SUSE® Linux Enterprise Server 15 Service Pack 2

SUSE® Linux Enterprise 15 server is a modular operating system that paves the way for IT transformation in the software-defined era. The modern and modular OS helps simplify your IT environment, modernize your IT infrastructure and accelerate innovation with an engaging platform for developers. As a result, you can easily deploy and transition business-critical workloads across on-premise and public cloud environments.

System Requirements

- Minimum Linux server system requirements for installation:
  - 1024 MiB RAM, 512 MiB Swap recommended
  - 2 GiB available disk space (8.5 GiB for all patterns), 32 GiB for snapshot/rollback of the OS
  - 800 x 600 display resolution (1024 x 768 or higher recommended)
- Supported processor platforms:
  - x86-64 (Intel 64, AMD 64)
  - ppc64le (IBM POWER LE)
  - s390x (IBM Z and LinuxONE)
  - aarch64 (Arm v8)

Product Overview

Many organizations use traditional infrastructure, software-defined infrastructure or a mix of traditional and software-defined. This leads to a hybrid IT scenario, where different types of IT infrastructure have different technologies, processes and business drivers.

SUSE Linux Enterprise 15 server, with its **multimodal design**, helps organizations transform their IT landscape by bridging traditional and software-defined infrastructure.

Key Benefits

- **Simplify your IT Environment.** The SUSE Linux Enterprise "common code base" platform helps break the silos of IT systems while bridging traditional and software-defined infrastructure. This enables easy migration of application workloads, improves systems management and eases adoption of containers.
- **Modernize your IT Infrastructure.** You can innovate and improve efficiency of existing IT infrastructure without disrupting the stability, security and proven standards. In Modular+ architecture, everything is a module. So, you can get product updates and patches more frequently.

  The Modular+ architecture helps an IT administrator reduce risk by simplifying planning and decision making. Starting with one installation image, you can add SUSE Linux Enterprise Server products or add modules with ease as your business needs grow. Delivery of new features is simple and easy as everything is a module.

"IDC believes the common code base of SUSE Linux Enterprise 15 makes the product a multiplatform OS that is well suited for heterogenous computing environments. SUSE can leverage this feature to help customers more effectively bridge the gap between traditional infrastructure environments and modern, software-defined infrastructure."

IDC MARKET NOTE, 2018

- **Accelerate Innovation.** Enable your DevOps teams by making it easy to adopt open source and with support for automation, project builds and message-oriented middleware. You can accelerate adoption of open source innovation by connecting with developer community at SUSE Package Hub. Once you are ready to move to Ops from Dev sandbox, you can easily transition from community Linux distribution openSUSE Leap to SUSE Linux Enterprise.

  You can meet the quickly changing needs of the modern developer and DevOps teams with management and monitoring features such as RabbitMQ, Prometheus and Maven.

  When you start with openSUSE Leap on your development setups there is no need to setup new systems for enterprise Linux. You can take full advantage of the enterprise class community Linux in your development environment with SLE15 SP2 binaries made available on openSUSE Leap.

Key Features

CREATE AND SUPPORT AN AGILE IT INFRASTRUCTURE

- **Cloud Ready.** Cloud images are available - optimized and ready to run. So, you can run them right-away at optimized start point. Images are available for Alibaba Cloud, Azure, AWS, Google Cloud, IBM Cloud, Oracle.

  Bring Your Own Subscription (BYOS) makes it easy to implement hybrid/multi cloud. You can bring your existing subscriptions to SUSE certified public cloud providers and to spin up on-demand instances.

- **Containers.** SUSE CaaS Platform is our flagship enterprise class container management solution that enables IT and DevOps professionals to easily deploy, manage, and scale containerbased applications and services. SUSE CaaS Platform comes integrated with Kubernetes for container orchestration and SUSE MicroOS—the microservices container and container host OS.

  In addition, SUSE Linux Enterprise Server supports Linux Containers and open source Docker container engine. You can manage Linux Containers using common virtualization framework (libvirt). To support open source Docker container engine, a private registry is included with tools to collaborate securely, apply security patches and automate application deployment inside Linux Containers.

- **Packages and Open Build Service.** Pick and choose functionality from a menu of packages made available by Modular+ architecture. Create reproducible builds across architectures and Linux distributions using Open Build Service technology. Take advantage of thousands of open source packages from the user community on SUSE Package Hub.

