



KEY HIGHLIGHTS

INDUSTRY: MANUFACTURING

**CHALLENGE**

Save money through hardware consolidation while expanding and strengthening a global IT network

SOLUTION

Use VMware Infrastructure to consolidate hosts while improving the reliability and manageability of Amway's technology infrastructure, both at its headquarters and remote offices worldwide

VMWARE AT WORK

VMware Infrastructure 3.5 Enterprise featuring:

- ESX 3.5
- VMware vCenter
- VMotion
- Storage VMotion
- VMware vSMP
- Distributed Resource Scheduler (DRS)
- High Availability (HA)
- VMware Update Manager
- Site Recovery Manager (SRM)

DEPLOYMENT ENVIRONMENT

- ESX 3.5 running on HP ProLiant servers
- Guest operating systems: Windows Server 2000, Windows Server 2003 (32 and 64 bit), Windows Server 2008 (32 and 64 bit), Windows XP Professional, SUSE Linux Enterprise Server 9 and 10 (64 bit).
- Mission-critical applications running in production on virtual machines: Hyperion financial-reporting software; EMC Documentum; DC Link, an application that controls wireless devices in manufacturing plants; middleware; Internet servers

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Tom Van Harn, Systems Support Advisor, Amway

Amway

Michigan-based Amway has a big global presence, offering products, business opportunities, and manufacturing and logistics services in more than 80 countries and territories. The company has more than 13,000 employees, and more than 3 million Amway individual business owners sell the company's many nutrition, wellness, beauty and home care products. And thanks to VMware technology, Amway's IT infrastructure mirrors the company's profile: lean, yet with a vast global reach.

Amway began using VMware Infrastructure in the datacenter at its Ada, MI, headquarters in the fall of 2004. "The company was growing significantly and datacenter capacity was a concern, so the initial focus was on server consolidation," explains System Support Advisor Tom Van Harn. "We started with development and test workloads to get familiar with VMware technology and see how it would function in our environment. Once we saw the stability of the technology—and the availability and manageability benefits it brought us—we began running production workloads on VMware Infrastructure. By the end 2005 we were implementing a virtualization-first policy. Anything new would go to VMware. And that's still the case today—the only exceptions are the rare cases when we have hardware requirements like a physical modem or a T1 card."

VMware technology also comes into play at the company's remote datacenters, which are spread all around the globe. "Most of them are around 60 percent virtualized, though we have more than 20 smaller sites throughout Europe that are 100 percent virtualized," Van Harn says. The hardware consolidation made possible by VMware virtualization technology helps Amway set up remote sites efficiently. "There is significant cost savings from an equipment purchase standpoint, because we don't need to buy physical server hardware, we set up a virtual infrastructure to handle the workloads instead," Van Harn points out. "For instance, our smaller offices of less than 20 users need local file services, print services, a local mail server and maybe one or two other application servers. But instead of buying rack infrastructure and three to six physical servers, we can consolidate all that on one VMware host server."

At those smaller offices, that single HP ProLiant server would be a standalone host, without shared storage. Amway outfits the next tier up, sites that have up to 200 users, with a two-host cluster and a small SAN. "That way we have the benefits of VMware High Availability, VMotion and Distributed Resource Scheduler to balance workloads between the two physical hosts," Van Harn explains. "It's still a considerably smaller footprint than if we were running a strictly physical environment—and it's far more cost effective."

He adds that Amway's virtualized infrastructure is far more flexible than a conventional setup. "If we need to move virtual machines around on VMware Infrastructure, say if we're relocating from one city to another, it's very easy to move them," he says. "That lets our IT infrastructure respond dynamically to changes in our business."

The platform mobility VMware technology brings to Amway's datacenter is also invaluable for disaster recovery. "Besides server consolidation, I think the biggest advantage we get from VMware technology is in the area of disaster recovery," Van Harn says. The VMware tool that he values most when it comes to disaster recovery is Site Recovery Manager (SRM), which ensures that Amway can move virtual machines to other hosts if trouble strikes a particular host or even datacenter. "About two years ago we made a strategic decision to virtualize everything on our disaster-recovery source list, for instance, Tier 1 applications like EMC Documentum Content Server, File Share Services, and Document Transformation Services," he says. "We've identified virtualization as the key enabler to protect our most important applications."

