

SeaChange® UML Grid Storage

Enterprise-class, IT-based Grid Storage Solution



In this era of high definition, there's always a need for more – more media formats to support, increased consumer consumption, higher demand for massive storage, and elevated levels of performance.

The SeaChange Universal MediaLibrary Grid is a high-availability storage system that utilizes the iSCSI architecture and offers high performance, high capacity, full redundancy, and scalability for enterprise and multimedia data storage.

The Universal MediaLibrary (UML) “brick” is now configured to scale to a grid storage system. A UML brick connects with other bricks in geographically dispersed locations, the entire network acting as single, virtualized file storage. It is especially designed for media companies who are planning to expand their storage capability as they grow.

It accommodates up to 216TB in a 5RU storage matrix. Unlike the traditional content library that caters to transmission playout or production storage only, the UML combines the traditional linear playout support with production and streaming into an all-in-one product. It is an open storage and server infrastructure that is simple to manage and cost-effective, allowing direct ingest, edit-in-place, archive, and play-to-air functionalities.



The Grid Architecture

The UML Grid storage architecture consists of the iSCSI server and client components using a high throughput, low latency cluster file system. The system supports up to 144PB of data and billions of files in a distributed file storage system with hundreds of clients in a single global namespace. The architecture features one or more bricks, each consisting of a High Availability Server Pair and a shared storage called the Matrix Storage Array (MSA). The disks inside the matrix are managed using the SeaChange High Availability Server (SHAS) software.

The client machines may run on Windows, Linux, or Mac, with applications that use the bricks as data storage. These may be ingest or playout servers such as the SeaChange MediaClient 8200 or non-linear editing tools like Apple Final Cut Pro, transcoders, and archive, among others.

Private Cloud File Storage

A client accesses files from a single global namespace, regardless of where the file is physically located in the network. Bricks can be geographically dispersed and still function as one in a private cloud.

Linear Capacity and Performance Expansion

The UML Grid features industry-leading performance of up to 17Gbps in a single stream. By simply adding bricks to the UML Grid system, companies can scale up storage space and performance on a modular basis, without disruptions or the need to restripe, and in only 60 seconds. It can handle up to 2,000 bricks in a grid with a maximum storage capacity of up to 144PB and unbeatable 34,000 Gbps throughput. The grid system promotes pay-as-you-grow expansion, which not only expands storage capacity but also multiplies performance levels.

Self-Protected UML Bricks

Each brick is reliable, with field-replaceable parts, hot-swappable drives, and redundant power supplies. It ensures no single point of failure featuring RAID 6 protection and High Availability controllers.

Load Balancing

Network traffic is balanced as files are distributed to different bricks, reducing transactional bottlenecks. Thus, response to simultaneous requests happens real time.

Flexible Connectivity

The UML Grid provides simultaneous NAS and SAN access to the same data.

The new UML Grid storage system is the newest and latest solution to advance your tapeless workflow technologies at a pace that suits your growth. The pay-as-you-grow approach to capacity and performance expansion lets you set your own pace according to your needs. With virtually no expansion limit, the world is your single global namespace.

Call your SeaChange representative and ask about the UML Grid Storage.


Product Specifications

	SeaChange UML Grid Storage Brick	
	HA Server Pair	Matrix Storage Array
Chassis	Two 2RU rack-mountable servers Network Interfaces: 2x Chelsio dual port 10GigE TOE Server Head Interconnect: Primary - InfiniBand, IPMI, and RS-232 Secondary - Ethernet	5RU rack-mountable chassis Disk Drives: 72 drives, 6 blades of 12 drives each Maximum drives supported per Matrix: 72 x 1TB, 2TB, or 3TB Hot swap and redundancy: Disk drives, cooling fans, power supplies, blades
Power Requirements	(Per Server Head) - Dual 720W supplies - AC Input: 100/240 VAC @ 60/50 Hz - Maximum power draw (startup) 230W - Normal power draw (operating) 200W	- Four 850W power supplies, two minimum for operation - AC Input: 100-240 VAC, 50/60 Hz x2 - Maximum power draw (startup): 1300 W (both 1TB and 2TB SAS drives) - Normal power draw (operating): 900 W (1TB SAS drives); 1200 W (2TB SAS drives)
Heat Dissipation	685 BTU/hour	3100 BTU/hour (1TB SAS drives), 4100 BTU/hour (2TB SAS drives)
Dimensions	(Per Server Head) 3.5" H x 17.2" W x 24.8" D	8.75" H x 17.7" W x 30.0" D; EIA310 compliant
Weight	(Per Server Head) 43.5 lbs (19.7 kg)	Chassis without drives: 85 lbs (38.6 kg) Chassis with seventy-two drives: 239 lbs (108.4 kg)
Operating Environment Temperature	10° C to 35° C (50° F to 95° F)	10° C to 30° C (50° F to 86° F)
Regulatory Approval	<ul style="list-style-type: none"> * FCC CFR 47 Part 15 A - This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. * EN55022 - Conducted emissions. European Union EMC Low Voltage Directive. * AS/NZ3548 - In accordance with Australia/New Zealand Conducted emissions requirements for Class A, Information Technology Equipment (I.T.E.). * VCCI - In accordance with Japanese limits and margins of compliance to VCCI requirements. * CE European Low Voltage Directives - EN55024:1998 EN61000-4-2:1995 Immunity, ESD - EN55024:1998 EN61000-4-3:1995 Immunity, Radiated - EN55024:1998 EN61000-4-4:1995 Immunity, EFT - EN55024:1998 EN61000-4-5:1995 Immunity, Surge, ±2KV Common Mode, ±1KV Diff. - EN55024:1998 EN61000-4-6:1995 Immunity, Conducted RF - EN55024:1998 EN61000-4-8:1995 Immunity, Power Frequency Magnetic Field - EN55024:1998 EN61000-4-11:1995 Immunity, Voltage Variations - EN61000-3-2:2000 Harmonic Current Emissions - EN61000-3-3:2000 Voltage Fluctuations and Flicker * CB Scheme - IEC 60950-1, Information Technology Equipment – Safety. Part 1, General Requirements Editions 1 & 2. * Safety - ETL Intertek in accordance with safety standard OSHA 60950-1 Information Technology Equipment. - 60950-1, Information Technology Equipment – Safety. Part 1, General Requirements Edition 1. - CSA C22.2 No. 60950-1, Information Technology Equipment – Safety. Part 1, General Requirements Edition 1. - IEC 60950-1, Information Technology Equipment – Safety. Part 1, General Requirements Editions 1 & 2. 	

Grid Specifications

Maximum capacity	144PB per file system
Maximum number of bricks	2,000 bricks
Maximum number of file systems	16 file systems
Maximum size per file	32TB
Maximum number of files	Tens of billions depending on file size
Maximum number of clients	Largest installed > 800
POSIX compliance	Compliant with POSIX for file semantics and locking
NAS support	CIFS, NFS, FTP, HTTP
SAN support	iSCSI
Client OS support	Microsoft Windows 32- and 64-bit (XP/2003/2008/Vista/7) Red Hat Enterprise Linux 4.x/5.x (32- and 64-bit) CentOS Linux 4.x/5.x (32- and 64-bit) Oracle Enterprise Linux 4.x/5.x (32- and 64-bit) SuSE(32- and 64-bit) Mac OS X 10.5.x – 32-bit (Leopard) Mac OS X 10.6.x – 64-bit, 32-bit (Snow Leopard)

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03.26_2012

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