SUSE Linux Enterprise Server for IBM Z and LinuxONE

You don't have to spend more for management and software or increase power and floor space requirements to get the data center you need. With SUSE® Linux Enterprise Server for IBM Z and LinuxONE, we offer an alternative platform to x86 platforms for virtualizing Linux, UNIX and Windows workloads. SUSE Linux Enterprise Server for IBM Z and LinuxONE will help you leverage the resiliency of IBM Z servers while you lower costs, reduce complexity and downtime, and mitigate risk across your enterprise.

- Solution:
  Enterprise Linux Servers

- Product:
  + SUSE Linux Enterprise Server for IBM Z and LinuxONE
  + SUSE Linux Enterprise Server Starter System for IBM Z
  + SUSE Manager
  + SUSE Studio

Respond to Today's Business Needs Today
You need to reduce data center costs; however, you also need to become more competitive and provide more services for your customers, which means you need more compute capacity. The typical response to these challenges is to add more hardware servers to handle the required workloads. Adding new physical servers to your data center, while giving you the capacity you need, can take weeks and increase management, licensing and hardware costs, as well as power and floor space requirements. It can also result in low server utilization (usually in the 5–15 percent range), driving up your total cost of ownership.

This server sprawl drains your budget, making it difficult to respond to business demands quickly. To remain competitive, you need to be able to provision new servers and add new software programs in minutes and hours, not days and weeks. You can do this with SUSE Linux Enterprise Server for IBM Z and LinuxONE running in a virtualization environment on an IBM Z server—while reducing total cost of ownership, simplifying data center complexity and increasing flexibility.

"Running SUSE Linux Enterprise Server for IBM Z and LinuxONE really gives us peace of mind. We get the benefits of open systems technology with all its flexibility combined with high availability and high performance of the mainframe platform."

BERND BOHNE
Department Head, Central Systems Technology
Sparda-Datenverarbeitung eG, Sparda Bank

SUSE.com

Simplify With an Industry-Leading Server Consolidation Platform

SUSE Linux Enterprise Server for IBM Z and LinuxONE offers you an alternative to x86 platforms for consolidating servers and virtualizing Linux, UNIX and Windows workloads. When you choose SUSE Linux Enterprise Server for IBM Z and LinuxONE you are leveraging the resiliency of IBM Z servers, the power of SUSE Linux Enterprise Server for IBM Z and LinuxONE and the hypervisor capabilities of z/VM or KVM to create a virtual environment that lowers total cost of ownership and simplifies data center management while increasing flexibility and reducing downtime.

SUSE Linux Enterprise Server for IBM Z and LinuxONE allows you to run Linux applications in a virtualized environment on IBM Z servers, consolidating servers and workloads to simplify management and reduce costs.

As the market share leader in Linux mainframe technology, SUSE Linux Enterprise Server for IBM Z and LinuxONE enables you to access the largest number of open source and proprietary applications and take advantage of the best technical support in the industry. We work closely with IBM to implement customerrequested enhancements. When you deploy SUSE Linux Enterprise Server for IBM Z and LinuxONE, you can take advantage of these enhancements to:
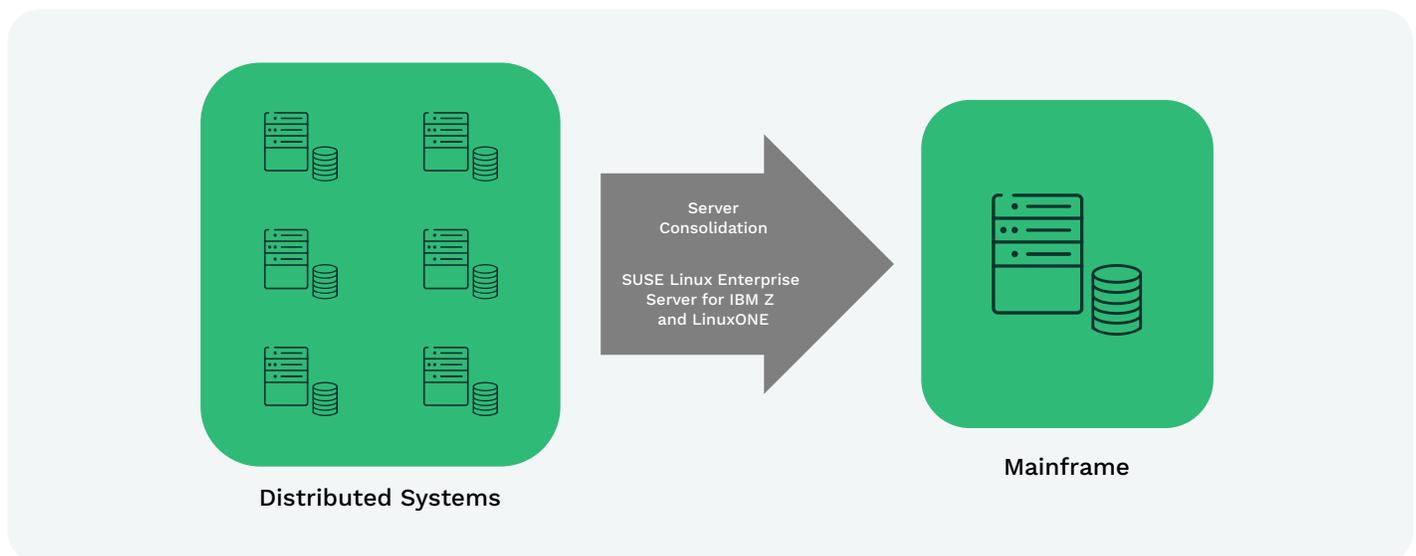
- Reduce total cost of ownership
- Simplify data center complexity
- Increase business agility

