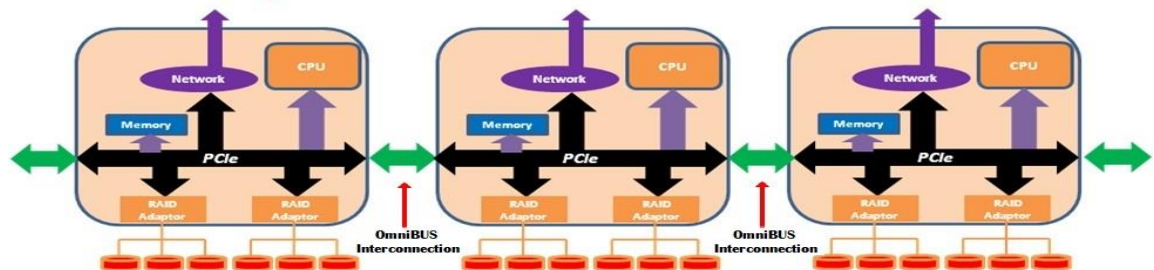# GateStor

Data Systems Corporation

Epoch Power Cluster Series

HC Cluster Storage Solution

GateStor introduce the EP-Cluster® v1.2-- *the* disruptive cluster storage system based on the ultra-fast SolidPower7000® platform. The Epoch Power is a revolutionary cluster architecture that breaks performance limits and overcomes existing issues in existing storage cluster solutions.

The EP-Cluster® is a patented unified storage cluster solution, interconnected by the **1Tbps OmniBUS Interconnection**, a PCI Express network on high performance COTS server platforms. By connecting the cluster through the **OmniBUS Interconnection**, all nodes can share the resources on every other node, breaking mayor limitations on current cluster implementations and offering a near linear performance increase.

Epoch Power Cluster Architecture

EP-Cluster® storage multi-node system delivers outstanding-performance, ease-of-use and cost-effectiveness demanded by today's storage users.

Via its native License Manager, the EP-Cluster® delivers the flexibility to serve the complete range of storage cluster needs – from small 2 node solution to massive enterprise solutions with up to 1024 nodes and up to 4 **Exabytes** of raw storage capacity.

Historically storage vendors offered the market very limited storage management options – low-end NAS/SAN/DASD systems, which did not scale as an organizations needs grew, or high-end, expensive NAS/SAN/DASD systems, which many small and mid-size organizations were simply priced out of.

EP-Cluster® patented architecture has demonstrated to be the answer to overcome existing cluster performance limitations, remove all network overheads and file size issues and limitations. It takes advantage of the existing SP7K technology still unique in the market with its Virtual Storage memory manager and broadcast technology which reduces the number of data transfers, not only within a node but throughout all the cluster via the unified 1Tbps OmniBus Interconnection.

Today, however, GateStor proudly leads the shift, offering storage software solutions that span the full range of today's storage management needs - with the features, and at the price-points, demanded by SMB's and large enterprises alike.

Epoch Power® Cluster *Storage* Feature Highlights

Epoch Power® Features

- Cloud Storage Platform
- From 1 to 1024 Nodes
- Each node support 600 drives
- Maximum storage 4 Exabytes
- Node Front-End Connectivity ports:
  - o 12 PCIe Gen3x4 (31.5Gbps) Ports total @ 378Gbps
  - o 6 InfiniBand @ 200 Gbps ports
  - o 6 200/100/10Gb Ethernet ports
  - o 8 32 Gbps FC ports
- Extensive storage Virtualization
- iSER, iSCSI, Block level and file level support
- SSD Drive support as Cache pools

- 1Tbps OmniBUS Interconnection to Hosts
- Back-End drive support
  - o SAS 12 Gbps 15K RPMs
  - o SATA 12 Gbps 7.2K RPMs
  - o SSD and Gen5 NVMe Drives
  - o Flash Memory
  Massive Support for up to 307,200 drive configurations
- Multiple node failure support
- Dynamic Cluster Expansion/Configuration
- PCIe Encapsulation for NVMe, SAS
- Local/Remote data Replication
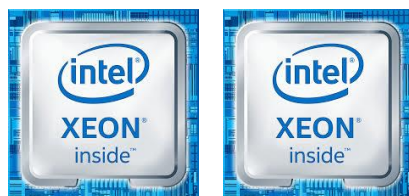- PCIe Gen3/Gen4 switches

