VIKING™
Enterprise Solutions

PRODUCT BRIEF | NVMe over Fabric Enclosure

NDS22482F

High Performance Enterprise Class Storage Using NVMe™ Over Fabrics Technology

The Viking Enterprise Solutions (VES) NDS22482F Fabric Enclosure offers twenty-four 2.5-inch U.2 (SFF8639) NVMe™ SSDs with six 100 GbE QSFP28 network ports. The enclosure provides access to the high performance of the NVMe drives over the network with virtually no latency or performance penalty.

Two fabric modules are included with the enclosure. Each fabric module has a PCIe switch network and three PCIe add-in cards slots that are compatible with a wide range of Ethernet fabric adapter cards (full length, full height, up to 150W of power).

The solution utilizes third-party add-in cards and offers six 100 GbE QSFP28 network links for NVMe-oF™ access to the drives. All of the NVMe-oF target protocol occurs in hardware without the need of a host CPU. This provides a combination of incredible performance at over 15M IOPs, and extremely low total latency of less than 16µs. This total includes both fabric latency (<8µs) and NVMe drive latency (<8µs if using Intel® Optane™ drives).

FEATURES

- Full NVMe performance available over the network
- Operation with either single or dual fabric modules for redundant failover
- Management interface to control drive access control & provisioning
- Hot-pluggable fabric modules, power supplies & drives
- SFF-8639, PCIe Gen 3 NVMe (U.2) drive support (up to 25W per drive)
- Single & dual port NVMe drive support
- Evolves with the market by using standard PCIe add in card adapters for NVMe-oF export (three x16 Ethernet add-in card slots per fabric module)
- Accommodates NVMe-oF adapters that are up to full length, full height in size & up to 150W in power
- Standard chassis customization & branding available

Management Interface

"The NDS22482F has a full featured management interface that provides status and control of the enclosure as well as the fabric. A consolidated web GUI provides enclosure status such as temperatures, voltages, fan speeds, and installed FRUs.

The GUI is also capable of managing the fabric. All fabric management functions are restricted to a secure out-of-band interface between the BMC and the fabric adapters that ensure only permitted hosts have access to specific NVMe subsystems.

Lowest latency NVMe over Ethernet with six 100Gbps network ports.

High bandwidth and low latency enclosure that offers twenty-four 2.5" NVMe drives accessible using NVMe over Fabric protocol across six 100Gbps ports.

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NDS22482F

Interfaces
- Two fabric modules
- Three x16 PCIe 3.0 card slots per fabric module
- Each add-in card slot accommodates up to a full length, full height PCIe card
- Up to 150W per add in card
- Six pin PCIe aux power is available for each slot

Hot-Swappable Components
- Two fabric modules
- Two AC to DC power supplies
- Either 1100W or 1500W of power, dependent on add-in card power requirement
- Two independent AC power inputs
- 24 drives in the front of the system

Firmware
- Allocation, access control, & portioning provided over 1Gbe management link
- CLI and GUI control for drive management & status of the enclosure

Drive Partitioning
- Controlled by the management software through the 1Gbe link

2U Rackmount Enclosure
- Dimensions:

  3.2 in. H x 17.6 in. W x 34.1 in. D (87 mm H x 448 mm W x 866 mm D)
- Weight with drives: 67.4lbs (30.6 kg) max
- Standard rackmount shelf
- Mounts industry standard 19" x 1m deep rack

Failure Notifications
- Status & fault LEDs on the enclosure, fabric modules & drives

Operating Environment
- Temperature: 5° to 35°C
- Altitude: -200 to 10,000 ft

Non-Operating Environment
- Temperature: -40° to 60°C
- Altitude: -200 to 40,000 ft

Disk Drives
- 24 NVMe drives accessible by either fabric module (active/passive with single port drives, and active/active with dual port drives)
- Form factor: 2.5" U.2
- Up to 25W per drive
- Interface: x4 PCIe 3.0 or dual x2 PCIe 3.0

AC Power
- Input voltage: 90-264V AC
- Input frequency: 47-64 Hz
- Power supplies: 2 (N+1)
- Input current: 8.5 amps @ 180V AC Inrush current: 40 amps peak per power supply
- Maximum system continuous DC output power rating: 1500 watts

Drive Partitioning
- Controlled by the management software through the 1Gbe link

Performance
- Up to 75 GB/s (reads) over the six 100Gbps ports
- Up to 15 million IOPs (reads) over the six 100Gbps ports

Safety Standards
- UL 60950
- CSA 22.2-950

Quality Standards
- Manufactured under an ISO 9002 registered quality system

Environment Protection
- RoHS and WEEE compliant

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, as well as error rates & quality of service
- Reporting of all serial number, part number, and revisions of the fabric modules, power supplies, drives & chassis

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For price, availability and sales information, please email us at sales@vikingenterprise.com or call us at +1 (408) 964-3555.

www.vikingenterprisesolutions.com