REDUCE TOTAL COST OF OWNERSHIP

The cost of running your data center includes hardware, software licenses, floor space, power, system administrators and many other factors—all of which add up quickly. However, what may be costing your data center the most is server sprawl. SUSE Linux Enterprise Server for IBM Z and LinuxONE is a powerful product that enables you to consolidate many workloads onto a single server. IBM Z servers generally require only about 20 percent of the floor space and power that equivalent capacity x86 servers require.

With SUSE Linux Enterprise Server for IBM Z and LinuxONE, the cost of running incremental workloads on IBM Z servers goes down as the total workload grows, while the cost goes up linearly for distributed systems with added workloads. You do not have to acquire new hardware, purchase new operating system subscriptions and new software licenses as you add workloads on new virtual machines. For some workloads, you may reach a threshold at which the cost of adding new workloads on SUSE Linux Enterprise Server for IBM Z and LinuxONE virtual machines drops to virtually zero.

"With SUSE Linux Enterprise Server for IBM Z and LinuxONE, the cost of running incremental workloads on IBM Z servers goes down as the total workload grows. The cost goes up linearly for distributed systems with added workloads. As you add more and more workloads to run on SUSE Linux Enterprise Server for IBM Z and LinuxONE virtual machines, the average cost per workload drops."

Distributed Systems

Server
Consolidation

SUSE Linux Enterprise
Server for IBM Z
and LinuxONE

Mainframe

SIMPLIFY DATA CENTER COMPLEXITY

If your data center is like most others, it has multiple types of operating system platforms and architectures in use at any given time; they are stored in various forms with cables running everywhere. Additionally, chances are good that you acquired these systems from many different vendors, so you must maintain several hardware and software licensing agreements. You must also hire system administrators with varying backgrounds to maintain the various hardware and software systems. All these issues contribute to data center complexity. You can simplify using server consolidation with SUSE Linux Enterprise Server for IBM Z and LinuxONE in a virtualized environment. You can consolidate many workloads onto a single IBM Z server, reducing the number of hardware vendors and software licenses that you must maintain. Then, after consolidation, you can manage your Linux virtual machines on IBM Z servers with mainframe tools, as well as systems management tools integrated with SUSE Linux Enterprise (like YaST® and AutoYaST), or additional products like SUSE Manager, greatly simplifying management tasks such as backups, updates and patches. Running Linux on IBM Z servers also simplifies software license maintenance and makes it less costly because a single software license can be shared across all Linux virtual machines that use the licensed software.

INCREASE BUSINESS AGILITY

Your success relies on your ability to respond to changing user demands and market requirements. To maintain a competitive edge, you must make these changes quickly—and changes frequently take the form of a new server or an existing server being provisioned with new workloads. Workload availability is key to maintaining systemwide agility.