Storage Management

- Virtualization of Physical Nodes
- Storage Agnostic (SATA, SAS, FC, third party FC storage boxes, etc.)
- Stripe over Block level, NAS
- Segmented file cluster support

Basic Configurations

Node Head Unit Size/Weight (kg. without SSDs)	2U/Net Weight: 35 lbs (15.9kg) Gross Weight: 57 lbs (25.9kg)		
Dimension（W x D x H)(mm)	17.2" (437mm)x 3.5" (89mm) x 24.8" (630mm) 26.5" (W) x 10.5" (H) x 38" (L)（package size）		
Drive Unit Size/Weight (kg. without SSDs)	4U/80 lbs (36.3 kg) gross weight		
Dimension x D x H)(mm)	7" (178mm) x 17.2" (437mm) x 27.5" (699mm) 26.5" (W) x 10.5" (H) x 38" (L)（package size）		
Processor	Support for two Xeon 64bit quad core processors		
RAID Levels	0, 1, 3, 5, 6, 10, 50, 60, 550, 560		
Cache	16GB, up to 128GB		
Array Stripe Size	4K, 8K, 16K, 32K, 64K, 128K		
Model	**EP-Node 1**	**EP-Node 4**	**EP-Node 16**
Host Channel (Select one or combine up to the max number of ports)	100/200/400GbE X 6 InfiniBand x 6 10/100/200/400GbE x 6 FC (32Gb) x 8 OmniBUS Fabric	100/200/400GbE X 12 InfiniBand x 12 10/100/200/400GbE x 16 FC (32Gb) x 16 1Tbps OmniBUS Fabric	100/200/400GbE X 256 InfiniBand x 256 10/100/200/400GbE x 96 FC (32Gb) X 96 1Tbps OmniBUS Fabric
Number Of Drives	90 drives basic Up to 540 drives	180 drives basic Up to 1080 drives	768 drives basic Up to 4,320 drives
Number of Solid State Drives in Head Units for Cache Extension	Eight 128GB	Sixteen 128GB	Sixty four 128GB
Connection Types	OmniBUS®, FC, InfiniBand, 10/100/200/400GbE		
Protocols	iSCSI, iSER, FCP, IB SRP, IPoIB, CIFS, NFS, pNFS, NVMeoF		
Virtualized Volume	Can be assigned to any connection types. Switching between different connection types is possible.		

Epoch Power® Features

Management Interface Language	English
iSCSI Port Bonding Bonding Mode	Balance-rr, Active-backup, Balance-xor, Broadcast, Balance-tlb, Balance-alb
Backplane	NVMe/SAS/SATA supports SES-II, SGPIO
HDD Bays Interface	NVMe, SAS / SATA3 (12Gbps)
SSD Bays	8 On head Unit
Capacity per Pre Configured Node	Std. 180TB Max.1.5PB （Petabytes）
JBOD Expansion per Node	Up to 8 JBODs
Write Mode	Write Back / Write Through
Copy/Mirror/Replication	Local Mirror, Remote Mirror, Remote Replication, Duplication, Volume Copy
Monitoring	Channel samplings, Volume historical read / write statistic, GUI login / logoff, log, client connections, GbE interface, HDDs status.
Alert	**Alarm type**： Mail / LED / Audio Alarm **Alarm Trigger**： HDD Failure / Fan Failure / Redundant Power Supply / Remote Mirror Broken
Update	Online Firmware Update / License Update
Hot-swap Power Supply Head Unit	900W Gold Level hot-swappable redundant power
Hot-swap Power Supply 45 drive chassis	1400W Gold Level hot-swappable redundant power
Cooling	4*hot-swappable fan
Power Source	AC 110V~240V Full Range 50-60Hz
Operating Temperature	5℃~35℃（41℉~95℉）
Non-operating Temperature	-20℃~55℃（-4℉~131℉）
Operating Humidity	35%~85%（non-condensing）
Non-operating Humidity	20%~93%（non-condensing）
OS Support	Windows 10,11, Windows Server 2018, RedHat, Debian, SuSE, Ubuntu Linux, Solaris

Dual Xeon Inside

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