



Release Notes

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension is an enterprise-quality Linux desktop with market-leading usability and interoperability. This document provides a high-level overview of features, capabilities, and limitations of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 and highlights important product updates.

These release notes are updated periodically. The latest version of these release notes is always available at <https://www.suse.com/releasenotes>. General documentation can be found at <https://documentation.suse.com/sled/15-SP2>.


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1 About the Release Notes

The most recent version of these Release Notes is available online at <https://www.suse.com/releasesnotes> .

These Release Notes are designed to be read in addition to those of SUSE Linux Enterprise Server 15 SP2 at https://www.suse.com/releasesnotes/x86_64/SUSE-SLES/15-SP2 .

Entries can be listed multiple times if they are important and belong to multiple sections. Release notes only list changes that happened between two subsequent releases. Always review all release notes documents that apply in your upgrade scenario.

2 SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension is the market's only enterprise-quality Linux desktop ready for routine business use. Developed and backed by SUSE, SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension provides market-leading usability, seamless interoperability with existing IT systems, and dozens of essential applications—all at a fraction of the price of proprietary operating systems.

2.1 Interoperability and Hardware Support

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 comes bundled with the latest versions of leading applications such as LibreOffice office productivity suite, Mozilla Firefox Web browser, and Evolution e-mail and calendar suite. In addition, it integrates with Microsoft SharePoint for group collaboration and supports a wide range of multimedia file formats, wireless and networking standards, and plug-and-play devices.

Through the latest enhancements in power management and security, SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 also provides an environmentally friendly IT experience (Green IT) and an error-proof desktop. Finally, SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension offers unparalleled flexibility. You can deploy it on a wide range of thick client devices (including desktops, notebooks, netbooks, and workstations), on thin client devices, or as a virtual desktop. By leveraging the power of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension, your business can dramatically reduce costs, improve end user security and increase workforce productivity.

2.2 What Is New?

2.2.1 General Changes in SLE 15

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 introduces many innovative changes compared to SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 12. The most important changes are listed below.

Migration from openSUSE Leap to SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension

Starting with SLE 15, we support migrating from openSUSE Leap 15 to SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15. Even if you decide to start out with the free community distribution you can later easily upgrade to a distribution with enterprise-class support.

Extended Package Search

Use the new Zypper command `zypper search-packages` to search across all SUSE repositories available for your product even if they are not yet enabled. This functionality makes it easier for administrators and system architects to find the software packages needed. To do so, it leverages the SUSE Customer Center.

Software Development Kit

With SLE 15, the Software Development Kit is now integrated into the products. Development packages are packaged alongside regular packages. In addition, the *Development Tools* module contains tools for development.

RMT Replaces SMT

SMT (Subscription Management Tool) has been removed. Instead, RMT (Repository Mirroring Tool) now allows mirroring SUSE repositories and custom repositories. You can then register systems directly with RMT. In environments with tightened security, RMT can also proxy other RMT servers.

2.2.2 Changes in 15 SP2

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 introduces changes compared to SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension SP1. The most important changes are listed below.

Media Changes

The Unified Installer and Packages DVDs known from SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP1 are deprecated and have been replaced by the following media:

- **Online Installation Media:** All SUSE Linux Enterprise 15 products can be installed with this stand alone media, after entering a registration key. The necessary packages are fetched from online repositories only. For information about available modules, see *Section 3.1, “Modules in the SLE 15 SP2 Product Line”*.
- **Full Installation Media:** All SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 products can be installed without network connection with this media, for offline installation scenarios. The media contains all necessary packages. It consists of directories with module repositories which need to be added manually as needed. RMT (Repository Mirroring Tool) and SUSE Manager provide additional options for disconnected or managed installation.

Kernel

SLE 15 SP2 includes the Linux 5.3 kernel. This new kernel release includes upstream features such as 16 million additionally usable IPv4 addresses, utilization clamping support in the task scheduler, power-efficient userspace waiting with the umwait x86 instructions and many more.

2.3 Important Sections of This Document

If you are upgrading from a previous SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension release, you should review at least the following sections:

- *Section 2.6, “Support Statement for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension”*
- *Section 4.2, “Upgrade-Related Notes”*
- *Section 4.4, “General Features & Fixes”*

2.4 Documentation and Other Information

2.4.1 Available on the Product Media

- Read the READMEs on the media.
- Get the detailed change log information about a particular package from the RPM (where FILENAME.rpm is the name of the RPM):

```
rpm --changelog -qp FILENAME.rpm
```

- Check the ChangeLog file in the top level of the media for a chronological log of all changes made to the updated packages.
- Find more information in the docu directory of the media of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2. This directory includes PDF versions of the SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 Installation Quick Start Guide.

