



# SUSE® Linux Enterprise Server and IBM\* zEnterprise\* System

Get server virtualization for less than US\$1 a day with IBM\* zEnterprise\* System. SUSE® Linux Enterprise is the perfect end-to-end solution to run your critical business on IBM zEnterprise System. IBM zEnterprise System includes zEnterprise 196 or z114, IBM zEnterprise Unified Resource Manager, and IBM zEnterprise BladeCenter Extension (zBX).

SUSE Linux Enterprise Server for System z is the marketshare leader for Linux\* on IBM System z and has long been the platform of choice for mission-critical computing. IBM zEnterprise 196 offers 60 percent more performance at a 35 percent lower price than alternative solutions, and delivers a virtual Linux server for under US\$1 day<sup>1</sup>. SUSE Linux Enterprise Server (x86-64), the most reliable, interoperable and manageable foundation for physical and virtual mission-critical workloads, now joins its virtual workload capabilities with IBM zBX.

## The Core—IBM zEnterprise 196 (z196) or IBM zEnterprise 114 (z114)

IBM z196 and 114 are designed with performance capabilities and capacity for growth and large-scale consolidation. With IBM z196 and z114, you can improve security, resiliency and availability while lowering both risk and cost. As environmental concerns heighten the focus on energy consumption, z196 and z114 offer new efficiencies that dramatically reduce energy usage and floor space when consolidating workloads from

distributed servers. For organizations looking to build green data centers, optional water cooling and high-voltage DC power allow a bold step into the future of cooler computing without changing the footprint. As an example, IBM z196 delivers impressive and improved capabilities, such as the Integrated Facility for Linux (IFL) engines at 5.2 GHz, up to 80 user-configurable engines, increased internal networks, and the ability to extend the amount of addressable storage capacity. In short, it helps deliver greater efficiencies and expand the use of the mainframe for a broader set of applications, while helping to lower the total cost of ownership.

## The IBM zEnterprise BladeCenter Extension (zBX) and Virtualization with SUSE Linux Enterprise Server

As part of the zEnterprise System, zBX is the new infrastructure managed by the zEnterprise Unified Resource Manager (zManager). It extends tried and true System z qualities of service and management capabilities to workloads running on select general purpose POWER7 blades

- **Solutions:**  
Enterprise Linux Servers
- **Products:**  
SUSE Linux Enterprise Server for System z  
SUSE Linux Enterprise Server  
IBM System z

<sup>1</sup> When hosting workloads that achieve high levels of consolidation and scale.



# IBM System z™

running AIX, IBM x86 Blades running Linux and/or Windows, and workload accelerators in the zEnterprise System. The zBX is connected to zEnterprise 196 through a secure, high-performance, private network. In addition, zBX can host high-performance processors for specific workloads, such as the IBM Smart Analytics Optimizer for DB2 for z/OS V1.1.

Together, the zEnterprise and the zBX infrastructure provide:

- A new infrastructure for supporting workloads on select IBM POWER, IBM System x86 blades, and workload optimizers
- A pre-built system that can be easily integrated with your z196/z114
- An integrated management for the zEnterprise System that can simplify operations and management across multiple application environments
- Virtual server provisioning and management for Linux guests running z/VM

SUSE Linux Enterprise Server integrates the latest virtualization technologies, which can be used to provision, deprovision, install, monitor and manage multiple virtual machines (VMs) on a single physical system. It comes with full commercial support for Kernel-based Virtual Machine (KVM), an open source full virtualization solution for Linux on x86 hardware, and also ships with the latest version of the Xen hypervisor. SUSE Linux Enterprise Server delivers support for all leading open source and proprietary hypervisor technologies, giving you maximum flexibility. Whatever your hypervisor choice, SUSE Linux Enterprise Server is the optimal host for your virtualized IT infrastructure, or the “perfect guest” operating system.

The zBX is designed with integrated IBM certified standard components, tested and packaged together by IBM. The IBM x86 blades installed in the zBX fully support SUSE Linux Enterprise Server.

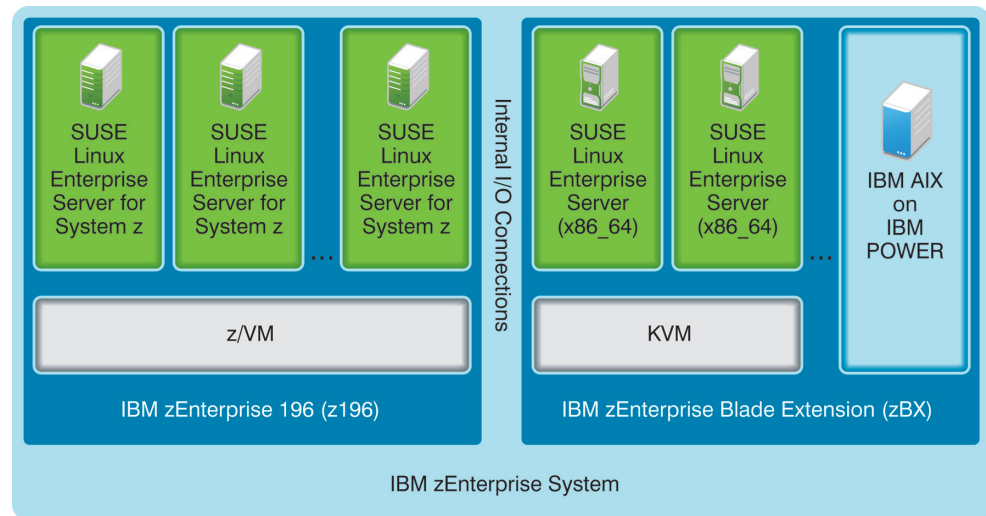


Figure 1. High level architecture—SUSE Linux Enterprise Server running on IBM zEnterprise System

To improve availability, hardware redundancy is built into the zBX at various levels—the power infrastructure, rack mounted network switches, power and switch units in the BladeCenter chassis, and redundant cabling for support and data connections to the z196 or z114.

