

ClustStor[®] Storage for High Performance Computing



Profile

- Cost-efficient IP SAN solution
- InfiniBand technology
- High storage capacity
- Fast network connection
- Flexible management

Specification

Flexible and Scalable Storage Systems

ClustStor[®] from MEGWARE are Storage Area Network (SAN) systems featuring high storage density and performance as well as a wide range of functions. With these systems, flexible and reliable iSCSI and native InfiniBand storage solutions can be implemented.

The transfer of the memory data takes place in a network and does not require any direct connection of the storage system and the processing unit. Thanks to an installed file system, the memory can be used by several computers, which leads to significantly higher levels of availability.

The often unpleasant problem of being faced with insufficient memory space in one computer and having unused capacity in other computers is now a thing of the past. ClustStor[®] provides flexible allocation and an optimal utilisation of its storage resources.

For data storage, ClustStor[®] is equipped with up to 16 SATA or SAS harddisks. When selecting the type of harddisk to be used, performance and reliability are the most important decision-making criteria, each of which depend on the requirements of the application concerned and on the budget available.

SATA harddisks are ideal storage media for large data volumes to be handled, for instance, in document management, in image and video processing, and in backup operations. They offer large storage capacities at favourable cost.

In most cases, databases are handling small data packages requiring numerous and fast access operations. SAS harddisks are well suited for such applications as they provide high disk speeds and a special organisation of read and write access operations.

Interesting solutions are possible for applications where data are to be optimally made available and mobilized and safely stored in the long term (Information Lifetime Management or ILM) according to their importance and frequency of utilisation, on the lowest-cost storage medium. To this end, it is for instance possible to provide ClustStor[®] with low-cost SATA harddisks for data which are not permanently used (backup to disc) and with SAS harddisks for transaction data which must be available quickly.

Clusters are able to considerably simplify the administration and maintenance of the storage system by separating the storage and processing operations. This becomes obvious in the safeguarding (backup) and multiple storage (replication) of data stocks where server availability is not impaired.

Nowadays, numerous storage area networks are based on the implementation of the Fibre Channel Standard, which has been designed for the high-speed transmission of large data volumes. However, besides the advantages offered by this technology, one must take into account the higher costs for a separate storage area network and additional components such as switches, cables, and host bus adapters, which also require increased management

efforts. In addition, the range of cable connections is limited.

ClustStor® with iSCSI protocol is based on the widespread SCSI and TCP/IP technologies. No separate network is required. As a result, an improved price-performance ratio can be obtained compared to Fibre Channel.

InfiniBand is an industry standard for network technologies offering very wide bandwidths and a low latency. With this system, communication, interprocess communication and storage data can be transmitted in a combined manner. Consequently, ClustStor® with native InfiniBand simplifies the infrastructure as no separate Storage Area Network needs to be installed and administered. Low capital investment and reduced maintenance result in considerable cost savings.

Applications where simple RAID systems are no longer able to cope with the high requirements on storage capacity, fast network connection and high failure safety are the perfect environment for ClustStor® Storage Systems. They can be implemented with the interconnects 1 Gigabit Ethernet, 10 Gigabits Ethernet and native InfiniBand. The harddisk systems are available with storage capacities of 1.1 to 12 Terabyte. Special unique selling points include comprehensive management and monitoring functions, such as snapshots and dynamic volume extension.

For even higher storage capacities of more than 100 Terabyte and the use in high-availability solutions, ClustStor® XTended Storage Systems are the right choice.

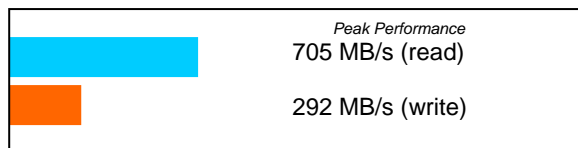
Performance Features :

- 19" rackmount housing (3 HU)
- Up to 16 harddisks (Hot-Plug)
- Support of SAS/SATA-II harddisks
- RAID 0, 1, 5, 6, 10
- Dynamic adaptation of volume size
- Snapshot support with rollback function
- Integration into centralized management (iSNS) is possible
- High reliability thanks to redundant system components
- Management interfaces : SSH, HTTP, HTTPS, Serial Console.

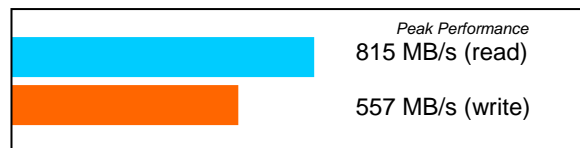
Recommended Areas of Application :

- Workstation
 - Image processing
 - Video and animation applications
 - CAD/CAE environment
- Small and medium-sized networks
 - Data bases
 - Document management
- High Performance Computing
 - Scientific-technical simulations
 - Computation of mathematical models

Benchmarks :



iSCSI / 10 Gigabits Ethernet



SRP / InfiniBand

Test Configuration: 15 x 250 GB SATA-II, 3 LUNs (each time RAID 5 with 5 HDDs), Orion-Oracle I/O benchmark with block size 1 MB.

Technical Data :

Model Versions

- 16x 3.5" HDDs (SATA II) in Hot-Swap Bays
- 16x 3.5" HDDs (SAS) in Hot-Swap Bays

Network Interfaces

- Ethernet Management Port
- Selectable data interfaces :
 - 4x 1 Gigabit Ethernet
 - 10 Gigabits Ethernet
 - DDR InfiniBand

Power Supply

- Redundant power supply unit for high availability
- Energy-efficient power input

Measures and Weight

- 19" rackmount design (3 HE)
- Weight : 33 kgs, depending on configuration

Consult us. Together, we will find the storage solution that fits you best.
We would be pleased to submit you a detailed equipment and price offer.

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