Helping to realize the many benefits of server virtualization

IBM Server Optimization and Integration Services – VMware server virtualization

Highlights

- ***Facilitates business innovation through IT optimization or a service-oriented architecture***
- ***Assesses virtualization readiness and develops an in-depth business case***
- ***Provides detailed design planning and documentation***
- ***Includes implementation by qualified engineers and an integrated management platform, IBM Systems Director***

Getting more out of your x86 servers

It's no surprise that companies large and small are turning to virtualization. Traditional server environments typically operate at only 5 to 15 percent of capacity. But organizations can increase their utilization rates to up to 80 percent with x86 server virtualization.[1] What's more, they can achieve consolidation ratios ranging from 8:1 to 30:1 and dramatically lower their server provisioning and repurposing time.[2]

Here are some of the impressive results reported by companies worldwide:[3]

- *A major worldwide financial services organization achieved a 12:1 consolidation ratio and increased its central processing unit (CPU) utilization by 30 percent.*
- *An Indian petroleum refining and distribution company achieved a 17:1 consolidation ratio and expects to increase that to 30:1 with additional CPUs and RAM.*
- *One of Italy's largest banks improved its server utilization rates by 100 percent.*
- *A leading U.S. faucet manufacturer saved US$250,000 in hardware costs by reallocating existing units instead of purchasing new, achieving a 10:1 consolidation ratio.*
- *A South American energy company consolidated its servers by a 20:1 ratio.*
- *A federation of trade unions in Singapore consolidated its servers by 46:1, achieving a 26 percent savings.*

Creating a foundation for business innovation

Although these utilization and consolidation results are important, virtualization is taking on an even more important role today as an enabler of innovation. A successful virtualization project can improve your organization's ability to respond to new business needs by providing a foundation for a more dynamic IT environment. Server virtualization can facilitate the alignment of IT to business objectives. It can play a major role in IT optimization. It can act as a key building block in a service-oriented architecture (SOA) environment. It can even contribute to the greening of your data center. What's more, by helping to lower your total cost of ownership (TCO)—including costs associated with hardware purchases, maintenance and facilities—virtualization can free up budgets for new initiatives.

While it's clear that x86 server virtualization can deliver many benefits, there's a catch. To fully realize these benefits, organizations require expert planning, design and implementation for their virtualization projects—and that's where IBM Server Optimization and Integration Services – VMware server virtualization comes in.

Building a virtualization business case

IBM Server Optimization and Integration Services – VMware server virtualization starts with a solution framing step that can help answer a key question: What can x86 server virtualization accomplish in your IT environment? IBM helps build a business case that projects your TCO and ROI. This, in turn, can help you to sell the virtualization project within your organization, especially to business executives who might be skeptical and therefore unwilling to fund it.

This solution framing step also looks at your business readiness and recommends strategies for supporting a shared service model. Working with your business and technology managers, an IBM IT architect documents your current business processes surrounding server purchasing, provisioning and management. This review details budget allocation and how budgets are currently assigned to projects and to the common infrastructure. The architect also documents your current operational and support model for change management, help desk and support staff roles, along with training needs and any internal service level agreements (SLAs).

Next, your IBM architect assesses your backend infrastructure components—for example, storage, network, backup, systems management, security and time synchronization—to help ensure that they can support virtualization. The architect also reviews and documents your current environment and makes recommendations for essential changes. Leveraging tools such as CiRBA's enterprise software, as necessary, the architect can gain a clear understanding of your environment and the various systems' configuration and utilization. The architect also analyzes business, infrastructure and workload constraints in order to accurately calculate the size of a potential virtualization platform.

Finally, the IBM architect assesses the virtualization host server to determine if it is large enough to deliver acceptable levels of services to all guests. The architect also performs a detailed hardware inventory and performance utilization analysis for suitability within a virtualized environment.

Creating a detailed design for your project

To produce a virtual infrastructure design that meets your specific requirements, your IBM IT architect next performs a second step, plan and design, which

produces a detailed design document that sets naming and security standards, defines the disk and network structure, and documents any required system tuning elements. This document includes the following:

- *Security and administration model*
- *Backup methodology*
- *Host physical and virtual disk layout, specifically file system structure and dedication of disks to guests, where applicable*
- *Virtual network topology structure and format, plus interconnection with the physical network*
- *VMware® service console configuration*
- *VMware kernel device share factor configuration*
- *Host server hardware specification*
- *VMware VirtualCenter server configuration, including database and directory services integration*
- *Virtual machine distribution among hosts*
- *Processes and procedures for ongoing management*
- *Implementation tables and configuration settings*

All of this information provides the level of detail an IBM engineer needs to perform the implementation of the host server and management environment.

Facilitating a successful implementation and skills transfer

Because successful implementations require qualified engineers, IBM provides an engineer trained in your specific virtualization product. He or she implements your system as documented during the design step and transfers skills to the individual who will be responsible for the long-term operation of your environment. By staying actively involved throughout the implementation, your IT staff person can gain comprehensive skills that could otherwise only be learned through theoretical training.

IBM also offers the following optional custom services for postimplementation support:

- *Operational support*
  - *Monthly "health checks"*
  - *Thirty hours of engineering support per month*
  - *Optional four-hour emergency response service*
- *Full remote management services*
  - *New guest provisioning*
  - *Host hardware support*
  - *Virtualization software support*
  - *Status monitoring*
  - *Performance and capacity management*
  - *Documentation*
  - *Security management*
  - *System software support*
  - *System backup and recovery*
  - *Infrastructure resilience and operational processes*

Why IBM?

With experience gained in managing more than 206,000 servers worldwide, IBM has the in-depth technical skills necessary to plan, design and implement x86 server virtualization in heterogeneous environments across servers, storage and network and systems management functions. IBM also provides architecture, processes and standards, an integrated server management platform — IBM Systems Director — and extensive business and technology transformation capabilities. And, thanks to IBM's global delivery organization with its common models, methodologies and tools, you can take advantage of IBM Server Optimization and Integration Services – VMware server virtualization from virtually anywhere in the world. In fact, IBM has 208 VMware-certified professionals in 28 countries, including 72 in Europe alone. IBM is VMware's largest systems integration partner and one of its largest original equipment manufacturer (OEM) partners.

For more information

To learn more about IBM Server Optimization and Integration Services – VMware server virtualization, contact your IBM representative or IBM Business Partner, or visit:

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1, 2 VMware, *Server Consolidation & Containment*, VMware Solutions Flashcards v1.0, August 29, 2006.

3 VMware client case studies.

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