



# SUSE® Linux Enterprise Server for ARM

July 2020

## What is SUSE® Linux Enterprise Server for ARM?

SUSE Linux Enterprise Server for ARM is the industry's first generally available commercial enterprise-grade Linux distribution that is optimized for servers and Internet of Things (IoT) devices based on a 64-bit Arm chip (AArch64 architecture).

## What 64-bit Arm processor systems are enabled by SUSE?

SUSE partnered with the following Arm processor providers to exploit and test unique Armv8-A features:

- **Advanced Micro Devices (AMD)**—Opteron A1100
- **Ampere Computing**—X-Gene 1, X-Gene 2, eMag, Altra
- **AWS**—Graviton, Graviton 2
- **Broadcom**—BCM2837, BCM2711
- **Fujitsu**—A64FX
- **Huawei**—Kunpeng 916, Kunpeng 920
- **Marvell/Cavium**—ThunderX, ThunderX2, Octeon TX, Armada 7040 / 8040
- **Mellanox**—BlueField
- **NXP**—i.MX 8M; QorIQ LS1028A, LS1043A, LS1046A, LS1088A, LS2085A, LS2088A, LX2160A
- **Rockchip**—RK3399
- **Qualcomm**—Centriq 2400
- **Socionext**—SynQuacer SC2A11
- **Xilinx**—Zynq UltraScale+ MPSoC

**Note:** Please check with the specific hardware vendor for SUSE YES certification for the Arm processor in

your solution. Due to the rapidly evolving availability of Arm System-on-a-Chip hardware, not all platforms have undergone the same degree of hardware testing.

## Are virtual images supported with SUSE Linux Enterprise Server for ARM?

SUSE Linux Enterprise Server for ARM includes full enterprise support for virtualization with KVM optimized with ARMv8.1-VHE (Virtual Host Extensions).

## What workloads are enabled for SUSE Linux Enterprise Server for ARM?

SUSE Linux Enterprise Server for ARM is flexible to support advanced features of a broad set of 64-bit Arm processors and open source community-based storage and industrial automation IoT solutions. Key features include the ability to:

- Develop innovative large-scale, storage and networking solutions with the capability to support up to 256 processor threads
- Enable software-defined storage with built-in Ceph client enablement
- Develop industrial automation solutions for IoT devices including the Raspberry Pi 3 Models A+, B and B+, Raspberry Pi 4 Model B and the Raspberry Pi Compute Module 3+
- Leverage and contribute to open source innovation with community-sourced, SUSE-validated Arm-based packages built using Open Build Service (OBS) and additional software available from

SUSE's Package Hub

### What is new in SUSE Linux Enterprise Server for ARM 15 SP2?

This release includes enhancements and updates to quickly deliver solutions based on a broad set of Arm System-on-a-Chip (SOC) vendors, with enterprise-class security, greater reliability and superior support. With SUSE Linux Enterprise Server for ARM 15 SP2 solution developers and administrators can:

- Develop and deploy enterprise systems including the Ampere Altra, AWS Graviton 2, Fujitsu A64FX and the NXP LS1028A
- Choose the Nvidia TegraX1 and TegraX2 for data science and edge applications
- Choose the Raspberry Pi 4 Model B (frame buffer graphics only), 3 Model A+ and Compute Module 3 B+
- More easily install SUSE Linux Enterprise Server on Raspberry Pi devices from DVD media
- Reduce energy use and heat of idle Raspberry Pi devices
- Enhance security with ARMv8.5 Speculations Barrier (SB) support
- Maximize hardware resource utilization with KVM optimized with ARMv8.1-VHE
- Simplify firmware Flash updates
- Increase Arm system scalability up to 480 vCPUs

### What are the benefits of SUSE Linux Enterprise Server for ARM for solution providers and enterprise early adopters?

SUSE Linux Enterprise Server for ARM enables hardware and software solution providers to:

- **Deliver innovative solutions** with a rock solid OS foundation that is flexible to support advanced features of a broad set of AArch64 processors and open source community-based storage, networking and industrial automation computing solutions.
- **Improve time to market** with an array of advanced tools to more quickly compile, package and deploy Linux solutions for 64-bit Arm systems.
- **Exploit Arm System-on-a-Chip specific features** with optimizations for storage, and a

foundation for network integration as well as support for encryption and compression engines or custom FPGA features.

- **Enhance security for commercial workloads** using the highest level of security for a commercial OS designed for Common Criteria EAL4+ and ARMv8.5 Speculations Barrier support, enabling Arm ecosystem security mechanisms.
- **Reduce problem resolution time and increase peace of mind** with ready and available SUSE Premium Support services options including up to 1 hour response times and 24x7 access.
- **Optimize application performance** by compiling with the latest available compiler technology available from the SUSE Linux Enterprise Server Toolchain Module.

### Does SUSE Linux Enterprise Server for ARM run on the Raspberry Pi?

SUSE Linux Enterprise Server for ARM includes an image to fit on an SD card specifically for the Raspberry Pi. This enables enterprises who use the Raspberry Pi as an IoT device for industrial automation to focus on solution delivery, rather than OS enablement and maintenance. A 60-day free trial is available to introduce SUSE Linux Enterprise Server to developers who wish to inexpensively experiment with 64-bit Arm processors and the SUSE Linux OS. It supports the Raspberry Pi 4 Model B, Raspberry Pi 3 Model A+/Model B/Model B+ and Raspberry Pi Compute Module 3+, and boots to an easy to use graphical user interface. A compiler and popular development tools are also available for download.

### What Raspberry Pi options are supported?

The following I/O options are supported:

- HDMI
- HDMI Audio
- Raspberry Pi Touch Display
- USB keyboard
- USB Mouse
- Ethernet
- Bluetooth
- Wi-Fi
- GPIO

SUSE depends on the source code for hardware drivers to be made available upstream to the open source community before they can be included in SUSE Linux Enterprise products. For this reason the following Raspberry Pi 3 features are not available:

- Audio (through the jack)
- Camera
- H.264 MPEG

#### **Can I use an earlier version of Raspberry Pi?**

SUSE Linux Enterprise Server for ARM supports only 64-bit hardware, including Raspberry Pi 4 Model B, Raspberry Pi 3 Model A+/Model B/Model B+ and Raspberry Pi Compute Module 3+. Models of Raspberry Pi prior to this are 32-bit.

#### **How can I get a copy of SUSE Linux Enterprise Server for the Raspberry Pi?**

SUSE Linux Enterprise Server for ARM for the Raspberry Pi in production use is available from the SUSE Linux Enterprise Server download page [www.suse.com/download-linux](http://www.suse.com/download-linux). It can be used for 60-days as a trial with free patches and updates for non-production education and experimentation.

After downloading the image you will need to unpack and burn the image to an SD Card of at least 8GB of capacity.