Ohio Mutual Insurance Group

"When we migrated from WebSphere Application Server 4 to 5.1, and then again from 5.1 to 6.1, we were able to build out the new WebSphere environment on a new set of virtual servers which were created in a few minutes, without having to add any new physical servers into our environment. Then we simply installed the applications on the new virtual servers, and the migration was complete. The upgrade was seamless, and we experienced virtually zero downtime. That is a huge advantage for us."

— Jeff Jolley
Manager of Software
Development, OMIG

KEY HIGHLIGHTS

Challenge

Consolidate physical servers in data center while enhancing performance and availability of applications and without compromising reliability of IT environment.

Solutions

Run 99 percent of the IT environment on VMware Infrastructure 3, leveraging features such as VMotion, High Availability, and Distributed Resource Scheduler to ensure minimal downtime and optimum performance of mission-critical applications.

Ohio Mutual Insurance Group

The Ohio Mutual Insurance Group (OMIG), based in Bucyrus Ohio, partners with over 300 Independent Insurance Agencies to distribute quality property and casualty insurance offerings throughout Ohio, Rhode Island, Connecticut and Indiana.

In late 2005, Mark Coe, Manager of IT Infrastructure and Operations at OMIG, was tasked with consolidating the company's data center. "At the time, we had approximately 40 physical servers, and Todd Albert, our Vice President of Information Technology asked me to find a way to reduce that number. We already had much of our test and development environment running on VMware, so we started looking into running our production environment on VMware, as well," recalls Coe. Within 18 months, Coe's team virtualized the production environment and consolidated down to seven physical servers.

As of November 2008, approximately 99 percent of OMIG's IT environment is virtualized, with seven VMware Infrastructure host systems running 111 virtual machines. The company runs all of its mission-critical applications on VMware Infrastructure, including IBM WebSphere Application Server 6.1, IBM WebSphere Portal 6.0, IBM DB2, Microsoft SQL Server 2000 and 2005, and Microsoft Exchange 2005. Additionally, the company's virtualization first policy dictates that all new applications must be deployed on a virtual server unless there is a compelling reason for physical deployment. "You have to twist my arm behind my back to get me to deploy an application on a physical server," remarks Coe.

Insuring Mission-critical Applications with VMware

OMIG relies heavily on WebSphere Application Server and WebSphere Portal. The WebSphere environment features three separate nodes running on virtual servers in a network deployment environment. One node serves as a deployment manager, while the other two are in the production environment. Nine logical servers are spread across the two production nodes, and these servers host a variety of applications that are essential to everyday operations. According to Jeff Jolley, Manager of Software Development at OMIG, "WebSphere is absolutely mission-critical. We not only host our enterprise policy processing system in WebSphere, but we also host the applications used by our business partners, the over 300, Independent Insurance Agents. In fact, the majority of our policy processing comes through our agent access portal, which is hosted in WebSphere."

OMIG also uses WebSphere to host its intranet portal, through which the employees in the home office launch their applications. "Almost all of our in-house applications are browser-based and are accessed through the company intranet. So our employees rely on the WebSphere-hosted intranet portal to gain access to the applications that they use throughout the day. Needless to say, our VMware-based WebSphere environment represents one of the most crucial components of our entire business," adds Jolley.

VMWARE AT WORK

VMware Infrastructure 3 Enterprise, featuring:

- VMware ESX 3.5
- VMware VMotion
- VMware vCenter
- VMware High Availability (HA)
- VMware Distributed Resource Scheduler (DRS)

"One of the main challenges in any database environment is disk space, or lack thereof. Before virtualizing the DB2 environment, we were always looking for ways to trim back the data to allow for enough space on the server. The physical server that we had our production data warehouse on had as many disk drives as it could handle; to give that server any more storage, we would have had to move it to another physical server. With VMware, we can easily bring more disk space to the data warehouse environment if we need to. As far as high availability is concerned, we have never had any of our databases go down in the VMware environment. They have been migrated with VMotion innumerable times without any issues whatsoever. I actually sleep better at night knowing that if a physical server fails, that DB2 instance will restart on another server thanks to VMware HA."

— Michael Hoff
Systems Administrator, OMIG

With regard to IBM support of its products on VMware, Jolley recounts his experience at IBM's primary WebSphere conference: "While attending the IBM Impact Conference, I noticed over the past couple of years that IBM WebSphere is really embracing the VMware environment. Three to four years ago, VMware was still quite an unknown and not really supported, but it's fully supported now."

Another virtualized application that is critical to the company is IBM DB2. OMIG runs DB2 Enterprise Edition 8.2 and DB2 Express 8.2 on seven virtual machines, with databases of up to 100 GB. The company's data warehouse test and production environments are hosted on DB2 Enterprise Edition, and several in-house applications with smaller databases are hosted on DB2 Express. "The data warehouse environment is used extensively by our Statistical Reporting Department, which compiles key performance indicator reports used by our Senior Management and our independent agency partners on a daily basis. That's a critical function for our company. And many of the in-house applications that are important to our organization rely on DB2," explains Michael Hoff, Systems Administrator at OMIG, who is also responsible for database administration.

