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U.S. Department of Veterans Affairs Selects RAID Inc. for Multi-Petabyte Storage Spaces Deployment

Software-Defined Storage Built at Scale with Windows Server 2012 R2 for Customer Advocacy Service Platform

ANDOVER, MA, Dec 07, 2016 — RAID Inc., a high performance computing solutions company, has been selected by the U.S. Department of Veteran's Affairs (VA) to deliver a next generation System Center Configuration Manager (SCCM) 2012 architecture, based on Microsoft's Storage Spaces feature. The primary focus of the SCCM 2012 migration project is to adopt a centralized enterprise service model, achieving greatly reduced infrastructure and operational costs allowing for sustained year over year growth of 15% for the next 5 years up to 600,000 endpoints and ability to migrate to Windows Server 2016.

The entire solution is comprised of two layers, the Scale-Out File Servers (SOFS) and the Hyper-V layer. Together, the highly dense solution will consolidate 283 sites and support over 465,000 devices. The SOFS layer is built upon the RAID Inc. EBODs (Enterprise JBODs) and dual-socket x86 servers. This layer, utilizing Microsoft Storage Spaces, provides the storage requirements for the Hyper-V clusters in the solution. The Hyper-V layer consists of the performance-tuned rack servers, each including quad socket 16-core processors and both 10GbE RDMA 10GbE adapters and IB FDR adapters for RDMA-enabled networking.

RAID Inc. institutes a holistic concierge approach to deliver vendor agnostic technical computing solutions tailored directly towards specific infrastructure challenges. The RAID Inc. custom design storage solution for the VA was architected to accommodate high performance workloads delivering business critical applications with Windows Server 2012 R2 ultra-dense storage capabilities. The combination of Microsoft certified SOFS nodes, storage, and Hyper-V servers create the various clusters within the SCCM 2012 solution—which includes the Central Administration Site (CAS), primary sites and backup. The VA's deployment features Server Message Block (SMB) 3.0 for ultra-fast networking, Failover Clustering for high availability and Enclosure Awareness for data resiliency with optimal storage Quality-of-Service (QoS). RAID Inc. designed the storage solution to utilize Mellanox Infiniband (IB) networking, made up of two (2) non-blocking fabrics utilizing the Clos fabric design. Both fabrics are independent from each other and provide both the bandwidth and redundancy mandated for the (SCCM) 2012 architecture.

News Facts:

- Windows Server 2012 R2 installation for the VA uses 5 petabytes of tiered storage for 283 sites.
- The CAS application layer utilizes Hyper-V Replica, live migration and virtual switching to stand up 465,000 VDI devices.
- RAID Inc. engineered high degrees of redundancy, required to ensure HA and disaster recovery (DR) capabilities.
- The certified Microsoft (SOFS) solution uses RDMA-enabled switch fabrics for both Infiniband and Ethernet connectivity.
- RAID technicians vetted the installation site in preparation for its expert engineers to deliver, install and test the solution.

Architecture:

- Windows Server 2012 R2 with Storage Spaces built at scale to meet capacity and high IOPS, low latency performance demands.
- (26) RAID Inc. Ability EBODs deliver nearly 5PB (petabyte) of cold tier data and 400TB of flash-accelerated hot tier storage.
- The SOFS architecture uses (22) dual socket Intel® Xeon® clustered file servers for high availability (HA).
- This SOFS design is connected via (10) Mellanox Infiniband 56GB/s switches and 98 ConnectX-5 interconnects to the VM nodes.
- The Hyper-V compute servers utilize (27) Intel® Xeon® quad-socket rack servers to deploy 1000s of virtual machines.

Supporting Quotes:

- "We are proud to have been chosen by the VA to procure, build, and configure this next generation architecture," said Robert Picardi, CEO of RAID Inc. "Our extensive experience with Microsoft software-defined storage, servers and networking technologies is an integral asset to building a successful solution."
- "Windows Server 2012 R2 Storage Spaces introduced numerous software defined storage advancements for virtualization and private cloud customers," said Siddhartha Roy, Group Program Manager, Windows Server High Availability and Storage, Microsoft corp. "By implementing tiered storage with certified enclosures, Microsoft partners like RAID Inc. can deliver Storage Spaces and Scale-Out File Server solutions."
- "Leveraging its high-reliability, low-latency and price/performance benefits, Mellanox InfiniBand is the superior network in clustering solutions," said Motti Beck, senior director of marketing, at Mellanox Technologies. "RAID Inc. delivers premium solutions and when coupling Mellanox with Windows Server 2012 R2, it enables RAID Inc. to achieve higher performance at a lower cost. This, in turn, maximizes the efficiency of its virtualized data canters deployments."

About RAID Incorporated

RAID Inc. was founded in 1994 to deliver end-to-end performance-driven technical computing and storage solutions. The company has earned industry praise for providing platform agnostic technical guidance in high performance computing (HPC), big data, cloud and software-defined data centers—in the most efficient, reliable and cost effective manner. The world's leading research facilities, government, life science, financial, healthcare, energy, and cloud service providers can leverage the RAID Inc. team of engineers' extensive academic, research lab and commercial expertise that make RAID Inc. a trusted industry leader. More information found at www.RAIDinc.com, call +1 (800)330-7335 or comment via @RAIDinc.