“We’re pleased to partner with SUSE to support SUSE Linux Enterprise Server so our customers can confidently run Linux workloads on select IBM x86 based servers in the new zBX with SUSE Linux Enterprise Server for physical or virtual workloads,” said Dan Frye, vice president, Open Systems Development, IBM. Further, Mr. Frye said, “IBM is committed to helping clients design, deliver and implement innovative Linux and AIX solutions that meet their unique business needs. With zBX, SUSE Linux Enterprise Server customers can benefit from the certified components of zBX. Customers can deploy and integrate seamlessly all components of the zEnterprise System with Linux and get the assurance that their entire hybrid environment is well maintained and supported from IBM.”

### **SUSE Linux Enterprise Server for IBM zEnterprise System**

Combining SUSE Linux Enterprise Server with IBM zEnterprise 196 /114 and zEnterprise BladeCenter Extension lets you run your mission-critical workloads in a perfect end-to-end Linux solution environment that is designed for interoperability and heterogeneous, mixed IT environments. By unifying entire sections of your data center, you increase utilization, and save both time and money. SUSE Linux Enterprise Server is a highly reliable, scalable and secure server operating system. It is designed to power today’s and tomorrow’s data center applications, web services and networks. SUSE Linux Enterprise Server 11 is optimized for all IT infrastructures—physical, virtual and cloud—and offers numerous advancements.

SUSE Linux Enterprise Server and SUSE deliver additional value with experience and tools that set us apart from the competition—tools that are available across architectures.

IBM zEnterprise System running SUSE Linux Enterprise Server is data center simplification at its best:

- *zManager on zEnterprise offers benefits such as single management scheme and single virtualization/provisioning/workload management scheme even if there is no zBX installed.*
  - Consolidation studies show that:  
You can see up to 70 percent lower management/administrative costs with z196<sup>2</sup>
  - You can also see up to 80 percent reduced energy usage
- *With z196/z114 and the zBX you can reduce risk and enhance connection security with the isolated, integrated network.*

SUSE Linux Enterprise Server for System z on z196/z114 allows customers to run their most important applications on the world’s leading mainframe architecture. The strengths of IBM System z—high reliability, immense scalability, strong security and the ability to consolidate diverse workloads cost-effectively—are fully leveraged by SUSE Linux Enterprise Server. SUSE and IBM collaborate extensively to ensure that SUSE Linux Enterprise Server is fully supported on System z. The two companies also work to incorporate new mainframe technology requested by joint customers, and to make over 1,800 certified applications available for SUSE Linux Enterprise Server on the mainframe. By deploying SUSE Linux Enterprise Server for System z as a consolidation platform for distributed x86- and UNIX\*-based workloads, customers reduce costs while increasing reliability, scalability and speed of deployment.

## **SUSE Linux Enterprise Server and IBM zEnterprise System**

[www.suse.com](http://www.suse.com)



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### **Dan Frye**

*Vice President,  
Open Systems Development  
IBM*

<sup>2</sup> IBM Internal Study based on Oracle SW with Nehalem 4 core running 25 percent utilization. Results may vary.

Rely on SUSE Linux Enterprise Server to run your IBM zEnterprise System to gain a competitive advantage. Mr. Frye of IBM states, "IBM and SUSE have partnered for over 10 years on the mainframe to bring continued innovation to the Linux on System z platform. The new z196 further strengthens the benefits of Linux and z/VM virtualization software with the z196 server capabilities in the areas of consolidation, security, reliability and disaster recovery. IBM engineers at IBM Böblingen Development Center and their counterparts at the SUSE engineering department in Nuremberg collaborated together to ensure that SUSE Linux Enterprise Server for System z exploits the enhanced hardware capabilities in z196/z114. Linux and z/VM on zEnterprise will continue to deliver unique business value in the areas of virtualization, operational flexibility, scalability, workload management, efficiency, business continuance, reliability and security. These values will continue to exist on the System z architecture only."

Our multi-IFL subscription pricing model for SUSE Linux Enterprise Server for System z helps you to manage the total cost of acquisition and the total cost of ownership when consolidating workloads to Linux on System z.

This pricing model provides volume discounts for subscriptions of SUSE Linux Enterprise Server for System z to multiple IFLs. Learn more at: [www.suse.com/partners/alliance-partners/ibm/mainframe/multiifl.html](http://www.suse.com/partners/alliance-partners/ibm/mainframe/multiifl.html)

### The Perfect Fit

The SUSE goal is to provide customers with the most interoperable and ubiquitous operating system foundation for their mission-critical computing, deliver application leadership, and make SUSE Linux Enterprise Server the perfect fit for the groundbreaking technology of IBM zEnterprise System, which embraces heterogeneous architectures to a unified system. You will see that SUSE Linux Enterprise Server is the ideal platform to run on any component of the IBM zEnterprise System. For more information, visit:

- [www.ibm.com/systems/z/hardware/zenterprise/](http://www.ibm.com/systems/z/hardware/zenterprise/)
- [www.suse.com/products/server/](http://www.suse.com/products/server/)
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