

SUSE Linux Enterprise Server FUNKCJE

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SUSE Linux Enterprise Server helps you save money, deliver mission-critical data center services reliably and securely and get the most out of your mixed IT environment.

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Reliability, Availability and Serviceability

- **Swap over network file system (NFS)**This feature allows you to use NFS over Internet protocols (IP) to access remote storage for local server needs. You can cut costs by using less expensive diskless servers and protect your systems against application restarts and costly downtime.
- **Control groups**SUSE Linux Enterprise Server features control groups for more fine-grained management of CPU, memory, storage and networking resources. Control groups let you assign specific hardware resources to applications, processes and threads. This precise control helps you optimize system performance, tune workload service response times and maximize uptime for your mission-critical workloads.
- **Device mapper multipath I/O**Asynchronous and multipath I/O capabilities reduce your overall disk read/write times and enable redundant storage paths and networks. The results are more efficient load balancing, improved performance and higher availability.
- **Carrier Grade Linux**SUSE Linux Enterprise Server supports the Linux Foundation's latest Carrier Grade Linux standard (CGL 4.0) and is validated for use in telecommunications environments.
- **Kernel improvements and btrfs**SUSE Linux Enterprise Server 11 ships with a modern 3.0 kernel, delivering enhanced RAS capabilities. You get improved scalability and data integrity with btrfs; a more resilient file system; faster snapshot capabilities

including capture, restore and compare; and rollback for better change control and reduced service times. It also supports the RAS features in the latest Intel and AMD processors such as CPU and memory hot-plugging.

Advanced Security and Certifications

- **Security Certifications**In early 2013 SUSE Linux Enterprise Server 11 achieved the Common Criteria certification on the AMD64 / Intel 64 and IBM System z architectures. Additionally, FIPS 140-2 certification, a U.S. government computer security standard used to accredit cryptographic security for modules like OpenSSL, was successfully completed.
- **AppArmor**This security framework protects your Linux OS and applications from external and internal threats and zero-day attacks. AppArmor comes with default policies for quick deployment so you can secure mission-critical applications quickly. Security profiles completely define what system resources individual programs can access and with what privileges. AppArmor also includes learning-based tools and advanced statistical analytics that simplify and accelerate the development of customized policies, even for the most complex applications. Additionally, with AppArmor you can change security policies dynamically, eliminating the need to reboot the system.
- **True firewall protection**SUSE Linux Enterprise Server protects your network from internal and external attacks with a "stateful" firewall. The Linux netfilter framework lets you establish an effective firewall that separates networks from each other. With the help of iptables—a generic table structure for the definition of rule sets—you can precisely control which packets are allowed to pass through a particular network interface. Setting up this kind of packet filter is simple with SuSEfirewall2 and the corresponding YaST® administration module.
- **UEFI Secure Boot**SUSE Linux Enterprise Server 11 Service Pack 3 is the first enterprise Linux to integrate and enable the secure boot mechanism of the Extensible Firmware Interface (UEFI) at your choice. Depending on your needs, this method identifies the authenticated kernel to boot the system, reducing significantly the potential for malicious attacks at this initial stage of system startup.
- **Trusted Platform Module (TPM) support**SUSE Linux Enterprise Server includes support for the TPM standard, which facilitates the authentication of hardware devices like laptops or desktops in, for example, corporate network environments
- **Comprehensive and precise security administration**SUSE Linux Enterprise Server exposes the latest hardware security features like the Advanced Encryption Standard (AES) instruction set. Applications and hardware that leverage AES operate more securely as a result. Other capabilities include certificate creation and management, VPN, encryption, authentication, access control lists, intrusion detection and more.

Scalability

- **Latest CPU Support**

SUSE Linux Enterprise 11 Service Pack 3 introduces support for latest CPUs, including:

- Intel® Xeon® processor E5-4600/2600/1600
- Intel® Xeon® processor E5-2600 v2 "Ivy Bridge-EP"
- Intel® Xeon® processor E5-2400 v2 "Ivy Bridge-EN"
- The 4th generation Intel® Core (TM) processor
- AMD Opteron 4000/6000 family

- **CPU and RAM limits**SUSE Linux Enterprise 11 can support up to 4096 logical CPUs on Intel 64. This has been confirmed on the SGI UV2 server platform. The theoretical limit of RAM support of SUSE Linux Enterprise 11 is 64TiB. The practical limit, which is more important to customers, is 16TiB RAM on certified hardware.

- **PCI Express Solid State Drive (SSD)**PCI Express SSD is a fast throughput and low latency interface technology. It supports connecting the SSD through the PCI Express interface to the server. This feature will boost the performance of local I/O and caching of your workloads, for example, databases. What's more, you can fine-tune applications that are sensitive to hierarchical storage layout at a more granular level.

- **Open Fabrics Enterprise Distribution (OFED)**OFED is the software stack developed by the OpenFabrics Alliance which uses remote direct memory access switched fabric technologies for server and storage connectivity. OFED provides high CPU efficiency, lower energy consumption and reduced rack-space requirements for cost savings. SUSE Linux Enterprise 11 Service Pack 3 support OFED 1.5.4.

