IBM

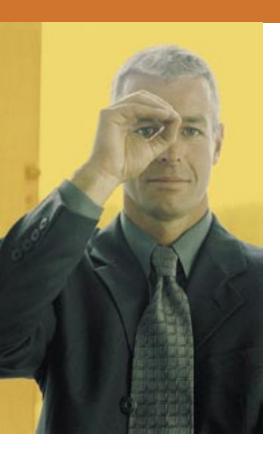**Linux on IBM @server zSeries**

Clear results for the on demand world

*Linux on IBM @*server *zSeries.* Clear results for the on demand world.

As we enter a new business world—
the on demand world—the ability
to sense and respond to changing
market conditions, customer demands
and external threats may become
an important factor determining your
company's success.

Because change is unpredictable in this new world, flexibility is
key. At the same time, your business will need to find new ways
to help cut costs and increase revenue, while still allowing high
availability of critical services, applications and data—across
your enterprise from end-to-end.

A true on demand business is one that can respond on the fly to market opportunities, customer needs and external pressures. How? Through an IT infrastructure that can support changing business objectives. At IBM, we call this infrastructure an on demand operating environment. It is one that is:

Integrated—so applications and processes can interoperate from end to end
Open—so you have the flexibility to run the applications and middleware your business needs
Virtualized—so you can help improve utilization rates, realize cost-efficiencies and leverage your existing assets
Autonomic—so less human intervention is needed to manage your system, allowing you to focus on your business, not your technology

Building this type of environment means starting with the proper foundation in place—and there is no better foundation than Linux running on the mainframe. Combine the legendary scalability and reliability of IBM @**server**™ zSeries® mainframe servers with the flexibility and open standards of the Linux operating system, and you get a solution that can achieve clear results in the on demand world.

Maximizing your IT investment

Companies in every industry are looking for ways to reduce costs and enhance their existing technology investments. As a result, strategic IT investments often end up taking a backseat to aggressive cost cutting. Linux, however, provides an attractive alternative, and running Linux on a zSeries mainframe server may be the smartest move your company can make.

Why? Because zSeries virtualization capabilities allow you to divide all server resources so you can run multiple platforms on the same server. With zSeries, you can consolidate from tens to hundreds of independent Linux servers onto a single server—and you can deploy them in minutes, not days or weeks. This consolidation can help reduce costs and minimize complexity while enabling business integration and easy access to resources. An integrated infrastructure allows your business to be responsive and flexible so you can meet the needs of e-business on demand.™

This unique combination of open standards and a highly reliable, scalable computing environment is drawing customers around the world to Linux on zSeries servers—an impressive feat, given the few years that Linux has been available on the mainframe. With 40 years of technological innovation behind them, zSeries servers offer industry-leading virtualization technology.

And that's not all. IBM offers a wide selection of robust middleware including WebSphere®, DB2® and Tivoli® products. There are also many Linux applications for zSeries available from leading software vendors around the world such as Aptrix, BEA, BMC, Linuxcare, Oracle, S2 Systems, SAP, Software AG and Stonesoft, among many others. In addition, key Linux distributors support Linux on zSeries, including SuSE (United Linux) and Red Hat. Finally, universities around the world are educating students with exceptional Linux skills—helping to provide Linux expertise and resources.

Linux on zSeries — an ultimate solution for e-business on demand

Building an on demand business takes time and needs a solid foundation. Linux on zSeries servers can help provide the characteristics that make up an on demand operating environment so your business can be more responsive, open and resilient to market changes, customer demands and external pressures.

Open standards for flexibility, less complexity and investment protection

IBM embraced Linux early on because open standards are the key to integrating business from end-to-end—not only because they help simplify business integration, but also because they can help a company to deploy new solutions more quickly and accelerate the time to market for new products and services.

Linux, because it is open, also provides you with the flexibility to choose the best applications for your business needs and helps your investment to provide value in the future. By making it easier for multiple applications and middleware to work together, Linux can help boost productivity within your enterprise as well as with your key suppliers and partners.

zSeries servers offer one of the world's most reliable and scalable environments for Linux—ideal for running new and open e-business applications right alongside existing core business applications. zSeries servers help make it easy to manage multiple diverse workloads while balancing resources across those workloads for optimal performance and maximum utilization.

