



Cloud Power



Hoster Improves Remote Access, Increases Revenues with Virtualized Desktop Solution

Overview

Country or Region: United States

Industry: Hosting

Customer Profile

nGenx delivers hosted applications to customers over the client device of their choice. Headquartered in Overland Park, Kansas, nGenx has three geographically diverse data centers and 50 employees.

Business Situation

With the consumerization of IT in full tilt, nGenx sought a better way to deliver a cost-effective virtual desktop solution that would work on any device.

Solution

nGenx used Windows Server 2008 R2, Hyper-V, Remote Desktop Services, Microsoft System Center data center solutions, and Citrix software to create a "desktop as a service" offering.

Benefits

- Anywhere accessibility
- Instant desktop standardization
- Vast scalability
- Enhanced data availability, security
- Huge revenue potential

"Today, people cannot afford to be tied to their desktop computer. With nFinity[®] Desktop, our customers can access their desktop and all of their applications from any device anywhere in the world."

Frank Houghton, Vice President of Sales, nGenx

nGenx, a U.S.-based cloud solutions provider, provides a remote desktop offering called nFinity[®] Desktop. By using nFinity[®] Desktop, organizations can access virtually any application and the corresponding data using any device, from nGenx data center servers. nFinity[®] Desktop works with the client device of the customer's choosing, simplifies desktop management, and protects sensitive data. To deliver this service, nGenx uses Windows Server 2008 R2 operating system with Hyper-V virtualization technology to deploy virtual desktops on virtual machines and uses Citrix Systems software to create an online virtual desktop management portal. This architecture provides operational efficiencies, allowing many more user sessions to fit on each host server. Since launching nFinity[®] Desktop, nGenx has increased virtual desktop revenues by more than 500 percent.

Microsoft[®]



Cloud Power

“Remote desktop solutions have been available for a number of years; however, the investment in capital and time to deploy and manage these solutions was previously prohibitive.”

Robert Bye, President, nGenx

Situation

Since its founding in 2000, nGenx has been a pioneer in cloud computing—offering applications and services over the Internet rather than installing those applications on local computers. Headquartered in Overland Park, Kansas, nGenx has three data centers within a 125-mile radius that are connected by a fiber-optic network. nGenx can shift customer applications between data centers without interruption to provide nonstop availability and optimal performance.

As an early Application Service Provider, nGenx was one of the first to deliver hosted applications over the Internet. The services that nGenx provided included not only hosted enterprise applications, such as Microsoft Exchange Server and Microsoft Office SharePoint Server, but remote desktops, using Terminal Services in the Windows Server operating system (renamed Remote Desktop Services in Windows Server 2008 R2). In a remote desktop computing model, the applications and client desktop environment run on a remote central server and are delivered to client devices over the Internet or a company network. Users can access their desktops from a desktop computer, portable computer, a thin client (devices with less powerful processors and less memory), tablet, or smartphone. Benefits of this model—broadly called desktop virtualization—include improved centralized control over desktop environments, anywhere access to applications and data, and lower desktop management and client PC costs.

“Remote desktop solutions have been available for a number of years; however, the investment in capital and time to deploy and manage these solutions was

previously prohibitive,” says Robert Bye, President of nGenx. “As an example, we had to install each application on a dedicated [U.S.]\$5,000 server. Many of these applications also required supporting services such as a database server, which required an additional server. If the customer required higher levels of availability, we added redundant servers. The smallest highly available deployments required a minimum of four physical servers. The costs quickly added up, which prevented most organizations from embracing virtual desktops.”

Additionally, setting up virtual desktops was a time-consuming, manual process. It could take weeks to complete a deployment for customers, whether they had dozens or hundreds of employees. nGenx was eager to grow this part of its business but needed a breakthrough in customer demand, technology efficiency, or both.

Solution

nGenx saw an opportunity for growth in 2009 when Microsoft announced more powerful versions of its Windows Server 2008 R2 operating system with built-in Hyper-V virtualization technology. Remote Desktop Services, also included in the operating system, was enhanced with richer display options and multiple-monitor support.

nGenx used this new software to dramatically lower the cost and complexity of virtualization and further embrace a cloud computing model. With cloud computing, pools of virtualized resources are dynamically reconfigured and reallocated on an as-needed basis, rather than having resources statically assigned to specific users and applications. The introduction of Hyper-V helped lower costs



Cloud Power

“We chose Hyper-V as the foundation for our desktop as a service offering because the performance was great and our automation software from Citrix integrated better with Hyper-V than with other hypervisors.”

