

# Intermedia

## PROFILE

Intermedia



### Industry

Business Communications Services

### Corporate Headquarters

New York, N.Y.

### Employees

240

### Annual Revenue

Privately held company

### Web Site

<http://www.intermedia.net/>

## THE NUMBERS

- 115,000 Microsoft Exchange 2010 mailboxes
- 99.999 percent availability
- 3,000 SQL databases, 14 terabytes memory

## IN BRIEF

### Objective

Intermedia wanted to simplify datacenter management, ensure customer uptime and gain business agility to scale rapidly and deploy new services as the company grows.

### Solution

The world's largest provider of hosted email services, Intermedia virtualized its deployment of Microsoft Exchange 2010 on the VMware platform.

### Business Impact

- Improved agility: Rapid provisioning enables scalability for business growth and fast response to business opportunities.
- Reduced risk: 99.999 percent availability achieved through redundancies gained by abstracting application away from physical hardware.
- Streamlined IT management: Eliminate time and cost of physically managing datacenter 3,000 miles away.

## World's Largest Hosted Email Service Virtualizes Microsoft Exchange 2010 for Management Ease and Scalability

*"I do not know any other company that has virtualized such a large, memory-intensive implementation of Microsoft Exchange. We have over 115,000 mailboxes on the virtualized platform and that number is growing rapidly."*

— Brent Rich, Vice President of Operations, Intermedia

Intermedia is the world's largest hosted Microsoft® Exchange service. The company serves thousands of small to medium-size businesses with 15 to 50 mailboxes, as well as many customers with 1,000 mailboxes or more. For an affordable monthly fee, Intermedia customers can get business email, VoIP-based telephone service, smartphones, instant messaging, email fax and other communications such as online backup and business Web hosting, all delivered as a service with 24x7 support.

The compelling business value Intermedia offers customers led the company to mushroom in size from 100,000 mailboxes in 2007 to more than 320,000 today. Over that same period, Intermedia deployed and expanded its VMware® virtualization platform to encompass core applications including BlackBerry® Server; Microsoft SharePoint; Microsoft SQL; Microsoft Office Communications Server (OCS); and Microsoft® Exchange 2010. For Intermedia, VMware technology is a must to streamline IT management, support 99.999 percent uptime availability and enable rapid scaling as the business grows.

"We rely on VMware technology, and not just for consolidation benefits; we're really using it for management ease and business agility," says Brent Rich, Intermedia's Vice President of Operations. "If a new product or business opportunity arises, there's no way I can tell my internal customers, 'You have to wait two weeks for me to order physical servers and even longer for me to build on top of them.' No. We have to move fast. Virtualization enables that. It also supports us to meet uptime SLAs, and success has proven that we can virtualize even our core Microsoft Exchange 2010 application with confidence."

### Beta Test Shows Viability of Virtualizing Microsoft Exchange 2010

Based in New York, N.Y., Intermedia operates three datacenters in California, one in New Jersey and one in the United Kingdom. The primary drivers to start virtualizing in 2007 were cost and management ease.

"We are continually deploying new infrastructures and there was a high cost associated with time spent in a datacenter that was 3,000 miles away. We had to use remote hands and pay them per hour," Rich explains. "In contrast, moving toward a cloud-based infrastructure on the VMware platform, we can deploy as much resource as we need in a prebuilt environment and not have to send someone back to the datacenter just to install a server."

Intermedia had already virtualized BlackBerry, OCS and SharePoint when in 2009 it virtualized a large beta platform for Exchange 2010. The results were so good the company continued to deploy on the VMware platform.

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*“We virtualized for the management benefit of being able to rapidly deploy servers to scale the infrastructure in alignment with business needs.”*

Brent Rich  
VP of Operations, Intermedia

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“We’d had a chance to see the beta deployment run and function well. Therefore, it was a natural progression to build our first Exchange 2010 domain on VMware technology,” Rich says. “It scaled cleanly to 35,000 mailboxes, so we went on to virtualize all of our subsequent 2010 domains.”

## Redundancy, vMotion Ensure Five Nines Uptime

Today, Intermedia runs five Exchange 2010 domains hosting more than 115,000 mailboxes in two datacenters, one in California and one in New Jersey. It plans to open two additional datacenters in the near future. The company also hosts approximately 200,000 mailboxes on legacy versions of Exchange that have not been virtualized. Moving forward, all new deployments will be on the virtual platform.

Intermedia architected its virtual infrastructure for fast scalability and high redundancy to ensure uptime. In each of the two datacenters hosting Exchange 2010, the company built four quadrants of VMware ESX® clusters. Each cluster has 15 servers, for a total of 60. Each corner of the quadrant architecture is completely redundant—with its own physical servers, storage and networking—and designed to run at 35 percent capacity or less. Front-end services lie on the two top quadrants. On the bottom, Intermedia replicates Exchange Databases between sides using Database Availability Groups. The vMotion® feature of VMware vSphere® enables Intermedia to move virtual machines among these redundant resources in the event of failure, or to dynamically adjust to changing load conditions.

