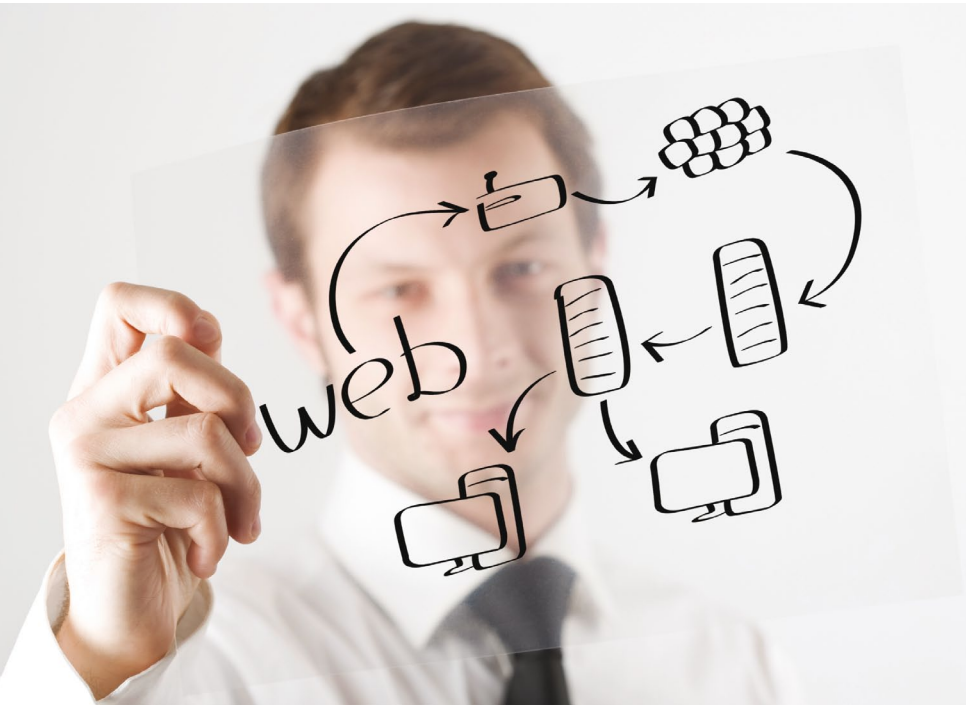
Enterhost improves customer agility, deploying new customer servers 60-fold faster in the cloud

- Cloud Computing
- Financial Services
- Green Efficiency
- Intelligent Data Management
- Server Consolidation
- System Management
- Virtualization



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Ben Tiblets,
Vice President,
Enterhost

Customer Profile

Company:	Enterhost
Industry:	Hosting Solutions
Country:	United States
Employees:	20
Web:	www.enterhost.com

Business Need

Web hosting provider Enterhost achieved a great deal of success by specializing in Microsoft® products, but its environment of dedicated servers with internal storage was not efficient. Server administration required a great deal of staff time, and deploying a new customer server took hours.

Solution

When Microsoft presented the opportunity to launch a new, efficient cloud hosting environment based on Hyper-V™ technology, Enterhost jumped at the chance. It implemented a virtualized customer platform on Dell™ PowerEdge™ blade servers, supported by Dell EqualLogic™ storage arrays.

Benefits

- 60-fold faster deployment of customer servers in cloud environment
- No customer downtime to upgrade or modify hardware
- No customer downtime in physical-to-virtual server migrations
- Customer agility improved due to flexibility of server platform
- 30-second failover for virtual servers in event of hardware failure
- SAN-to-SAN backups place no load on network or virtual servers
- Staff time freed up for customer problem resolution
- Power consumption trending down as customer base grows
- Prospective 90% lower power consumption in data center if all customers immediately moved to the cloud
- Dell Financial Services does not require large up-front cash outlay

If you're afraid of change, don't start a Web hosting business. Some companies can take a meandering approach to transformation. If they ever rethink their business model, it's rare. But successful hosting providers are perpetually reinventing themselves as they race to stay ahead of the technology curve.

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In the 11 years since Kevin Valadez and Ben Tiblets founded Fort Worth, Texas-based Enterhost, they have innovated time and again. "When we started the company, it was a shared-hosting business; that's where Web hosting was at the time," says Valadez, president of Enterhost. "Then demand shifted, and we started giving each customer dedicated physical boxes. Now we're evolving with the industry again, launching a new generation of hosted products in the cloud."

The path of greatest efficiency

Enterhost differentiates itself primarily by specializing in Microsoft products. "We are a Microsoft Certified Gold Partner with a Microsoft Hosting competency," says Tiblets, the company's vice president. "We are a Microsoft-only host, and this business model has brought us a lot of success."

The company now has its own 20,000-square-foot data center—a data center full of Windows Server-based machines, thanks to the dedicated-server hosting model. "Until recently, we were constantly building out new servers," Tiblets says. "A customer would order a dedicated server. We would build the hardware to the customer's specifications, install the operating system and physically deploy the machine to the data center floor. We were buying new servers every week."