Robert Bye, President, nGenx

because the technology is included in Windows Server. Also, nGenx reduced complexity by using Microsoft System Center data center solutions along with software from Citrix Systems to provide an online portal that enables customers to create virtual machines in seconds and manage their virtual computing environments.

Around the same time, there was a dramatic increase in the number and variety of powerful, portable client devices on the market, including tablet PCs (particularly the Apple iPad) and smartphones with graphical user interfaces. Also, high-speed 4G wireless networks became available, enabling people to run a variety of applications and enjoy a richer Internet experience on their mobile phones.

“The popularity of these new client devices revolutionized the way people interact with their desktop and their data,” says Frank Houghton, Vice President of Sales for nGenx. “People began spending more time on these devices and wanted to shift more areas of their personal and work lives to them. Many began using smartphones and tablet PCs as their primary computer, instead of a desktop or laptop. There was suddenly a surge in demand to access office computing environments from phones and tablet computers.”

nGenx realized that Remote Desktop Services, Hyper-V, and the System Center management suite gave it the tools it needed to improve its virtual desktop offering and create a new “desktop as a service” (DaaS) offering that was affordable and easy to deploy. “We chose Hyper-V as the foundation for our desktop as a service offering because the performance was great and our automation software from

Citrix integrated better with Hyper-V than with other hypervisors,” Bye says. “Plus, we had already invested in System Center solutions for managing the rest of our data center infrastructure, and they worked very well for us. VMware had similar tools, but they were cost-prohibitive for a service provider.”

nFinity® Desktop

nGenx calls its new virtualized desktop offering nFinity® Desktop. It delivers applications to a variety of devices anywhere a user requires them. nGenx provides access to thousands of applications, ranging from Microsoft Office programs to proprietary line-of-business applications and delivers them to a traditional desktop, laptop, tablet PC, or phone. “I can leave my office desktop computer and take my tablet PC with me to lunch,” Houghton says. “From there, I can log on to the exact same session with my cursor in the exact same place I left it at the office. I can order a sandwich and keep working. When I’m back in my office, I pick up at my desktop computer where I left off in the café.”

nFinity® Desktop applications and the associated data are provisioned in the cloud; therefore, users are no longer tied to one computer—or one device—to access their applications, files, and data. “There’s a huge wow factor when people see their Windows-based desktop running on an iPad,” Houghton says. “With nFinity® Desktop, it’s no longer ‘either Microsoft or Apple;’ it’s both. I can finally get my Windows-based desktop on all my devices.”

Back in the Data Center

nFinity® Desktop is deployed on a Cisco Unified Computing System running the



Cloud Power

“The Microsoft Dynamic Datacenter Toolkit, System Center Virtual Machine Manager, and Citrix XenApp all work together to automate and simplify nFinity® Desktop deployment and management.”

Robert Bye, President, nGenx

Windows Server 2008 R2 Datacenter operating system. The nFinity® Desktop infrastructure is rounded out by an expandable Compellent storage area network (SAN) and Cisco Nexus network switches. This solution gives nGenx capacity for approximately 24,000 virtualized desktops for every 60 host servers.

nGenx implemented nFinity® Desktop by using a desktop virtualization deployment model, called session virtualization, available through Remote Desktop Services. With session virtualization, users access a centralized installation of a desktop by sending keystrokes to and receiving screen shots from a server. nGenx augments Remote Desktop Services with Citrix application delivery and presentation software to be able to deliver a seamless desktop experience across all devices, no matter which operating system is deployed.

Session virtualization contrasts with another popular desktop virtualization model called virtual desktop infrastructure (VDI), which provides the ability to store desktop operating system, applications, and user data as a full virtual machine on a server. VDI is limited to one virtual desktop per virtual machine, while session virtualization allows multiple virtual desktops per virtual machine.

