



SUSE Edge

An Integrated, Cloud Native Stack, Optimized for the Edge

Benefits of...



Automate operations with full lifecycle management



Deploy lightweight Kubernetes at the Edge



Use Operating System built for Edge



Meet edge computing needs such as low latency and reduced bandwidth

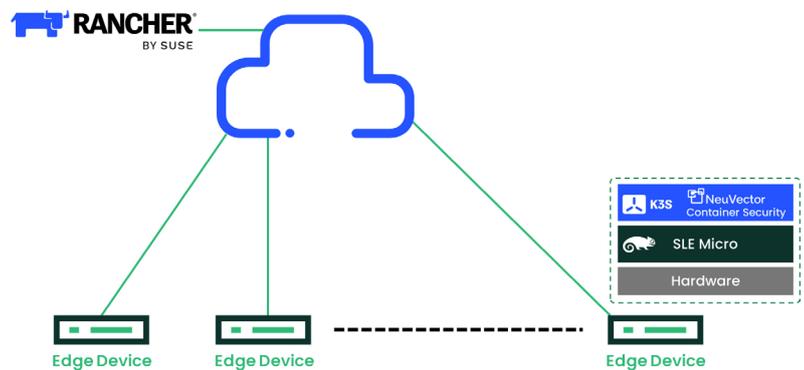


Prepared to support very long product lifecycles

Product Overview

SUSE Edge is one of the industry's first edge computing platforms to deliver Full-Lifecycle Management for the Edge. SUSE Edge solution is a lightweight software infrastructure for building, deploying, and managing cloud-native applications with automation, security, and a common management framework.

By combining the best of open source technologies – Linux and Kubernetes, SUSE Edge offers you the unique ability to manage both OS and Kubernetes from a single pane of glass (i.e., one management console), and do it at scale.



Key Features

Automate Operations with Full Lifecycle Management

Our goal is to fully automate edge infrastructure. All routine maintenance functions (patches, updates, config changes) are performed seamlessly. When things go wrong, security signed and verified transactional updates are easy to rollback.

With **“Full-Lifecycle” management** you will have the ability to manage the lifecycle at each layer: application, cluster and OS. Rancher Management Platform helps you manage the full-lifecycle using a single management console for the edge stack – for both OS and Kubernetes.

Rancher by SUSE’s Continuous Delivery utilizes a ‘GitOps’ approach to help users manage and deploy thousands of Kubernetes clusters easily. Driven by project **‘Fleet’**, Rancher Continuous Delivery gives users the ability to manage Kubernetes at the Edge across any infrastructure environment. Fleet itself is GitOps at scale, designed to manage up to a million clusters.

“The Home Depot is deploying Kubernetes across a footprint of over 2200 stores. Having a common platform with Kubernetes, centered around a single binary experience with K3s, enables us to deploy, update, secure the underlying container platform quickly than traditional full stack Kubernetes.”

Infrastructure Manager, Zach Hardin,
The Home Depot

[Rancher by SUSE](#) provides maximum security and reliability. This is mission control for all your edge-deployed clusters. **Rancher addresses the needs of the DevOps teams** deploying applications with Kubernetes and the IT staff delivering critical services to the edge.

Lightweight Kubernetes at the Edge

Certified Kubernetes distribution built for IoT & Edge computing

SUSE Edge utilizes [K3s](#) to deliver lightweight Kubernetes distribution fit for resource constrained and remote location or IoT devices, with following key benefits.

- Production ready – Highly available, perfect for running production workloads inside edge appliances or at the network edge.
- Reliable and Scalable – Manages thousands of clusters across the Edge.
- Simplified and Secure – K3s is packaged as a single <40MB binary that reduces the dependencies and steps needed to install, run and auto-update a production Kubernetes cluster.

Container Security

NeuVector provides full lifecycle container security. Rancher users can access and be authenticated to manage NeuVector directly through the Rancher console. This provides customers the benefit of a complete zero-trust stack with a seamless user experience that simplifies security management for large, globally distributed Kubernetes environments.

Software-defined storage platform for Kubernetes

[Longhorn](#), also a CNCF project, is used to deliver a powerful, distributed, software-defined storage platform for Kubernetes that can run anywhere. When combined with Rancher, Longhorn makes the deployment of highly available persistent block storage for your edge-based Kubernetes clusters easy, fast, and reliable.

