NetApp®

We Ensure Happier Human Resources

Ultimate SOFTWARE

Industry
Human capital management software as a service

The Solution
- SolidFire 18-node clusters of SF2405
- Improved IOPS performance 4x
- Enabled fast, easy recoverability
- Supports legacy VMware environment, as well as OpenStack private cloud

Benefits
- High availability
- Scale-out
- Deep VMware and OpenStack integration
- Guaranteed performance
- In-line efficiency

Ultimate Software is a leading cloud provider of comprehensive human capital management (HCM) solutions delivered via Software as a Service (SaaS). More than 2,800 customers with employees in 150 countries count on Ultimate's award-winning UltiPro® suite to unite all aspects of HR, payroll, and talent management throughout the employee life cycle, all supported by powerful reporting and analytics.

How Ultimate Software solved performance and stability challenges common to the industry
Data center performance is often a huge obstacle to delivering effective human capital management solutions as a service. Uptime is critical, as are high availability and security. However, inadequate storage performance often prevents providers from achieving these goals.

Over the years, Ultimate had deployed a variety of storage solutions, including some that continue to run on legacy systems. Its commitment to continuous improvement, though, fueled an ongoing desire for high IOPS performance, fault tolerance, and scalability to overcome the persistent

performance issue. In its most recent search for a scalable and high-availability solution that supports both VMware and OpenStack, Ultimate found its answer.

SolidFire so outperformed competitors in a technology bake-off that Ultimate chose SolidFire as its storage standard going forward. Now, Ultimate thrives with an infrastructure designed to continuously advance functionality, performance, and security while also reducing its infrastructure footprint and power consumption through greater density.

What better performance means to Ultimate Software customers
Ultimate's customers like the SaaS model because it frees them from having to invest in infrastructure development and application maintenance. Now customers don't need to sacrifice convenience for performance. Ultimate's HCM solutions are faster, easier, and much more effective at ensuring predictable, reliable SaaS experiences. Customers can also count on proven uptime with SolidFire's disruption-free scalability.

"SolidFire alleviated the performance and stability challenges we were having. Now the customer experience is back to what they expect. They're happy, and we're happy."

Steven May
Senior Director of Cloud Operations, Ultimate Software

The Whole Story

As a leader in the global HCM industry, Ultimate Software hosts its core HR and talent management systems, as well as all customer data, at four main data centers in North America. The data centers are built on a pod architecture with 200-500 customers per pod and new pods built when Ultimate needs to scale. Uptime is vital, and this architecture provides high availability and fault tolerance. Today, the company builds on the OpenStack platform and also operates legacy resources based on VMware technology.

Storage poses the main technology challenge

Ultimate's storage goals revolve around managing growth while combining the economics of leveraging shared resources on demand with the performance and predictability of dedicated infrastructure.

Ultimate refreshes its hardware every three years and constantly searches for the most advanced technologies on which to base its products and delivery infrastructure.

"We did intensive testing," Steven said when discussing their latest evaluation process. "We built up a basic infrastructure for SolidFire and competitors, and ran a battery of tests. I ran an I/O test for eight hours continuously. At 100,000 IOPS, I would pull one of the drives out and see how the performance held. I also had a technician pull the power on every

unit at the exact same time, and power it back up. SolidFire distinguished itself in these tests. Recovery was much easier; the nodes would simply come back with little management intervention. With competing solutions, we had to jump through hoops, such as adding drives back in manually."

The SolidFire solution

SolidFire provides a scale-out all-flash storage platform designed to deliver guaranteed performance to thousands of application workloads side-by-side, allowing consolidation under a single platform. The SolidFire system can be combined over a 10Gb Ethernet network or 8/16Gb Fibre Channel clients in clusters ranging from four to 100 nodes. Ultimate originally purchased five SF3010 nodes, and, based on the positive results it experienced to date, added another 66 SF2405 nodes shortly after, with plans to purchase an additional 44 nodes. Ultimate's intention is to use SolidFire in both production and development, with quality assurance testing to ensure consistent results in both environments.

