Scaling virtual demos on demand

The Dell Demo Center team can enable more hands-on product training and customer demos by quickly provisioning new-solution workloads on a large scale with the Dell Fluid File System.

Business need
Dell needed to be able to quickly deploy new virtual demos on a large scale for use in sales-based demos, hands-on labs and training.

Solution
The Dell Demo Center team can scale its infrastructure and quickly deploy new workloads by taking advantage of the Dell FS8600 technology, which enables thin cloning and on-demand workload allocation via the Dell FluidFS architecture.

Benefits
- Large virtual workloads provisioned in seconds
- Up to 80 percent storage savings
- Hundreds of labs deployed every day
- Increase in Sales teams’ productivity
- Use of demo environment extended to support training and events

Solutions at a glance
- Data Center Virtualization
- Networking
- Network Security
- Storage

“We can deploy online demos, labs, and virtual classrooms in seconds, not minutes or hours, with the Dell FluidFS solution. This makes our sales and support teams much more productive and helps them provide a higher level of services to our customers.”

Maurice Harty, Director, Dell Solution Center
Every day, Dell sales and support teams rely on the Demos.Dell.com site, a cloud-based demo environment, to demonstrate complex enterprise IT solutions to customers and partners, no matter where those audiences or the Dell employees are based.

The demand for solution demonstrations was growing fast, both internally and externally. Since 2012, the enterprise portfolio has expanded greatly due to acquisitions such as Compellent, AppAssure, Quest, Wyse, and SonicWALL. This resulted in a huge increase in the demo catalog, and in the number of sales professionals and partners that leverage the demo environment. The Demo Center team needed to scale the infrastructure to accommodate the growing internal demand for hands-on labs used by sales engineers for self-guided practice, as well as for labs used during large customer events. The Demo Center team also wanted to enable partners to use the environment for training and sales demonstrations.

However, the architecture was unable to support this increased demand. Online demos and virtual classroom environments were taking too long to create, and once created, were consuming far too much storage. For instance, three data protection demos used more than 200TB of disk space. “We really needed to reduce the deployment time of virtualized demos,” says Dan Coleman, a solution architect with the Dell Demo Center team. Storage was a major part of the challenge. “We were finding that sales teams were limited in the number of demos they could show customers in a day,” Coleman says.

Clustered file storage solution offers thin provisioning
The Demo Center team looked at several options before deciding on Dell Fluid File System (FluidFS), which works with Dell Compellent storage. “After reviewing numerous potential solutions from different vendors, we selected the Dell FluidFS to enable us to quickly provision VMs on the fly and give us the ability to overprovision storage,” says Joseph Correia, a solution architect for the Dell Demo Center team.

Like many storage platforms, FluidFS supports thin provisioning of storage volumes, which offers the ability to

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“We leveraged the Dell Fluid FS to maximize our existing investment in Dell Compellent by using its thin provisioning technology features to deliver demos instantly.”

Joseph Correia, Solution Architect, Dell Solution Center

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allocate more space to an environment than actually exists in the network-attached storage (NAS) pool. FluidFS also incorporates redirect-on-write snapshots instead of the copy-on-write solutions typical of other file systems. Redirect-on-write requires only one I/O operation, thereby preventing performance degradation. With these capabilities, the Demo Center was able to implement a solution in which a single “Gold” snapshot is taken for every demo environment. Individual demo requests are then serviced by cloning this snap.

The major benefit is that multiple clones can be created in real time. This means that, for example, if there is a need to create 50 demo environments for a training event, or a similar number for an expo, those demos can be made available immediately. This was simply not possible under the old architecture.

Additionally, because demos are based on linked clones, they consume less space than full demos. Also, the FS has native compression and deduplication facilities that further reduce the amount of physical storage required. Taken together, these capabilities enable a dramatic reduction in the amount of space consumed by the overall environment. It is typical, for example, to observe the demos platform servicing a peak-time demand that required approximately 1PB of storage, while in fact only consuming 20TB of physical storage on the Dell FS8600. Being able to achieve a storage savings of this magnitude, with up to 2,000 virtual machines operating at one time, and with no impact on performance, is a testament to the power and capability of the FS8600 platform. As a result, Dell as a whole can sell more, train more, and support more.