Server modifications likewise required staff to spend time in the data center, and they entailed downtime for customers. "Anytime a customer wanted to make a change like adding more RAM, we'd have to schedule a maintenance window and pull the server offline," Tiblets says. Worse, customers experienced unplanned downtime if hardware failed. "If we lost a power supply, for example, the customer's server would be down until we physically replaced the power supply," Tiblets adds.

Then Microsoft invited Enterhost to participate in a proof of concept for a more stable and efficient hosting platform built on Windows Server 2008 R2 Hyper-V and Microsoft System Center Suite. The

Technology at Work

Services

Dell™ Support Services
– Dell ProSupport™ with Mission Critical four hour onsite service

Hardware

Dell EqualLogic™ PS6000XV storage array

Dell EqualLogic PS6500E storage array

Dell PowerConnect™ 6248 48-port Gigabit Ethernet Layer 3 switch

Dell PowerEdge™ M1000e blade enclosures

Dell PowerEdge M910 blade servers with Intel® Xeon® E7540 processors

Integrated Dell Remote Access Controller (iDRAC)

Software

Dell EqualLogic Auto-Snapshot Manager/Microsoft® Edition for Hyper-V™

Dell EqualLogic SAN HeadQuarters (SAN HQ)

Dell Management Console

Dell OpenManage™

Microsoft Dynamic Data Center Toolkit

Microsoft System Center Configuration Manager, Data Protection Manager and Virtual Machine Manager

Windows Server® 2008 R2 Datacenter and Enterprise Editions with Hyper-V™

company jumped at the chance. "We did a proof of concept of the Microsoft Dynamic Data Center Toolkit, and we were blown away by the product's capabilities," Tiblets explains. "It enables hosting providers like us to build and manage a cloud platform in-house."

Hardware a hosting provider can rely on

Enterhost decided to use the toolkit to deploy a virtualized hosting environment for customers, and to run that environment on hardware from another long-time ally. "When we first started Enterhost, we kept costs down by piecing together white-box servers," Valadez says. "We soon saw the logic in spending a little more money so we could spend less time buying, building and troubleshooting problems with hardware. We started working with Dell, and our experience with Dell systems has been great ever since. When we decided to launch the cloud environment, we wanted to run it on Dell hardware, because we wanted a consistent platform that was thoroughly tested for compatibility before it reached our door. That allows our technicians to focus on improving our core services instead of trying to figure out which CPU matches which system."

The team evaluated their server and storage alternatives. The Enterhost dedicated-server environment used only internal storage, but that was not an option. "You cannot build up a cloud-based hosting environment without centralized storage," says Tiblets. "We didn't even consider Fibre Channel because it would have added a lot of expense and complexity. We started looking for an iSCSI solution, and we asked Dell for recommendations. They pointed us to Dell EqualLogic."

For servers, the team chose Dell PowerEdge blades. "The main reason we went with blades was because of the integrated networking and cabling," Tiblets says. "In looking at the need for a back-end infrastructure for the iSCSI network, we felt blade servers made the most sense."

Enterhost deployed its Hyper-V-based customer cloud environment on two Dell PowerEdge M1000e blade enclosures housing Dell PowerEdge M910 blade servers with Intel Xeon processors. The company chose to deploy fewer, more powerful M910 blades, rather than more of a less-powerful model, to save money on licensing of the Microsoft Dynamic Data Center Toolkit. A Dell EqualLogic PS6000XV storage array with high-performance SAS disk provides storage for the platform. Enterhost also deployed a Dell EqualLogic PS6500E array with large-capacity SATA disk as a backup target, along with a Dell PowerConnect 6248 48-port Gigabit Ethernet Layer 3 switch to handle the iSCSI storage traffic.

"Some of our competitors have big environments running on very cheap hardware, but we don't like that approach," Tiblets says. "We have enterprise-level customers, so we want an enterprise-level environment. If a customer asks what hardware our cloud platform runs on, I don't want the answer to be 'white boxes and some sort of software-based storage platform.' I want to say we're running Dell EqualLogic storage area networks and Dell M1000e blade server systems."

60-fold faster server deployment

The new platform radically improves the efficiency of Enterhost staff. Senior Systems Administrator Dustin Howe and his team manage the cloud platform using Microsoft System Center Configuration Manager, System Center Virtual Machine Manager and System Center Data Protection Manager. "When a customer requests a new virtual server, we can deploy it in a matter of minutes," Howe says. "Previously, we needed several hours to respond to the same request. The cloud platform accelerates our server deployment about 60-fold. And if a customer wants to move from a dedicated machine to the cloud platform, we can just do a physical-to-virtual migration while the physical server stays live. When the virtual machine is ready, we can cut them over without any downtime."

Once a customer environment is live in the cloud, administration remains streamlined. "If a customer wants to upgrade their RAM or hard disk, an administrator goes into the software and clicks a few buttons," Tiblets says. "We don't even need to bring the virtual server down. We move virtual machines between physical hosts without losing any pings. The way this works is beautiful."

