

TAKING THE THRUWAY TO VIRTUALIZATION

The State of Nevada DMV shifts into virtualization 83 percent faster with Dell Services



SOLUTIONS

- BACKUP/RECOVERY/ARCHIVING
- CONSOLIDATION
- POWER & COOLING
- VIRTUALIZATION



CUSTOMER PROFILE

COUNTRY: Carson City, NV (USA)
INDUSTRY: Government
FOUNDED: 1957
NUMBER OF EMPLOYEES: 1,252
WEB ADDRESS: www.dmvnv.com

CHALLENGE

The Nevada Department of Motor Vehicles (DMV) is growing as a result of the phenomenal growth of Nevada. The result was server sprawl and rising costs, facts which were noted by the network group responsible for more than 1,200 desktops and notebooks along with 108 servers at the DMV's Carson City headquarters.

SOLUTION

With the help of Dell Global Infrastructure Consulting Services, the DMV explored and implemented a virtualized infrastructure using Dell™ PowerEdge™ servers running VMware® ESX Server. A Dell/EMC SAN is providing virtualized storage capacity and a second Dell/EMC SAN provides replicated disaster recovery and production capabilities at one of the DMV's Las Vegas sites.

BENEFITS

Get IT Faster

- 83% faster deployment, project completed in 6 weeks vs. anticipated 9 months thanks to help from Dell Services

Run IT Better

- Ability to maintain and deploy servers without disrupting users
- 96% faster rollout of new servers (10 minutes vs. 4 hours)
- 88% faster server updates (15 minutes vs. 2 hours)
- 97% faster responses to questions with Dell services (1 hour vs. 4 days)

Grow IT Smarter

- 26 replacement servers removed from 2010 budget (roughly \$150,000 in savings)
- Reduction in power and cooling costs, and energy consumption

If IT administrators in the Nevada Department of Motor Vehicles (DMV) needed any proof that Nevada is the fastest growing state in the U.S., all they had to do was look around. Those who had been there for ten years could remember when the DMV was so small that it didn't even warrant its own network or IT department. But two years ago the IT department had 60 people with a Network Support Team of 13, which managed hardware, applications and data for 29 offices headquartered in Carson City, more than 1,200 users with Dell notebooks and desktops, and 108 Dell servers.

“WE’RE GOING TO SAVE THE STATE OF NEVADA QUITE A BIT OF MONEY WITH THE DELL AND VMWARE SOLUTION.”

Bill Bernard, Network Manager, State of Nevada DMV

It was the 108 servers that got the Network Support Team thinking. The costs of server sprawl grew exponentially as new servers had to be replenished in a few years, and more new servers had to be brought on line continually to support growing data and applications. The maintenance needs of the servers also increased with the number of servers. However, the DMV did not have the resources to bring in more people to do the job.

The costs, of course, fell on the taxpayers. And the Network Support Team members were taxpayers, too. They needed a remedy for this unchecked growth. Fortunately, there was a remedy at hand: virtualization.

“We started looking at virtualization a couple of years ago,” says Bill Bernard, Network Manager, State of Nevada DMV. “With the possibilities of server virtualization, we thought we could reduce our volume of maintenance work and the cost of servers. Our power consumption would go down, and we wouldn't have to

supply as much cooling to keep our equipment running. Then Dell made one of their regular visits, and they weren't selling servers this time. They were offering the services and solutions we needed to solve our problem.”

ASSESSING VIRTUALIZATION READINESS

As the DMV network group was considering virtualization, Dell suggested a Virtualization Readiness Assessment (VRA) to provide an effective way to evaluate the impact that a virtual infrastructure would have on the DMV's data center. The VRA would pinpoint how the newly virtualized environment would help improve server management, maximize uptime and streamline deployments.

Using highly automated processes, Dell gathered up-to-the-minute information about the DMV's server environment, including key data on its system inventory and a month's worth of performance data using a Dell data collection tool. Dell then analyzed the data, assessed the

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2900 servers with Intel® Xeon® processors
- Dell/EMC CX3-40 SAN
- Dell/EMC CX400 SAN

SOFTWARE

- VMware® ESX Server 3.02
- Double-Take® replication software

SERVICES

- Dell Global Infrastructure Consulting Services
 - VMware Infrastructure Workshop
 - Virtualization Readiness Assessment
 - Design Services
 - Implementation Services
- Dell Support

“DELL WAS ABSOLUTELY INSTRUMENTAL IN GETTING US GOING QUICKLY WITH THE VIRTUALIZATION PROJECT. VIRTUALIZATION HAS BECOME MATURE AND DELL HAS STEPPED INTO THAT SPACE AS A FULL SOLUTION PROVIDER.”

George Fish, IT Professional III (Networks), State of Nevada DMV

situation and outlined the virtualization opportunities available in the DMV's existing infrastructure.