“Using session virtualization we can scale up to 400 desktop sessions on one host server; plus, we can slice up those servers and share them between several companies—having multiple isolated customers being delivered multiple applications on a single host server,” Houghton says. “This level of virtual machine density and degree of flexibility is not possible with VDI.”

The virtualized desktops run Windows Server 2008 R2 Datacenter as their operating system. nGenx uses Citrix XenApp 6.0 software to provide a desktop experience that looks and functions much like that of the Windows 7 operating system. Additionally, nGenx uses Microsoft Application Virtualization (App-V) to simplify deployment and maintenance of applications running on the virtual machines. App-V is a standalone product, part of the Microsoft Desktop Optimization Pack, but it is also available for use in Remote Desktop Services. App-V allows nGenx to provide applications with a higher degree of automation, which increases the core functionality and flexibility of the customer control panel.

Virtualized Desktop Deployment and Management

nGenx used the Microsoft Dynamic Data Center Toolkit for Hosters in conjunction with the Citrix provisioning solution to automate nFinity® Desktop provisioning for its customers and partners. The Dynamic Data Center Toolkit for Hosters provides guidance, sample code, and best practices to help hosting service providers offer managed services with Hyper-V.

nGenx also used several System Center solutions to build nFinity® Desktop and manage it on a daily basis. The company installed Microsoft System Center Virtual Machine Manager 2008 R2 behind the automated provisioning portal for nFinity® Desktop to handle the creation and management of virtual machines. nGenx uses Microsoft System Center Operations Manager 2007 R2 to monitor virtual machine and host server performance and provide performance information back to System Center Virtual Machine Manager.



Cloud Power

“Many companies have spent millions of dollars trying to make sure that all desktops are running the same operating system and application versions.... All of these issues are taken care of with virtual desktops.”

Robert Bye, President, nGenx

“The Microsoft Dynamic Datacenter Toolkit, System Center Virtual Machine Manager, and Citrix XenApp all work together to automate and simplify nFinity[®] Desktop deployment and management,” Bye says.

“For customers, it’s push-button easy.”

Depending on which application is needed, nGenx can get customers up and running with nFinity[®] Desktop in as little as 10 minutes.

Benefits

nFinity[®] Desktop offers customers a virtualized desktop solution that works with the client device of the end users’ choosing, simplifies desktop computer and application management, scales broadly, and better protects sensitive data. nGenx anticipates revenue increases of more than 500 percent from the new offering.

Anywhere Accessibility

nFinity[®] Desktop gives people the ability to access their entire work desktop from any device. “Today, people cannot afford to be tied to their desktop computer,” Houghton says. “With nFinity[®] Desktop, our customers can access their desktop and all of their applications from any device anywhere in the world. This is a seismic shift for most organizations. Being able to work in little patches from anywhere and any device is a huge timesaver.”

When tornadoes ravaged the U.S. Midwest in spring 2011, entire factories and businesses were wiped out. Several of the affected businesses contacted nGenx with frantic pleas for help in getting their employees back to work. nGenx was able to quickly load data and applications from these companies’ disaster recovery locations into the nFinity[®] Desktop virtual desktop solution. The affected employees were able to get back to work on the

following Monday morning using their home computers over an Internet connection.

Instant Desktop Standardization, Lower Costs

Many corporate IT departments are finding it difficult to standardize their desktop environments; however some have found success by using Remote Desktop Services. “Many companies have spent millions of dollars trying to make sure that all desktops are running the same operating system and application versions and to gain control over who has access to what,” Bye says. “All of these issues are taken care of with virtual desktops.”

Organizations can also lower desktop management costs by using nFinity[®] Desktop. “IT staffs are strapped for resources and are struggling to deal with a proliferation of employee-owned devices,” Houghton says. “nFinity[®] Desktop solves all that for them. We’ve cut the whole desktop deployment process down to minutes per user.”

Additionally, desktop virtualization client hardware costs are about 25 percent lower. Because applications are no longer processed on the client device, organizations can save money and give employees thin clients to use. This also allows companies to extend user desktop refresh cycles from the traditional every three years, to every five or six years. “With nFinity[®] Desktop, I can run the most powerful applications, such as Autodesk Revit three-dimensional drafting software, on a tablet,” Houghton says.

