

Simplifying IT and reducing costs for flexibility and responsiveness
in an on demand world



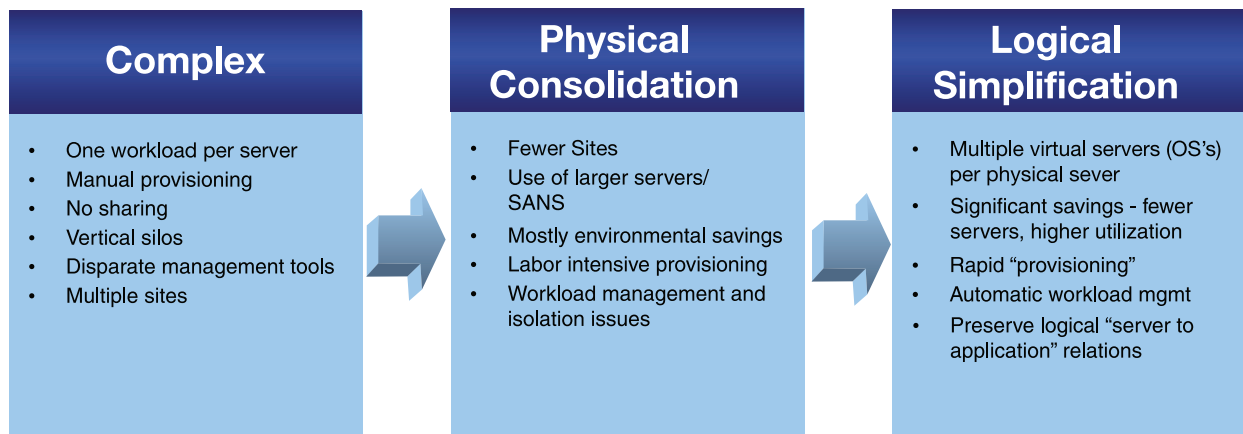
Optimizing IT investments



Successful companies everywhere recognize that a flexible and responsive IT infrastructure plays a key role in helping achieve business goals. Yet, they are often hindered by complex infrastructures, characterized by racks of underutilized servers, siloed applications and data, disparate management systems and manual provisioning. Far from flexible and responsive, this type of infrastructure can be difficult, costly and time-consuming to operate—while often limiting innovation and market-responsiveness.

The IT challenge is clear—simplify and optimize the infrastructure so that you can efficiently respond in a cost-effective way. IBM brings the technology, business and industry expertise for simplifying the IT environment for real business value. IBM systems, in conjunction with an extensive portfolio of software and services, provide a foundation that helps you get the most out of IT. You can leverage complementary approaches for:

- Improving IT asset utilization
- Enabling rapid response to changing business requirements
- Employing virtualization and systems management technologies to increase flexibility and responsiveness



IBM server and storage products help to physically consolidate the environment, while advanced IBM technologies help with logical simplification for more flexibility and better asset utilization.

Improving IT asset utilization

Because complex infrastructures are often rigid, it can take longer to respond to business needs. Addressing layers of complexity can make you more responsive. But where do you start?

Simplifying the physical infrastructure is the first step. You can employ fewer, more capable IBM systems to run applications and store data, leading to more cost-effective operations and infrastructure management.

With IBM's commitment to industry-standard, cross-platform technologies and the Linux® open source movement, you have a choice of several different architectures, technologies and even printing solutions to achieve your goals.

Activities

- Physical system consolidation
- Logical “virtualization” of applications and processing power
- Flexible management of virtualized infrastructure

Potential benefits

- Maximize utilization
- Increase productivity
- Improve ROI
- Lower operating costs
- Focus on growth
- Improve service levels

IBM @server BladeCenter

IBM blades are slim, hot-swappable servers that plug into a single IBM® @server® BladeCenter® chassis like books in a bookshelf. This solution helps consolidate existing systems and simplifies the deployment of new ones—just slide a new blade server into the chassis and you have scaled-out with modular processing power. Need to run multiple servers with varying speeds, types of processors and operating systems? No problem. The BladeCenter can support a mix of processors and operating systems all in the same chassis.



