VX1600 series Unified Network Storage

Overview

VX1600 series storage, with high performance, high reliability, high density, high scalability and high usability, is a new-generation unified network storage developed especially for video surveillance. Integrating a range of features such as iSCSI storage, RAID processing, permanent data protection and cutting-edge disk management technology, this device offers concurrent block access performance (iSCSI) ,and thus to be a comprehensive solution to storage in video surveillance.

Features

Intelligent RAID Engine (ISET)

- Convenient RAID application

  The RAID can be used immediately after being created. The system automatically initializes at the background.

- Free from the impact of abnormal RAID status

  The performance of storage devices usually deteriorates in the case of RAID degradation. The Intelligent RAID Engine technology can be a shield against the impact of abnormal RAID status on services to ensure the normal operation of front-end monitoring services.

- Free from the influence of concurrent reading/writing

  The IOPS multiplies when concurrent reading and writing occurs on a disk. The Intelligent RAID Engine technology can be a shield against the impact of video recording and playback to ensure the normal operation of front-end services.

- Cache algorithms for videos

  Optimized read/write cache management algorithm, greatly improving access performance and extending the lifespan of HDDs.

- SSD Cache

  The use of SSD Cache can be greatly improving access performance of hot data

- Dynamic adjustment of reconstruction speed

  The system adjusts the reconstruction speed automatically based on the system conditions to reduce the impact of RAID reconstruction on services and to improve the effective utilization of system resources.

Super Error Correction (SEC)

- Automatic disk inspection and repair

The unique hard disk fault-tolerant processing algorithm ensures service continuity even when multiple disk errors exist in the array. Fault sectors can also be automatically repaired.

- Fast disk reconstruction

  Data can be copied to a hot spare disk within a short period. This substantially reduces the read I/O of disk, speeds up the reconstruction, and avoids data loss.

- RAID superblock backup

  Array composition is not affected when data in a certain sector cannot be read. In addition, damaged data can be repaired by using the backup sector to improve array reliability.

Data Protection

- Data safe box

  Online embedded UPS protection and data safe box are provided to ensure secure writing of cache data into data safe box at unexpected power-off without data loss.

- Disk pre-copying

  Pre-detection of failure is implemented to transfer data from risky disk to the hot spare disk.

- Disk protection

  Once a disk error is detected, the disk repair process would automatically start. Data in the failed disk is recalculated from other disk in the array to remap the bad blocks of disk.

- Link protection

  Link aggregation and dynamic failover ensure the read/write bandwidth without affecting the availability of data channels.

Three Dimensional Linear Expansion

- Seamless expansion based on LUN resources
- 2 X48Gbps Mini SAS HD interfaces for back-end expansion.

High-Quality Hardware Design

- High density

  The innovative enclosure with 583mm depth and 4U height that holds up to 24 disks, is space-saving and applicable to the standard rack-mounted scenarios.

- Carrier-class applications with high availability

  The application of Intel 64-bit server platform architecture, 64-bit multi-core processor, ECC DDR3 memory, and 64-bit storage OS ensure excellent service continuity by providing stable and reliable data access. The system availability reaches up to 99.999%.

- Watchdog

  The system would be forced into the security mode in case of a failure. High-speed cache data is stored in the data safe box. Storage media in the data safe box can roam to the new system together with the array disk. The system can be recovered securely and conveniently.

- Dual BIOS

When the active BIOS fails to start, the system automatically detects the failure and switches to the standby BIOS. This ensures reliable system startup and BIOS update.

- Redundant power supplies

  The hot-swappable power supply is designed in redundancy and load balancing mode. Automatic power switching in case of failure and online replacement of failed power supply are supported.

- Overload protection

  The mechanism of hardware overload protection is provided. When the temperature reaches the protection threshold, the system automatically turns off to protect the disk data.

- When CPU and memory malfunction or reach the protection threshold, the system automatically sends alarm messages through mails, short messages, and SNMP Trap.

- Power protection

  Disk powered on sequentially during system startup, protection from impulse current.

- Multistage fan speed and energy saving

  Fans with multistage speed are configured in the hot-swappable frame in redundancy mode. System power consumption can be balanced intelligently with heat dissipation calculation to ensure low power consumption and stable operation of the system.

- Convenient maintenance

  Functions as indicator alarm, mail alarm, beep alarm, SNMP Trap alarm and SMS alarm are supported.

  Automatic startup after unexpected power-off, and timed startup and shutdown are also available.

  The environmental monitoring function allows the monitoring of the utilization of network interface and CPU, the querying of the access of LUN and RAID, as well as the management of device voltage and temperature. In this way, administrators can comprehensively inspect system operation condition and reasonably allocate resources to maximize the device performance.

Green Technology and Energy Conservation

- Selected power supplies with high PF and conversion efficiency
- Intel CPU with cutting-edge process technology and advanced architecture
- Particularly selected chips with low power consumption for service model of video surveillance
- Unique simplified design of board

  Reduced component type and quantity, under the affirmatory premise of the function, performance and reliability

- Multistage fan speed

  Several temperature sensors are configured and built inside to intelligently control the fan speed.

- Hibernation for unoccupied disks
- Intelligent cache design

  Reasonably sort and buffer the read/write data by intelligent algorithm reduce the disk read/write times，and reduce the hard disk power consumption.

Specifications

Item	VX1600
Storage controller	Intel 64-bit multi-core processor
Memory	4 GB (up to 32 GB)
Front-end Service Interface	3 10/100/1000 Mbps Ethernet interface 4 port 10/100/1000 Mbps Ethernet interface module（optional） 2 port 10 GE SFP＋ interface module（optional） 4 port 10 GE SFP＋ interface module（optional）
Back-end Expansion Interface	2x48 Gbps Mini SAS HD（optional）
HDD	24 SATA interfaces
Disk Capacity	1 TB, 2 TB, 3 TB, 4 TB , 5 TB, 6 TB,8TB
RAID	JBOD and RAID 0,1,10, 5, 50,6 Dedicated hot-spare disk and global hot-spare disk
Maximum Number of Logic Resources	1024
Protocol Supported	iSCSI
Alarm Feature	Indicator alarm, beep alarm, mail alarm, SNMP Trap alarm, and short message alarm
Operating System	Windows and Linux
Power Supply	1 default， 1 optional
Battery	at least 1
Dimension (H ×W×D)	Controller enclosure:175.0mm×481.6mm×589.0mm
Power Consumption	Controller enclosure: < 450(fully configured)
Power Supply	100 V – 127 V/ 200 V – 240 V AC, 60 Hz/50 Hz
Weight	Controller enclosure :Fully configured：< 43 kg
Authentication certificate	CE, FCC, TUV, UL, CCC
Operating temperature	5 °C~40°C / 41 °F ~ 104 °F,(10°C~ 35°C / 50 °F ~ 95°F Recommended)

Dimension Figure

VX1600