

communication elements



Fall 2011

Expertise You Can Bank On

Cerium helps American Bank streamline its data center, upgrade its unified messaging system — and save money at the same time.



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An aging messaging environment, older physical hardware, security challenges ... like many organizations, American Bank needed to upgrade and streamline key components of its IT infrastructure. And, like many organizations, the bank needed a trusted partner to help cut through the IT industry hype and design a solution that would meet its needs cost-effectively.

It needed Cerium Networks.

The Cerium team leveraged its knowledge and experience with VMware and Microsoft server solutions to meet American Bank's challenges. Cerium helped the bank deploy a virtualized infrastructure designed to support a Microsoft Exchange upgrade and enable the consolidation of other legacy servers.

"The first step was to create a VMware infrastructure, which allowed us to virtualize the new Exchange servers we were going to implement," said Aaron Webb, Systems Manager, American Bank. "It has also allowed us to virtualize a lot of our legacy servers. We're going to be gradually virtualizing more of them as well."

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Expertise You Can Bank On

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Headquartered in Livingston, Mont., American Bank relies upon Cerium for help with its voice communications and networking requirements. Although it is primarily known for its expertise in voice communications systems, Cerium came to the table with recommendations on how to improve the bank's core messaging infrastructure.

"Cerium put in our Cisco IP telephony system, and did a very good job. It's a good design, and a solid system. They have also helped us with our network and they've always done a great job," Webb said. "We decided to work with them on this project based upon that experience and the sound recommendations they made."

More Features, Lower Cost

American Bank had been utilizing the Cisco Unity Unified Messaging system, and had planned to continue with that product. Cerium's certified Microsoft specialists recommended the Unified Messaging features of Microsoft Exchange Server 2010 as a better fit for the bank's needs.

"Cerium told us about the Microsoft Unified Messaging features, and the differences between it and the Cisco product, and we decided to go in that direction," said Webb. "It saves us a lot of money on Cisco maintenance and gives us some additional functionality."

Unified Messaging in Exchange 2010 consolidates voice mail and email messages in a universal inbox. It creates a text version of voice mails that are delivered along with an MP3 file to a user's inbox, enabling users to read the contents of voice mail as easily as they would read email. Users can also access voice mail, email, calendar and contacts features using voice commands. In addition, Unified Messaging provides customized greetings, call transfer options and other features to streamline communications —



Solution Summary

- Virtualization enabled American Bank to consolidate its legacy servers and provided a platform to support a Microsoft Exchange upgrade with redundancy for reliability.
- Cerium was selected based upon its expertise with VMware and Microsoft Server solutions, its sound recommendations regarding the bank's messaging infrastructure, and its reputation for proven results.
- Exchange 2010 provides key unified messaging functionality at lower cost than competitive solutions.
- Cerium's systematic implementation approach ensured a smooth transition and minimum impact on bank operations.
- American Bank estimates that virtualization saved approximately \$70,000 over five years by reducing the number of servers to support.

without the need to purchase, manage or maintain a separate voice mail system.

Cerium helped the bank deploy an Exchange cluster consisting of two Exchange Client Access Server (CAS) hub servers in two different locations for redundancy and high availability. Cerium also implemented two Exchange mailbox servers in two different locations and an Exchange Unified Messaging server.

"The design provides us with a more secure and reliable messaging environment geographically distributed across two data centers in a virtualized environment," Webb said.

Meeting Requirements

Cerium implemented an antivirus and spam filtering appliance to protect American Bank's email system. The solu-

tion also provides seamless email encryption to secure the bank's messages and data. Audit features help support the bank's regulatory compliance practices.

"The [security] system is able to deliver reports on the various regulations that apply to the bank," Webb said. "For example, we are under the Gramm-Leach-Bliley Act, and it has reports related to that."

Although the project was critical, so are the bank's ongoing operations. Cerium was required to meet specific criteria, with financial ramifications.

"We wanted the lowest impact on our user base and Cerium was able to help us accomplish that," said Webb. "I would recommend that organizations follow Cerium's advice with regard to project management and timing. The Cerium engineers started with a small pilot group and took the time to thoroughly test everything and work out the kinks before putting it into production. They then went to a larger pilot group and so on until we went into production for everyone. That approach made the transition very smooth."

