its Global Storage Service, which has served Fortune 500 companies around the world since October 2000. The company is headquartered in San Francisco, with facilities in the United States, Japan, and the United Kingdom.

For more information, visit www.scale8.com or call 415.896.0788.

System Capacity		N2200	N2200XL
Number of Storage Nodes (min/max)		3 / 21	3 / 54
Raw Storage Capacity (min/max)		6 TB / 42 TB	6 TB / 108 TB
Number of Disk Drives (min/max)		36 / 252	36 / 648

File Systems or Logical Volumes	Up to 32*
File System Size	Up to 8 TB*
Files per File System	Unlimited
Single File Size	Up to 8 TB*
Storage Nodes	• Capacity per storage node: 2.0 TB raw • Disks: Qty (12) 180 GB 7200 rpm ATA disk drives • Memory per Storage Node: 2 GB ECC DDR Memory • Processor: 2.4 Ghz Intel® XeonTM
Network Connection	1000Base-TX (Copper) or SX (Multi-mode fiber)
Scale8 N2000 Software Suite	• Scale8 Distributed Logical Volume Manager (DLVM) • Scale8 Distributed Storage Manager (DSM)
Network Protocol Support	NFS v2/v3 over UDP or TCP
Client Support	Sun Solaris, Red Hat Linux, SGI Irix, Microsoft Services for Unix
RAID Support	Multi-layer RAID 5; enabled with Scale8's unique Dual Data Protection technology

High Availability	• Online replaceable disk drives and power supplies
	• Disk failure resilience
	   —Up to two in any DVG
	   —Up to twelve across all DVGs
	• Single storage node failure resilience
	• Automated file server head node fail-over

Enclosure	Optional 36U data center cabinet with integrated power
Physical Dimensions	24"Wx36"Dx72"H
Power Requirements	Dual 120VAC 20A NEMA L5-20 (with Twist-lock plugs)
Environmental	Temperature: 0 – 35°C Operating Altitude: 0 – 10,000 ft
Standard Warranty	• 3-year hardware warranty • 90 day software subscription
Technical Support	• Silver, Gold, or Gold-4 support plans available, providing options for 24 x 7 telephone support and on-site technical assistance.

* Current QA testing limit; planned for future expansion