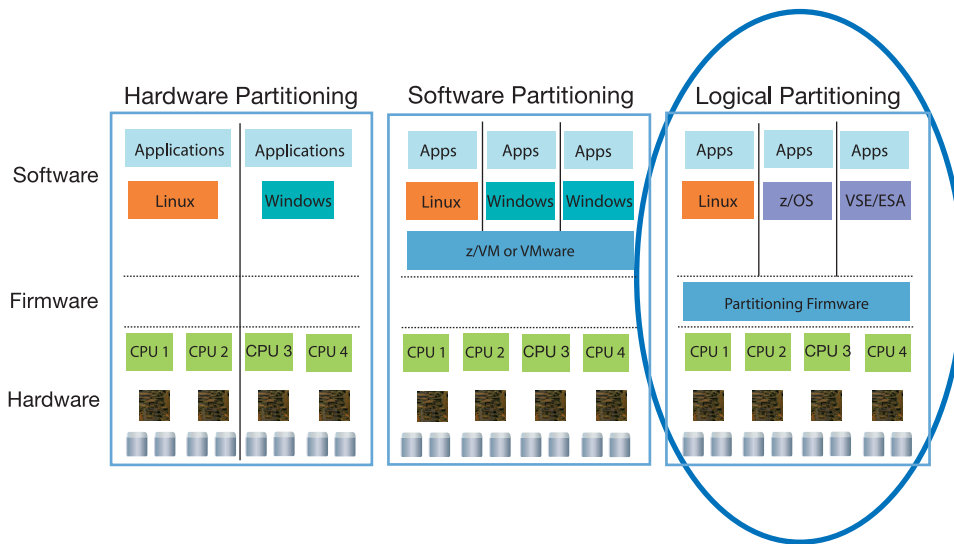
IBM @server Cluster 1350

Clustering is an appropriate solution for handling a range of computing challenges, from consolidating multiple workloads to addressing unexpected peaks in demand. IBM clustering solutions enhance availability, scalability and security while providing a single point of management control. The IBM @server Cluster 1350 is a comprehensive solution that simplifies and expedites deployment of a Linux cluster. It scales up or out with minimal or no downtime, enabling a rapid response to changing requirements.

IBM System z9 and IBM @server iSeries, pSeries, xSeries and zSeries

IBM offers a choice in systems that are uniquely designed to help you simplify and consolidate your physical infrastructure. Together, they span a range of processing power needs and support different sets of operating systems including IBM AIX 5L™, IBM i5/OS™, Linux, Microsoft® Windows® and IBM z/OS®. Capacity on Demand and virtualization features are built-in to allow quick and easy adjustment of the infrastructure.

Through dynamic logical partitioning (LPARs), several of these systems can run multiple operating systems and applications simultaneously, so that you can manage more applications on fewer systems. The pSeries®, iSeries™ and IBM System z9™ and zSeries® systems are designed to take it one step further by automatically borrowing idle processing power to handle other workload needs on the server.



IBM System z9 and zSeries . . . in a class of their own

Core competencies like virtualization, business continuity, intelligent workload management, autonomic functionality, secure transaction processing and the capability to run at utilization levels up to 100% put the IBM Mainframe in a class of its own.

With all of its legendary capabilities, the Mainframe is the premier platform for large businesses running mission-critical applications, consolidating and managing workloads and providing a powerful, secure and reliable computing environment. Specialized processors are available today for running Java™ and Linux workloads on the mainframe, helping you to extend the value of your investment.



As a key platform for system technology innovation, the System z9 and zSeries mainframes will continue to offer leading-edge IBM system technology. They will also play a central role in enterprise-wide infrastructure management as part of the IBM Systems agenda.

Linux

Linux is an open operating system that runs on all IBM server products and supports all IBM TotalStorage® products. It offers a unique opportunity to reduce the number of operating systems and lower operational costs. Linux helps ease management and support needs across the environment and enables you to run more applications on fewer physical devices. Due to its reliability, Linux has been experiencing double-digit growth over the past several years.

The IBM Systems agenda for On Demand Business is IBM's strategy to deliver systems around three core design principles: virtualize everything, commit to openness and collaborate to innovate. With these principles, IBM is answering the call to help our clients grow their businesses.

Enabling response to changing business requirements

In an on demand world, a rigid infrastructure is not sufficient for companies on the road to becoming a true On Demand Business. The next step beyond physical server consolidation is logical consolidation, which makes it fast and easy to allocate or add resources to meet dynamic business requirements. Several IBM technologies—all available today—help you make the most of what you already have.

Capacity on Demand

Capacity on Demand is designed to enable you to quickly and easily scale up or out so that you can grow without installing additional servers or storage devices and without disrupting operations. Because costs vary with usage, Capacity on Demand can help handle the inevitable variations in the need for computing resources that all businesses experience.

BladeCenter, iSeries, pSeries and zSeries servers, System z9 and IBM TotalStorage products offer the ability to either permanently or temporarily increase processor capacity, memory or storage device utilization. The new xSeries® 460 allows you to scale out in a “pay as you grow” manner so that you can expand from four to thirty-two processors through affordable and modular building blocks.



