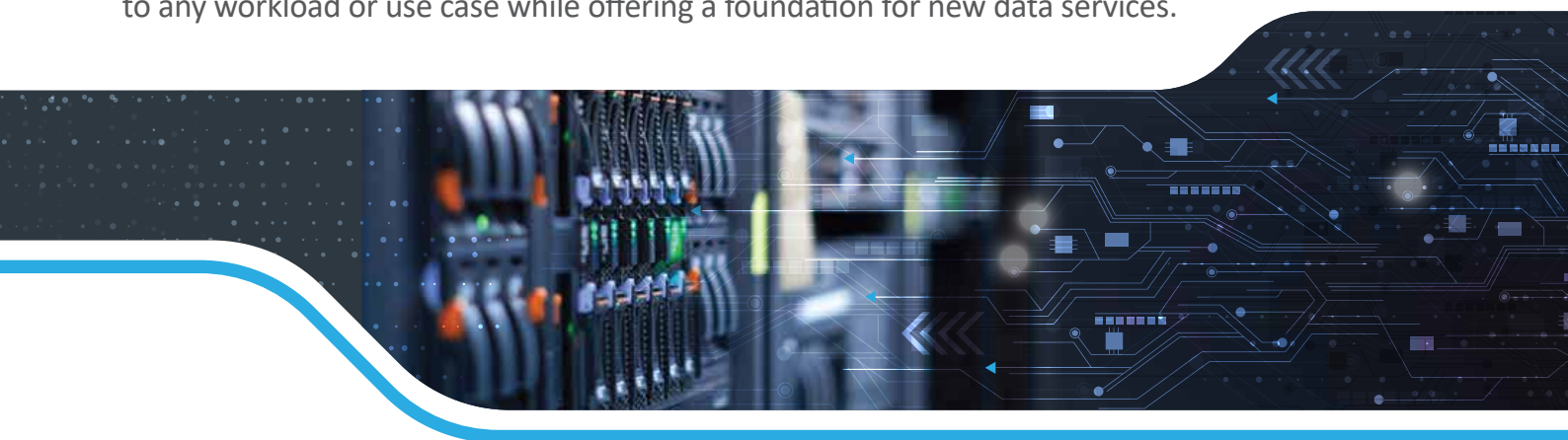


Kumulus O Series

Eliminate legacy storage complexity with instant access and analysis

KloudStor Kumulus O leverages simple and emergent behavior with decentralized coordination to handle any rate, flow or size of data.

Kumulus O turns standard hardware into a reliable pool of resources that adapts to any workload or use case while offering a foundation for new data services.



KloudStor Kumulus O

It's incredibly efficient.

Squeeze every last drop of value out of your resources.

Complete storage software

Kumulus O is a complete software stack that boots from bare metal and includes all operating system, services and interfaces needed. It runs everything from RAM, including its distributed object index, leaving up to 98% of hard drive capacity for net content. That's why rolling upgrades on Kumulus O are natural and straightforward.

Shatters complexity

Kumulus O doesn't rely on a file system (zoFS) or database (zeroDB) that both get brittle with size. All operational and descriptive information is encapsulated as metadata with each object. The zeroFS and zeroDB approach means storage capacity and object count can scale quickly.

Evolves with you

Use the servers, hard drive technology or network of your choice. Seamlessly add new hardware while mixing node types, hardware vendors or drive sizes, even within the same node. This lets you easily and steadily add new, more efficient hardware while retiring older nodes at the press of a button. Forklift upgrades are a thing of the past.

Darkive

Darkive is patented adaptive power conservation technology that will selectively spin down drives and power step node CPUs to reduce power consumption by up to 80% in cold archive use cases. These savings put Darkive optimized Kumulus O clusters well within the TCO of large tape based media archives while still ensuring content is readily accessible.



- 100% uptime with no single point of failure
- Symmetric architecture, no separate proxies or caching servers
- World-class customer support



- Mix and match servers and capacities
- Rapid, bare-metal deployment, no software installation required
- 90 seconds to add a new server to the storage cluster



- Linearly scale-out capacity and throughput
- Highest performing parallel architecture
- Encapsulated metadata with ad hoc search & query

It's exceptionally fast.



Don't let the volume, flow or size of your content slow you down.

Kumulus O architecture

All Kumulus O nodes can handle all operations. An innovative algorithm and caching is used to dramatically reduce overhead and manual management associated with other architectures like RING. There are no single points of failure like controller nodes, databases or management nodes.

Instant access

Object addressing is based off of a 128-bit unique universal identifier or unique name. When content is accessed it is located instantly (zero IOPS) and delivered in milliseconds regardless of capacity or object count.