Ultimately, the move to the VMware environment and Exchange 2010 will save American Bank time and money. In addition to reducing maintenance costs on its unified messaging system, the technology is enabling the bank to cut its data center overhead.

"We have calculated that virtualization has saved approximately \$70,000 in five years' time by reducing the number of servers we have to support," Webb said. "That's the cost of server maintenance, the cost of power to supply those servers, and the replacement cost of the server hardware."

Cerium Networks helped American Bank upgrade its messaging platform and save money at the same time. That's expertise you can bank on.

There and Back Again



By KEVIN L. MAYO
Solutions Architect
Cerium Networks

There and Back Again, better known by its abbreviated name *The Hobbit*, is a fantasy novel and children's book by J.R.R. Tolkien. The Hobbit is the amazing story of one small person's journey against great obstacles, magical partnerships, and the defeat of a dragon. Bilbo Baggins, the lead character in *The Hobbit*, once his adventures were complete, returned home to The Shire to write his book.

The computer network, has made an amazing journey, and like *The Hobbit*, has come full circle to return to its origins. I remember early in my career, working in the Novell Headquarters campus located in Provo, Utah. The campus was huge, sprawled many city blocks, and the Novell IPX network sprawled dozens of high-rise buildings. The Novell network was powered by a computer mainframe, and an Avaya telephone system literally the size of a central office.

Computer mainframes were the standard. The Arpanet had not yet transformed to the Internet, and site-to-site connectivity was limited in bandwidth and costly. As remote branch office sites grew, the computer network required a transformative shift in network architecture, that of local server processing. This local sever rollout could facilitate end-users connecting locally to their applications and not having to drag and strain for service over 56K circuits. This local server architecture became the de facto standard aided by the always reducing costs of server and personal computer hardware.

And then there came bandwidth. Bandwidth was to change everything we thought we knew about the computer network, and once again, the centralized mainframe model takes hold, and our networking journey comes full circle today. What we used to know as a DS3so r OC48s; large 45+ Mbps data pipes for enterprise corporations which cost tens of thousands of dollars per month, now can be delivered to the home, over coaxial cable, for under \$100 per month. And it is this bandwidth, that has silently but forever changed the computer networking landscape.

Today's corporate data centers exist as centralized virtual machines. These virtual machines, or VMs, exist as logical entities on CPU, Memory, Storage, and Power optimized blade servers. Where once we had a dedicated physical server for each application within the organization, we now see 4 to as many as 16 virtual machines per physical server blade. The shift to virtualization has been incredibly fast, in fact so much so, it is estimated by many industry experts that today, more virtual servers are installed and in production networks worldwide than are physical servers. But this data center, and virtual server consolidation is only the first part of our journey. The next phase in the evolution will be unlike the silent, server consolidation phase

unseen and unnoticed by the network's end users. Virtual Desktop Infrastructure or VDI, will change everything the end user thinks they know about plugging in.

There are three prominent VDI technologies being deployed today, RDP, Citrix, and VMware. The thin-client software application running these three technologies is running in the background waiting for the end-user to plug in. This new virtual empowered end-user can plug into the network with whatever preferred network device they choose. For the IT administrator, the type of device the end user prefers to use for day-to-day business will not matter. IT will control the VDI thin-client, and thus, IT will control what services and with what privileges the end user has network rights to. One of the industry leaders in VDI desktop technologies is CHIP PC.

These new CHIP PC technologies completely eliminate the end-user's personal computer. No more refreshing physical personal computers every three years. An organization can save a lot of money collapsing a couple of hundred servers to a dozen virtual enabled blade servers. But it's easy to see the even larger cost savings an organization might save not having to replace their users PC every three years. These new VDI technologies such as those by CHIP PC, allow an end-user to plug into a monitor, connect speakers and USB devices like a keyboard and mouse. Network here we come.



IP Telecommunications manufacturers like Avaya and Cisco are releasing VDI thin-client services to run in the background of their .XML enabled IP telephones. Thus, whatever is plugged into the telephone is being serviced by the VDI thin-app running within it. The end-user will no longer need to plug in a physical computer to the back of their IP phone. Avaya and Cisco are releasing docking stations which will allow a peripheral-only footprint. The VDI experience is further getting pushed out to manufacturer specific tablets soon to be released such as the Avaya Flare and Cisco Cius. These products will facilitate a more user friendly video and collaboration experience once again, driven by the telecommunications platform and powered by VDI. Finally, mobility is at the forefront of end-user demand. Mobile VDI services will provide the full wired network experience to the end-users iPhone, Droid and other smart phone mobile devices.