Virtualization for efficiency and responsiveness

Virtualization can help reduce complexity, lower costs, enhance business resiliency and maximize the utilization efficiencies and availability of your applications and data. Virtualization technology allows you to consolidate applications and workloads onto a single server by dividing it up into logical partitions and/or creating multiple virtual servers within a single partition.

What sets Linux running on a zSeries server apart from other solutions is the advanced virtualization technology of zSeries. With zSeries servers, you can run from tens to hundreds of virtual Linux servers on a single server.

zSeries virtualization is multidimensional, with workload management technology designed to allow the system to share resources and direct them dynamically and virtually whenever and wherever they are needed. You set the workload priorities determined by your business needs, and zSeries dynamically manages them for you. zSeries servers are designed to run at over 90 percent server utilization during peak hours for real production workloads—helping you do more business with fewer resources.

zSeries virtualization also allows you to deploy virtual Linux servers without adding new server footprints, so your business can easily explore the wide range of available open source tools and applications without making a large up-front investment.

Because virtualization allows existing workloads to run side-by-side with Linux servers on the same machine, zSeries servers also help give your company the freedom to explore new strategies while leaving existing applications untouched, which can translate into higher utilization rates and lower costs.

The bottom line? Virtualization on the zSeries can help empower you to sense and adapt to shifting market conditions in real time—making your business more responsive to customer needs.

Challenge: *A telecommunications company chooses to consolidate multiple servers running UNIX workloads on a single server*

Solution: *Migrating order management and billing applications to Linux on zSeries helped provide mainframe reliability for the company's critical applications with greater flexibility. Today, they run 70 virtual Linux servers and adding more is a snap*

Benefits: *Rapid virtual server deployment, highly reliable operation, rapid implementation, simple application porting, flexibility to choose the best platform for each application*

Integration for greater business value

An integrated business can be more responsive, more flexible and more efficient. By integrating business processes and improving data sharing, a company can deliver more value in less time and in a more cost-efficient way.

Integration brings together key business processes and data from across your enterprise. It means breaking down silos to gain a unified view of customers and competitors so you can better sense and respond to demands and threats. Integration also can help you deploy new solutions more quickly and process transactions more efficiently.

Challenge: *A government agency seeks to provide new online services to citizens, integrating those services with existing ones*

Solution: *The agency replaced its existing zSeries server with a newer model and added Linux to the operating environment, allowing legacy applications to continue running while also helping to enable new and existing applications to benefit from the openness and flexibility of Linux on zSeries*

Benefits: *Deployment and integration of new applications, easier development, scalability for growth and significant cost savings*

Linux on zSeries servers are designed to provide a highly secure yet integrated environment in which applications and data can share system resources. The integration capabilities of zSeries servers are based on open standards and leading-edge technologies that are designed to provide extremely high-speed connections between applications in the same physical server.

zSeries servers give you the choice of running multiple Linux, z/OS®, z/VM®, TPF or VSE/ESA™ systems simultaneously, while integrating key middleware components including IBM WebSphere, DB2 and Tivoli products. This impressive level of flexibility means that you can integrate your business with the zSeries while helping to maintain an effective mix of platforms and applications to achieve your goals.

Self-managing, self-healing features for agility and resilience

Innovative self-healing features, built into every zSeries server, are designed to help systems manage and heal themselves and dynamically adapt to changes. That means helping to keep your system running at peak performance, reduce administration costs and let you focus on running your business rather than managing your IT infrastructure.

The concept of servers that take care of themselves is modeled after the autonomic function of the human nervous system. Just as the human body automatically breathes, digests and fends off viruses, a zSeries server is designed to manage, repair and protect itself.

Because they incorporate IBM technologies that have been developed over decades of research and fine-tuning, zSeries servers are leaders in autonomic computing abilities. Dynamic resource allocation helps to ensure maximum transaction processing—so your customers, suppliers and employees can count on reliable service. Self-diagnosing service processors are designed to perform routine preventive maintenance on all aspects of the system to help keep critical applications running without interruption. Predefined business priorities allow the system to dynamically direct resources to top-priority work so your most important applications can have the power and bandwidth they need at the right time.