2.4.2 Online Documentation

- For the most up-to-date version of the documentation for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2, see <https://documentation.suse.com/sled/15-SP2>.
- Find a collection of White Papers in the SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension Resource Library at <https://www.suse.com/products/desktop/#resources>.

2.5 Support and Life Cycle

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension is backed by award-winning support from SUSE, an established technology leader with a proven history of delivering enterprise-quality support services.

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 has a 10-year life cycle, with 10 years of General Support. The current version (SP2) will be fully maintained and supported until 6 months after the release of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP3.

For more information, check our Support Policy page <https://www.suse.com/support/policy.html>.

2.6 Support Statement for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension

To receive support, you need an appropriate subscription with SUSE. For more information, see https://www.suse.com/support/programs/subscriptions/?id=SUSE_Linux_Enterprise_Desktop.

The following definitions apply:

L1

Problem determination, which means technical support designed to provide compatibility information, usage support, ongoing maintenance, information gathering and basic troubleshooting using available documentation.

L2

Problem isolation, which means technical support designed to analyze data, reproduce customer problems, isolate problem area and provide a resolution for problems not resolved by Level 1 or prepare for Level 3.

L3

Problem resolution, which means technical support designed to resolve problems by engaging engineering to resolve product defects which have been identified by Level 2 Support.

For contracted customers and partners, SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension is delivered with L3 support for all packages, except for the following:

- Technology Previews, see *Section 2.7, "Technology Previews"*
- Sound, graphics, fonts and artwork
- Packages that require an additional customer contract, see *Section 2.6.2, "Software Requiring Specific Contracts"*

- Some packages shipped as part of the module *Workstation Extension* are L2-supported only
- Packages with names ending in `-devel` (containing header files and similar developer resources) will only be supported together with their main packages.

SUSE will only support the usage of original packages. That is, packages that are unchanged and not recompiled.

2.6.1 General Support

To learn about supported features and limitations, refer to the following sections in this document:

- *Section 6, “Removed and Deprecated Features and Packages”*
- For supported file systems and virtualization options, see the Release Notes of SUSE Linux Enterprise Server 15 SP2 at https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15-SP2.

2.6.2 Software Requiring Specific Contracts

Support for specific packages may require a support contract with a third party.

2.7 Technology Previews

Technology previews are packages, stacks, or features delivered by SUSE to provide glimpses into upcoming innovations. Technology previews are included for your convenience to give you a chance to test new technologies within your environment. We would appreciate your feedback! If you test a technology preview, please contact your SUSE representative and let them know about your experience and use cases. Your input is helpful for future development.

Technology previews come with the following limitations:

- Technology previews are still in development. Therefore, they may be functionally incomplete, unstable, or in other ways not suitable for production use.
- Technology previews are **not** supported.


- Technology previews may only be available for specific hardware architectures. Details and functionality of technology previews are subject to change. As a result, upgrading to subsequent releases of a technology preview may be impossible and require a fresh installation.
- Technology previews can be removed from a product at any time. This may be the case, for example, if SUSE discovers that a preview does not meet the customer or market needs, or does not comply with enterprise standards.

3 Modules, Extensions, and Related Products


This section comprises information about modules and extensions for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2. Modules and extensions add functionality to the system.

3.1 Modules in the SLE 15 SP2 Product Line

The SLE 15 SP2 product line is made up of modules that contain software packages. Each module has a clearly defined scope. Modules differ in their life cycles and update timelines.

The modules available within the product line based on SUSE Linux Enterprise 15 SP2 at the release of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 are listed in the *Modules and Extensions Quick Start* at <https://documentation.suse.com/sles/15-SP2/html/SLES-all/art-modules.html> .

Not all SLE modules are available with a subscription for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 itself (see the column *Available for*).

For information about the availability of individual packages within modules, see <https://scc.suse.com/packages> .

