VTrak E-Class - E310f/E310s
High Availability SAS/SATA RAID Storage Systems

High Availability and Performance with Maximum Expandability and Scalability for Enterprise and Nearline Applications

Product Highlights

- Configure up to 45TBs of data storage with SAS JBOD expansion
  - 2U rackmount with a cable-less design for higher reliability and major components are hot-swappable
  - 12 Drive Bays
  - Supports failover/failback RAID controllers for high availability
  - FC and SAS host interface ports for performance and connectivity
  - Supports SAS (enterprise) and SATA (nearline) drives simultaneously
  - LUN Masking and Mapping enable SANs and large clusters

Why is the VTrak E-Class the right solution for enterprise and SMB customers?

- High Availability – NSPOF
  - Redundancy - Dual controllers, power supplies and cooling units; Cableless, screwless design
- High Performance
- Expandability and Scalability
  - Connect up to 4 VTrak J-Class JBOD Storage Systems.
  - Additional SAS ports in the E310s allow you to connect or cascade multiple E310s units
- Flexibility - SAS/SATA interoperability allows one subsystem to support all your application needs
- Ease of Qualification
  - Common architecture - all you need to do is change the controller
- Open Architecture - Lets the customer decide what components--from disk drives to HBAs that they want to use.
- Comprehensive Data Management
  - Network management through web-based application, email, SNMP, WBEM/CIM, SSL
  - Comprehensive embedded web-based management via Ethernet – WebPAM® PROe. Command Line Interface/Utility via RJ-11 Serial Port
  - Remote Management
- Data Protection Features
  - RAID 0 / 1 / 1E / 10 / 5 / 6 / 50 / 60; Predictive Data Migration® and PerfectRAID®
- Excellent Support Programs
  - 24 x 7 support (English only), 3 year warranty and advanced field replacement
**Product Overview**

**Feature Set**

- **RAID Features**
  - RAID 0, 1, 1E, 5, 6, 10, 50, 60 – Any combination of these RAID levels can exist at the same time
  - 64K, 128K, 256K, 512K and 1MB stripe size per disk
  - Background task priority tuning: adjustment of minimum I/O reserved for server use during all background tasks
  - Global and dedicated (per array) hot spare with revertible hot spare support

- **Background Activities**
  - Media Patrol
  - Background synchronizing and Foreground initialization
  - Rebuild
  - Redundancy Check
  - SMART condition polling
  - OCE (Online Capacity Expansion) and RLM (RAID Level Migration)
  - Priority Control, Rate Control and watermarking per BGA in Disk and NVRAM

**Key Advantages**

- **Robust Data Protection**
  - PerfectRAID™, Predictive Data Migration™ Battery backup, Media Patrol

- **Sophisticated RAID Features**
  - Online Capacity Expansion, RAID Level Migration, Capacity Coercion, Drive Roaming, Multiple LUN Support, LUN Masking and Mapping

- **Industry Standards Compliance**
  - Management: Web-based application, email, SNMP, CIM/WBEM, SSL, SLIP, Telnet
  - Supports Disk Data Format (DDF) for industry wide standardization and drive roaming between VTrak systems

- **Compatibility**
  - Extensive testing and qualification of third party disk drives, HBAs, initiators, switches and software

- **Modular Architecture**
  - The VTrak E310x series of RAID storage systems share the same:
    - Enclosure, power supplies and cooling units
    - Graphical user interface (GUI) – Same look and feel when configuring and managing the system across all VTrak products

- **Expandability and Scalability**
  - Connect up to 4 VTrak J-Class JBOD Storage Systems.
  - Additional SAS ports in the E310s allow you to connect or cascade multiple E310s units

- **Freedom of Choice:** Choose the capacity and brand of hard disk drives in your VTrak product
  - End Users: Save money with drives that are suitable for your application. Upgradeable as your storage needs increase.
  - System Integrators and Value-Added Resellers: Increase your margins by selecting drives purchased at the lowest cost.

**Management Software**

- Auto, Express and Advanced configuration support for novice and skilled user
- Extensive user database mgmt - Import/export function for user data base, RAID configuration, event files
- Multiple subsystem support utilize SLP discovery
- Event Notification - Email, NETSEND; audible(buzzer), & visible(LEDs) alarms

**Target Applications**

- Entry level enterprise and SMB SANs
- Transactional data management: Business applications data, small data bases - e.g. Oracle and Microsoft SQL
- Nearline/Archival data (medical/legal/financial records, e-mail, source code, doc control, records, etc)
- Storage and server consolidation
- Document/Medical imaging
- Digital Video Surveillance
- Audio/Video editing, archive, distribution and scratch disk
- Uncompressed HD video capture
- Video production and editing
- Datacenters / Mass Storage

**Quick Reference Guide**

**VTrak E-Class - E310f/E310s**

High Availability SAS/SATA RAID Storage Systems
Product Overview (cont’d)

Front View

- **VTrak E310f/E310s**
- **Power**
- **FRU Status**
- **Logical Drive Status**
- **iSCSI-1 Activity**
- **iSCSI-2 Activity**
- **Controller Heartbeat**

- **Drive Carrier**
  - Hot swap drive carriers for 3.5" x 1" drive form factor
  - Direct SAS and SATA drive connection to the backplane
  - Drive status and activity LED
  - Positive camming action ensures reliability

- **Enclosure Hardware**
  - 2U-12 bay SATA RAID, 3 ½” drives
  - Hot swappable Field Replaceable Units (FRUs)
    - Controllers, power supplies, disk drives and carriers
  - Completely cable-less design for all components
  - 72 Hour Battery Backup standard

- **Enclosure Management**
  - Power Supply – Fan Speed control, Status LED
  - Cooling unit – Fan speed control tuned to thermal/airflow condition for noise reduction
  - Locate function for drive, FRU units and subsystems
  - All back side FRU’s support Vital Product Data (VPD) - SN, part #, revision and more

Back View

- **VTrak E310f**
  - Dual Controller
  - Power Supplies
  - Cooling Units
  - RJ-11 Serial Port
  - FC Ports (2)
  - Ethernet Interface

- **VTrak E310s**
  - Dual Controller
  - Power Supplies
  - Cooling Units
  - RJ-11 Serial Port
  - SAS Ports (4)
  - Ethernet Interface

- **SAS Expansion Port**
- **FC Ports (2)**
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VTrak E-Class Configuration with VTrak J-Class

Manage all your VTrak systems through the same web-based GUI – WebPAM PROe

Supports seamless software failover and failback on management Ethernet port

VTrak E310f/s Dual Controller SAS/SATA RAID Storage System

VTrak J-Class JBOD Storage System (up to 4 JBODs)

One SAS Domain

x4 SAS External Cable

Additional SAS host ports allow you to connect or cascade multiple E310s units