SPECsfs® Performance

We now turn to analysis of the new SPECsfs®2008* benchmark results. Unfortunately there were no new CIFS reports but there were more than a couple of new NFS benchmarks, mostly from NetApp but we also have a first time Isilon benchmark as well.

Latest SPECsfs2008 NFS results

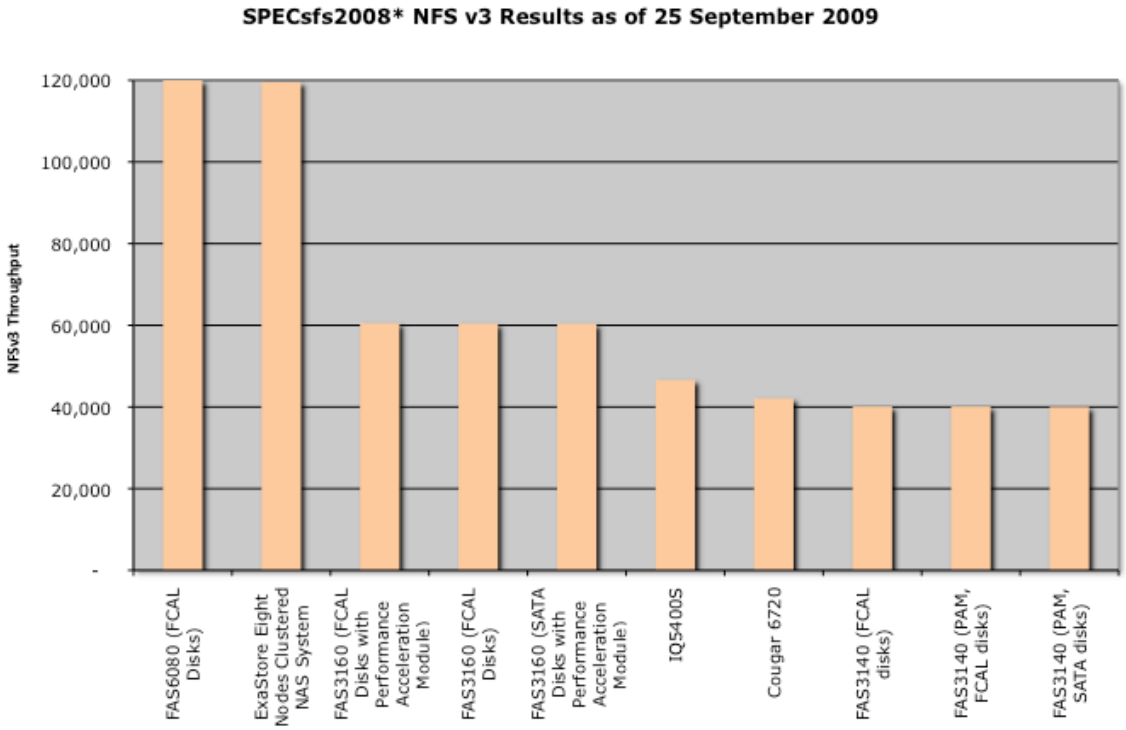

Figure 1 SPECsfs2008* NFSv3 throughput results

NetApp's FAS6080 now takes top honors with over 120K SpecSFS2008 ops, and aside from ExaStore 8-node cluster NetApp's FAS 3160 rounds out the rest of the top 5. The FAS6080 was using 2-10Gbe links. Isilon IQ5400s came in 6th with a 10 storage node system with 20-Gige links. Recall that ExaStore had an 8 node cluster and was using 48-Gige links.

NetApp's FAS 3160's illustrates how their performance accelerator module (PAM) can improve performance. For the

- #3 3160 had 56 FC disk drives with PAM,
- #4 3160 had 224 FC disks with no PAM had roughly equal throughput performance
- #5 3160 had 96 SATA disks with PAM and had roughly equal throughput performance.

