



PRODUCT BRIEF | High Density 12 Gb/s LFF HDD Storage Server

NDS4603

Performance-oriented Enterprise Class High Density Storage Enclosure

Data storage capacity continues to expand, increasing the need for enterprise class high density storage enclosures. Today's business environment requires simple, easy ways to grow capacity as well as providing performance and scalability on demand. The Viking Enterprise Solutions (VES) NDS4603 High Density Storage Enclosure enables 3.5" or 2.5" SAS/SATA hard disk drive (HDD) and solid state disk (SSD) device connections in a mixed environment. Target device communication and management is enabled via standard serial attached SCSI (SAS 3.0) protocol with enclosure services linked via SES firmware. The enclosure can be configured as a JBOD or NAS.

The VES NDS4603 Storage Enclosure offers best-in-class performance and capacity, space-saving density, "green" energy efficiency and 24x7 high-availability redundancy of key components.

The NDS4603 fits into an industry standard 19" rack / 1 meter rack. Its flexible configuration allows it to be deployed in a variety of applications.

FEATURES

- ▶ Full-featured robust 12Gb/sec high-performance SAS 3.0 storage enclosure
- ▶ Operation with either single I/O controller or dual I/O controllers for redundant failover
- ▶ Multiple Drive partitioning/split-bus zoning modes
- ▶ Hot-pluggable I/O controller(s) & dual redundant high efficiency advanced supplies
- ▶ SFF-8644 12Gb/sec SAS 3.0 host & expansion ports or expansion of up to 100Gb/s network interface
- ▶ Flexibility to choose SAS or SATA drives to achieve the right performance, reliability & price
- ▶ Modular design increases product configuration flexibility
- ▶ Standard chassis customization & branding available
- ▶ SAS point-to-point connectivity isolates drive failures, increasing reliability & fault tolerance & improving performance
- ▶ SAS daisy-chain expansion to additional storage arrays & other SFF-8644 SAS compliant host/expansion ports or add-on PCIe 3.0 HBA

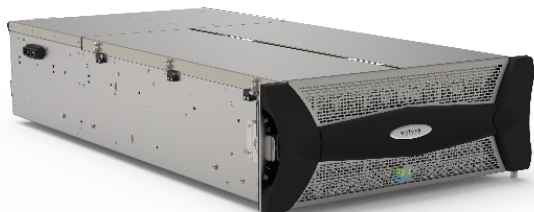
VES Portfolio of Storage and Storage Server Solutions

VES offers a broad portfolio of product offerings, including:
Leading edge performance & high availability solutions
Leading edge cold storage & object storage solutions
Purpose built compute & storage platforms

Working with VES provides you with an accelerated time-to-market for your server and storage product needs, and allows you to leverage our portfolio of proven product designs.

Customers are backed by an industry leading design team and a world-class Electronics Manufacturing Services organization.

High Density SAS 3.0 Connected Enclosure supports 60 Hard Drives in 4U. Provides exceptional performance and scalability for high density storage environments.



NDS4603

Host/Expansion Interfaces

- ▶ One or two VES SAS 3.0 I/ I/O controller modules per system, with each I/O module supporting 5x 12Gb/sec SAS 3.0 SFF-8644 ports

Capacity

- ▶ 60 drive capacity per 4U enclosure

Firmware

- ▶ SCSI Enclosure Services (SES) 3.0
- ▶ IPMI 2.0 Baseboard Management Controller

I/O Controller Models

- ▶ NDS4603-JS Model:
 - ▶ Single Controller 12Gb/sec SAS 3.0 JBOD I/O controller module with support for storage expansion enclosures
- ▶ NDS4603-JD Model:
 - ▶ Dual redundant 12Gb/sec SAS 3.0 JBOD I/O modules, each with support for storage expansion enclosures

4U Rackmount Enclosure

- ▶ Dimensions:
7.0 in. H x 16.6 in. W X 34 in. D (17.7 cm H X 40.1 cm W X 86.4 cm D)
- ▶ Weight with drives: 220 lbs (100 kg) max
- ▶ Standard Rackmount Rail Kit with integrated cable management

Drive Partitioning/Split-Bus Zoning

- ▶ Controller module can be zoned in four pre-defined zoning schemes
- ▶ Additional zoning schemes can be developed upon request

Redundant Hot-Swappable Components

- ▶ Up to two SAS 3.0 JBOD I/O controller modules or Haswell Servers
- ▶ Two AC power supplies
- ▶ Two Regulator modules to provide hard drive power
- ▶ Two independent AC power inlets
- ▶ Up to 60 Drives
- ▶ Two Supercap/Battery modules

Disk Drives

- ▶ 60 independent point-to-point connections to each SAS or SATA disk drive with dual-port access & failover by each controller to each drive
- ▶ Form factor: 3.5" & 2.5" SAS, SATA & SSD drives
- ▶ Rotational speeds up to 15K RPM
- ▶ Interface: 12Gb/6Gb/3Gb SAS; 6Gb/3Gb SATA

AC Power

- ▶ Input voltage: 180-264V AC
- ▶ Input frequency: 47-63Hz
- ▶ Input current: 20.0 Amps max @ 230VAC
- ▶ Maximum system continuous DC output power rating: 2900 Watts – Reduced power at low line voltages

Monitoring and Reporting

- ▶ Monitoring for temperature, advanced power & cooling modules including fan speed control, disk drives & I/O module(s), as well as error rates & quality of service
- ▶ In-band reporting of all serial number, part number, & revisions of each FRU & chassis

Performance

- ▶ Up to 48 Gb/s (sustained reads) using 12 Gb/s SSD drives
- ▶ Up to 38 Gb/s (sustained reads) using 6 Gb/s SSD drives & EDFB

Operating Environment

- ▶ Temperature: 5° to 35°C
- ▶ Relative humidity: 20% to 80% (non-condensing)
- ▶ Altitude: -200 ft to 10,000 feet
- ▶ Shock: 5G at 11ms, 1/2 sine wave pulse
- ▶ Vibration: 0.10G at 5Hz to 500Hz

Non-Operating Environment

- ▶ Temperature: -40° to 60°C
- ▶ Relative humidity: 10% to 90% (non-condensing)
- ▶ Altitude: -200 ft to 40,000 feet
- ▶ Shock: 10G at 11ms, 1/2 sine wave pulse
- ▶ Vibration: 0.5G at 5Hz to 500Hz

Electromagnetic Emissions & Immunity Standards

- ▶ CE Mark
- ▶ EN55022/EN61000 Class A
- ▶ FCC Class A
- ▶ Canadian IECS-003

Safety Standards

- ▶ UL 60950
- ▶ CSA 22.2-950
- ▶ IEC/EN/UL/CSA 60950-1, 2nd Edition

Quality Standards

- ▶ Manufactured under an ISO 9002 registered quality system

Environment Protection

- ▶ RoHS & WEEE compliant