Running SUSE Linux Enterprise Server for IBM Z and LinuxONE on IBM Z servers offers you the flexibility you need to meet your organization's business demands. If you choose SUSE Linux Enterprise Server for IBM Z and LinuxONE, you can benefit from the large application portfolio available on it, including a growing set of server and middleware products and open source applications. With SUSE Linux Enterprise Server for IBM Z and LinuxONE in a z/VM environment, you can provision new servers and virtual SUSE Linux Enterprise Server for IBM Z and LinuxONE servers in seconds and minutes. z/VM is able to spawn a new SUSE Linux Enterprise Server for IBM Z and LinuxONE virtual server with the security and reliability inherent in the mainframe. The z/VM hypervisor pools, emulates and distributes system resources so that SUSE Linux Enterprise Server for IBM Z and LinuxONE virtual machines can share the same resources.

IBM Z server operating systems such as z/VM and z/OS provide sophisticated workload and resource management capabilities that allow a wide variety of workloads to be scheduled and run without intervention. You can move many kinds of workloads onto SUSE Linux Enterprise Server for IBM Z and LinuxONE virtual machines. Resources are shared across the virtual machines and the workloads are scheduled by IBM Z workload management software. This is in contrast to standalone Linux and Windows servers that can run only single workloads and provide little resource sharing.

Modernize Your Data Center

SUSE Linux Enterprise Server for IBM Z and LinuxONE allows you to run Linux applications in a virtualized environment to lower costs and increase compute capacity and flexibility. These advanced technologies enable you to access open source applications, address infrastructure simplification issues, simplify management and save on software licensing. We deliver these industry-leading benefits using:

- **SUSE Linux Enterprise Server for IBM Z and LinuxONE.** SUSE has tailored this powerful Linux operating system for mainframes by working closely with IBM to include enhancements requested by IBM customers and to ensure that it supports many of the ISV applications. SUSE Linux Enterprise Server for IBM Z and LinuxONE contains modifications to seamlessly run on the IBM Z hardware and to work with the z/VM and KVM virtualization technologies.
- **SUSE Manager.** SUSE Manager delivers best-in-class Linux server management capabilities, like automated software management, system provisioning and monitoring. It enables customers to easily manage Linux server deployments across physical, virtual and cloud environments, decreasing total cost of ownership while improving compliance and service quality. SUSE Manager can also manage Linux virtual machines on IBM Z and can be hosted on mainframes.
- **SUSE Studio™.** SUSE Studio delivers the fastest and easiest way to build, configure and maintain portable and cloud-enabled application stacks, thereby reducing the complexity, maintenance and support costs of software deployments. SUSE Studio is the only available tool that combines the creation of application images or software appliances for x86 and mainframe environments. SUSE Studio eases the migration between the various IT environments within a data center.

When you choose the SUSE Linux Enterprise Server for IBM Z and LinuxONE for server consolidation, you are leveraging the resiliency of IBM Z servers, the power of SUSE and the hypervisor capabilities of z/VM to create a virtual environment that lowers total cost of ownership, reduces data center complexity, increases flexibility and reduces downtime.

Accelerate Transformation With New Workloads

IBM Z mainframes succeed in managing a demanding balancing act: they not only support the massive cumulative investment in mainframe applications and systems, but over the years offered a new approach to enterprise computing, by introducing concepts and technologies, that have become crucial in designing today's economic system. Examples are the built-in RAS capabilities for high availablity, virtualization technology or the cloud concept.

Today, in many organizations, mainframes are taking on even more of the computing load than ever before. This is largely due to one of the most important milestones in the five visionary decades of the mainframe: the adoption of the Linux operating system, in which SUSE played a decisive role.

SUSE and IBM know how important it is to address a reliable infrastructure, setting the pace of change driven by cloud, big data, mobile, social and security. That is why SUSE and IBM offer the proven innovation, performance and flexibility of an open infrastructure capable of handling increasingly demanding workloads.

For the future of the mainframe, IBM is building on its four strategic pillars Cloud, Analytics, Mobile, and Security. SUSE Linux Enterprise Server for IBM Z and LinuxONE supports all components of the CAMS strategy as a key component of the underlaying infrastructure.

Master Today's On-Demand Environment

Your business suffers when workloads are not consistently available. A data center must recover quickly from all downtime, whether planned or unplanned because your business can potentially face losses from tens of thousands of dollars to millions of dollars per hour of downtime. So when you're ready to eliminate downtime, lower costs, increase business agility and simplify complexity, you're ready for SUSE Linux Enterprise Server for IBM Z and LinuxONE. For more information visit: **www.suse.com/products/systemz**