Mainframe reliability, scalability and availability enable growth

The flexibility of Linux combined with zSeries virtualization, application availability and autonomic management capabilities make zSeries servers an ideal environment for e-business. However, the traditional mainframe benefits that zSeries servers also offer—legendary performance, reliability, security and scalability—can help support on demand operation.

During spikes in demand, the ability to scale up and out at a moment's notice can be the difference between flawless execution and slow response times or even system crashes. A single zSeries server can scale up to millions of transactions per day or scale out to manage tens to hundreds of virtual Linux servers. zSeries servers are among the most secure servers on the market, with reliability measured in decades—not weeks or days. In fact, the clustered zSeries system is designed to have up to 99.999 percent availability.

zSeries servers are designed to provide the highest qualities of service to help support high-volume, transaction-driven applications and other critical processes, supplying tremendous power and throughput for information-intensive e-business on demand.

The right partner for your on demand business

Moving forward, the need for organizations to move faster, improve flexibility and bolster collaboration on a global level will undoubtedly grow—and the importance of having a partner like IBM will become increasingly apparent. Through our extensive Linux expertise, the zSeries technology advantages and relationships with leading software vendors, IBM offers solutions and services for Linux on zSeries servers—combining the functions you need to help keep your business running in a highly secure and reliable environment with the scalability and flexibility to help you get clear results for your business demands.

Because there is no one-size-fits-all approach to business, IBM has designed several Linux on zSeries solution offerings to choose from, plus an array of software and business consulting services to help get you up and running.

IBM @server **Integrated Platform for e-business on zSeries** provides a turnkey e-business environment for companies looking for out-of-the-box functionality. By integrating best-of-breed hardware and software products, this packaged solution can get you up and running with Linux quickly—at an attractive package price. You get a pretested, optimized e-business platform that integrates zSeries hardware, Linux distributed by SuSE and core IBM e-business products to assist your on demand transformation.

IBM @server **zSeries Offering for Linux** provides an enterprise-class server that can accommodate all of your organization's Linux workload needs in a single server footprint at an affordable price. The zSeries Offering for Linux includes a dedicated zSeries Linux server, ideal for consolidation of work typically handled by UNIX® and Microsoft® Windows® servers, to help simplify systems management, boost performance and reduce overall costs.

Our zSeries Business Partners are supporting the Linux-enabled software and hundreds of Linux applications available from software vendors and the open source community. IBM Linux Integration Centers, IBM Competency Centers and IBM Solution Partnership Centers around the world can help customers design and deploy Linux solutions, help software vendors migrate their applications to Linux and provide software vendors with facilities to test their applications.

Linux Services

What is Linux? What should I do? Help me to do it! IBM Global Services (IGS) offer a wide spectrum of Linux services to help you at every stage of e-business. Whether you want to choose applications, deploy or test a new Linux solution or port applications, IGS has experienced, trained professionals to help you every step of the way. Services include:

- Technology assessment and consulting
- Deployment assistance
- Migration and server consolidation
- IBM DB2 Universal Database™ (UDB) software installation
- WebSphere Application Server implementation and migration
- IBM Managed Hosting – Linux Virtual Services
- Operational support and technical training
- Customized offerings

Challenge: *A U.S. publisher launching a Web site needs high availability, the ability to manage usage fluctuations and a means to provide high scalability*

Solution: *IBM Managed Hosting – Linux Virtual Services delivers capacity as an on demand utility service—giving the company a stable infrastructure for e-business on demand and allowing it to pay only for the processing, storage and networking capacity it needs at any given moment*

Benefits: *Enterprise-class reliability, flexibility and scalability without up-front capital investment*

For more information

To learn more about IBM @server zSeries and Linux, or about how other customers are using Linux on the mainframe, please contact your IBM representative or IBM Business Partner or visit **ibm.com**/eserver/zseries/linux. For more information on Linux offerings across the IBM @server product family, please visit **ibm.com**/eserver/linux.

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