

VirtuCache Case Study



USE CASE

- VDI Performance

LOCATION

- Los Angeles, USA

VIRTUALIZATION AND STORAGE ENVIRONMENT

- VMware Horizon View on 6 x HP BL490c Gen7 with 98 GB RAM.
- Linked clones were used for virtual desktop VMs.
- 8gbps XioTech and HP EVA Storage appliances

CHALLENGES

- End users of virtual desktops were experiencing slow boot times, Windows cursor freezing and slow response times.

SOLUTION

- VirtuCache configured to cache LUNs on HP EVA and XioTech storage appliances to one 480 GB Seagate Enterprise SATA SSD for each ESXi host.

The VirtuCache Difference

By caching hot data from the LUNs to in-server SATA SSD, and subsequently serving up more and more IO from this SSD, storage latencies within VMware were much reduced, thus improving end users' virtual desktop experience.

VirtuCache reduces VDI Latencies at University of California, Los Angeles

Main Challenges

UCLA has deployed Virtual Desktops for students and staff using VMware Horizon View.

End users of these virtual desktops complained about slow boot times, Windows cursor and start button freezing and generally slow response times from the virtual desktops at various times during the day.

To better understand the root cause of these issues, we collected VM level read and write storage throughput and latency data using VMware esxtop. Both read and write throughput were always under 5 MBps, and write latencies were always less than 20 ms. It was the read latencies that would peak to 100 ms at various times during the day. Also the Trend Micro Deep Security Anti-Virus VM would lock up files during a file scanning operation resulting in a sudden jump in latencies across all the VMs on the host.

VirtuCache Deployment

VirtuCache was deployed on each of the physical hosts with commodity Seagate SATA SSDs (cost of SSD \$1 / GB). We would have preferred to use the lower latency SAS SSDs, however since the onboard RAID controller on the blades could only support SATA, we could use only SATA SSDs.

VirtuCache was configured to cache LUNs on the HP EVA and XioTech appliances to a single 480 GB Seagate 600 Pro SATA SSDs installed in each of the 6 ESXi hosts.

Results

To compare VM level latencies before and after VirtuCache, esxtop was used in batch mode to export data to flat file that was subsequently processed in excel to generate the chart below.

The chart below shows maximum latencies before and after VirtuCache for each of the VMs on the host for two consecutive Mondays. Performance data for the ESXi host shown in this graph is a representative example of the extent to which performance of each host in the cluster was improved.