Vast Scalability

By using session virtualization, nGenx achieves far better scalability than is



Cloud Power

“While VDI limits you to one virtual machine per user desktop, Remote Desktop Services lets us pack between 60 and 80 users into a single virtual machine, or 400 virtual machines per host server.”

Robert Bye, President, nGenx

provided by the VDI model, which is limited to about 30 to 40 user sessions for a similarly configured host server. “We can scale up to 400 desktop sessions on a single host server,” Bye says. “While VDI limits you to one virtual machine per user desktop, Remote Desktop Services lets us pack between 60 and 80 users into a single virtual machine or 400 virtual machines per host server.”

In addition to packing hundreds of nFinity[®] Desktop sessions in a single host server, nGenx can deploy new Hyper-V-based virtual machines in minutes. nGenx can also move its nFinity[®] Desktop virtual machines between host servers and data centers to optimize performance and resource usage.

Enhanced Data Availability, Security

By using nFinity[®] Desktop, organizations have a better ability to manage security and enforce compliance rules across the enterprise. “If an employee loses a computer that has fully deployed nFinity[®] Desktop, an administrator can lock down all application and data access instantly so that nothing is lost or breached,” Houghton says. “Since nFinity[®] Desktop is a cloud-based solution, the employee simply obtains another mobile device or laptop, logs on with the appropriate credentials, and they have instant access to the same experience.”

As an example of this functionality, one nFinity[®] Desktop customer had his car stolen along with the laptop he left inside. He made a quick call to his IT administrator to reset his credentials. Since his sensitive data was safe in the nGenx cloud, not a single kilobyte of data was compromised. The customer was able to simply purchase a new laptop and securely log on to

nFinity[®] Desktop and was back to work in minutes.

Support for Consumerization of IT

IT departments use nFinity[®] Desktop to address another complicated challenge, which has been called the consumerization of IT—employees wanting to use personal devices for work. “The iPad in particular has been a huge headache for IT departments,” Houghton says. “Most don’t know how to properly handle this challenge; however, nFinity[®] Desktop solves the problem instantly. Employees can access their entire Windows-based office desktop and all of their line-of-business applications from their iPad or other tablet PCs, without any work from the corporate IT staff.” This also enables the IT department to provide the latest software versions to their users without an expensive technical effort. The IT department uses the administration portal to enable new applications and to provision, add, and change users.

Huge Revenue Potential

Since launching its nFinity[®] Desktop, Desktop as a Service solution, nGenx has seen sales surge. “The future really looks great for this business,” Houghton says. “When we started offering virtual desktops in 2007, we were ahead of our time and sales weren’t as strong as we had originally expected. But moving to session virtualization along with Hyper-V, System Center, and Citrix software for automated deployment has really simplified the underlying infrastructure and made it more affordable. Whereas we used to see deals for just over 10 virtual desktop, today we’re seeing deals for well over 600 desktops at a time. Our nFinity[®] Desktop revenue has increased 500 to 600 percent. The desktop virtualization market is finally red hot!”



Cloud Power

For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers in the United States and Canada who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to:
www.microsoft.com

For more information about nGenx products and services, call (888) 696-4369 or visit the website at:
www.nGenx.com

Microsoft Cloud Power

Microsoft offers a complete set of cloud-based solutions to meet business needs, including solutions for advertising; communications (email, meetings); collaboration (document storage, sharing, workflow); business applications (customer resource management, business productivity); data storage and management; and infrastructure services. In addition, customers can take advantage of an entire ecosystem of solution providers and Microsoft partners.

For more information about Microsoft Cloud Power, go to:
www.microsoft.com/cloud

Software and Services

- Microsoft Server Product Portfolio
 - Windows Server 2008 R2 Datacenter
 - Microsoft System Center Operations Manager 2007 R2
 - Microsoft System Center Virtual Machine Manager 2008 R2
- Technologies
 - Hyper-V
 - Remote Desktop Services

- Solutions
 - Microsoft Dynamic Data Center Toolkit for Hosters

Hardware

- Cisco UCS servers with Intel Xeon processors
- Compellent storage area network
- Cisco Nexus switches