



SUSE Linux Enterprise Micro 5.4

Lightweight and Secure OS Platform for Containers and VMs

Benefits of...



Small footprint, Enterprise-grade



Low Maintenance



Secure OS Platform, Mission-critical by Design



Perfect for Containers & Kubernetes



100% open source, built using open standards

Product Overview

SUSE Linux Enterprise Micro is a lightweight and secure OS platform purpose built for containerized and virtualized workloads.

It leverages the enterprise-hardened technology components of SUSE Linux Enterprise and merges that with what developers want from a modern, immutable OS platform. As a result, you get an ultra-reliable infrastructure platform that is also simple to use and comes out-of-the-box with best-in-class compliance.

SLE Micro is well suited for any decentralized computing environment such as edge, embedded or IoT deployment without vendor lock-in. Using SUSE Linux Enterprise Micro, you can build and scale differentiating edge systems across a wide range of industries including aerospace, telecom, automotive, defense, healthcare, hospitality, and manufacturing.

Key Features

“Using SUSE Linux Enterprise Micro and the lightweight Kubernetes distribution K3S managed by Rancher, we are excited to implement a maintenance free infrastructure for innovative new cluster concepts for edge devices.

With a decentralized approach, we are reducing operational expenses and modernizing application infrastructure by moving applications running on bare metal to a fully managed containerized stack using K3S.”

Ottmar Amann,
Software Systems, Corporate Research &
Development
KRONES AG

Immutable OS. SLE Micro is a lightweight immutable OS that’s optimized for edge use cases. Its immutable design ensures OS is not altered during runtime and runs reliably every single time. Further, SLE Micro leverages enterprise-hardened SLE common code base to provide enterprise-grade quality and reliability.

Small Footprint and Modular Architecture. SLE Micro’s size is optimized for small footprint installations without compromising on enterprise-grade security or quality. SLE Micro’s modular architecture maximizes developer agility and flexibility. You can start with just the Linux kernel and add required modules to create a custom image (using KIWI, Open Build Service, and SUSE SolidDriver Program) that is tailored for your application. You have full control over the footprint of the OS image.

Containers. SLE Micro is built from ground up to support containers and microservices. All applications/workloads are run as containers and separated into dedicated containers. This provides several advantages – new installation of workloads can be done without reboot, atomic updates are easier to support (create new workload, kill old workload) and it is easy to rollback when an update or configuration change goes wrong. From security perspective, workloads are isolated from the core filesystem to guard against malicious applications compromising the system. Container runtime (podman) is adjusted to support auto-generation of SELinux policies for container workloads.

Integrated with SUSE Edge. Rancher by SUSE provides seamless deployment of SLE Micro from Rancher dashboard. You can manage Operating System and Kubernetes from one dashboard. As a result, you save operating costs, improve efficiency of IT Operations and enable management at scale.

Security & Compliance

- **Built-in Security Framework.** Includes fully supported security framework – SELinux with policies. SELinux provides a mechanism for supporting access control security policies, including United States Department of Defense-style mandatory access controls (MAC). Container runtime (podman) is adjusted to support auto-generation of SELinux policies for container workloads.
- **Secure Device Onboarding.** Using integrated secure device onboarding client, MSPs (Managed Service Providers) or IHVs/ISVs can ship an appliance directly to end customer, and subsequently, while operating the device remotely, onboard it securely. This helps reduce deployment time and manual process while improving security for onboarding appliances/devices.
- **Secure Updates.** Updates are always security signed and verified. Additionally, the updates are easy to rollback if an update fails or is not needed.
- **Kernel Live Patching.** You can apply updates to a running kernel without the need to reboot. This helps you avoid costly downtime per device and reduce risk of cyber attack, by applying the security updates as soon as available, without waiting for a maintenance window.
- User space Live Patching is available as technogloy preview with SLE Micro 5.3.
- **Certifications.** SLE Micro leverages SLE common code base, to provide FIPS 140- 2, DISA SRG/STIG, integration with CIS and Common Criteria certified configurations. In addition, SLE Micro is listed at NIAP as under evaluation for FIPS 140-3 certification and Common Criteria.
- SUSE has over 25+ years of deep [US Federal Government experience](#) delivering core platform and collaboration technology for the public sector worldwide. SLE Micro, part of SLE product family, provides same level of security to meet the defense mission-critical requirements.
- **Aiming for Zero Maintenance.** SLE Micro is built with the goal of zero maintenance. All routine maintenance functions like patches, updates, config changes are designed to be seamless for the system administrator.

Automate Deployments

- You can provision and install OS image without reboot using [YOMI](#) or AutoYaST. [YOMI](#) is the new installer introduced with SLE Micro. It is designed as a SaltStack state and uses YaML based configuration files that makes it easy to perform mass configurations.
- Pre-hardened images are available for faster and more secure deployments.
- Use [Ignition](#) to automate the initial configuration.

Reliable Updates

- **Secure download.** Updates are always downloaded using https.
- **Signed.** Packages and repositories are security signed – Intruder cannot exchange good, new packages with old or insecure packages.
- **Verified.** Packages are verified before usage. System is not updated if conflicts occur. Snapshots get immediately deleted if updates terminate with an error.
- **Transactional updates.** Each update is atomic and uses transactional update technology. Transactional updates along with rollback provide a fail-safe environment. Using Btrfs with snapshots provides a very space efficient method. The updates are flexible – no new package format is necessary and no size limitation for partition or OS. The transactional update process also can be enhanced to perform additional tasks during installation of updates.

Health Check. Built-in health checks ensure an optimized run time environment. Automated checks are done for errors during booting and snapshots. When error is detected, you have multiple options, such as rollback to working snapshot, reboot, or inform administrator. The health checks can also be easily extended by user supplied plugins and scripts. So, you can customize the health checks as per your needs.

Architectural Flexibility. You have flexibility in choosing the right hardware platform for your applications. SLE Micro supports x86-64, Arm 64bit, and IBM Z & LinuxONE architectures, so you can deploy applications with confidence across multiple architectures.

Support for Edge devices. Support for 4G/5G modems strengthens the support for edge devices with SLE Micro.

Real Time Support. Real time kernel is optional on x86-64. Real time kernel can be used for real time applications.

High Availability in edge deployments. Keepalived and haproxy are included to offer High Availability functionality in edge deployments.

Long Term Support. SLE Micro is prepared to support long product lifecycles.

Lifecycle Management. You can manage using Rancher by SUSE, SUSE Manager or using Cockpit for 1:1 Web based management or integrate with open-source management tools.

System Requirements

- Minimum: 1 GB RAM, 12 GB HDD
- Recommended: HDD 20GB for system + 40GB for storing containers

Note: RAM requirement depends on workloads.

Supported processor platforms

- x86-64 (Intel 64, AMD 64)
- AArch64 (Arm)
- IBM Z and LinuxONE (s390x)

For detailed product specifications and system requirements, visit: <https://www.suse.com/products/micro> and <https://documentation.suse.com/sle-micro>