ESG Validation Preview

Simplicity, Performance, and Reliability with the All-flash HPE SimpliVity 380

Date: June 2017 **Author:** Mike Leone, Senior Validation Analyst

ESG has completed an initial validation of the HPE SimpliVity 380. Key areas of focus include the ability to easily manage and monitor a multi-cluster environment; visibility into data storage efficiency and capacity savings with compression and deduplication; simplicity in creating backups and restoring them with HPE SimpliVity RapidDR functionality; delivery of fast performance in multi-VM, mixed workload environments; and resiliency of HPE SimpliVity clusters to deliver sustainable levels of performance.

HPE SimpliVity 380

While many organizations are prioritizing a shift to the cloud, it is worth noting that few are going "all-in." The cloud can deliver flexibility, elasticity, and lower cost, but there is no question that on-premises infrastructures remain essential to delivering key performance, privacy, and control SLAs for many mission-critical applications. Building off of SimpliVity's early success in the hyper-converged market, HPE is looking to provide cloud-like flexibility and cost benefits on-premises with the all-flash HPE SimpliVity 380.

By combining HPE SimpliVity software's unique architecture and feature set with powerful HPE ProLiant DL380 Gen9 servers, HPE offers a robust solution to meet the dynamic demands of a modern data center. This pre-integrated solution uses a building block approach to simplify the deployment and management of a highly-virtualized environment. VM-centric management enables improved operational efficiency, and all-flash storage delivers high levels of sustainable performance. It includes non-impactful storage efficiency features such as compression and deduplication, plus built-in resiliency that ensures workloads can survive infrastructure failures. With these features organizations gain a complete IT infrastructure built with proven technology that delivers the simplicity and speed they demand.

Key Findings

- ESG audited mixed workload performance of an all-flash HPE SimpliVity 380. Nine virtualized workloads, including OLTP, Microsoft Exchange, VDI, and Decision Support were emulated using Vdbench. One common performance testing faux-pas is not simulating a real-world workload by testing with repeating bytes or confining test data to system cache or memory. The combination of a large working set to ensure that the workloads were serviced from the underlying storage (as opposed to cache or memory) and the fact that Vdbench does not use repeating bytes when sending read and write requests served as an ideal way to demonstrate the storage performance capabilities of the solution as a customer may see them in the real-world. The system supported high levels of IOPS while maintaining low latencies.
- Many times performance testing is done only on healthy functioning systems, however in this case, testing was also done to highlight the system's ability to deliver sustainable performance through failures. An OLTP-like workload was run and components (including drives, virtual controllers, and nodes) were systematically failed. In all cases, the workload performance impact was virtually unnoticeable, with the system automatically rerouting traffic and migrating VMs based on resource availability in the cluster.
- ESG witnessed seamless integration into the vCenter management console, including the ability to easily jump between globally-dispersed datacenters while viewing real-time performance metrics such as IOPS, throughput, and latency at data center-, cluster-, and VM-levels.
- Storage efficiency was easy to understand, with a view of an HPE SimpliVity cluster's capacity metrics, including a breakdown of how the logical capacity was consumed (VM data, local backups, and remote backups), and how that logical capacity translated to consumed physical capacity. This included views of deduplication and compression savings based on logical-to-physical capacity ratios.
- It was easy to create core backup policies and rules across geographies with a just few clicks. ESG also validated the use of RapidDR by leveraging existing backups, creating DR plans from one geography to another, testing the failover plans to ensure they worked, and then setting them in motion.

Through hands-on testing and benchmark audits, ESG validated the simplicity, performance, and resiliency of the all-flash HPE SimpliVity 380. The complete report goes into greater detail, including steps to complete certain tasks, screenshots, configuration details, and analyzed performance results.