Supports small and large files

Kumulus O's zeroFS, zeroDB, Kumulus O architecture, and support for replication and erasure coding provide consistent rapid performance for small (Bytes) or large (Terabytes) files.

Tunable

Kumulus O can extract every bit of value from commodity hardware but if a power boost is needed you can choose higher performance servers, solid-state drives or 10 GigE networks to enable performance intensive workloads.

It's highly automated.



Content management can be time consuming – let our software do it for you.

Health Processor

The intelligence behind Kumulus O's automation is the Health Processor that continually checks system status, governs and executes all automated procedures including content integrity and executing Lifepoints.

Lifepoints™

Lifepoints are administrator-defined policies stored as metadata with the object enforced by the Health Processor. Lifepoints are used to automatically manage the entire content lifecycle from creation to expiration including number of replicas, erasure coding scheme, delete protection and deletion

Kumulus O at work

Kumulus O's unique Kumulus O architecture enables the massively parallel interaction between each individual node automating capacity and load balancing. Distributed repairs also happen independently because every object is aware of a lost replica or lost segment and re-replicates accordingly. Kumulus O even powers Darkive and is key to directing requests to optimal nodes allowing all others to fall asleep and save power.

It's massively scalable.



Capacity and performance are a plug away.

Rack-boot-store

Kumulus O's no single point of failure approach truly shines when it comes time to scale. Simply rack servers, boot Kumulus O and store. There is no LUN or namespace management, and all storage balancing is automated.

Hundreds of PBs, hundreds of billions of objects

A mind numbingly large namespace combined with Kumulus O architecture enables massively parallel scaling to hundreds of petabytes and hundreds of billions of objects.

Linear scale

With the parallel nodes very loosely coupled and no bottlenecking controller nodes or metadata databases to hold you back, just add the hardware of your choice for linear scaling of capacity and throughput.

Single or multi-site

Supports single or multi-site deployments (with massively parallel replication, both synchronous and asynchronous) to support a broad range of use cases and business requirements.

It's rock-solid reliable.

Elastic protection optimizes data durability and access – for each object individually.

Elastic content protection

Combines automated management of replication and erasure coding (definable per object) with continuous integrity checks, active recovery and passive recovery.

It's enterprise-ready.



Demonstrate compliance, robust insight, and attentive support.

WORM and Legal Hold

Address regulatory mandates that content is stored on nonerasable, non-rewritable media. You can also use Legal Hold to create a point-in-time snapshot of a specified set of objects at a specified time that are then immutably stored regardless of what happens to the original object or cluster.

Integrity seals

Patented technology that lets you prove in a court of law that content has not been tampered with. Integrity seals are based on only the content and can be upgraded in the case a hashing algorithm is compromised.

No-SQL indexing

Gain robust insight into objects stored via (the optional) Caringo Indexer. Ad hoc queries can be run on object attributes or metadata and viewed through a web-based portal or compiled as JSON or XML for import into 3rd party analytics applications.

Enterprise support

All customers have instant access to our knowledge base, FAQs, tech notes and product alerts. We also offer higher touch support packages depending on your business requirements.



Fast recovery

Active and passive recovery is automated and all nodes participate in recovery through Kumulus O's innovative distributed algorithm that scales with cluster size. This means that recovery happens fast and gets faster as capacity grows.

Optimize for durability or access

Erasure coding can be used to save footprint and increase data durability while replication can be used to ensure rapid access. Kumulus O also automatically replicates hot content for reliable content delivery regardless of access patterns.

No service downtime

Kumulus O is highly available by design, supports hot plug drives, adding/retiring disks/nodes and rolling upgrades of the full software stack – all without service downtime.

Additional Management Features

Web-based storage administrative console

Manage, monitor and control the entire cluster from a web-based management and administration user interface.

Flexibility in naming

Store both user-assigned object names and Kumulus O-assigned IDs seamlessly.

Granular access rights

Administrators have security and authentication control over user named objects, buckets and domains.

Syslog server support

Alerts can be sent to a Syslog server for standard reporting, diagnosing alerts or establishing audit trails.

SNMP and NTP support

The Kumulus O Admin console includes detailed reporting via Net SNMP and also allows you to leverage an existing systems management platform to manage/administer the cluster as another element in the network. In addition, support external network clock synchronization to ensure accurate time stamping of content stored and events/activities within the storage environment using standard, open time-server infrastructure.

Intelligent Platform Management Interface (IPMI) support

Kumulus O leverages IPMI to monitor the health of the CPU, disk drives and other components with the cluster and alert administrators if a potential problem emerges.

Contact us today to find out more:

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