Linux on IBM System z

Highlights

- **Unify your IT infrastructure with IBM System z™ virtualization technology and Linux® open standards**

- **Get Linux quality, leveraging the historical System z strengths: reliability, availability, security and the established business processes of the mainframe**

- **Integrate open and industry standard-based solutions with core data and business applications available with IBM z/OS® and IBM z/VSE™ on System z today**

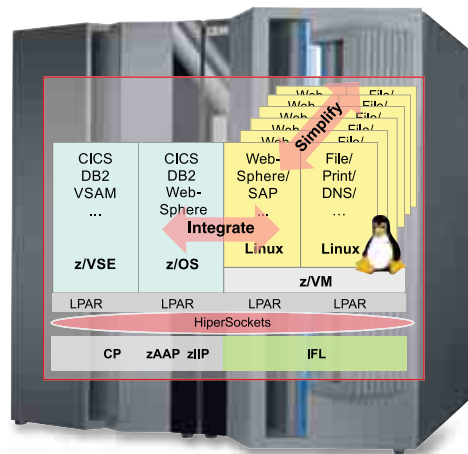- **Enhance your System z investment and utilize the large Linux application portfolio and widespread Linux skills**

Open to take back control

In today's world, businesses and their infrastructures have become fragmented into multi-tier solutions and technology spread across the company.

Businesses are realizing the need to address the complexity of their IT infrastructure. The requirements demand more responsiveness and flexibility than ever before—managing risk while lowering costs and taking control through less complicated management.

Many businesses are realizing that mainframes—IBM System z9™ Enterprise Class (z9 EC), IBM System z9 Business Class (z9 BC), IBM eServer™ zSeries®—are critical elements in helping to take back control of and streamline their IT infrastructures.

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Linux continues to gain acceptance in the marketplace. That's due to its well-known attributes: rich security features, stability, flexibility, interoperability, portability of code and skills and reduced software costs.

While Linux brings those advantages to all the platforms that it runs on, choosing the correct platform for your Linux applications can provide significant advantages.

Linux running on System z is based on the common Linux kernel. While the kernel is common to all hardware that Linux runs on, it derives unique benefits when running on mainframe hardware with unique qualities of service and virtualization capabilities that distinguish System z technology from other architectures.

IBM mainframes have incorporated a comprehensive array of core strengths over 40 years of mainframe development, innovation and refinement. Advanced virtualization, intelligent workload management, the unique ability to support diverse workloads concurrently, high levels of security and intelligent recovery capabilities are just a few of the strengths that make the System z

platforms the ideal choice to host mission critical applications and serve as a hub for the IT infrastructure. Add the historical mainframe strengths—reliability, availability, scalability and security, and the result is a system designed to deliver high levels of resource utilization and advanced asset protection. The System z platforms can help to simplify the IT infrastructure through the consolidation of workloads, protect data and maintain privacy, minimize downtime and reduce data loss and provide an environment to run Java™ technology-based applications alongside core applications and data.

The extended capabilities of the new System z platforms will help to bring these benefits to your IT infrastructure.

Linux virtual servers on System z can help unify your IT infrastructure, leveraging the comprehensive virtualization technology and intelligent workload management. You can grow virtually with IBM z/VM® virtualization capabilities, consolidating from tens to hundreds of independent servers onto a single System z platform.

The deployment of more and more distributed servers often results in a level of complexity that is unmanageable and increasingly expensive. Virtual Linux servers may help you to unify your IT infrastructure through consolidating that environment on a single centralized server, potentially providing better resource utilization, easier maintenance and more effective and efficient operations. As a result, unchecked server sprawl and ongoing fragmentation may be reduced.

Designed to run multiple and mixed workloads concurrently and new workloads integrated with existing workloads, System z environments share resources and direct them, according to user defined policies, virtually and dynamically whenever and wherever they are needed. A highly efficient and security-rich network called "HiperSockets™" is built into System z servers, providing additional security and requiring less external networking hardware and software.

Virtual backup servers, hot standby servers and other servers that would require physical resources in distributed environments require minimal resources when not in use. New servers can be deployed in minutes and resources can

be reclaimed quickly when they are no longer needed. Virtual Linux servers residing on a System z platform can share data and applications, and be managed and controlled from a central point, thus reducing complexity. These are just a few examples of the scope and benefit of the advanced levels of virtualization that distinguish System z technology from other operating environments.