- **Modules.** In SUSE Linux Enterprise 15 with Modular+ architecture, everything is a module. So, you can innovate without being out of pace with the traditional enterprise software delivery model. The modules available in SUSE Linux Enterprise Server provide faster integration with upstream updates. This design approach lets you balance the flexibility of the modular architecture and stability of the infrastructure. Using Unified Installer, customers can search for a package they like and choose the set of packages they want in the system. Refer to https://documentation.suse.com/sles/15-SP2/html/SLES-all/art-modules.html.

- **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.

"In SUSE's 'Modular+' architecture, everything is a module so customers can install only the features that are needed. This approach helps customers minimize upfront planning and reduce risk, and enables SUSE to deliver product updates and patches more frequently."

IDC MARKET NOTE, 2018

- **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. 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 for ARM and SUSE Linux Enterprise Server for Raspberry Pi.
- **Salt.** Track and manage configurations using Salt integrated in base system. Salt 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.

  In addition, SUSE Linux Enterprise Server supports Linux Containers and open source Docker container engine. You can manage Linux Containers using common virtualization framework (libvirt). To support open source Docker container engine, a private registry is included with tools to collaborate securely, apply security patches and automate application deployment inside Linux Containers.
- **Implement DevOps.** Support automation, project builds and message-oriented middleware, all combined with management and monitoring features (such as RabbitMQ, Prometheus and Maven).

DEPLOY MISSION CRITICAL SERVICES

- **SUSE Linux Enterprise Live Patching.** Update security patches without rebooting machines and without waiting for your next service window.
- **Data Security.** Improved hardware based data security using AMD's Secure Encrypted Virtualization (SEV) technology. It enables guest virtual machines to run in encrypted memory, helping protect them from memory scrape attacks from the hypervisor.
- **Complete offline installation/disconnected operations.** Enhance security with disconnected offline installation that helps you to maintain physical segregation from external networks. Complete offline installation is a big benefit for many applications such as Oracle, SQL, and SAP and businesses such as government and defense.
- **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 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 drivers and tools (open-vm-tools) are fully supported and integrated into SUSE Linux Enterprise Server in an all-in-one package with their performance fine-tuned.
- **High Availability.** 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. Starting with SUSE Linux Enterprise 15, Geo Clustering is included within High Availability extension itself, so you can easily connect data centers across the world using the integrated Geo Clustering functionality.
- **NVDIMM.** Reduce downtime by reducing rebuild time upon power restoration with integrated NVDIMMs that save data in seconds and make data immediately available on reboot. Downtime sensitive applications such as online transaction processing and financial applications can benefit from persistent system memory functionality. Improve performance by running applications such as storage and database acceleration at far higher speeds using system memory persistence capabilities of NVDIMM. As an example, SUSE Linux Enterprise Server is optimized for Intel® Optane™ DC persistent memory with SAP HANA® workloads.
- **Exploiting Hardware RAS.** Enhance your system reliability and reduce service costs. SUSE Linux Enterprise Server includes exclusive processes to exploit the RAS features of your hardware platform.

"SUSE designed SUSE Linux Enterprise (SLE) 15 with the developer community in mind. Developers can easily transition from openSUSE Leap or the free developer versions of SLE to the fully supported SLE 15 distribution."

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- **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.
- **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

- **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 Customer Center (SCC).** Using SCC, you can 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.
- **Security standards compliance.** SUSE Linux Enterprise Server is 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 (IPSecbased 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.
- **Disk Encryption.** Protect data at rest without additional software cost. Local and remote disk encryption is supported using cryptctl for all on-premises, cloud and hybrid installations. Integration via Enterprise Key Management KMIP standard.
- **Single Sign-on.** Shibboleth support in SUSE Linux Enterprise Server enables single sign-on using one identity across different domains for computer networks and web infrastructure.

Following are links for products/extensions referenced in this document.

- SUSE CaaS Platform
- SUSE Linux Enterprise Live Patching
- SUSE Linux Enterprise High Availability Extension (includes Geo Clustering)
- SUSE Linux Enterprise Server Workstation Extension, Desktop

For further details visit: www.suse.com/server/

Documentation: https://documentation.suse.com/#sles

Release Notes: https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15-SP2/