Avanade Achieves Zero Downtime with NetApp Clustered Data ONTAP

In March, Tech OnTap *brought you the first in a series of interviews with NetApp customers on their clustered Data ONTAP® migrations and the benefits to their organizations. This month we bring you the fourth installment, a discussion with Avanade Inc.*

Cloud service providers require storage that satisfies a variety of needs in terms of cost and performance. Hundreds of cloud providers have chosen NetApp® FAS storage running Data ONTAP as their storage platform of choice to satisfy requirements for nondisruptive operations, secure multi-tenancy, and value-added storage services.

Avanade helps its clients and their customers realize results through business-technology and cloud solutions, and managed services that combine insight, innovation, and expertise in Microsoft technologies. Tech OnTap sat down with Patrick Cimprich, vice president and Global Infrastructure Services chief architect, to discuss why his team chose clustered Data ONTAP, the upgrade process from 7-Mode, and the overall advantages for both Avanade and its clients.

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About Avanade Inc.	
Industry	Business Technology, Cloud, Managed Services
Corporate Headquarters	Seattle, Washington, USA
Professionals	25,000
Facilities	70 locations in 22 countries
Storage Environment	▪ **Production.** 4-node mixed cluster: two FAS3720 nodes and two FAS8020 nodes with 250TB usable capacity ▪ **Test.** 2-node FAS3170 cluster
Main Applications	Microsoft Windows Server 2012 R2 Hyper-V

TOT: Why did Avanade choose clustered Data ONTAP?

Patrick: There are three main reasons we chose clustered Data ONTAP. First, we've been a NetApp customer for a long time—more than ten years. We tend to cycle through new arrays, and we were attracted to clustered Data ONTAP's on-demand ability to make those transitions by seamlessly migrating volumes from old nodes to new nodes in a cluster. The process is completely nondisruptive with NetApp DataMotion.

The second reason is load balancing. The same capabilities that make seamless transitions possible make it easy to move data between cluster nodes or media types to deal with hot spots as they happen. The ability to do that without taking downtime is pretty compelling.

Finally, we recognize that NetApp is making a significant investment in clustered Data ONTAP, and we want to be a part of that future journey. We started transitioning to clustered Data ONTAP several years ago, and we've been

running on it exclusively for about a year.

TOT: Can you provide some examples of how you use DataMotion?

Patrick: We're going through a lifecycle transition right now. We're replacing an old FAS3170 in our cluster with a FAS8020. In this case we're retiring the entire array, including the drives. To accomplish this, we simply add the new nodes to the cluster and move data nondisruptively from old to new. When the old nodes are idle, we'll remove them from the cluster.

For load balancing, most of our workloads are on Hyper-V, so we use Hyper-V Storage Live Migration to move those workloads. We also have a number of iSCSI LUNs for native workloads. We are able to move those as needed between controllers or from one set of drives to another. That's been really convenient.

TOT: How did you accomplish the upgrade from 7-Mode to clustered Data ONTAP?

Patrick: We're a hosting provider and a Microsoft shop. In our environment we use Hyper-V as a hypervisor running on top of SMB 3.0. As a result, the transition was very simple. We used Hyper-V Storage Live Migration to move running workloads from 7-Mode platforms to clustered Data ONTAP. We can do that nondisruptively in the middle of the day. Because we used the native Hyper-V capabilities, we didn't need any of the specific NetApp tools or technologies.

We also went through the whole journey to update the team's technical skills for clustered Data ONTAP. That took longer than the physical transition.

TOT: Can you explain your current NetApp environment?

Patrick: We have two clusters, one for production and one for test. For production we have a four-node cluster consisting of two FAS3270 nodes and two FAS8020 nodes with about 250TB of usable capacity and we support about 400 customers in our environment. We use storage virtual machines to logically separate file and block access. For test we have a two-node FAS3170 cluster.

As I mentioned, we're in the process of replacing the FAS3170. Having the older platform in the cluster limited us to a maximum of four nodes, so we'll be able to scale out further in the future.

TOT: What's been the experience for your customers since you moved to clustered Data ONTAP?

Patrick: The day-to-day experience hasn't changed at all. In general, clustered Data ONTAP just works, which is a very good thing. Even with 7-Mode we had to take very few outages, but we did occasionally have to take them. I can't think of any outages since we upgraded; it just doesn't happen. The advantage for us is in not having to coordinate with hundreds of customers to look for downtime. Now we plan changes for midday when everyone is working. That way we're all fresh in case anything unexpected happens.

TOT: Do you use flash in your environment?

Patrick: Our new array includes a shelf of SSDs. We're currently experimenting with Flash Pool configurations and all-flash aggregates and moving virtual machines around, looking for the most appropriate fit there. We want to understand if it makes sense from an economic perspective to have an all-flash resource versus a hybrid approach with Flash Pool. We did some work in test, now we're doing it in production.

TOT: What kind of testing do you do before you roll something into production?

Patrick: We have a pretty rigorous set of synthetic workloads, but at the end of the day those don't really show you real life. We're big believers in doing it for real. One of the benefits of our Hyper-V environment running on clustered Data ONTAP is that we can move live workloads piecemeal to see how things react with real workloads.

Because of the changes in technology, we've shifted from a model of doing extensive testing before rolling something out to production and hoping for the best, to a model where we do some initial testing to validate that the “wheels don't blow off the bus,” and then making incremental changes in production to see how things react. We're much more hands-on with real workloads as opposed to fooling ourselves into thinking that a test rig is good enough.

TOT: What advice would you give IT Teams looking at clustered Data ONTAP?

Patrick: In my mind, the key distinguishing factors of clustered Data ONTAP are the features that allow you to make changes such as adding and removing systems from the cluster and moving workloads for load balancing, or to accommodate changing business requirements. You really want to understand what can be done with those live operations and how they complement the other tools in your tool bag, such as the virtualization layer.

Getting a holistic understanding of what you can do and then applying it accordingly makes all the difference in the world.

To learn more about Avanade, read the NetApp success story, Avanade Improves Time to Market for Business-

Critical Solutions with NetApp Clustered Data ONTAP.