Storage Solution Delivers Superior
"SaaS" Automotive Applications for ASA Clients

Meets Demanding Service Level Agreements for Performance and Availability

Background

Headquartered in Merrimack, NH, ASA Automotive Systems, LLC develops and builds enterprise-wide software solutions, delivers support and services and enables independent tire dealers and automotive repair shops to achieve a maximum return on their information technology investment. ASA's software tools can be tailored to suit the point-of-sale (POS), order processing, accounting, e-commerce and business management needs of any size retail and wholesale automotive operations. These software products can help both single store and multi-location operations to increase profits, streamline operations and improve customer service.

Partnership

ASA's licensed and hosted software tools help tire dealers, auto repair shops, and retread facilities manage all facets of their auto repair and tire businesses. The on-line hosted tools offer the "Software as a Service" (SaaS) to their clients. The company recently made a significant investment in the physical hosting facility, infrastructure and virtualization technology for its hosting services. ASA partnered with Winchester Systems to provide storage solutions for their hosting services because it offers a scalable architecture, energy-efficient design, and business continuity with hardware based snapshots, mirroring and FlashD2D automated disk-to-disk backup. "By offering 'Purpose-Built' solutions, Winchester Systems products have consistently yielded better performance and more reliable

enterprise data storage and server solutions. They are easier to understand and manage which helps us ensure that every ASA customer receives the performance and availability that it deserves," said Scott Hopkins, Vice President of Operations for ASA Automotive Systems.

Virtualization

Historically, ASA hosting services operated on servers that each supported a single operating system and a single application dedicated to individual customers. Recently, the company made the decision to move to virtualization technology that makes it possible to run multiple virtual machines on a single physical host. ASA used the VMware virtualization platform as the foundation for building ASA's private cloud. ASA no longer assigns servers, storage, or network bandwidth permanently to each customer. Instead, its hardware resources are dynamically allocated when and where they're needed within its private cloud.

Data storage challenge

One of the major challenges of implementing a virtual environment is architecting a storage infrastructure to take full advantage of its benefits. Virtualized servers require concurrent access to high performance shared storage resources in order to deliver a resilient virtual infrastructure for mission critical applications. Storage used to support a virtual environment also needs to be dynamic to abstract storage objects from physical storage in order to enable automatic storage management and provisioning. Reliability, performance and scalability are all critical storage system requirements to support the virtualization of mission-critical applications. Finally, the storage system must provide a high level of redundancy in order to ensure business continuity.

"We were looking to acquire a storage subsystem that provides high performance as well as reliability and redundancy in order

to prevent our customers from experiencing delays and ensure that our applications are always available to support their business needs," Hopkins said. "We looked at Hewlett-Packard, Dell and Winchester Systems and selected Winchester Systems because it provides leading-edge performance and reliability at an affordable price. We also liked the fact that Winchester Systems provides flexibility to expand capacity as we move forward and grow in the future. Finally, I had worked with Winchester Systems in the past so I already knew their support is second to none."

Intelligent storage architecture

ASA needed to meet stringent service levels required for their customer's retail operations. Winchester Systems designed an intelligent architecture with a vSphere HA cluster to ensure a far higher level of application availability than ASA had in place prior to moving to virtualization. The VMware-based computing and storage environment delivered by Winchester Systems ensured the business continuity that ASA needed to service their customer base. In the event any virtualized host should fail the cluster is configured to automatically restart the virtual machines on another physical host. In addition, the storage backing the cluster has been tiered for both virtual machine performance and data management. ASA's Tier 1 applications with priority workloads and higher IO requirements run in VMs that reside on high speed 15k rpm disks in a RAID 10 disk group. Tier 2 applications run in high capacity 10k rpm disks in RAID 6 disk groups also used for backup and archive data.

Backups

FlashDisk RAID arrays from Winchester Systems provide a set of robust features that allow data storage to be configured with complete redundancy. Their FlashD2D backup provides the ability to schedule and automate zero-downtime backups that also offer storage savings by mirroring primary storage to low-cost secondary storage. In the event of a disruption to primary data, the secondary data can be promoted to primary storage by a simple reassignment. Mirroring provides near seamless access to centralized data eliminating the single point of failure inherent with a stand-

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>
> *Scott Hopkins, Vice President of Operations*

alone RAID array.

Professional Hosting

ASA also contracted with Windstream to provide the physical data center which is hosted in Windstream's highly secure central office and data center collocation sites around the country. Supported by a staff with a 24x7 Technical Assistance Center (TAC), each data center has connections to a diverse OC-48 fiber ring, has redundant power to the grid, and is backed-up by five 1,400 horsepower, one-megawatt generators with 30,000 gallons of diesel fuel. Each data center also has 2,000 tons of cooling capacity which keeps it at an optimum temperature for customer equipment while pulling from outside air in winter months to help reduce energy consumption.

Meeting the SLA

"Our new computing and storage infrastructure makes it possible for us to fulfill demanding service level agreements (SLAs) that will enable our customers to operate their businesses efficiently and most importantly reliably for many years to come with the ability to grow their data as required," Hopkins said. "Our storage system has played the key role in the creation of a robust, reliable shared environment where multiple customers share the resources to run our applications. We monitor the storage system performance continuously and we solicit feedback from our customers. Its performance over the past 18 months has been excellent."

Summary

"ASA's partnership with Winchester Systems and VMware offers our customers a highly available infrastructure with fully redundant servers, storage, data and network paths," Hopkins concluded. "Winchester Systems storage systems also help us provide a scalable architecture that facilitates large growth with minimal disruption. Its energy-efficient design cuts power 60% and runs cooler and more reliably than alternatives. The business continuity embedded in the FlashDisk RAID array offers on-site backup and recovery using hardware-based snapshots, mirroring and FlashD2D technology."