“Dell was absolutely instrumental in getting us going quickly with the virtualization project,” says George Fish, IT Professional III (Networks), State of Nevada DMV. “Virtualization has become mature and Dell has stepped into that space as a full solution provider.”

CAUTION: DELL SERVICES WORKING

Working with Dell Global Infrastructure Consulting Services for design and implementation, the State of Nevada DMV architected a scalable and highly available virtualization solution. The Dell service professionals created a detailed implementation plan with hardware and software specifications.

Under the capable direction of a project manager who stayed with the project from beginning to end, Dell service professionals installed and configured VMware software, and empowered the DMV's systems administrators to efficiently manage the entire solution.

“We could have done this project without Dell Services coming in and helping us,” says Fish. “But instead

of the six weeks it took us to do it, it probably would have been nine months. And it would have been much, much more disruptive. It was a huge help to have Dell Services onsite. Our project manager was just tremendous, very knowledgeable. She was able to pull in support engineers whenever they were needed, which made our job a lot easier. Something that we might have been struggling with for three to four days, Dell got to the right people and could get answers to us within an hour.”

A Dell VMware Infrastructure Workshop and Dell Enterprise Support round out the services solution for the State of Nevada DMV. Both education and support have been highly effective in delivering expertise to meet the DMV's needs.

VIRTUALIZATION WILL SAVE THE COST OF PURCHASING 26 SERVERS—ROUGHLY \$150K

So far the DMV has virtualized 28 physical servers on four Dell PowerEdge 2900 servers with Intel Xeon processors. The Network Support Team is not stopping at 28, however. “The plan is to virtualize 41 servers,” says Bernard. “And we're definitely going to surpass that. I can see us breaking the 60 to 80 server mark in the next two to four years. As we virtualize servers, I can take them off

the 2010 budget because they don't need to be replenished, so already I've cut out requests for 26 servers.”

The State of Nevada DMV is also working with Dell to upgrade its existing Dell/EMC CX400 SAN to accommodate these new virtual servers. Additionally, it is working on a new remote disaster recovery site with a Dell/EMC CX3-40 SAN in Nevada. Double-Take software will replicate data between the two locations to provide two fully redundant disaster recovery and production sites. “Dell's industry expertise and alliances with leading-edge technology innovators such as VMware and Double-Take Software enables customers to leverage emerging trends such as server virtualization in their solutions,” says Bernard.

SMOOTH RIDE FOR USERS

Wannetta Bernard is the production control manager for the DMV, in charge of the first-level response teams who work on help desks to field calls from employees. Her teams receive the brunt of the complaints when applications are not working. According to Bernard, “My main concern about the virtualization project was, am I going to be able to access my file servers? Is my e-mail going to go down? How many calls is my help desk going to have to take?”

"It turned out that the virtualization project had very little impact on users," she continues. "In fact, if you asked the staff, I'll bet that 90 percent of the users were not even aware that it ever occurred. I've worked with several companies and I love Dell!"

VIRTUALCENTER ENABLES 88% FASTER UPDATES

Another staff member who did know the project was going on is Tony Azevedo, a technician who supports the servers, desktops, routers and switches at the DMV. For him the time savings are already clear even though the project is very recent. "We can provision a new server in about 10 minutes," says Azevedo. "In the past it would have taken us four hours."

One of the greatest benefits the Network Support Team is noticing is its ability to manage the virtual servers remotely with VMware VirtualCenter, while achieving the highest levels of efficiency, automation, simplicity and security. With VirtualCenter, the DMV can rapidly provision virtual machines as well as monitor performance of physical servers and virtual machines.

"Being able to go to one place and look at all of your virtual machines, and manage those machines is just phenomenal," says Azevedo. "High availability, dynamic resource scheduling, all of those things that come with virtualization are available through the VirtualCenter."

Server management is also easier and faster with virtualization. "Every month we have to do Windows updates, and it takes quite a bit of time," says

Fish. "We don't have whole racks of test servers to practice on. We need to get things out into production quickly. And the tools that we have in VMware really make that a lot easier. We take a snapshot of a server, which gives us a bridge to retreat to. This is all during production so users are not affected. We can apply updates, and if everything is working fine then we just continue on. But if something's not right, we have a snapshot to go back to. We've never had this before. We can do updates in 15 minutes with VirtualCenter instead of the two hours it took before."

Running the virtual machines on the SAN is also a new way to ensure high availability. A virtual machine becomes a file on a shared SAN resource and can be run on any of the four physical hosts. Virtual machines can be moved from host to host in the event of a physical server malfunction without users knowing. "Being able to run a virtual server on the SAN and move it to any of the hosts is awesome," says Azevedo. "We're able to do so many things that we couldn't do before through virtualization."

"We're going to save the State of Nevada quite a bit of money with the Dell and VMware solution," says Bernard. "I think the entire state will be going this way. This solution should be looked at by anybody who has numerous servers, and Dell services have made this transition painless and seamless for us."

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