There and Back Again is a great story written by one of the giants in fiction, J.R.R. Tolkien. *There and Back Again* also tells the story of the amazing history of our computer network and how, like us, we have come full circle.



Collaboration in the Cloud

Microsoft Office 365 delivers world-class productivity and collaboration tools in a secure, cloud-based service that can be accessed anywhere with virtually any device.

Collaboration and cloud computing are two of the hottest technology trends for businesses today. Microsoft is leveraging both to deliver Office 365, a productivity and collaboration solution available as a Web-based service for a monthly subscription. Office 365 brings together Microsoft Office, Microsoft SharePoint Online, Microsoft Exchange Online and Microsoft Lync Online in an always-up-to-date cloud service. It is available in a wide range of service plans designed to meet the needs of businesses of all sizes, ranging from the largest to the smallest.

With Office 365 for small businesses, customers can be up and running with Office Web Apps, Microsoft collaboration tools and an external web site in minutes. These tools put enterprise-class email, shared documents, instant messaging, video and web conferencing, portals, and more at everyone's fingertips.

Office 365 for enterprises has an array of choices, from simple email to comprehensive suites to meet the needs of midsize and large businesses and government organizations. Customers can now get Microsoft Office Professional Plus on a pay-as-you-go basis with cloud-based versions of the industry's leading business communications and collaboration services. Each of these plans comes with the advanced IT controls, innovative security technologies, 24x7 IT support and reliability customers expect from Microsoft.

Reliable and Secure

A wide variety of devices, applications and services make it easy for workers to keep in touch by voice, video and social networking. However, many employees complain that they are not being allowed to take advantage of these tools. A study conducted by InsightExpress found that 52 percent of organizations prohibit the use of social media applications and similar collaboration tools at work. Many employees also feel that their ability to collaborate is constrained by corporate policies and the corporate culture.

Office 365 gives organizations a secure, cost-effective way to provide employees with the collaboration tools they want and need. Built from the ground up for reliability, availability and performance, Office 365 includes always-up-to-date security features. It also safeguards data with geo-redundant, enterprise-grade reliability, and provides for disaster recovery with multiple data centers and automatic failover.

Single sign-on has made worker adoption of Office 365 very easy. Workers and network administrators are very happy with being able to use a single user ID and password and to be able to manage them from a single location.

True Productivity

Employees have identified a variety of other frustrations with collaboration devices and applications. These include restrictions set by IT managers on the types of collaboration technologies that can be used, a lack of integration among the applications, non-compatible formats, and the limited number of collaboration tools at their disposal. Ease of use, the ability to communicate anywhere and at any time, and features and functionality are the three most desired attributes of a device or application.

With the introduction of Office 365, Microsoft has a real advantage over the competition. Office 365 goes beyond an “online-only” approach by offering Offline access and editing through the use of Microsoft Office, and data center level integration and coexistence with on-premises systems. Customers can have the best of both worlds and truly have access to their applications and data where and when they need them.

Office 365 takes a holistic approach to collaboration with tools that are available everywhere and work together seamlessly. And because Microsoft Office applications are at the heart of Office 365, employees can become productive right away. Microsoft Word, PowerPoint, Excel, OneNote, Outlook and other Office applications connect to Microsoft Exchange, SharePoint and Lync to deliver a familiar, world-class solution for communication and collaboration.

The Power of the Cloud

Office 365 also enables organizations to derive the benefits of a cloud-based solution that lowers overall costs while deliver-

ing the right tools to the right users. Employees can benefit from the solution immediately, and new features and upgrades are instantly available. Costs are recorded as operating expenses rather than capital expenditures. As a result of these and other benefits, organizations could achieve an ROI of more than 300 percent with Office 365, according to a study conducted by Forrester Consulting.

The Office 365 service was introduced in beta last year with enthusiastic response — in a few months, more than 200,000 organizations signed up and began testing it. Businesses using Office 365 are already reporting impressive results and reducing IT costs by up to an estimated 50 percent while boosting productivity.