- **Data Center Bridging (DCB)**DCB refers to a set of enhancements to Ethernet local area networks for use in data center environments. DCB allows you to build an Ethernet-based converged networking for both storage and data networking for lower total cost of ownership (TCO) and simpler management.

- **Logical Volume Manager (LVM) thin-provisioning**Thin provisioning is a way to place virtual devices on a data volume that can share data, grow with use and allow for snapshots of snapshots without degradation. This functionality is enhanced in Service Pack 3. Thin provisioning gives you physical storage over subscription and lets you optimally utilize available storage in your shared storage environment on the Volume Management layer.

- **iSCSI Target (LIO)**The iSCSI Target (LIO) implements a generic SCSI target that provides remote access to most data storage device types over all prevalent storage fabrics and protocols. iSCSI target (LIO) support increases speed and synchronizes the target for iSCSI and FCoE together, using just one stack to improve throughput and performance.

- **IPv6**The next-generation Internet Protocol version 6 specification (IPv6) is the successor to Internet Protocol version 4 (IPv4). Kernel subsystems and other system services, including NFSv3, AutoFS, UEFI 2.3.1, and Python-Ethtool, have been upgraded to support IPv6.

- **Support for high-speed interconnects**Open Fabrics Enterprise Distribution (OFED) 1.5.4 support enables affordable, high-speed, remote direct memory access (RDMA) capable fabrics and unified interconnects based on InfiniBand and 40 Gigabit Ethernet. Support for Fiber Channel over Ethernet (FCoE) allows existing fiber channel storage to be accessed using an Ethernet adapter. Data Center Bridging (DCB) enhancements allow network traffic with differing requirements to operate and co-exist on Ethernet networks.

Cross-Platform Virtualization

- **Support for XenBoost** hardware utilization and efficiency with this open source hypervisor, which is integrated into SUSE Linux Enterprise Server. Xen 4.2 delivers superior performance—especially for I/O intensive workloads. The key is thorough support for single root I/O virtualization (SR-IOV) and single root address translation services (SR-ATS).
- **Support for KVM (Kernel Virtual Machine)**A subscription to SUSE Linux Enterprise Server includes full commercial support for KVM 1.4 , also an open source hypervisor. KVM boosts performance by leveraging the Linux kernel's resources. Like Xen, it ships at no additional cost with SUSE Linux Enterprise Server.
- **Paravirtualized drivers**With paravirtualized drivers, you can also run virtual Windows servers with near-native performance. These drivers are available with the SUSE Linux Enterprise Virtual Machine Driver Pack 2.1.
- **Optimized for major third-party hypervisors**Achieve greater utilization of older systems and increase performance on newer hardware. Run SUSE Linux Enterprise Server as a guest operating system in virtual environments created with VMware vSphere, Microsoft Hyper-V or Citrix XenServer. And it's affordable—one subscription entitles you to run an unlimited number of virtual guest instances per physical server.
- **Linux Containers**SUSE Linux Enterprise Server has commercial support for Linux Containers—for highly efficient, low overhead OS virtualization. Service Pack 3 updates Linux Containers with the latest improvements.

Simplified Administration, Development and Systems Management

- **YaST/AutoYaST/WebYaST**YaST is a user-friendly environment for installing and configuring Linux systems. Predefined patterns simplify setup and deployment. AutoYaST extends this functionality to larger numbers, letting you deploy server subsets or entire groups—even unattended. WebYaST offers the functionality of YaST via a web browser.
- **Efficient package management**Managing package installations and resolving dependencies can be a nightmare. SUSE Linux Enterprise Server includes ZYpp, the

fastest update stack available on any enterprise distribution. System updates that once took hours now take just minutes. Starting with SP2, SUSE Linux Enterprise Server supports a snapshot and rollback feature for package management and administrative tasks. This is accomplished by integrating the options of a btrfs file system (without the ZYpp stack) and the open source tool Snapper, resulting in simpler handling of btrfs snapshots.

- **Subscription and patch management tools**SUSE Linux Enterprise Server includes access to Customer Center and the Subscription Management Tool (SMT). With these tools you can easily manage your systems through an intuitive, web-based portal, or centrally manage software updates on a per-system basis within your corporate firewall.
- **Cross-architecture debugging**You can analyze System z core dumps on an x86 system, eliminating the need for a duplicate mainframe based server. This simplifies systems management and keeps costs under control.
- **Software development kit (SDK)**Included with SUSE Linux Enterprise Server is a comprehensive SDK that contains several integrated development environments and also supports popular programming languages, such as C, C++, Java, Perl, Python, PHP and Ruby. The SDK also includes libraries, compilers, debuggers, simulation tools and editors necessary for developers, as well as Tomcat, a popular application for serving web applets.

