Oct. 01, 2008

From the Oct. 2008 Issue

Continental Airlines is the fifth largest airline in the world and the largest U.S. International Carrier. You may have heard of them. Their IT infrastructure consists of 192 sites around the globe with approximately 20,000 PCs and 2,000 servers. Yes, this is a complicated environment with mandatory uptime.

Has Continental moved to virtualization? Absolutely. Continental was in a critical power situation in its Houston data center. The airline literally couldn't add additional power circuits from its power provider. The solution was to begin virtualizing servers. This consolidation of multiple servers (140 in all to just 50) solved the power issue and improved utilization of hardware resources on the host servers, but it created a management issue.

As Tom Bittman of the Gartner Organization recently said, "Virtualization without good management is more dangerous than not using virtualization in the first place. Automation is the critical next step to help organizations stop 'virtualization sprawl,' which is not much better than server sprawl." Continental addressed this virtualization management issue with a software tool from Microsoft — System Center Virtual Machine Manager. That's a mouthful, so I'll refer to the tool by its acronym — SCVMM.

SCVMM allowed Continental to significantly reduce deployment time for replacement servers. Prior to moving to virtualization and SCVMM, Continental spent, on average, four weeks to provision a new server. This included a couple of days to build the server and more than three weeks lead time for purchasing, acquisition

and installation. SCVMM has a number of tools to not only manage virtual

originally planned. The second version, dubbed System Center Virtual Machine Manager 2008, is currently in Beta and supports Microsoft's hypervisor technology, which is officially planned to be released in August 2008, a few months before this issue will mail. This second version also adds the ability to manage VMware virtual machines, with support for XenServer VMs to follow a little later.

I have been testing SCVMM 2008 Beta with the release candidate version of Microsoft's Hyper-V. I did encounter an error when doing a physical to virtual (P2V) conversion on one of our servers, but the other P2V conversions I tried went without a hitch. In addition, SCVMM uses a technology called 'checkpoints.'
This allows us, for example, to create an image just prior to deploying an application we think might misbehave. If our worst fears are realized and the application behaves badly, with the checkpoint we created prior to installing the application, we can rewind or roll-back to the server state just prior to installing the application. This saves significant time over the previous method, which was to use Control Panel, Add-Remove programs to remove the misbehaving application and hopefully not experience any other ill effects of installing the application. Checkpoint technology is also beneficial for testing the latest service pack or security update. In addition to P2V conversions and checkpoints, SCVMM allows for the cloning (it's not just for sheep) of virtual machines. This provides an exact copy for backup or offsite storage purposes.

Accounting Firm Issues
Few accounting firms are the size of Continental Airlines; however, the issues are similar. We all have to face the obsolescence of hardware and are concerned about management of our group of servers. With the recent announcement of a Microsoft product called Essential Business Server, more and more firms (even

smaller firms who have been using Small Business Server) will be evaluating

The Ideal Situation

An ideal situation would be to invest in two physical machines, one to host four virtual servers utilizing the licensing discounts of Essential Business Server and a second for redundancy. Should something unforeseen happen to the primary virtual host machine, the images can be quickly started on the backup host machine. You might be thinking this is overkill, but remember, the cost of not being able to keep your staff working is measured in terms of the lost billable hours for the period of time it takes to bring services back online. And even if you never use that second machine, the peace of mind is worth its cost. Think of it as insurance. I suspect most firms make other insurance investments from errors and omissions to liability.

Microsoft vs. VMWare

It's clear that Microsoft is serious about virtualization and determined to take on market leader VMWare. In the Continental Airlines example, the airline IT group evaluated several virtualization products, and the head-to-head came down to Microsoft vs. VMWare. In this case, the Microsoft virtualization product came out the winner. Whichever virtualization technology you consider, don't bury your head in the sand. Understand that you need a well designed management tool to go along with your virtual environment.

Technology

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