

JEGS High Performance

Building an efficient, responsive and cost-effective virtual infrastructure

Overview

The need

Fast-growing retailer JEGS wanted to provide resilient and responsive information services to employees and customers, but faced capacity and maintenance constraints for its server infrastructure.

The solution

Virtualized its existing HP and Dell servers to three IBM® System x® servers with Intel® Xeon® processors, and centralized data storage to an IBM Storwize® V7000 system.

The benefit

More than 6:1 server consolidation ratio cuts cost and complexity. Virtualization of both servers and storage enables flexible, efficient use of computing resources, and rapid deployment of new services.

Headquartered in Columbus, Ohio, JEGS High Performance is a specialist retailer of high-performance auto parts to both professional race drivers and car enthusiasts. Founded in 1960, JEGS now employs more than 350 people and has a 250,000 square-foot warehouse supplying its two retail stores, mail order business and website.

Doing more with less

JEGS faced a challenge common to many small and mid-sized businesses: how could it ensure that employees and customers always have access to the services and information they need, without the cost of maintaining a large infrastructure or an army of technicians?

Over time, the company's Intel processor-based server environment had grown as new applications were added, ultimately resulting in a sprawl of some 20 physical machines from both Dell and HP. Each server contained its own dedicated storage resources, and there was no way to share capacity or other resources between systems.

Adopting a server virtualization strategy paid immediate dividends when it came to upgrading a key system.

"I built a full test environment for our migration to Microsoft Exchange Server 2013, then seamlessly moved it into production. That just wouldn't have been an option with our previous infrastructure," says Scott Abrams, Systems Administrator, JEGS High Performance.



Solution components

Hardware

- IBM® System x3650 M4
- IBM Storwize® V7000
- Intel® Xeon® processor

IBM Business Partner

- Mapsys, Inc.
-



Scott Abrams, Systems Administrator at JEGS, comments: “We were running out of processing and storage resources on some servers, while others were barely used at times. We had more hardware than we really needed, and that meant we were also using more rack space and energy than strictly necessary.”

As well as being inefficient, the one-application-per-server model presented a potential business risk: if a particular physical server had failed, JEGS would have completely lost access to whatever service was running on that machine.

“The servers were mostly out of official support, and we didn’t want to test our luck any further,” says Abrams. “We set out to create a centralized, highly redundant and highly efficient infrastructure that would provide the extra capacity we needed with additional flexibility.”

Efficiency through virtualization

Working with IBM Business Partner Mapsys, Inc., Abrams gained approval for a server virtualization strategy based on three IBM System x3650 M4 servers running Microsoft Hyper-V. The Microsoft Windows virtual servers hosted on Hyper-V are stored on an IBM Storwize V7000 system, which provides highly flexible virtualized storage with built-in storage tiering from IBM Easy Tier®.

This landscape supports key Windows-based systems including Microsoft Exchange Server for corporate messaging and calendaring, Microsoft Active Directory for domain control and authentication services, file and print services, and several Microsoft SQL Server databases serving images for JEGS.com.

The System x3650 M4 servers at JEGS each have one 8-core Intel Xeon processor E5-2680 running at 2.7 GHz, with 384 GB of memory. The Intel Xeon processor E5 family offers the optimal combination of performance, built-in capabilities and cost-effectiveness for diverse IT requirements.

“This is a key advantage of virtualization: I can build whatever I want, and at zero incremental cost. Architecturally, we can continue to have one application per server, or groups of clusters for greater resilience, but without the hardware costs and inflexibility of a purely physical set-up.”

— Scott Abrams, Systems Administrator,
JEGS High Performance

Flexible and strong

Combining server virtualization on x3650 M4 servers with centralized storage on Storwize V7000 has enabled JEGS to overcome its previous resource limitations. The solution also reduces maintenance effort and boosts responsiveness, because engineers can easily add or remove virtual capacity on the fly. “We just allocate the virtual resources—CPU, memory, disk—that each system actually needs,” says Abrams.

To date, JEGS has virtualized 15 of its old physical servers, but already has more than 25 virtual servers in production on the x3650 M4 servers, including clustered environments for high availability. Abrams comments: “This is a key advantage of virtualization: I can build whatever I want, and at zero incremental cost. Architecturally, we can continue to have one application per server, or groups of clusters for greater resilience, but without the hardware costs and inflexibility of a purely physical set-up.”

By replacing its disparate HP and Dell servers with three efficient IBM x3650 M4 servers, JEGS has created a modular and easily scalable infrastructure that is also highly resilient. Abrams concludes: “During the implementation phase, I went around pulling network cables out of the back of the System x servers, and everything carried on working as normal. That degree of resilience means lower operational costs and excellent availability for our internal users, and of course the IBM solution will also significantly reduce our future hardware costs.”

For more information

Contact your IBM representative or IBM Business Partner, or visit the following website: ibm.com/systems/x

For more information about JEGS High Performance visit: jegas.com



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