IBM Grid computing

IBM Grid computing enables a new level of power, flexibility and integration. A specialized form of virtualization, grid computing taps into IBM server processing power, IBM TotalStorage capacity and network bandwidth to create a single system image that grants users and applications access to vast IT capabilities. It gives you the power and flexibility to address new requirements, for example, easily scaling out by allocating more nodes of the grid for a high-demand workload.

Grid and Grow

Grid and Grow is an integrated software, hardware and services solution for businesses large and small. It helps companies with compute-intensive applications accelerate business results by utilizing an open, robust and scalable architecture. With this solution, you choose among options for a BladeCenter system, operating system and scheduler. It enables you to scale out the grid implementation as your needs grow.

Speeding deployment and increasing flexibility through virtualization and management

You need tools and technologies at your fingertips that let you effectively achieve change. New applications have to be deployed quickly and seamlessly to benefit customers, end users and the relationship with business partners and suppliers. IBM has industry-leading technologies that can help to control resources through an open standards-based approach. IBM virtualization and system management tools are the next step in IT optimization.

IBM Virtualization and the IBM Virtualization Engine platform

IBM Virtualization technologies are flexibility in action. Virtualization transforms rigid, inaccessible resources into a flexible, dynamic infrastructure that you can easily control. In a virtualized environment, resources—like servers, software and storage—are pooled and shared so they can be leveraged to respond to changing requirements. Need to deploy a new application? With virtualization, you look across your pooled environment, allocate available server and storage resources on existing systems and off you go. You deploy more quickly, better utilize resources, improve service levels and help keep costs under control.

IBM Virtualization has its roots in the mainframe world, where it was introduced and has been in use for over 35 years. IBM System z9 and zSeries servers use a variety of hardware and software technologies—z/VM® (virtual machine), PR/SM (processor resource systems manager), Enterprise Workload Management, Intelligent Resource Director, HiperSockets™ and more—to achieve virtualization and share resources across multiple operating system environments.

But data centers do not run on mainframe systems alone. Through the new IBM Virtualization Engine™ platform and systems technology, IBM brings the power and flexibility of virtualization to pSeries, iSeries and xSeries systems. The Virtualization Engine platform provides a consolidated point of systems management within a single system or across multiple, diverse platforms so that businesses of any size can implement a cross-platform virtualized environment.

IBM will be building on this thought-leading technology over the next five years, where plans call for helping you “virtualize everything.” This is an exciting technology today—with more to come in the future!



IBM TotalStorage virtualization

You can also manage your heterogeneous storage resources as a single virtual pool. The IBM TotalStorage Open Software family helps optimize the storage infrastructure. The four products that help you achieve storage virtualization are: IBM TotalStorage SAN Volume Controller, IBM TotalStorage Productivity Center, IBM TotalStorage SAN File System and IBM TotalStorage Virtual Tape Server. You quickly align storage resources to business goals and free your staff to focus on other priorities when you implement these technologies.

IBM technology leadership

IBM is a technology leader in a number of systems technologies including: POWER™ processors, grid computing, virtualization and Capacity on Demand. This leadership translates into products that help clients create an optimized operating environment.

IBM virtualization and systems management

Better systems management puts you in control of availability and this contributes to keeping service levels high and management costs low. IBM systems management and virtualization tools help to manage systems and workloads from a single point of control and provide autonomic computing capabilities so that systems can manage, heal and protect themselves.

Tools such as IBM Enterprise Workload Manager (eWLM), IBM Director, TotalStorage virtualization, and IBM Tivoli® Provisioning Manager/Intelligent Orchestrator allow you to centrally monitor and manage your virtualized environment.

Helping you achieve IT optimization goals

From IBM Global Services

IBM Global Services has the technical know-how you need to make the most of your IT infrastructure, with expertise in designing and implementing solutions in a variety of industries and across a range of areas including business continuity, server consolidation, virtualization, grid computing and others.

IT Optimization Solution Framing Services, Infrastructure Services Readiness Engagement for Virtualization and IBM Accelerator for Service Management for orchestration and provisioning are services that can help you make significant strides as you optimize your infrastructure.

From IBM Global Financing

The IBM Open Infrastructure Offering (OIO) helps you organize and optimize your IT operation in alignment with your overarching business strategy and design. OIOs are created through a customized contract that allows IBM to pull together a total business solution tailored to your unique needs, combining hardware, software, professional services, maintenance, financing and disaster recovery into a single customized agreement. Our total solution financing combines a simplified acquisition process with a consolidated monthly bill.

Get started today

IT Optimization sets the foundation for an On Demand Business in which a responsive, variable, focused and resilient IT infrastructure is a key success factor.

IBM brings a range of industry-leading technologies that help you streamline your physical environment and virtualize it to align quickly to changing business goals. You can get started today. For more information visit:

ibm.com/servers/eserver/about/productivity.





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