Linux running on System z evolves to a higher level of quality by leveraging historical mainframe strengths like reliability, availability, security and established business processes. The quality of your business depends on the comprehensive IT environing it is based on: the application, middleware and operating system, the hardware and network. The System z has been designed using a holistic systems approach that includes the latest operating system, middleware, storage and networking technologies. Linux applications running in the System z business environments benefit from high qualities of service and premier features provided by the System z environment such as IBM Geographically Dispersed Parallel Sysplex™ (GDPS®) providing enhanced disaster recovery through the

ability to switch production systems in secondary data centers. The system administration for backup/restore implementations such as the IBM Tivoli® Storage Manager™ on z/OS is providing the ability to back up and archive data from all Linux servers running on System z platforms. System z also provides additional capacity for your operation in emergency situations with Capacity BackUp (CBU) for all workloads.

The System z environments are ideal for applications that require high availability and security while supporting variable workload demands. Linux can leverage the established processes, disciplines and attributes, becoming an integrated element of the mainframe environment.

The high level of qualities of Linux on the System z platform plays an important role in application hosting in many enterprises.

Linux provides open and industry standards to world class System z to ease the integration of new solutions with core data and business applications available with z/OS and z/VSE today. Business integration is about enabling business flexibility through the integration of systems,

data, applications, processes and people across and beyond an enterprise, giving organizations the power to reduce complexities, extend existing IT investments and dynamically respond to changing business conditions.

Open standards are important to end-to-end business integration. They can help simplify integration, help your company deploy new solutions more quickly and accelerate the time to market for new products and services.

System z integration capabilities are based on support for open standards, such as Linux, Service-Oriented Architecture (SOA), J2EE™ and Web services. They are based on leading-edge technologies that are designed to provide extremely high speed, security-rich connections between applications in the same physical server.

The IBM WebSphere® family is a major player for business integration. WebSphere enables businesses to respond to changing business conditions with improved flexibility and speed. WebSphere creates a reliable, high-performance environment for deploying and running applications, enabling companies to reach users in new ways and support new business

models. In addition to WebSphere, IBM DB2®, Lotus® Rational® and Tivoli products are helping to bring together information from different systems into a coherent whole.

Linux-based applications, integrated with z/OS, z/VM or z/VSE data and applications, allow businesses to enhance investments in existing applications, while deploying dynamic new customer and business to business services.

This Linux environment provides the flexibility to be compatible with existing systems while preparing for the future.

Linux can enhance your System z investment with new applications and the widespread Linux skill base. As an open source technology, Linux makes IT infrastructure—and therefore business itself—more modular, allowing companies to use tools from multiple vendors to create systems that can immediately work in concert.

The support of open standards in System z environments increases the skill base for the platform. Anyone with Linux skills is a potential System z application developer, and the same is true for J2EE skilled developers.

Linux provides you with the flexibility to choose the best applications for your business. Linux applications can run wherever Linux runs, because Linux is designed to be platform independent. That allows for an application, once available on Linux, to be deployed on other Linux systems easily with a simple re-compile. Many vendors have recognized the values of open-standards, potentially making it more cost-effective to develop new applications. Open-source software helps industry players to collaborate successfully with one another and with the community at large for the good of all.

Linux running on System z platforms may reduce costs. Over time, the savings may be considerable. Potential savings may be derived from:

- *A unified IT infrastructure based on the consolidation of distributed servers to virtual Linux servers on System z can enable higher utilization rates and reduce software licensing costs, minimize complexity, reduce maintenance effort with intelligent workload management, streamline the network and provide a more security-rich environment.*

- *Linux running on mainframes provides high level of qualities for your Linux applications utilizing the historical strengths of the System z environment and the established business processes and disciplines for disaster recovery and business resiliency*
- *Leverage your existing z/OS or z/VSE programs and data while deploying new applications rapidly with Linux on mainframes*
- *The Linux-based solutions in the System z environment are easily deployed, extending the existing business applications and the open standards support of System z and enlarging the application developer and skill base for consistently high qualities of service to your user.*

Linux on System z is an attractive platform that brings the strengths of the mainframe to new workloads, offering higher level of uptake, integration with existing data and core applications available with z/OS and z/VSE, less complex manageability and dynamic workload management capabilities that can help to optimize your cost base.

Linux on System z can help you build a simplified and unified IT infrastructure for your applications, it might be the smartest move your company can make. Take back control of your infrastructure.

For more information

To learn more about Linux on
IBM System z, please contact your
IBM representative or IBM Business
Partner, or visit:

ibm.com/systems/z/linux