

SUSE® Linux Enterprise Server for System z 12

For more than 50 years, the IBM mainframe has been known for its high reliability and ability to run various mixes of workloads simultaneously with very little downtime. SUSE began working with IBM back in 1999 to port Linux to IBM System z. Linux on the mainframe has become one of the primary targets for server virtualization using IBM's z/VM hypervisor operating system. SUSE® Linux Enterprise Server for System z, running in a virtualized environment under z/VM, can provide you with lower total cost of ownership than a comparable distributed virtualized environment, reduced data center complexity and increased business agility.

Product Overview

What is SUSE Linux Enterprise Server for System z?

- *Optimized for IBM mainframes, SUSE Linux Enterprise Server for System z running under z/VM offers an excellent server- and workload-consolidation solution, and a reliable and efficient platform for new workloads.*
- *SUSE Linux Enterprise Server for System z runs in native mode in an LPAR (Logical Partition) or virtualized under z/VM in an LPAR. Because SUSE Linux Enterprise Server for System z is almost always used to consolidate workloads running on standalone servers onto System z servers, it runs as a guest under z/VM on an Integrated Facility for Linux (IFL) about 95 percent of the time.*
- *An IFL is a System z specialty engine that IBM created to make running Linux-based software more economical.*

- *z/VM isolates each SUSE Linux Enterprise Server for System z-based virtual server from the other virtual servers, leaving it unaffected if another virtual server crashes.*
- *All SUSE Linux Enterprise based products share one code base. However, SUSE Linux Enterprise Server for System z includes specific features to take advantage of System z hardware and the z/VM virtualization technology.*
- *System administrators and application developers who are familiar with SUSE Linux Enterprise Server on x86-64 platforms do not need any special training to use or administer SUSE Linux Enterprise Server for System z.*

New Technologies and Features

SUSE Linux Enterprise Server for System z 12 comes with many new technologies and features that help you achieve greater ROI, uptime and performance:

System Requirements

■ Hardware

SUSE Linux Enterprise Server for System z runs on the following IBM System z hardware:

- IBM zEnterprise System z196
- IBM zEnterprise System z114
- IBM zEnterprise EC12 (zEC12)
- IBM zEnterprise BC12 (zBC12)

■ Memory Requirements

SUSE recommends using:

- 768 MB For installation under z/VM
- 1 GB For installation under LPAR

■ Disk Space Requirements

Minimal requirements are:

- 2.6 GB Default Installation
- 3.6 GB+ Recommended (with graphical desktop, development packages and Java)

■ Network Connection

- OSA Express Ethernet (including Fast and Gigabit Ethernet)
- HiperSockets or Guest LAN
- 10 GBE, VSWITCH

■ **Architecture Level Set (ALS).** *To make sure you get the most out of your environment, we did an Architecture Level Set that provides state of the art System z processor hardware exploitation for IBM z196, z114, zBC12 and zEC12.*

■ **New core technologies.**

- With *wicked*, SUSE Linux Enterprise Server introduces a modern, dynamic network configuration infrastructure.
- *GRUB2* offers advantages such as using modules which can be loaded separately as per requirement, and recognizing many more file systems.
- *Systemd* is a new system and service manager designed for Linux which can manage the entire boot process, and allows starting services in parallel.

■ **Server virtualization.**

Kernel-based Virtual Machine (KVM)—
Technical Preview: *With SUSE Linux Enterprise Server for System z 12, you get the change to try KVM out on the System z hardware platform.*

■ **Advanced security with**

Cryptography: *SUSE Linux Enterprise Server for System z 12 supports the latest System z hardware based PKCS #11 cryptographic cards. To easily setup this crypto hardware stack on System z, you can also select a new install pattern in YaST® during installation.*

■ **RAS capabilities**

- *PCHID mapping* helps you to determine the physical channel-ID (PCHID) associated with a CHPID.
- SUSE Linux Enterprise Server for System z 12 includes *kernel support for concurrent Flash MCL (microcode level) updates* to Flash storage media during operation without impacting I/O.
- *Disk mirroring with real-time enhancement for System z* improves storage operation by enabling uninterrupted operation even in case of a temporary DS8000/ESS failure or timeout.
- With the function *Dump to zfcp/SCSI Partition*, the SCSI dump tool writes dumps directly to a SCSI partition, without using a file system.

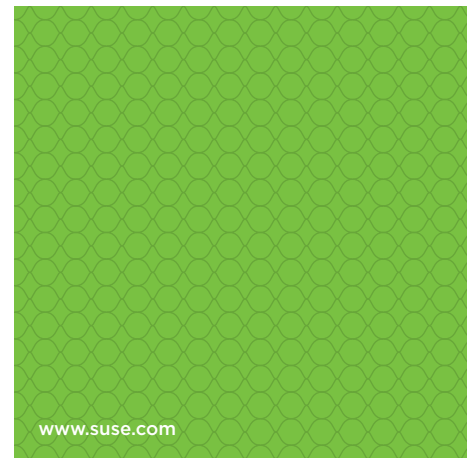
■ **Increased operational efficiency and performance.**

- *Improved performance of dasdfmt* improves the speed of the DASD formatting processes, helps you lower administration time and efforts, and supports growth with larger future DASDs.
- *Support of transparent large pages* provides performance improvements for applications that access large amounts of anonymous memory.
- *Multiple netiucv paths for communication between z/VM guests* lets you establish multiple netiucv connections between the same two z/VM guests. This results in better scalability for z/VM Linux data exchange and improved performance.
- The *QSAM Access Method for Data sharing with z/OS* enhances the functionality of the s390-tools to allow direct access on the DASD storage devices from a Linux system to z/OS legacy data.
- *Optimized Compression Library zlib* significantly improves performance and lowers processor resource consumption for applications using the respective library.
- *Support for zPXE Boot* provides a similar function to the PXE boot on x86/x86-64.

Key Benefits

When you are facing higher data center costs, lack of agility needed to meet business needs, low server utilization rates and too much downtime, you should consider using SUSE Linux Enterprise Server for System z to consolidate enterprise workloads.

- *Increase productivity and business agility by reducing the time needed to provision, deploy and reconfigure servers and do it without investing in new hardware*
- *Reduce floor space and power usage requirements.*
- *Reduce number of servers, operating systems and system administrators, decreasing data center complexity*
- *Run mixed workloads without operator intervention*
- *Save licensing fees for per-processor ISV application licensing with Linux running on IFLs.*



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