

SeaChange® Universal MediaLibrary

New Generation Storage Server for Broadband and CDN Solutions

The SeaChange Universal MediaLibrary (UML) is an enterprise-class server infrastructure that offers simple-to-manage, open storage to enable media companies to economically deploy and expand their operations.

The UML serves as a high-density storage library in VOD infrastructures, providing operators with the capacity to store hundreds of thousands of hours of content. With the option to integrate with a content management system such as SeaChange AssetFlow or other third party CMS, content can be readily available to backoffice systems for delivery to the users. The UML also serves as an origin server in Content Delivery Network (CDN) deployments. It features load balancing and system failover capabilities, offering operators new levels of performance, reliability, and scalability, without limiting their deployment options.

SYSTEM ARCHITECTURE

The UML system architecture draws on SeaChange's heritage of delivering powerful, highly available, storage and streaming solutions to create a media library that far surpasses traditional storage methods. The UML is comprised of a pair of highly available UML server nodes and the innovative Matrix Storage Array platform. This combination creates an economical, high-availability core storage solution that delivers the performance and reliability that media companies demand.

The UML server nodes are a pair of Linux servers that provide an incredibly fast and reliable management server pair, offering the level of organization required for massive amounts of storage. In an "active-active" architecture, each node provides access to dual ported storage, i.e., all 72 drives in a Matrix Storage Array, allowing application performance to scale and yet keep storage simple to manage. The pair provides fault resiliency by mirroring write-back data between host-based DRAM caches using a high-speed Infiniband interconnect. The UML server nodes are therefore capable of fast failover within seconds, ensuring that the storage library is always available to the rest of the network.

The Matrix Storage Array platform offers an intelligently designed system with unmatched storage capacity. Each 5RU Matrix Storage Array chassis contains 6 front-access blades that can be pulled out for maintenance while online. Each blade module contains 12 top-load drive slots that enable simple drive replacement, without impacting ongoing critical operations. The Matrix Storage Array provides high throughput performance since all of the drives are pooled together to act as one, yet remain independent in order to be able to handle the level of requests demanded in a broadband environment.



High Availability

The UML server pair provides constant access to all drives with fast server failover. RAID 6 redundancy ensures content is always available. A fault-resilient design for power supplies and fans keeps servers up.

Immense Capability

Pooled resources mean close to 600TB of storage per rack. 10GigE connectivity provide high performance via simple IP networking.

Density

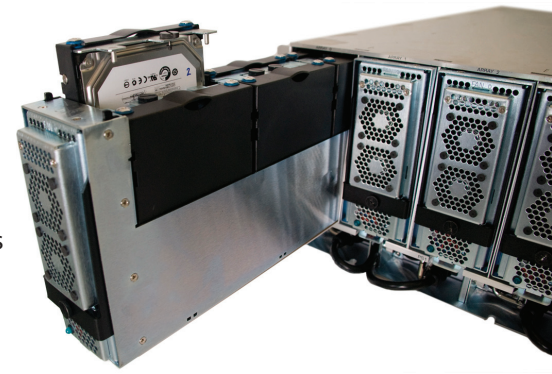
Conserve valuable rack space without sacrificing storage with up to 53TB (using 1TB drives) or 106TB (using 2TB drives) of usable RAID 6-protected storage in a 5RU easy-to-service Matrix Storage Array.

Economical

Deliver the lowest storage cost/GB in the industry.

Simple to Manage and Scale

An integrated NAS solution with GigE interfaces means easy deployment of an IP workflow. Easily scale up to 72 drives or multiple racks.



UML Server Pair

Chassis	Two 2RU rack-mountable servers
Operating System	CentOS Linux
File System	Distributed File System
Server Node Interconnect	Infiniband
Network Interface	2x Chelsio dual port 10GigE TOE
Network Control Interface	Onboard dual 1GigE Ethernet ports

Specifications per server node

Power Requirements	<ul style="list-style-type: none">- Dual 720W supplies- AC Input: 100/240 VAC @ 60/50 Hz- Maximum power draw (startup) 230W- Normal power draw (operating) 200W
Heat Dissipation	685 BTU/hour
Dimensions	Height: 3.5" (89cm, 2RU) Width: 17.2" (437cm) Depth: 24.8" (630cm)
Weight	43.5 lbs (19.7 kg)
Operating Environment Temperature	10-35 degrees Celsius
Humidity	8-90% relative humidity, non-condensing
Altitude	3000 meters (8,000 ft) maximum

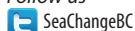
Matrix Storage Array

Chassis	5RU rack-mountable chassis
Disk Drives	1TB or 2TB SAS drives
Maximum drives supported per Matrix	72 drives
Hot swap and redundancy	Disk drives, cooling fans, power supplies, blades
Power Requirements	<ul style="list-style-type: none">- Four 850 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 drives)- Normal power draw (operating): 900 W (1TB drives); 1200 W (2TB drives)
Heat Dissipation	3100 BTU/hour (1TB drives) 4100 BTU/hour (2TB drives)
Dimensions	Height: 8.75" (22.2cm, 5RU), Width: 17.7" (45cm), Rack Depth: 30.00" (76.2cm), EIA310 compliant
Weight	Chassis without drives: 85 lbs (38.6 kg), Chassis with seventy-two drives: 239 lbs (108.4 kg)
Operating Environment Temperature	10° C to 30° C (50° F to 86° F) ; Humidity: 20-80% relative humidity, noncondensing; Altitude: 3000 meters (8,000 ft) maximum

Regulatory Approval:

- 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, $\pm 2\text{KV}$ Common Mode, $\pm 1\text{KV}$ 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 General Requirements Edition 1.
 - IEC 60950-1, Information Technology Equipment – Safety. Part 1, General Requirements Editions 1 & 2.

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