

PRODUCT BRIEF | High Density 102 Drive, High Availability JBOD

NDS41020

Enterprise Class High Density 102 drive High Availability JBOD

The Viking Enterprise Solutions (VES) NDS-41020 High Density JBOD packages 102 3.5" hard disk drives (HDDs) at 12Gb/s. The enclosure contains two active I/O Modules (IOMs). The VES® NDS-41020 Storage JBOD offers best-in-class performance and capacity, space-saving density, "green" energy efficiency and high-availability of all active components. The NDS-41020 fits into an industry standard 19" wide by 1.0m deep rack.

Applications Use Cases

The NDS-41020 JBOD was designed to enable vertical scaling of storage capacity in order to match the needs of a wide range of enterprise grade storage applications requiring full redundancy. The NDS-41020 allows for expanding external storage in file, block and object storage format through a standard SAS interface between the JBOD and any standard storage server. The NDS-41020 provides leading-edge density, capacity, \$/GB savings, and reduced footprint for even the largest of today's hyper-scale data centers.

FEATURES

- ▶ Dual I/O modules for failover keep the system fully operational even with a single IO module
- ▶ Multiple drive partitioning/split-bus zoning modes
- ▶ Hot-pluggable I/O controllers, fan modules & redundant, high efficiency, advanced power modules & 5V regulators
- ▶ SFF-8644, 12Gb/s, SAS 3.0 host & expansion ports or expansion of up to 100Gb/s network interface with server modules
- ▶ Modular design increases product configuration flexibility
- ▶ Standard chassis customization & branding available
- ▶ SAS point-to-point connectivity isolates drive failures, increasing reliability & fault tolerance, while improving performance
- ▶ SAS daisy-chain expansion to additional storage arrays & other SFF-8644 SAS compliant host/expansion ports
- ▶ Special "Lite" configuration also available, featuring a single SAS 3.0 I/O module with 4 12Gb/s SAS 3.0 SFF-8644 ports & supporting SATA drives up to 6Gb/s

The VES Advantage

VES offers a broad portfolio of product offerings, including:

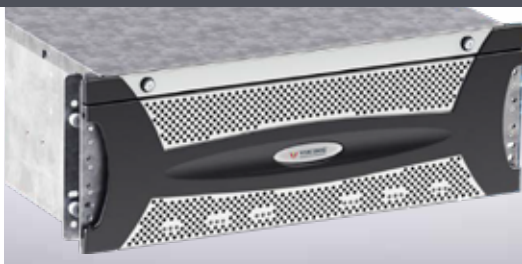
- ▶ Leading edge performance SSD arrays, SAS & NVMe
- ▶ Leading edge high performance & high availability solutions
- ▶ Industry leading cold storage & object storage solutions
- ▶ Purpose built compute and storage platforms

VES provides you with an accelerated time-to-market for your server and product needs, and allows you to leverage a best in class portfolio of proven product designs.

Customers can rely on an industry leading design team and a world-class Electronics Manufacturing Services organization.

Provides exceptional performance and scalability for today's high density storage environments.

High Density 12 Gb/s LFF HDD. Very High Density SAS 3.0 Connected Enclosure - supports 102 drives in 4U.



NDS41020

AC Power

- ▶ Input voltage: 180-264V AC
- ▶ Input frequency: 47-63 Hz
- ▶ Power supplies: 2 (n+1)
- ▶ Input current: 9.4 amps max @ 200V AC per power supply
- ▶ Maximum system continuous DC output power rating: 1600 Watts

Hot-Swappable Components

- ▶ Two JBOD IO modules
- ▶ Two AC to DC power modules
 - ▶ Two 1,600 watt power supplies
 - ▶ Two +5V regulators per enclosure/system provide hard drive power
- ▶ Two independent AC power inputs
- ▶ Up to 102 Drives in main bay

Firmware

- ▶ SCSI Enclosure Services (SES) 3.0-based firmware

Drive Partitioning/Split-Bus Zoning

- ▶ Drive array can be zoned in four pre-defined zoning schemes supported by the I/O modules
- ▶ Additional zoning schemes can be developed upon request

Capacity

- ▶ 102-drive capacity per 4U enclosure
 - ▶ 102 drive slots compatible with LFF or SFF drives
- ▶ 12Gb/s supported on all drive slots

Failure Notifications

- ▶ SCSI Enclosure Services (SES-3.0) over in-band interface & via LEDs

Host Expansion Interfaces

- ▶ Two VES SAS 3.0 JBOD I/O modules, each with four 12Gb/s SAS 3.0 SFF-8644 ports

Operating Environment

- ▶ Temperature: 5° to 35°C
- ▶ Relative humidity: 20% to 80% (non-condensing)
- ▶ Altitude: -200 to 10,000 ft
- ▶ Shock: 3G at 11ms, 1/2 sine wave pulse
- ▶ Vibration: 0.10G at 5 Hz to 500 Hz
- ▶ Acoustics (declared sound power): 92 dB with I/O modules; at idle/active operation tested to ISO 7779

Non-Operating Environment

- ▶ Temperature: 5°C to 45°C
- ▶ Relative humidity: 10% to 90% (non-condensing)
- ▶ Altitude: -200 to 10,000 ft
- ▶ Shock: 10G at 11ms, 1/2 sine wave pulse
- ▶ Vibration: 0.5G at 5 Hz to 500 Hz

Disk Drives

- ▶ Form factor: 3.5" HDDs or 2.5" SSD SAS drives
- ▶ Interface: 12Gb/6Gb SAS; 6Gb SATA
- ▶ 10W per drive

Safety Standards

- ▶ UL 60950
- ▶ CSA 22.2-950

Quality Standards

- ▶ Manufactured under an ISO 9002 registered quality system

Environment Protection

- ▶ RoHS & WEEE compliant

4U Rackmount Enclosure

- ▶ Dimensions: 6.9 in. H x 17.2 in. W x 39.4 in. D (17.2 cm H x 43.8 cm W x 100.0 cm D)
- ▶ Weight with drives: 275.0 lbs (124.7 kg) max
- ▶ Standard rackmount rail kit with optional cable management system

Electromagnetic Emissions & Immunity Standards

- ▶ CE Mark
- ▶ EN55022: 2010
- ▶ EN61000 3-2:2014
- ▶ EN61000 3-2:2013
- ▶ FCC Class A
- ▶ Canadian IECS-003

Monitoring & Reporting

- ▶ Monitoring for temperature, power, cooling (including fan speed control), disk drives, & I/O module(s)
- ▶ In-band reporting of all serial numbers, part numbers & revisions of the I/O modules, power modules, power supplies, drives & chassis

