



# SUSE® Linux Enterprise Server 12

Modern data centers and enterprises require an agile IT infrastructure, support ever increasing demands of mission critical workloads and have a need to continuously improve IT infrastructure to stay secure and support rapid innovation. SUSE® Linux Enterprise Server provides the infrastructure foundation that enables organizations to deploy latest container innovations, adapt to new hardware architectures, maximize service uptime, increase virtualization, and implement enterprise-ready solutions out-of-the-box with proven security and optimized performance.

## Product Overview

SUSE Linux Enterprise Server is a world-class, secure open source server operating system, built to power physical, virtual and cloud-based mission-critical workloads. Designed for mixed IT environments, it offers best-of-breed performance with reduced risk of technological obsolescence or vendor lock-in.

SUSE Linux Enterprise Server 12 is a modular, general-purpose operating system and runs on all major processor architectures. It is optimized to run on leading hypervisors and supports an unlimited number of virtual machine guests per physical system with single subscription, making it the perfect guest for virtual and cloud computing.

## Key Benefits

- **Create and support agile IT infrastructure** using the latest container applications, JeOS for rapid deployment and provisioning, and precise upgrades of specific components with modules.
- **Deploy mission critical services** with SUSE Linux Enterprise infrastructure foundation that enables you to

*maximize service uptime using cutting edge live patching technology, increase virtualization for application workloads, provide maximum security for all your application needs and create cost-effective infrastructure with support of wide range of hardware platforms.*

- **Continuously improve your IT infrastructure** by deploying enterprise-ready solutions out-of-the-box with proven security and optimized performance.

## Key Features

### CREATE AND SUPPORT AN AGILE IT INFRASTRUCTURE

- **Containers.** SUSE Linux Enterprise Server 12 improves the manageability of Linux Containers with better integration into the common virtualization framework (libvirt). SUSE Linux Enterprise Server 12 supports container engine from open source Docker project for your production environments and includes a private registry with tools to collaborate securely, apply security patches and automate application deployment inside Linux containers.

## System Requirements

<b>Minimum Linux server system requirements for installation:</b>
512 MiB RAM, 512 MiB Swap recommended
2 GiB available disk space (more recommended, 8.5 GiB for all patterns), 16 GiB for snapshot/rollback of the OS
800 x 600 display resolution (1024 x 768 or higher recommended)
<b>Supported processor platforms:</b>
x86-64 (Intel 64, AMD 64)
ppc64le (IBM POWER LE)
s390x (IBM z Systems)
ARM v8 (AArch 64)
For detailed product specifications and system requirements, visit: <a href="http://www.suse.com/products/server/">www.suse.com/products/server/</a>

