SIRIUS

CASE STUDY

SIRIUS HELPS A COUNTY GOVERNMENT SIMPLIFY, PROTECT AND MANAGE ITS DATA CENTERS

THE CLIENT:

A county government serving a metropolitan area with a population of 250,000.

THE CHALLENGE:

The government entity needed a cost-effective, active-active infrastructure solution that would provide seamless data and application transparency across two data centers, higher application performance, more reliable backup, and simplified, low-cost administration.

THE SOLUTION:

Sirius helped the County implement a VersaStack™ converged infrastructure solution that is actively mirrored across both of its data centers. Built on Cisco UCS® servers, Cisco® networking and IBM® Storwize® V7000 virtualized flash storage and software, VersaStack provides 100-percent active-active redundancy to ensure complete reliability for applications and data, as well as dramatically improved performance and simplified administration.

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In 2009, the County was subscribing to an expensive dedicated transmission connection or line between its two data centers. The primary data center is in a metropolitan area and a disaster-recovery site is located eight miles outside of the city — a necessity to protect the County from natural or man-made disasters that could cripple essential services. That year, the County replaced its transmission connection with its own fiber ring network to reduce operating costs and enable the future deployment of an active-active infrastructure that would permit uninterrupted services.

With that network infrastructure in place, the County worked with Sirius to deploy Stretch MetroCluster™, a NetApp® technology that allows a cluster to be "stretched" over a metropolitan distance. The cluster was used to join an IBM N6040 storage systems in each of the data centers. Because Stretch MetroCluster performs synchronous rather than asynchronous writes across the network, there was no lag time or log replication, and it allowed simplification of the networking at the Layer 2 level. If there were a disaster in one data center, essential applications and data would automatically be available from the other.

In 2015, as the MetroCluster and N6040 storage systems were approaching end of life, the County asked Sirius to recommend options for updating their infrastructure to a newer technology that would provide the active-active redundancy they need, but with even higher performance and easier administration.

Sirius evaluated and presented several options. Because high performance for the County's critical SQL-based applications was a top priority, the County chose a VersaStack solution built around 16 Cisco UCS servers (eight in each data center, all of which are running VMware® hosts) and IBM Storwize V7000 storage systems.

Regardless of whether the storage solution was based on spinning disk or solid-state drives (SSDs), it was imperative that it provide superior application performance for their SQL applications, especially the County's critical, 24x7 applications. A Sirius senior storage engineer used the IBM Comprestimator sizing tool to determine that, based on the County's capacity needs, an all-flash solution would actually be more cost-effective than spinning disk due to the V7000's real-time compression and deduplication savings. The two all-flash V7000 systems are configured with a total of 49 TB of physical SSDs, but the usable capacity is closer to 150 TB due to the systems' deduplication and compression features.

With the two V7000 nodes, applications can support high availability by themselves, but the active-active configuration isn't just great for disaster scenarios; it also allows the County to move servers around in the VM cluster, to patch the Cisco UCS blades, and to perform VM updates. It's completely transparent to the applications, so the County is able to use resources regardless of which data center they reside in, and create a cluster and present disk to it that appears out of both data centers. Although the County regularly validates that the configuration is working and monitors the systems, but the active-active configuration eliminates the need for failover testing that a conventional disaster recovery site would require.

ABOUT VERSASTACK

Jointly developed by IBM and Cisco, VersaStack converged infrastructure solutions enable you to easily and cost-effectively scale compute, network and storage capacity as needed to reduce design, deployment and management overhead; lower total cost of ownership; and simplify scalability. VersaStack solutions are built from Cisco UCS integrated infrastructure combined with IBM software-defined storage.

Backed by Cisco Validated Designs and IBM Redbook application guides, VersaStack offers cost-effective, high-performance hybrid cloud converged infrastructure solutions, with the versatility to adapt as your business priorities change.

The County took a phased approach to migrating its applications onto the new infrastructure, moving them over as dictated by major software upgrades or replacement of legacy applications with new ones, and then decommissioning the old resources. The first parts of the new infrastructure were installed in September 2015, and by the middle of April 2016 the mirrored hardware configuration of the VersaStack was in place. The migration of applications began shortly thereafter. Today, all applications have been moved over to the new VersaStack environment, accounting for 130 to 150 virtual servers in the VMware environment.

THE RESULTS:

- Sirius' calculations projected an average 10x performance improvement— which, if anything, has proved conservative.
- The County was able to keep costs low despite improved performance and availability. Cost savings are incredibly important for an IT department with oversight from county commissioners elected by and accountable to the public.
- Efficiency was improved while availability of its key systems was assured.
- As time goes on, more and more instances of VersaStack are being implemented. For example, the County recently employed IBM HyperSwap® replication software on the V7000 to run its 9-1-1 application on its VersaStack. The system previously ran on a dated Tandem system. To this point, there is no need for sequel clustering in the application.

For more information about how the Sirius IT Strategy practice can help you simplify, protect and manage your storage environment, call Sirius today at 800-460-1237 or visit www.siriuscom.com/storage.