

Introduction to SUSE Linux Micro deployment

WHAT?

Basic information about available SUSE Linux Micro installation images and hardware requirements.

WHY?

To better understand all types of installation images for SUSE Linux Micro.

EFFORT

Less than 15 minutes of reading and a basic knowledge of Linux deployment.

GOAL

To choose the right SUSE Linux Micro installation image for a specific target environment and verify that the minimum hardware requirements are satisfied.

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1 Installation images

SUSE Linux Micro is distributed as downloadable installation images. There are multiple types of installation images and each of them is suitable for a specific deployment scenario. This article helps you decide what installation image or images apply for your installation environment based on several criteria.

1.1 Image type

The following types of installation images are available for SUSE Linux Micro based on the installation type. Keep in mind that not all types of installers are available for each installation environment.

Raw disk image

Raw disk image is not a bootable image with an installer but the actual image of an installed SUSE Linux Micro itself. It is not “installed” but rather copied to a hard disk device. On its first boot, you can configure basic system options using an *ncurses* user interface. Using a configuration medium, you can fine-tune the deployment setup with Combustion and Ignition tools.

Self-install image

Self-install image is a bootable raw disk image that takes care of copying its content to a hard disk device.

PXE installation image

A tar archive that can be used to install SUSE Linux Micro from a remote server using the PXE client on the target system.

Virtual machine image

Instead of installing SUSE Linux Micro in a virtual machine, you can use pre-built disk images for supported hypervisors. The `.qcow` or `.qcow2` are available for the QEMU emulator. The `VMware` images are intended for deployment on the VMware virtualization technology. To configure the image, you can use Combustion, Ignition or `cloud-init`.

Cloud image

Use this image to run SUSE Linux Micro in a supported cloud environment. To configure the image, you can use Combustion, Ignition or `cloud-init`.

All the above mentioned images are delivered as either a base or default subtype. In addition to the core OS, subtypes contain the following tools:

base

- Podman

default

- Podman
- virtualization stack
- Cockpit
- salt-minion

1.2 Kernel type

On AMD64/Intel 64 and AArch64, SUSE Linux Micro can be installed either with a default kernel or a *real-time* kernel. While default kernels focus on throughput-oriented operations and fair scheduling of tasks, real-time kernels are designed to maintain low latency and consistent response time. The default kernel is available in all types of installation images listed in [Section 1.1, “Image type”](#). The real-time kernel is available in the following installation images:

- Raw disk image
- Self-install image



Tip

You can identify the real-time kernel images by the string rt in their file name.

1.3 Disk encryption

If your deployment requires running SUSE Linux Micro on an encrypted disk, use an installation image with the disk encryption support.



Tip

You can identify images with the disk encryption support by the string `encrypted` in their file name.

1.4 Installation environment

The choice of the installation image heavily depends on the environment where you intend to install SUSE Linux Micro.

Bare metal installation

When installing SUSE Linux Micro directly on a physical host without virtualization or cloud services layers, you have several options depending on the type of the target hardware.

- If the target host supports a bootable drive in addition to the main installation disk, use the self-install image.
- If the target host provides only the main installation disk, use the raw disk image.

Virtualized installation

To run virtualized SUSE Linux Micro, you have the following options:

- Use a raw disk image as the main disk of the virtual machine.
- Use a self-install image as a bootable drive and use it to transfer the disk image to the main disk of the virtual machine.
- Use a pre-built virtual machine image of SUSE Linux Micro designed for a supported hypervisor.

Cloud deployment

To run SUSE Linux Micro in a supported cloud environment, use a pre-built image designed for a supported cloud services provider.

2 Requirements

This article lists requirements for deploying SUSE Linux Micro.

2.1 Hardware requirements

SUSE Linux Micro deployment is supported on the following hardware:

BIOS

Installing SUSE Linux Micro is supported on hosts with UEFI BIOS only. Hosts with legacy BIOS are not supported.

Maximum number of CPUs

The maximum number of CPUs supported by software design is 8192.

Memory

SUSE Linux Micro requires at least 1 GB RAM. Remember that this is a minimal value for the operating system, the actual memory size depends on the workload.

Hard disk

The minimum hard disk space is 20 GB. However, the *qcow2* images require at least 32 GB of hard disk space. When planning the HDD space, consider also the amount of space used by the workloads of your containers.

CPU

AMD64/Intel 64 v2, AArch64, IBM Z—z14 and higher, and POWER 9 and higher CPU architectures are supported. See [Section 2.1.1, “Supported CPUs and support status identification”](#) for instructions on checking if your CPU is supported.

2.1.1 Supported CPUs and support status identification

In general, on AMD64/Intel 64 the following Intel CPU generations are supported:

- Intel Nehalem (released in 2008) and newer high-end CPUs: Intel Core i9, Core Ultra 9, Intel Core i5 and i7 CPUs, and so on.
- Intel Silvermont (released in 2013) and newer low-power branded CPUs: Atom, Celeron, Pentium, Core i3/i5/i7 U and Y series, and so on.
- AMD Bulldozer (released in 2011) and newer Zen high-end CPUs: FX and Opteron CPU lines, Ryzen, and so on.
- AMD Jaguar (released in 2013) and newer low-power CPUs: Athlon, Sempron, A and E series, and so on.

To check if your CPU is supported, run the following command before you install SUSE Linux Micro:

```
> cat /proc/cpuinfo |grep '^flags'
```

Your CPU is supported if *all* the following flags are present in the command output:

```
cx16 lahf_lm popcnt ssse3 sse4_1 sse4_2
```

2.2 Virtualized deployment

When deploying SUSE Linux Micro as a virtual machine guest, you need to have a VM Host Server running one of the supported hypervisors and prepare a virtual machine for SUSE Linux Micro deployment.

SUPPORTED HYPERVISORS

- KVM in libvirt environment
- VMware
- Harvester

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