- **Just Enough Operating System (JeOS).** *SUSE Linux Enterprise Server JeOS is a minimized form factor of SUSE Linux Enterprise Server. JeOS is delivered as minimized, ready-to-run virtual images to make the virtualization deployment more efficient. JeOS is also delivered as a KIWI template for customers and partners to use to start golden images.*
  - **Modules.** *Modern innovation can outpace the traditional enterprise software delivery model. The modules available in SUSE Linux Enterprise Server 12 meet this need by providing faster integration with upstream updates. This design approach lets you balance the flexibility of the modules and stability of the infrastructure. The modules include:*
    - Advanced Systems Management Module (Salt, Puppet 3)
    - Certifications Module (FIPS 140-2)
    - Containers Module (container tools, prepackaged SLES containers)
    - Legacy Module (sendmail etc.)
    - Public Cloud Module (AWS, Azure, GCE integrations)
    - Toolchain Module (GCC)
    - Web & Scripting Module (PHP5.5, PHP7.0, Node.js)
  - **Full System Rollback.** *Gain better resiliency with Full System Rollback that allows you to take snapshots of the system, including the kernel files, and roll back. System administrators can boot from a snapshot to improve data safety. When you upgrade to a new service pack for your SUSE Linux Enterprise Server, the full system rollback capability minimizes the risk and allows you to rollback easily.*
  - **Skip Service Packs.** *Save time and resources with “skip service packs” functionality, which lets you skip upgrades of prior service packs and jump straight to latest service pack from SUSE Linux Enterprise Server 12. Along with the Rollback feature that enables going back to a good state at click of a button you can minimize human error and save even more time.*
  - **ARM AArch64 and Raspberry Pi.** *Improve power efficiency using ARM 64’s low power consumption and efficient design for your servers and network infrastructure using SLES 12 for ARM and SLES 12 for Raspberry Pi.*
  - **ARM based SoC systems.** *Open the doors for broad hardware and virtualization support with higher compute density, less power consumption and economical hardware using new ARM based SoC systems.*
  - **Open Build Service, SUSE Package Hub.** *Create reproducible builds across architectures and Linux distributions using Open Build Service technology.*
    - 25,000+ open source packages from the user community
    - Enterprise packages built using Open Build Service technology on SUSE Package Hub
  - **Salt.** *Track and manage configurations using Salt integrated in base platform. Salt, available in the Advanced Systems Management module, provides a very scalable, fast and secure way of communicating with systems in real time. In addition, you can seamlessly integrate with SUSE Manager to take full advantage of Salt’s configuration management capabilities.*
  - **Full support for KIWI.** *With one configuration, you can use KIWI to create OS images for physical deployments (DVD, USB) as well as provision it into virtual hypervisor environments (Xen, KVM, VMware, HyperV), container frameworks and public and private clouds.*
- DEPLOY MISSION CRITICAL SERVICES**
- **SUSE Linux Enterprise Live Patching.** *Update security patches without rebooting machines and without waiting for your next service window.*
  - **Open vSwitch with DPDK (Data Plane Development Kit).** *Efficiently implement virtual network functions using Open vSwitch with DPDK (Data Plane Development Kit) that accelerates the user space data plane and provides the packet processing capabilities needed for Software Defined Networking (SDN) and Network Function Virtualization (NFV) solutions.*
    - Combined with the broad hypervisor support of SUSE Linux Enterprise Server the new network function virtualization capabilities provide SUSE customers with a complete virtualization solution for cloud and on-premise deployments.
  - **Mission-critical systems support.** *Create cost-effective infrastructure based on your mission critical systems requirements. SUSE Linux Enterprise provides proven support for a range of mission-critical systems—Mainframes IBM z System and LinuxONE, Midrange servers powered by IBM POWER8 and scalable Intel/AMD/ARM 64-bit servers.*
  - **Virtualization.** *Increase virtualization and reduce data foot print using virtualization technologies that suit*

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your business needs. SUSE Linux Enterprise Server provides built-in support for Xen and Kernel Virtual Machine (KVM), Containers for application automation, and paravirtualized driver packs for enhanced virtual machine performance. SUSE Linux Enterprise Server is optimized to deliver superior performance with VMware vSphere and Microsoft Hyper-V.

- **VMware Tools Integration.** VMware drivers and tools (*open-vm-tools*) are now fully supported and integrated into SUSE Linux Enterprise Server 12 in an all-in-one package with their performance fine-tuned.
- **Extensions for Clustering.** Achieve higher service availability by clustering servers together and removing single points of failure. SUSE Linux Enterprise High Availability Extension offers an industry-leading, mature high availability solution. Further enhance your business continuity by connecting data centers across unlimited distances with Geo Clustering for SUSE Linux Enterprise High Availability Extension.
- **NVDIMM.** Reduce down-time and improve I/O performance utilizing persistent system memory applications
  - Dramatically reduce down-time by reducing rebuild time upon power restoration with integrated NVDIMMs that save data in seconds and make data immediately available on reboot. Down-time sensitive applications such as on-line transaction processing and financial applications can benefit from persistent system memory functionality.

- Run applications such as storage and database acceleration at far higher speeds using system memory persistence capabilities of NVDIMM.

- **Exploiting Hardware RAS.** Enhance your system reliability and reduce service costs. SUSE Linux Enterprise Server 12 includes exclusive processes to exploit the RAS features of your hardware platform.
- **Certified Applications.** SUSE Linux Enterprise Server supports a wide variety of third-party ISV applications. For the complete list of certified software applications for SUSE Linux Enterprise (all versions), please visit: [www.suse.com/susePSC/home](http://www.suse.com/susePSC/home)
- **Certified Hardware.** Most leading hardware vendors support our Linux server OS, so you can save money by using your existing physical servers or low-cost commodity hardware.

#### CONTINUOUSLY IMPROVE YOUR IT INFRASTRUCTURE

- **Interactive and unattended upgrades.** Using this feature, system administrators can quickly and easily upgrade their SUSE Linux Enterprise Server operating systems, reducing downtime, lowering administrative costs and improving quality. In fact, SUSE Linux Enterprise has been supporting (manual) major version upgrades for ten years. With YaST®, you can interactively prepare a suitable profile and then use AutoYaST to automatically upgrade groups of servers.
- **NVMe over Fabrics.** Improve application performance with fast local NVMe (Non-Volatile Memory

Express) and remote storage devices with NVMe over Fabrics (NoF). Using NVMe you can fully exploit the benefits of modern solid-state memory technology.