By supporting both x86 and ARM64 architectures, Longhorn is the first Kubernetes-native storage solution designed to help teams store data reliably within even the most remote, low-powered environments at the edge.

“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.”

Ottmar Amann,
Software Systems, Corporate R&D
KRONES AG

Operating System Built for Edge

The new SUSE Edge delivers a cloud-native variant of [SLE Micro](#), our lightweight and secure OS built from the ground up for edge applications. [SLE Micro](#) leverages the enterprise-hardened components of SUSE Linux Enterprise so you get an ultra-reliable infrastructure platform that’s simple to use and comes out of the box with best-in-class compliance. Key features include:

Lightweight, Immutable OS

- Built from ground up to support containers and microservices.
- SLE Micro’s tiny footprint is 3x smaller than SLE Server without compromising on enterprise grade security or quality.
- 100% open source, built using open standards.

Provides a reliable and secure OS Platform for the Edge

- Uses enterprise-hardened technology components of SUSE Linux Enterprise.
- Leverages certifications and compliance, such as FIPS 140-2, DISA SRG/STIG.
- Pre-installed security framework – SELinux.

Low Latency

- Real time performance enables bringing advanced workloads as close as possible to where they’re delivering value. Thus, eliminating network latency and providing organizations with instantaneous compute, storage, and container services.

Long Term Support & Architectural Flexibility

SLE Micro is prepared to support long product lifecycles.

SLE Micro supports x86-64 as well as Arm 64bit architectures, so you can deploy edge applications with confidence across multiple architectures.

SUSE Edge solution serves a broad set of use cases ranging from organizations that are using on-prem devices to organizations ready for cloud-native. The solution is modular. When combined with [SUSE Manager](#) or an open source management tool you can use for edge use cases that are

not fully containerized. For edge use cases that are fully containerized and cloud-native, Rancher enables managing the lifecycle of edge-scale Kubernetes deployments. Below are some edge scenarios for quick reference.

Organizations are at different points in their journey to cloud and digital transformation.

Edge Scenarios

On-premise/Standalone

Some organizations use Bare Metal installations that are on-premise or standalone. They may or may not be connected to cloud. They would use [SLE Micro](#) at OS layer, with or without [SUSE Manager](#) for management.

Cloud-ready

A 'cloud ready' or 'cloud-enabled' application is built from software that has been modified to run on a cloud computing infrastructure. An example of this would be an application located on-premises that has been 'lifted and shifted' to the cloud. The applications may be running in virtualized environments. Some of these organizations are transforming their mission critical workloads without containerization. They could use SLE Micro at OS layer and SUSE Manager for managing the OS.

Cloud-native

Some organizations are moving towards cloud-native technology for their edge use cases. They would prefer to have a full cloud-native stack that is fully integrated along with being able to manage everything from one management tool. Here, [Rancher Management Platform](#) would be their single management console for the edge stack. So, you can manage both Kubernetes and OS from single pane of glass (i.e., one management console). Having one management tool, takes away a lot of operational friction that only multiplies with each edge device that is added to the network.

For such scenarios, there are two challenging areas at the edge - native complexity brought in by Kubernetes, and the sheer number of edge locations under management.

Combining these two challenges — complexity and large numbers — requires a framework that can simplify the operational management and be able to do it at scale. SUSE Edge is designed to provide the edge computing platform to address these two key challenges.

This means that you can confidently innovate at the edge and do it knowing that SUSE is right beside you with enterprise-grade support.

System Requirements

Minimum system requirements for SLE Micro installation

- 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 (Arm64)

Resources

Product Pages

- [IT Operations at the Edge](#)
- [Rancher by SUSE](#)
- [K3s](#)
- [SUSE Manager](#)
- [SLE Micro](#)
- [Longhorn](#)

About SUSE

With over 25 years of engineering excellence, exceptional service, and a worldwide partner ecosystem, SUSE is a global leader in Enterprise Linux, Kubernetes Management, and Edge solutions. We collaborate with partners and communities to empower our customers to innovate everywhere -- from core to cloud to edge and beyond. SUSE puts the "open" back in open source, giving customers the agility to tackle the innovation challenges today and the freedom to evolve their strategy and solutions tomorrow. The company is headquartered in Nuremberg, Germany and is listed on the Frankfurt Stock Exchange.

To learn more about SUSE's products and solutions visit www.suse.com