* SPECsfs2008 results from http://www.spec.org/sfs2008/results/

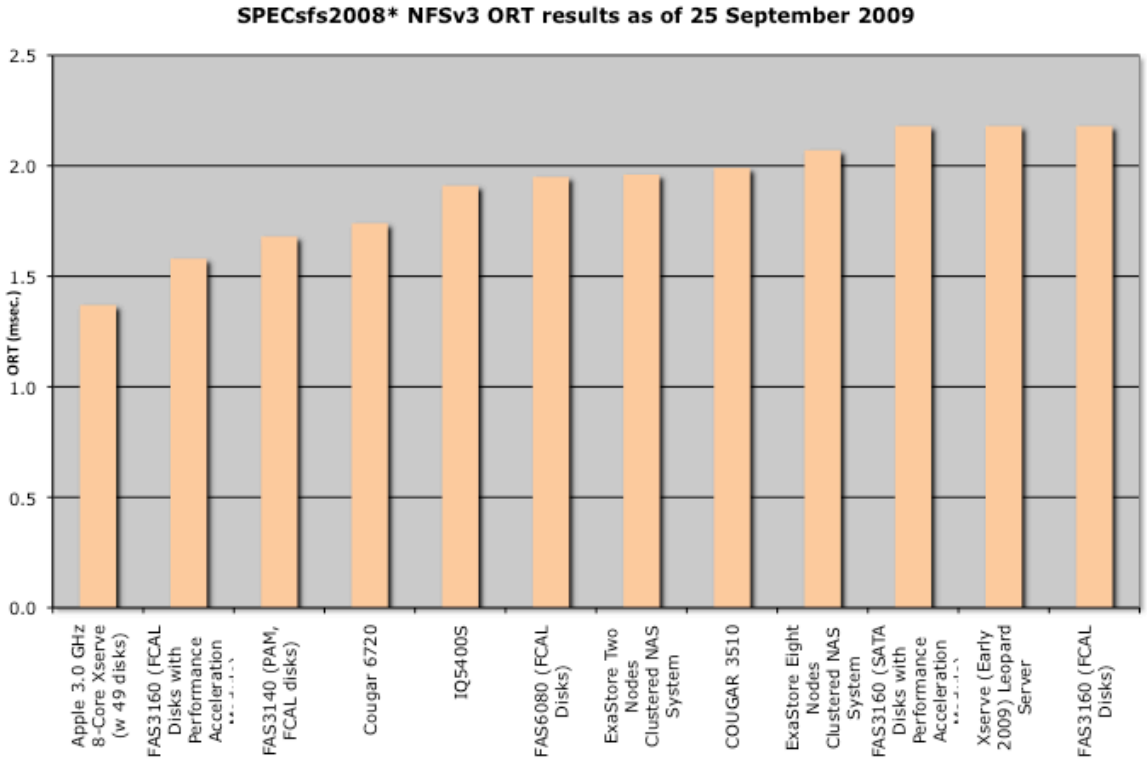

Figure 2 SPECsfs2008* NFSv3 ORT results

NetApp's PAM module seem to also positively impact response time results. In the top 10 (13 actually) FAS with PAM took numbers 2, 3 and was tied for 10th at 1.6, 1.7, and 2.2msec., respectively. Having PAM onboard a FAS system seems to shave 25% off of – system response time vis a vis an equivalent FAS3160. It would have been interesting to see what PAM could have done for the FAS6080 but for that, we will need to wait until another time.

Isilon came in at number 5 with a respectable 1.9msec for 10 storage node system. I would have thought all that intercluster overhead would have adversely impacted latency, guess not.

Latest SPECsfs2008 CIFS results

There were no new CIFS benchmarks submitted during the last quarter and so, for that data please look to our prior SPECsfs2008 StorInt dispatches.[1].

[1] See http://www.silvertonconsulting.com/page2/page2d/storage_int_dispatch.html for prior performance StorInt's

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Significance

Finally some mainstream, enterprise class NAS systems are showing up in SPECsfs2008 benchmark results. I am very happy to see NetApp's top end FAS6080 and their mid-range FAS3160 system benchmarks released under SPECsfs2008. Now that NetApp has put a stake in the ground perhaps the rest of the high-end NAS system vendors will follow in their footsteps.

It's also interesting to see the performance benefits of NetApp's PAM. It's somewhat surprising to see it roughly make up for 4x the spindles with no degradation in throughput performance and significantly better latency. I believe these are generation 2 Flash based PAM cards, and added about 512GB of cache to their NAS systems. NetApp's approach to using NAND flash is to place it in the cache where it benefits all workloads. As far as I can see (from the SPECsfs2008) data, it seems to be working.

Silverton Consulting, Inc. is a Storage, Strategy & Systems consulting services company, based in the USA offering products and services to the data storage community

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