- **Enhanced YaST Installer.** Improve resiliency and automate processes right from installer stage using auto update of code with the powerful administration tool YaST (Yet another Setup Tool). YaST gives you the capability to customize your system quickly during and after the installation. YaST is now written in Ruby so it's open and more easily customized.
- **SUSE SolidDriver Program.** The SUSE SolidDriver program accelerates the adoption of new technologies by removing the complexities and risks associated with deploying kernel drivers. It gives you an easy way to identify fully compatible and supported software code.
- **SUSE Customer Center (SCC).** SCC is the new portal to centrally manage your SUSE subscriptions, access software updates and contact SUSE Customer Support. The user-friendly interface gives you a central view of all your SUSE subscriptions, allowing you to easily find the information you need.
- **The Subscription Management Tool (SMT).** SMT helps large organizations centrally receive patches and updates for their SUSE Linux Enterprise software. It provides our customers a way to easily migrate and gain much simpler and faster access to updates and patches.
- **Security standards compliance.** SUSE Linux Enterprise Server 12 GA was successfully certified after

Common Criteria Certification at EAL4+. In addition multiple cryptography security modules are validated to fulfill the requirements of FIPS 140-2. Those modules are OpenSSL, OpenSSH client and server, Strongswan (IPSec-based VPNs), the Kernel Crypto API, Mozilla NSS (Level 2) and libgcrypt.

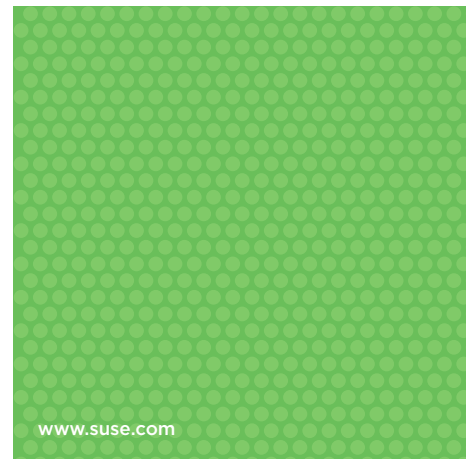
- **TPM 2.0.** Implement hardware based security with secure cryptoprocessor standard TPM (Trusted Platform Module) 2.0.
- **Single Sign-on.** Shibboleth support in SUSE Linux Enterprise Server 12 enables single sign-on using one identity across different domains for computer networks and web infrastructure.
- **Intel Skylake.** Improve system performance using Intel Skylake technology to deliver high performance graphics, improved system responsiveness and longer battery life.
- **Wicked.** Wicked makes it easy to manage ever-more-complicated network configurations such as VLAN, virtualization, bridging, bonding, and IPv6. Wicked allows you to import existing configuration files from older Linux operating system versions
- **Advanced networking.** SUSE Linux Enterprise Server 12 supports IPv6, includes Open Fabrics Enterprise Distribution (OFED) and supports Fibre Channel over Ethernet (FCoE) and Data Center Bridging (DCB), which you can use to run SAN and LAN traffic over the same link.
- **Network Teaming.** Network Teaming is a technology that applies to various methods of combining multiple network connections in parallel. Similar to Network Bonding, which is already supported in SUSE Linux Enterprise 12, the Network Teaming feature increases throughput beyond what a single connection could sustain and provides redundancy to increase network uptime.

- **Samba 4.** Samba allows you to easily and securely interoperate in the Microsoft Windows environment. SUSE Linux Enterprise Server 12 includes support for the latest version of Samba 4, which provides better integration with Windows Active Directory Domains. When used with btrfs, Samba 4 further improves server-side copy performance for Windows users.

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- **SUSE Linux Enterprise High Availability Extension.** Deploy in both physical and virtual environments to maintain continuity, protect data integrity, and maximize uptime.
- **Geo Clustering for SUSE Linux Enterprise High Availability Extension.** Deploy physical and virtual Linux clusters between data centers located anywhere in the world.
- **SUSE Linux Enterprise Real Time Extension.** Reduce the latency and increase the predictability and reliability of time-sensitive mission-critical applications.
- **SUSE Linux Enterprise Live Patching.** Reduce downtime and enhance security by applying kernel patches without stopping the system.
- **SUSE Linux Enterprise Server Workstation Extension.** Turns SUSE Linux Enterprise Server into a full featured development or administrator workstation environment.

For detailed product specifications and system requirements, visit: [www.suse.com/products/server/](http://www.suse.com/products/server/)



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