

# VirtuCache Case Study



## USE CASE

- Storage Performance

## LOCATION

- USA

## VIRTUALIZATION AND STORAGE ENVIRONMENT

- HP DL380 running ESXi 6.7
- 256 TB of 3PAR accessed over 10gbps iSCSI

## CHALLENGES

- ServiceNow's ITAPP Dev/Ops group wanted to improve storage performance from their existing storage appliance and storage network without requiring a hardware refresh.

## SOLUTION

- VirtuCache was deployed on 3 ESXi hosts caching from LUNs on the 3PAR array to 1.6TB of Samsung PM1725a PCIe SSD locally attached in each ESXi host.

**Dev/Ops build times reduced by 66% and 3PAR Storage refresh delayed**

## Problem definition

ServiceNow's Itapp Dev/Ops team wanted to improve storage performance from their existing storage appliance and storage network without requiring a hardware refresh.

## Solution

Virtunet's VirtuCache software improves the performance of any SAN based storage appliance and storage network, no matter how old or slow. With VirtuCache, the performance improvement that customers get from their existing storage infrastructure rivals the performance of all-SSD arrays.

## VirtuCache details

VirtuCache is installed in the VMware physical server along with any SSD in the same host. It then automatically caches frequently used data (both reads and writes) from any SAN based storage appliance to this in-host SSD. Subsequently, by automatically serving more and more data from this much faster in-host SSD (instead of backend storage appliance), VirtuCache improves storage performance considerably, thus allowing higher VM consolidation ratios and improving application performance from within VMs.

VirtuCache competes with SSD based storage appliances. Since the SSD is closer to the CPU in the case of VirtuCache, storage latencies will be lower than any SSD based storage appliance. Also it's a cheaper alternative than upgrading to an all-flash array.

## VirtuCache solution

VirtuCache was installed on 3 ESXi hosts caching to 1.6TB PM1725 PCIe flash cards. In our tests the PM1725 SSD does 250MBps at 1ms VM level latencies.

VirtuCache was configured to cache both reads and writes for all VMs. The writes were replicated to another SSD on another host (caching policy of Write Back One Replica).

All caching and replication related operations in VirtuCache are automatic. Write replication is done to prevent data loss in case of host failure. If a host were to fail, then VirtuCache immediately syncs the SAN from backup copy of writes that are on another host.

## Benefits to ServiceNow

Using VirtuCache, ServiceNow was successfully able to reduce code compile times to a third of what they were experiencing before.

## The VirtuCache Difference

Using VirtuCache ServiceNow was successfully able to reduce build times to a third of what they were experiencing before.