Van Harn explains how it works: "SRM offers a cohesive recovery plan for virtualized applications that includes storage replication at a second site. You can literally just click a button to say 'run test' and SRM will make sure your virtual machines and other systems are sequenced properly and that everything can communicate. I'm happy to say we haven't had any disasters, but if one strikes, I'm confident we'll be OK, because SRM lets us see the big picture, including dependent systems that should be included in a recovery plan—ones we might not have identified without SRM. It helps us cover all the bases."

Amway is also making good use of two other powerful VMware tools, VMotion and Distributed Resource Scheduler (DRS). "VMotion and DRS are really key to balancing the workloads across the hosts in a cluster so we can get the best performance out of the cluster," Van Harn says. "We also like being able use VMotion to put a host in maintenance mode so we can move all its virtual machines to another host when we're doing memory upgrades and any other hardware troubleshooting. Because maintenance doesn't impact users, we can do it during the day—which is great for us support guys, who prefer not to work on the weekends."

As of mid-2009, Amway is in the middle of a successful pilot of VMware View. "We want to realize the benefits we've seen from virtualizing servers in the desktop space," Van Harn says. The plan is to continue the pilot through the rest of the year and begin more aggressive deployment in 2010, focusing on 2,500 U.S. desktops. "We'd like to reduce the amount of desktop hardware we have sitting around various offices and call centers," he explains. "We've done the TCO analysis, and it looks like we'll realize about \$4 million savings over three years on things like power, hardware, and desktop-deployment costs."

"It's not just the initial cost of hardware," he adds. "It's also that the failure of that hardware takes quite a bit of time to troubleshoot and fix—not to mention the possibility of losing data, say if somebody drops a laptop. With VMware View, we can reduce hardware dependency and store all that data in a protected datacenter. That's good for the user and good for the company, since it will mean we won't have sensitive data wandering around on desktops and laptops and USB keys. And because a virtual desktop is an appliance, if a device fails, we can swap it out and get the user back up and running very quickly. We can even tie it in with Site Recovery Manager to enable more dynamic recovery, so if we lose a call center in one location, its data is protected and we can start up again in another."

"Anybody, everybody should be looking to use virtualization. Companies can make of it what they need. If it's just cost reduction through server consolidation, that's great. With virtualization, you don't have to jump in neck deep to see advantages. But we've taken it to the next level—and so can anyone else—by leveraging VMware disaster-recovery solutions like SRM and desktop technology like VMware View and cloud frameworks like vSphere. My advice is to start where you need to, get familiar with VMware technology, and then grow your virtualized infrastructure to suit your business."

Tom Van Harn, System Support Advisor, Amway

Amway has plans to add to its VMware arsenal in other ways as well. First and foremost is its upgrade to vSphere, the world's first cloud operating system. "We just finished the deal on our upgrade and new licenses, and we're looking forward to using the new features, like host profiles, which will be key for our infrastructure because they'll let us copy what we consider an ideal configuration so we can duplicate those networking, storage and security settings for other hosts," he says. "And we're also looking at other VMware management tools like Lab Manager and Stage Manager. That may be the next step for us: virtualizing testing and development for services and application development."

Amway is certainly making the most of VMware technology innovation, but Van Harn says enterprises will benefit even if they opt to proceed slowly. "Anybody, everybody should be looking to use virtualization," he claims. "Companies can make of it what they need. If it's just cost reduction through server consolidation, that's great. With virtualization, you don't have to jump in neck deep to see advantages. But we've taken it to the next level—and so can anyone else—by leveraging VMware disaster-recovery solutions like SRM and desktop technology like VMware View and cloud frameworks like vSphere. My advice is to start where you need to, get familiar with VMware technology, and then grow your virtualized infrastructure to suit your business."

Results

- Server consolidation ratios of roughly 25:1
- A VMware-first policy for new servers and applications, which will mean its main datacenter will move from roughly 50 percent virtualized to about 90 percent in the next three years
- VMware Infrastructure greatly facilitates the setting up and management of remote datacenters, which are between 60 to 100 percent virtualized
- Power usage has been cut dramatically, and space constraints have been addressed in the main datacenter and remote offices
- Site Recovery Manager simplifies and improves the firm's disaster-recovery capabilities
- Virtualizing desktops with VMware View is expected to save \$4 million over three years
- Upgrading to vSphere for even greater efficiencies and cost savings

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