

VMworld 2011: Nexenta Squares Up to EMC and NetApp Over Performance



“We stood tall alongside the largest, most established storage brands with a comparable solution that comfortably held its own, despite it costing just a fraction of the EMC and NetApp offering.”

—Evan Powell, CEO,
Nexenta Systems

As reported in *The Register*®,
By Chris Mellor

VMworld 2011

Cheap and effective storage from Nexenta matched EMC and NetApp's multi-million-dollar systems in VMworld 2011's Hands On Lab, and took up some of the slack from its rivals when difficulties arose on the first day. EMC and NetApp have coolly brushed off Nexenta's claims it outperformed them.

The storage infrastructure for the Hands On Lab (HOL) at the show in Las Vegas was provided by the trio of vendors after they were approached by VMware, with Nexenta getting the call in February.

VMware wanted Nexenta to provide the storage component for a SuperRack concept, a commodity white box-based alternative to VCE's Vblock and the NetApp/Cisco Flexpod. Arista provided switching technology for the SuperRack.

Nexenta said it was responsible for up to 60 percent of the Hands On Lab storage load at one time, despite only having a fifth of the work allocated to it, because of problems, it is speculated, with one of the other systems.

The lab ran on vSphere v5 in the cloud, a geo-distributed public cloud with data centers in Amsterdam (Colt), Miami (Terremark), and Las Vegas (Switch SuperNap). Each component lab was deployed using VMware's Cloud Director v1.5 (not the release generally available), and on NFS. We understand there were 480 lab seats, with dual-monitor workstations using VMware View desktops, and 24,000 lab seat hours of operation.

There were some 27 individual labs in the overall HOL, and around 5,000 people used the HOL in total during its 50 hours of operation.

Storage Speeds and Feeds

EMC provided two VNX 7500 arrays configured with three file blades plus a standby blade. The arrays came “with SSD, FAST Cache, FAST VP, and loads of 10GbE”. The bulk of the EMC load ran on NFS, and VNX VSAs ran in many of the labs.

We understand one VNX 7500 was an all-flash configuration with 96 SSDs. The other had more than 140 15K RPM hard drives and an SSD storage tier. The estimated street list price for these two VNX configurations was \$2.6 million.

NetApp supplied, we understand, two FAS3270 arrays, each with four Flash Cache cards and 144 15K RPM hard drives. The estimated list price for the pair was \$1.4 million.

Nexenta provided four instances of its ZFS-based NexentaStor, known as SuperRack, running on SuperMicro Westmere hardware: essentially, generic commercial off-the-shelf (COTS) x86 machines. A pair of high-availability servers was used per instance. Data was stored on around 160 7,200 RPM 2TB Seagate SAS hard drives, with STEC 8GB Zeus RAM and Zeus IOPS (200GB) SSDs, which were used for read and write caching. It says its systems for the show cost \$325,000 at list prices.

Storage Performance

EMC said: There were 131.115 terabytes of NFS traffic in the labs; there were 9.73728 billion NFS operations;

The average I/O size was 14KB; Internal average VNX NFS read latency was 1.484ms; and

Internal average VNX NFS write latency was 2.867ms.

A total of 13,415 lab sessions were run, creating and destroying 148,138 virtual machines over four days. A VM was created every 1.215 seconds and there were 10 to 25 VMs per lab seat session, with each VM up to 26GB in size.

Nexenta claims 7.9 billion storage operations were performed by the four NexentaStor systems. They ran four out of eight HOL vertical app areas for the duration of the show.

The peak load was 154,000 4KB NFS operations at sub-1ms latency, and the peak bandwidth on a single Nexenta controller was: 1,300MB/sec.

The average latencies were:

Read: 2.194ms

Write: 2.133ms



The story here is that the cheap and cheerful off-the-shelf hardware in the Nexenta ZFS storage stood toe-to-toe with EMC and NetApp storage costing four to eight times as much.



Nexenta Systems is the leading supplier of enterprise-class OpenStorage solutions. Its flagship software-only platform, NexentaStor, delivers high-performance, ultra-scalable, cloud- and virtualization-optimized storage solutions.

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