To streamline backups, Enterhost uses Dell EqualLogic Auto-Snapshot Manager/ Microsoft Edition for Hyper-V (ASM/ME), part of EqualLogic Host Integration Tools (HIT) for Microsoft. "It takes a snapshot of production data, then Data Protection Manager pulls backups from the snapshot," Howe explains. "Backups run directly on the SANs, so data protection doesn't put a load on the virtual machine or the network. That means we can run backups anytime we want, not just in the evenings. Our backup success rate has

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>
> *Ben Tiblets, Vice President, Enterhost*

been phenomenal, and because the data is virtualized and stored on disk rather than tape, restores are quicker and easier."

To manage the storage hardware, Enterhost staff use Dell EqualLogic SAN HeadQuarters. "SAN HQ is a great tool," Howe reports. For server management, they use Dell OpenManage and Dell Management Console. "We're very impressed with the way everything syncs together in Dell blades," Howe says. "We love the ease of management. We're using the FlexAddress feature to tie a Media Access Control (MAC) address persistently to a blade slot. If something goes wrong, we can swap out the blades fast because we don't have to make configuration changes. It's a cool feature, but we haven't needed it because we haven't had issues with our server hardware."

Enterhost also appreciates the remote management capabilities enabled by the blades' Integrated Dell Remote Access Controller (iDRAC) feature. "When I was deploying our cloud environment, I got the blade chassis up and running on the data center floor," Howe says. "Then I installed all the operating systems, and did everything else I needed to do, while sitting at my desk." Adds Tiblets: "This is a game-changer for us, because some of our offices do not have direct access to the physical servers. Remote management enabled by the iDRAC allows all of our technicians to access the systems as if they were on site."

More effective staff, more agile customers

For Enterhost staff, efficient system administration frees up time for more valuable activities. "Rather than building and modifying physical servers, our staff can spend their time working on other issues and solving customers' problems," Tiblets says.

For customers, the cloud environment provides much greater flexibility. "It doesn't matter what hardware you choose to run a certain virtual server today," Howe says. "If you want to beef it up in the future, or scale it down, we can move your server to a different host. Our customers no longer have to make long-term decisions up front that bind them to a certain physical machine."

30 seconds to failover for virtual servers

Customers are also seeing performance improvements. "For most of our customers, the blade servers and EqualLogic storage offer a noticeable performance improvement," Howe says. "Our dedicated-server environment includes a lot of SATA drives in simple, non-array configurations. Some customers might worry about moving to centralized storage, but putting them on EqualLogic zeroes out any performance issues they thought they might have."

Availability has also improved, although the company has never experienced much downtime. "For years, our level of server failures has been minimal," Tiblets says. "But now, if we lose a physical host, the environment automatically redistributes the virtual servers that were on the host, moving them to other hardware. We simulated a hard failure in the proof-of-concept environment, and we lost about 30 seconds of pings before the virtual servers came back up on another host. It's nice to know that if we have a hardware failure in our cloud environment, the virtual servers will fail over so quickly that customers might not even notice the blip in service."

Enterhost contracts with Dell ProSupport with Mission Critical four hour onsite service if it needs emergency assistance, but that doesn't happen often. "We don't use Dell Support a lot," Tiblets says. "Our failure rate on Dell equipment is so low, and we always had our own backups in a dedicated environment. But we realize that it's critical to invest in Dell Support Services in order to have the quickest response time and keep downtime to a minimum."

Prospective 90% lower power consumption

Despite the obvious benefits of the cloud, Enterhost expects to migrate customers over a few years. "We have a large deployment of legacy servers," Valadez says. "Immediately moving all our customers would require a large investment, and it doesn't make sense to force them to transition all at once. Instead, we'll launch new customers in the virtual environment, while slowly transitioning our current customers to the cloud through service upgrades."

Even this gradual migration has required a new approach to hardware investment. "In the past, we ordered servers every week," Tiblets says. "Our process was a little like just-in-time inventory. Buying a lot of hardware up front, and then hoping we make the sales, is different for us. For our cloud environment, we leased the equipment through Dell Financial Services. Instead of making a large cash outlay up front, we can continue making regular payments for hardware, like we're used to."

As customers migrate to virtual servers on efficient blade hosts and centralized storage, Enterhost expects operating costs to drop. "Power and cooling is a large cost of running our data center," Tiblets says. "If all of our customers moved to the cloud platform and we shut off all their dedicated servers today, our power usage would drop by 90 percent. That's not how we've chosen to make this transition, but at some point, every legacy box will be retired. And we know, without a doubt, that our power usage will trend down even as our customer base ramps up."

Still, Tiblets emphasizes, the project isn't just about increasing profit margins. "Our move to the cloud is about staying ahead of the game," he says. "It's about innovating and offering new products to customers. If we don't keep moving, we won't be positioned for success as the industry evolves."

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