Microsoft SQL Server 2000 and 2005 and Microsoft Exchange Server 2005, which are also virtualized, play a vital role in OMIG's daily operations. "Our entire Exchange environment, with approximately 200 mailboxes, is virtualized. And we use Exchange in conjunction with another virtualized application, Symantec Enterprise Vault, for email archiving. Then, we have about a dozen virtual machines running SQL Server for a variety of databases that are as small as 30 GB and as large as 150 GB. We have a SQL back end for a number of components that support our policy management system, and our image management system is also a SQL database. These are all key databases that support our employees and independent agency partners, who need to be able to readily access data from our policy systems to do their jobs effectively. So we really rely on VMware virtualization for the vast majority of our day-to-day operations," says Hoff.

Beyond Server Consolidation: VMware Infrastructure Farreaching Benefits

Although OMIG's primary motivation for virtualization was server consolidation, the company quickly realized the full value of running its IT environment on VMware Infrastructure. According to Coe, "We were pleasantly surprised to see what VMware could do with distributed resources, high availability, and VMotion capabilities, of which we weren't aware at first. But once we realized what VMware was capable of, we were able to leverage its many features to create a robust and reliable environment."

Among the numerous advantages VMware Infrastructure provides in the administration of applications, rapid server provisioning is paramount. "When we migrated from WebSphere Application Server 4 to 5.1, and then again from 5.1 to 6.1, we were able to build out the new WebSphere environment on a new set of virtual servers which were created in a few minutes, without having to add any new physical servers into our environment. Then we simply installed the applications on the new virtual servers, and the migration was complete. The upgrade was seamless, and we experienced virtually zero downtime. That is a huge advantage for us." says Jolley. OMIG experienced a similarly smooth transition during its recent vCenter upgrade, and Jolley feels confident about the upcoming DB2 upgrade: "IBM recommends installing new instances of DB2 9.5 and then restoring database backups from the 8.2 environment into the new 9.5 environment. So, again, it will be a breeze with VMware."

DEPLOYMENT ENVIRONMENT

- ESX 3.5 running on IBM x3850 4 quad core Processors servers with 64 GB memory attached to IBM DS4800 and N3600 SANs
- Guest operating systems: Microsoft Windows 2003 Standard and Enterprise and Solaris 10
- Virtualized applications in production: IBM WebSphere Application Server 6.1, IBM WebSphere Portal 6.0, DB2 Enterprise Edition 8.2, DB2 Express 8.2, Microsoft SQL Server 2000 and 2005, and Microsoft Exchange , Symantec Enterprise Vault
- Virtualized applications in pre-production: IBM WebSphere Application Server 6.1, IBM WebSphere Portal 6.0, DB2 Enterprise Edition 8.2, DB2 Express 8.2, Microsoft SQL Server 2000 and 2005, and Microsoft Exchange , Symantec Enterprise Vault

As a testament to the reliability and robustness of VMware solutions, Coe provides his own anecdote: "Initially, we were trying to stay around 12 to 15 virtual machines per host, but we got ourselves into a position where we didn't want to buy another server yet, so we squeezed all of our 50+ production servers onto to just three hosts. Then, there was an occasion recently when we needed to apply patches to our production environment. Using VMotion, our network administrator was actually able to move our entire production environment onto two host servers without any noticeable degradation in performance. We were really impressed with the robustness of VMware and with the transparency of using VMotion to move a host out of the cluster and doing maintenance on it without any impact to the end user."

From a database administration perspective, Hoff comments on the benefits of running DB2 on VMware: "One of the main challenges in any database environment is disk space, or lack thereof. Before virtualizing the DB2 environment, we were always looking for ways to trim back the data to allow for enough space on the server. The physical server that we had our production data warehouse on had as many disk drives as it could handle; to give that server any more storage, we would have had to move it to another physical server. With VMware, we can easily bring more disk space to the data warehouse environment if we need to. As far as high availability is concerned, we have never had any of our databases go down in the VMware environment. They have been migrated with VMotion innumerable times without any issues whatsoever. I actually sleep better at night knowing that if a physical server fails, that DB2 instance will restart on another server thanks to VMware HA.

An Eye Toward the Future

Given its tremendous success in implementing and leveraging the features of VMware Infrastructure 3, OMIG is looking to VMware for additional solutions that will further benefit the company. One such solution is VMware Site Recovery Manager. OMIG is in the process of creating a remote site that is going to be fully replicated on the NetApp platform and implemented with VMware Site Recovery Manager. The target completion date for the new data center recovery solution is February 2009.

Results

- Consolidated approximately 40 physical servers down to seven
- Virtualized 99 percent of IT environment, including mission-critical applications such as IBM WebSphere, IBM DB2, Microsoft SQL Server, and Microsoft Exchange 2005, while increasing application performance and reliability
- Upgraded applications and applied patches quickly and seamlessly with no impact to users
- Experienced virtually zero downtime by implementing features such as VMotion, HA, and DRS

VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com