Faster, more predictable performance

Each of Ultimate's 12 current core products uses some version of Microsoft® SQL Server; the company co-locates up to 100 customers on a single server. Ultimate is building next-generation solutions in a Linux-based OpenStack private cloud environment, leveraging MongoDB. "Pods running with SolidFire deliver four times

the IOPS performance of legacy pods — from 25,000 to 100,000 IOPS," Steven said. "The performance is night and day compared to our older environments. We can guarantee IOPS now with no noisy neighbor conflicts among customers on a pod. It's all about performance and recoverability, making sure customers feel no or minimal impact if issues arise."

For a time, Ultimate had been building infrastructure on a converged compute and storage model that resulted in excessive outages. When the company retrofitted with SolidFire, those problems vanished. Ultimate can now deliver business-critical apps from a shared storage infrastructure with guaranteed storage performance. "SolidFire alleviated the performance and stability challenges we were having," Steven said. "Now the customer experience is back to what they expect. They're happy, and we're happy."

Robust QoS, security, deduplication, and analytics

SolidFire all-flash storage ensures performance with fine-grain Quality of Service (QoS), performance virtualization, and the ability to adjust resources on the fly. The solution also provides robust security features essential to Ultimate's multi-tenant pods, including account isolation and 256-bit AES at-rest encryption. By providing drive-level encryption at rest on all storage nodes, SolidFire actually allows Ultimate to save money by eliminating the need for third-party encryption solutions.

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"There's going to be a big win in terms of financial efficiency, because we won't have to continue to make that investment," Steven said.

Additional cost savings result from SolidFire's always-on in-line deduplication. "Deduplication and the compression SolidFire uses definitely lowers our footprint as we replace some of our existing SANs," Karl Liin, an Ultimate Software hardware architect said.

Ultimate also takes advantage of SolidFire Active IQ, which provides real-time array health diagnostics and historical trending at the cluster, node account, and volume levels to ensure the highest levels of availability and performance. "We've had a ton of different storage vendors, and the analytics we received from them was barely acceptable, or in some cases required large investments into very expensive tools — and even then they weren't as good as some of the things we're getting out of the box with SolidFire," Steven said. "That's been a huge win for us. If there's an outage or performance issue, we're able to get at root causes much quicker."

Business Results

Ultimate has been recognized among the Achievers 50 Most Engaged Workplaces™ in North America, and in 2014 ranked #20 in Fortune's list of 100 Best Companies to Work For.

As a company whose business is all about human resources management, Ultimate knows customers look to it for thought leadership and best practices. To this end, Ultimate is re-architecting its core products in its UltiPro suite. This multi-year project involves redefining Ultimate's development process as well as the company's SaaS infrastructure. SolidFire's integrations with VMware, including a vSphere Client and vCenter Client plug-ins, were essential to Ultimate's choice of SolidFire. Now, the ability to integrate with OpenStack is essential to Ultimate's future technology roadmap. "The ability to integrate with VMware, with the vCenter Server, was a must," Paul said. "We also needed a solution that had the APIs and integration capabilities to support our movement to OpenStack."

Ultimate will evaluate SolidFire in its development private cloud environment to see how quickly developers can spin up and tear down virtual machines through automated self-service processes. The company's goal is to iterate and innovate its software products faster, to speed time to market with new features, and to extend Ultimate's market leadership. Leveraging SolidFire, Ultimate is expanding its services internationally as well as making them available both to large enterprises and to companies with as few as 200 employees.

As a hardware architect for Ultimate, Karl noted that SolidFire distinguishes itself with QoS, reliable performance, in-line data reduction, secure multi-tenancy, strong reporting analytics, and user-friendliness. "It's super-easy," he said. "We taught an employee to add a node and drives in a heartbeat, and he was amazed at how simple it was."

From Steven's perspective as Senior Director of Cloud Operations, the greatest business value of SolidFire is the ability to deliver high quality, uninterrupted service to Ultimate customers. "The performance is solid, so we don't experience degradation," he said. "If things do go wrong, the impact to the customer is much less or non-existent. Using SolidFire is painless and seamless."

NetApp®

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit **www.netapp.com. #DataDriven**

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