Interoperability with Other Platforms

- **Interoperability with Windows**Since 2006, SUSE and Microsoft have been formally collaborating to improve interoperability between Linux and Windows. Our latest server OS supports Samba 3.6 to help enterprises deploy SUSE Linux Enterprise Server in Windows 7 active directory domains more easily.
- **Interoperability with UNIX**Our Linux platform is POSIX-compliant and fully compatible with other POSIX-compliant UNIX operating systems, such as Solaris, AIX and HP-UX. In addition, our latest network file system—NFS 4.1—delivers enhanced support for file system access control lists, further improving interoperability with UNIX systems.
- **Interoperability with Linux**SUSE Linux Enterprise Server adheres to the Linux Foundation's current Linux Standards Base (LSB 4.0). This ensures maximum compatibility with previous versions and helps ISVs more efficiently port, test and certify their Linux applications.
- **Improved interoperability**Samba 3.6 adds SMB2 protocol support as well as improved CIFS kernel modules for easier deployment of SUSE Linux Enterprise Server in Windows 7 active directory domains. IPv6 support in NFS and integration into UEFI network boot processes improves interoperability with UNIX systems.

High Performance Computing

- **Support for high-speed interconnects**Open Fabrics Enterprise Distribution (OFED) 1.5.4 support enables affordable, high-speed, remote direct memory access (RDMA) capable fabrics and unified interconnects based on InfiniBand and 40 Gigabit Ethernet. Support for Fiber Channel over Ethernet (FCoE) allows existing fiber channel storage to be accessed using an Ethernet adapter. Data Center Bridging (DCB) enhancements allow network traffic with differing requirements to operate and co-exist on Ethernet networks.
- **Advanced power-saving features maximize performance per watt**Tickless idle reduces system power consumption and lowers energy costs. When the CPU is idle, tickless idle eliminates the periodic timer in the Linux kernel, allowing the CPU to remain in power-saving states longer. More granular file-based power profiles simplify enterprise-wide power management, and support for the Processor Clock Control (PCC) interface driver ensures complete processor state information is shared between the operating system and hardware BIOS. With more efficient algorithms, you gain greater control over CPU speeds and hardware power management, maximizing performance per watt.
- **Cluster-ready**SUSE Linux Enterprise Server is "Intel Cluster Ready." It supports advanced memory management; native POSIX thread libraries; highly scalable, multi-threaded file systems like XFS; advanced multi-pathing; and high-speed interconnects. The rich feature set makes SUSE Linux Enterprise Server the overwhelming favorite for high-performance computing clusters worldwide.
- **IPv6**The next-generation Internet Protocol version 6 specification (IPv6) is the successor to Internet Protocol version 4 (IPv4). Kernel subsystems and other system services, including NFSv3, AutoFS, UEFI 2.3.1, and Python-Ethtool, have been upgraded to support IPv6.

Modular Extensions for Advanced Capabilities

- **High Availability Extension**This affordable, integrated suite of technologies enables you to deploy highly available physical and virtual Linux clusters. Used with SUSE Linux Enterprise Server, it helps you maintain business continuity, protect data integrity and reduce unplanned downtime.
- **Real Time Extension**This extension turns the general-purpose Linux operating system into a fully supported, real-time operating system. It also reduces the latency of mission-critical applications while increasing their predictability and reliability.
- **Enhanced clustering capabilities with unlimited distance**Geo-clustering is offered with the High Availability Extension for improved disaster recovery. Enhanced web-based tools now offer easier and more complete access to cluster logs, as well as fine-grained management capabilities, facilitating cluster administration.

World-Class Support

- **Technical support**SUSE has over 20 years of experience and hundreds of Linux-trained engineers located in support centers covering every region of the world.

Because SUSE has long been involved in integrating its solutions with those of other vendors, our technical support personnel can tackle the toughest problems—at any scale and on any platform or combination of platforms.

- **SupportLink**This application dramatically speeds problem resolution by collecting system crash data and other critical information and organizing it for easy analysis by SUSE support systems and personnel. SupportLink lets you report issues quickly, and it archives and securely sends your log files to SUSE.
- **SupportAdvisor**With this tool, you can diagnose issues locally without sending your log files to SUSE for analysis. SupportAdvisor is easy to use and runs on both Linux and Windows. In addition, it enables you to run health checks on multiple servers, helping you identify trends and address potential trouble spots before they turn into full-blown problems.

Featured Highlights

- **Get more done with the most versatile Linux platform** Supports 10,000+ ISV application versions, runs on multiple hardware platforms and interoperates with Windows and UNIX.
- **Run mission-critical workloads reliably and securely** Offers the lowest downtime in its class. Takes advantage of hardware and software RAS and security.
- **Achieve scalability for your mission-critical workloads**See how SUSE Linux Enterprise Server 11 Service Pack 3 helps you achieve vertical and horizontal scalability.
- **Save time and money, now and in the future** Squeeze every cent from your existing hardware. Save even more with low-cost software licensing and powerful administration tools.
- **Try the support ranked #1 by customers and partners** Consistently ranked #1 for Linux support. Recommended by Microsoft, SAP and VMware to their Linux customers.