Office 365 eliminates the need to buy new hardware and software or pay for maintenance. It also reduces the burden on IT by eliminating the need for server patching, updating or upgrading. Migration tools help IT get users up and running quickly and easily, and 24x7 IT-level phone support is available.

Office 365 also enables the customer to stay in control. Tightly integrating cloud-based and on-premises workloads enables customers to maximize their current technology investments, deploy at their own pace, and get the benefits of the cloud in a way that works for their business.

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Identity Firewalls:

From castles to Starbucks to who is doing what.



By **JOHN WHALEN**,
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Cerium Networks

Security models for protecting our networks continue to evolve from a castle mentality—surrounding our confidential assets with a big wall, a

big moat, and one way in—to a borderless architecture.

In the new borderless world, remote workers of all stripes—home workers, mobile workers, contractors, and business partners—and local users with differing job duties and varying levels of access rights use the network for business critical applications.

To answer the real-world requirements of users and the network administrators who support these users, while also protecting the organization's information assets, Cerium works with new technology from Cisco Systems to understand who is doing what on the network.

Cisco has recently released new capabilities for identity firewalling that

give administrators an exact understanding of which authenticated user is accessing what application or network service. The identity firewall is not a license or device, i.e. there is no additional charge. The identity firewall's capabilities are contained within the ASA IOS version 8.4 as a feature.

Security policies that align to users and groups rather than to IP addresses give organizations easier, more precise control over who can access the network—and what they can access. Cisco® identity-based firewall security provides more flexible access control to enforce policies based on user and group identities and the point of access. It also enables simplified policy configuration, so administrators can write policies that correspond to business rules—for increased security, enhanced ease of use, and fewer policies to manage.

Employees require “anytime, anywhere” access to the network—inside and outside the firewall. Corporate headquarters, branch offices, satellite locations, and VPNs for secure home access all employ

different IP addresses. While legacy firewalls require a separate policy for each location to ensure that access can be granted to a specific employee, Cisco identity-based firewall security requires only a single policy: “Allow [Employee ID] access to the network.” Similarly, group policies such as “Do not allow marketing to access engineering source code” can be written to provide more precise control over network resources.

Users often need access to one or more server resources. Typically, a firewall is not aware of the users' identities and, therefore, cannot apply security policies based on identity. To configure per-user access policies, you must configure a user authentication proxy, which requires user interaction (a user name / password query).

The Identity Firewall in the ASA provides more granular access control based on users' identities. You can configure access rules and security policies based on user names and user groups name rather than through source IP addresses. The ASA applies the security policies based on an association of IP addresses to Windows

Active Directory login information and reports events based on the mapped user names instead of network IP addresses.

The Identity Firewall integrates with Microsoft Active Directory in conjunction with an external Active Directory (AD) Agent that provides the actual identity mapping. The ASA uses Windows Active Directory as the source to retrieve the current user identity information for specific IP addresses and allows transparent authentication for Active Directory users.

Identity-based firewall services enhance the existing access control and security policy mechanisms by allowing users or groups to be specified in place of source IP addresses. Identity-based security policies can be interleaved without restriction between traditional IP address based rules.

From Cerium's perspective as network integrators and consultative business partners with our customers, the key benefits of the Identity Firewall include:

- Decoupling network topology from security policies
- Simplifying the creation of security policies and security management
- Providing the ability to easily identify user activities on network resources
- Simplify user activity monitoring

AVAYA



The Avaya Flare™ Experience

Imagine the possibilities. Your favorite communications tools — video, e-mail, IM, social networks, phone — at your fingertips. Now put all these tools into a single, unified enterprise workspace and you have the Avaya Flare Experience. Designed to change the way you communicate and collaborate, the Avaya Flare Experience delivers a seamless communications experience that is easy to use, convenient, and ready in real time to help you focus on the task at hand.

Contact your Cerium Networks representative to learn more.

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Microsoft®
Office 365



Get in the Cloud

Microsoft Office 365 brings together cloud versions of our most trusted communications and collaboration products with the latest version of our desktop suite for businesses of all sizes. Cerium can support your transition to the cloud by helping you assess your needs, choose the right services, and provide add-on capabilities

 Office Professional Plus +  Exchange Online +  SharePoint Online +  Lync Online



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