Adding to an all-Dell environment
“The Demo Center is a true Dell end-to-end solution,” says Correia. The user portal was developed by the Dell Application Services team, and the infrastructure behind it is based on Dell servers, storage and networking. Furthermore, the Demo Center site is monitored by Dell SecureWorks security analysts and also protected by Dell SonicWALL next-generation firewalls. The Demo Center team also uses Dell NetVault and vRanger backup and recovery software, Toad BI software for website analytics, and Dell Foglight for monitoring. The Dell Compellent FS8600 NAS appliances complete the picture.

Dynamic workloads deployed on a large scale to meet different needs
The Demo Center team now has a solution that can deploy dynamic workloads on a large scale throughout the world.

As a result, the team can easily provision demonstration environments for different use cases, including field-based sales demos, hands-on education labs where sales engineers can practice solution demos, and support scenarios where customer problems can be reproduced on screen.

Greatly reduced provisioning time
Whether it’s a one-to-one customer solution demonstration or a large training event requiring 50 virtual lab environments, all workloads can be provisioned in seconds, so sales engineers can showcase solutions to customers almost instantaneously. “We can deploy online demos, labs, and virtual classrooms in seconds not hours with the Dell FluidFS solution,” says Harty. “This makes our sales and support teams much more productive and helps them provide a higher level of service to our customers.”

80 percent storage savings, more customer demos
The thin provisioning capability also means the team can consider further increasing the capacity of the system. “We leveraged the Dell Fluid FS to maximize our existing investment in Dell Compellent by using its thin provisioning technology features to deliver demos instantly,” Correia says.

“Having a better demo environment with the Dell FluidFS solution enables a broader set of use cases, such as training, events, and customer support. It also accelerates the sales cycle and supports revenue growth by helping us deliver more demos faster, with lower capital expenditures.”

Daniel Coleman,
Solutions Architect
Dell Solutions Center
The team now has an infrastructure that supports a greater number of demos than before. “We recently had 105 demos operating simultaneously, requiring 1,000 VMs running concurrently. This wouldn’t have been possible without the Dell FluidFS solution. And we can scale to support many more simultaneous demos than that,” says Correia. “We can reach more customers than before and showcase all Dell products in the demo catalog as a unified solution with Dell FluidFS,” adds Dillow.

Sales engineers can also take advantage of improved performance during demos. “Before this solution, when 100 people launched demos at the same time, the storage struggled to support that many demos at once and the performance suffered,” says Correia. “Performance is much better now, and it doesn’t matter how many demos are being opened.” Additionally, sales engineers can also spend more time on specific product demos, because individual demos do not use as much storage space as before. “A sales engineer can keep a demo up to 30 days now, as opposed to only a few hours,” says Gale Dillow, a senior manager of product technologists for the Dell Software Group. “That means they can do more customization of their demos.”

Also, the organization can facilitate more use cases. “Having a better demo environment with the Dell FluidFS solution enables a broader set of use cases, such as training, events, and customer support,” says Dillow. “It also accelerates the sales cycle and supports revenue growth by helping us deliver more demos faster, with lower capital expenditures.”

Sandbox environment provides time for demo preparation

The Demos.Dell.com environment also has multi-tenant workload capabilities with FluidFS, so each user gets a private workload environment. With this functionality, sales engineers can take advantage of a sandbox environment through which they have access to dozens of enterprise products, learning about new solutions and practicing their demonstrations before going live in front of customers.

A team effort leads to a better solution

For the Dell Demo Center, implementing the right solution was the result of a close collaboration between the Dell Application Services, Demos.Dell.com, and FS8600 product teams. “This project was a success because of a great internal partnership,” says Dillow. “We had some challenges initially during implementation, which required the FluidFS engineering team to go back and make some modifications. But that made it a much more robust solution.”

That partnership continues as the FluidFS solution evolves. “We’re currently working with the FluidFS team on the next version of the product,” says Correia. “Both teams are collaborating to come up with the best, most comprehensive solution. It’s a true Dell on Dell story.”

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Gale Dillow, Senior Manager, Product Technologists, Dell Software Group

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