“That’s how we host our product to ensure five nines availability,” Rich says. “If something occurs or we lose a physical server, VMware vMotion takes care of it by moving the infrastructure around within that corner, just to ensure we don’t have any issues or service loss. That’s one of the things VMware software is really good at.”

Intermedia’s VMware platform is vSphere with VMware vCenter™ Server for centralized control of the virtual infrastructure. The server hardware is Dell™ PowerEdge™ R610 and R710 in California, and Dell PowerEdge M610 and M710 blades in New Jersey. All are six core, 2.66 processors with between 80 and 120 gigabytes of memory with EMC Clariion and VNX supporting almost three petabytes of data.

“One of the most important things to note is that each quadrant has separate, isolated storage,” Rich says. “So not only do we have a highly redundant virtual platform for each corner, we then replicate between the bottom corners for databases. So it’s two different ESX clusters with dedicated storage to each and replicating together, and then on the front end, we put all the load balanced services like mail filters and relays behind Cisco hardware load balancers. Those also have their own dedicated storage arrays to ensure the highest level of service reliability. We have about 3,000 back-end databases, 14 terabytes of memory and close to 5 terahertz of CPU power. I do not know of any other company that has virtualized such a large implementation of Microsoft Exchange.”

With 15 servers in a cluster running at less than 35 percent utilization, and the ability to move virtual machines to available hardware, Intermedia could lose half its nodes in a single cluster with little impact, Rich says. The customer might get disconnected for 15 seconds until the virtual machines are moved elsewhere with vMotion or while being redirected within the load balancer. In a physical infrastructure, it would take him longer than that just to pick up the phone and tell an IT staffer to go fix the problem.

“VMware software allows us to increase redundancy by abstracting the application away from the underlying hardware,” Rich says. “The only way to have true five nines is to have that level of redundancy. It minimizes the impact if something happens. The business benefit is that VMware virtualization reduces risk.”

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*“Microsoft Exchange 2010 works extremely well on the VMware vSphere platform.”*

Brent Rich  
VP of Operations, Intermedia

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## Intermedia Customers Gain Affordable, Easy-to-Manage Service

For Intermedia customers, their hosted Exchange services are not only reliable; they are also simple to manage. Intermedia's HostPilot® Control Panel gives customers 24x7 online control of their mailboxes, lists, staff settings and mobile devices. The panel is so simple to operate that no system administrator is needed; an HR employee can do the job, Rich says. Customers may select from 25 gigabytes to unlimited storage capacity depending on the plan they choose.

Behind the scenes, domains are segregated on a permissions basis in a multi-tenant environment of a shared logical and physical infrastructure. Control panel components all run on virtualized Microsoft Active Directory controllers and spam filters.

“For a modest monthly fee, customers get secure, high-performing, five nines Microsoft Exchange hosted email, plus instant messaging with Office Communications Server, BlackBerry if they want it, and other service options,” Rich says. “Most companies could not run a platform like that on their own. There would be so much time, effort and capital expense involved that any organization with less than a couple of thousand employees couldn't even consider it.”

## Virtualization Aligns IT Infrastructure with Business Needs

Intermedia itself must constantly advance its platform to accommodate business growth, as well as rapid deployment of new products and services. New customers are constantly signing up and in recent months alone, Intermedia has launched hosted PBX as a standalone service, online backup, and control-panel updates. Change is constant, and virtualization provides the flexibility to support it.

“When you're growing rapidly like we are, it's really important to be able to move resources around and adjust them as needed,” Rich says. “Virtualization makes it much easier. You're not spending time and money dealing with the physical stuff. From a management, administration and deployment perspective, it's efficient to deploy onto a prebuilt green virtual environment. The physical server infrastructure is ready, storage is presented to it and we just allocate our virtual machines to build what we need now. We can even deploy virtual machines without having the physical resources ready, and add them before going live—or incrementally as needed.”

Rich estimates virtualization has cut deployment time by at least half, considering how long it takes to install and image physical servers, and perform custom configurations. Planning too is easier, with no need to find datacenter space for new hardware, or add power or cooling. Utilization also improves. Intermedia can easily move virtual machines from one datacenter to another, ensuring that no resources sit idle while others are overloaded.

Virtual processes also support best-practice standardization, Rich says. Intermedia can deploy a clean and concise standard in the datacenter, in a cookie-cutter, reproducible, efficient deployment of pod infrastructure.

“It's really about manageability and flexibility. We can manage our infrastructure remotely and build on it efficiently,” Rich says. “Ultimately, virtualization enables Intermedia to align its IT services with the company's business needs. I never have to tell the business it has to wait a month to have the infrastructure ready.”

## IMPLEMENTATION OVERVIEW

**VMware Products:**

VMware vSphere 3.5  
VMware vSphere 4.1  
VMware vCenter Server

**VMware Services:**

Training

**Applications:**

Microsoft Exchange 2010  
SharePoint 2010  
OCS  
SQL 2008 R2  
Active Directory 2008 R2  
BlackBerry Server 5.0  
Quest Foglight

**Platform**

Dell PowerEdge Servers  
EMC Clariion

