



KEY HIGHLIGHTS

INDUSTRY: **MANUFACTURING**



SUBARU

CHALLENGE

The just-in-time method of manufacturing requires highly reliable inventory management systems, but Subaru of Indiana had reached its facility's capacity for servers. It could not install more backup systems without investing substantially in an upgrade of its air conditioning system.

SOLUTION

Subaru implemented VMware Infrastructure 3 to increase flexibility and system reliability, as well as reduce downtime, system administration workload, power consumption and the overall number of physical servers by more than two-thirds.

VMWARE AT WORK

VMware Infrastructure 3 Enterprise, featuring:

- ESX Server 3.0 with VMFS
- VirtualCenter 2
- VMware® VMotion™

DEPLOYMENT ENVIRONMENT

Guest operating systems: Windows Server 2003, Windows 2000 Server, Windows XP, Windows 2000 Professional, SUSE Linux

Applications: Microsoft SQL Server 2005 and 2000, Active Directory Environment, Custom Vehicle Tracking Software, Windows Software Update Services, Trend Micro Officescan Server, Crystal Reports Server, Verizon Wireless Sync Server, Microsoft IIS Server, Apache Web Server, GE Fanuc iFix Automation Suite, GE Fanuc Proficy Plant Applications Suite, Microsoft MSMQ Server, Atlas Copco ToolsNet, OLE for Process Control Server

"In the case of a server failure, we always have a complete VMware virtual machine image that we can run while we're fixing the hardware. We don't have to wait four hours for a new disk drive to arrive."

—Jamey Vester, Product Control Specialist, Subaru of Indiana

Subaru of Indiana

In its 620-acre facility in Lafayette, Indiana, Subaru of Indiana produces cars and SUVs for its parent company, Fuji Heavy Industries, and Camry vehicles for Toyota. It has the capacity to produce 21,800 vehicles a month, using the just-in-time method of manufacturing. This method requires a streamlined production line, with highly accurate and reliable inventory controls. A lack of any one component can stop the assembly line and trigger problems up and down the supply chain.

The facility suffered from several problems. Some of its applications had reliability issues, but the IT staff faced compatibility issues when it tried to use newer servers as hot standbys for older models. It was running the Microsoft operating systems-based clustering on physical hardware, but it required dedicated SCSI devices in the associated storage area network. However, expanding the number of servers would necessitate a major upgrade of the data center's power needs and the associated cooling system. To reduce complexity and increase capacity and reliability, the IT staff installed VMware Infrastructure 3 software.

Results

- Avoided storage costs: Subaru's previous clustering solution required dedicated SCSI storage. The company's current clustering solution still uses Microsoft clustering, but utilizes virtual machines on ESX Server, negating the requirement for a separate storage array. Subaru saved \$5,000 on the cost of storage while still maintaining data availability.
- Reduced the number of server racks from 10 to three and physical servers from 90 to 15, as well as associated leasing costs
- Increased annual uptime from 96.64 percent to 99.56 percent
- Freed IT from being locked into a particular hardware architecture
- Decreased hardware deployment time from weeks to hours
- Increased flexibility: IT can now expand the capacity of Subaru's crucial production-tracking system by standing up new virtual machines as required by each day's varying production needs.
- Improved business continuity options: IT can use the virtual machines as hot backups for physical machines without the need for new hardware to bring the system back up quickly.
- Improved power consumption: Subaru was able to avoid upgrading the power distribution circuits in its factory.