



ROCKETSCIENCE



WHITE PAPER Object Storage

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ROCKET SCIENCE

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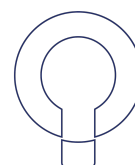
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SUMMARY

Rocket Science offers many solutions and we access to the best of breed technology out there, however sometimes you just want to build something.

Over the years we have built many custom storage appliances for mixed workflows, we have utilized common enterprise class hardware and have been able to archive great performance and stability for mixed rich media.





1.1. PERFORMANCE NAS

One of the first systems we built was to offer the smaller budget clients a solution between 48TB – 266TB which would be able to allow multiple streams of HD to multiple edit suites. These systems used multiple enterprise class hard drives in an array with our intelligent caching engine using Nvme PCI cards.

Each system comes with 4x 10Gbit and 2x 1Gbit ports enabled. These ports can be used directly to the client machines, or as a bonded multiple port connection to a switched environment.

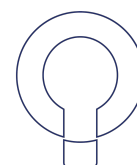
The system comes preconfigured and optimised for the workflow used by the end user. In addition to this we have a web based interface for performance monitoring on network and disk access.



1.2. HIGH PERFORMANCE MEDIA NAS

Our high performance NAS is built for rich media in mind. The system is offered in a 12 bay and 24 bay solution and comes with dual 10Gbit and dual 1Gbit network connectivity. The following table contains the measured throughputs:

Video Format	Data Rate MB/s	24 Bay	12 Bay
Red Epic Dragon 5k 3:1	70	32	15
Red Epic Dragon 6k 4:1	178	10	5
Red Epic Dragon 5k 8:1	259	5	3
Proress 422 HQ 1920x1080	22	55	32
Proress 444 HQ 4096x2160	142	12	7
Proress 444 XQ 4096x2160	212	7	4
HDD 4:4:4 DPX 1920x1080	237	5	3
2k DPX 2048x1556	292	4	2
4k Film DPX 4096x3112	1167	1	1





1.3. OBJECT STORAGE/SCALE OUT PERFORMANCE NAS

Most scalable storage systems out there like the EMC Isilon require multiple nodes or 3-node configurations which end up taking quite a bit of Rack space. These systems require more cooling and more power as you add more nodes on.

Our approach has been different when we started building a high density storage appliance which we would be able to scale and offer multiple connectivity options depending on the requirement.



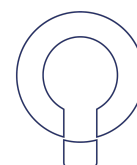
This 4U appliance comprises of 4x storage arrays which each hold up to 120TB of storage per node as well as SSD technology for caching. Each node offers 10Gbit as well as 1Gbit connectivity.



We offer this system from a base configuration of 40TB and up to 480TB, which is spread across the nodes within the chassis.

Each node carries its own OS and physical resources such as storage, networking and caching.

Our system is built as a Software Defined Storage system which is distributed, scalable, fault-tolerant and highly available. We protect data by spreading replica data across all available nodes.





Disk/Node failures are handled transparently without data loss or down- time.

For us to grow the storage system we are able to add another chassis with a single node, and grow the system further node by node. With a Distributed Software Storage system, data recovery from failed disk is done by data replication from the remaining storage. The system always has a previously set number of copies of data in multiple locations.



Our system is ideal for the following use cases:

1. Archive
2. Media Storage/CCTV
3. Render Farm Storage
4. Disaster Recovery
5. High Performance Computing