3.2 Available Extensions

The following extension which is not covered by SUSE support agreements, available at no additional cost and without an extra registration key:

- SUSE Package Hub: <https://packagehub.suse.com/> 

3.3 Derived and Related Products

This sections lists derived and related products. Usually, these products have their own release notes documents that are available from <https://www.suse.com/releasesnotes> .

- SUSE Linux Enterprise Server: <https://www.suse.com/products/server> 
- SUSE Manager: <https://www.suse.com/products/suse-manager> 

4 Installation and Upgrade

SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension can be deployed in several ways:


- Physical machine
- Virtual host
- Virtual machine
- System containers
- Application containers

4.1 Installation

This section includes information related to the initial installation of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2.

Important: Installation Documentation

The following release notes contain additional notes regarding the installation of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension. However, they do not document the installation procedure itself.

For installation documentation, see the *Deployment Guide* at <https://documentation.suse.com/sled/15-SP2/html/SLED-all/book-sle-deployment.html> .

4.2 Upgrade-Related Notes

This section includes upgrade-related information for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2.

Important: Upgrade Documentation

The following release notes contain additional notes regarding the upgrade of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension. However, they do not document the upgrade procedure itself.

For upgrade documentation, see the *Upgrade Guide* at <https://documentation.suse.com/sled/15-SP2/html/SLED-all/book-sle-upgrade.html> .

4.3 For More Information

For more information, see *Section 4.4, "General Features & Fixes"* and the sections relating to your respective hardware architecture.

4.4 General Features & Fixes

4.5 Desktop

4.5.1 GNOME Desktop Update

The GNOME Desktop (and associated applications) has been updated to version 3.34 (from version 3.26). This update brings many improvements, performance improvements, and new features. Among those, you might notice visual refreshes for a number of applications, including the desktop itself and the icon set, custom folders in application overview, redesign of various control panels, and a new on-screen keyboard.

4.5.2 Rocket.Chat Support in Pidgin

Rocket.Chat support for Pidgin is now available, through the [pidgin-plugin-rocketchat](#) package.

4.5.3 Remote Desktop Packages Update

Various packages used for remote desktop have been updated: xrdp to 0.9.11 and xorgxrdp to 0.2.11.

4.5.4 Qt5 update

Qt5 libraries have been updated to latest 5.12 LTS branch.

4.5.5 Gstreamer Update

The Gstreamer multimedia framework has been updated to version 1.16.2. This version includes among various bug fixes and features, support for WebRTC.

4.5.6 libxml++ Support

Libxml++ libraries are available and supported in SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2.

4.5.7 X Server Support for PRIME Render Offload

Support for PRIME render offload has been backported into X server for SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension. PRIME render offload is useful for systems that include both an integrated and a discrete GPU: It allows an X screen rendered by the integrated GPU to display specified applications rendered by the discrete GPU.

4.5.8 Use update-alternatives to Set Display Manager and Desktop Session

In SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 12 SP5 and earlier, you could use `/etc/sysconfig` or the YaST module `/etc/sysconfig Editor` to define the display manager (also called the login manager) and desktop session. Starting with SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 GA, the values are not defined using `/etc/sysconfig` anymore but with the alternatives system.

To change the defaults, use the following alternatives:

- Display manager: `default-displaymanager`
- Wayland session: `default-waylandsession.desktop`
- X desktop session: `default-xsession.desktop`

For example, to check the value of `default-displaymanager`, use:

```
sudo update-alternatives --display default-displaymanager
```

To switch the `default-displaymanager` to `xdm`, use:

```
sudo update-alternatives --set default-displaymanager \  
/usr/lib/X11/displaymanagers/xdm
```

To enable graphical management of alternatives, use the YaST module *Alternatives* that can be installed from the package `yast2-alternatives`.

4.6 Base System

4.6.1 Add Support for IP Filtering in systemd

Support for IP filtering, as described in <http://0pointer.net/blog/ip-accounting-and-access-lists-with-systemd.html> is now available in systemd on SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2. :rnotes: Release Notes :rversion: 15.2.20200729

4.7 Virtualization

4.7.1 Vagrant

Vagrant (<https://www.vagrantup.com/>) is a tool that provides a unified workflow for the creation, deployment and management of virtual development environments. It provides an abstraction layer for various virtualization providers (like VirtualBox, VMWare or libvirt) via a simple configuration file that allows developers and operators to quickly spin up a VM running Linux or any other operating system.

A new VM can be launched with Vagrant via the following set of commands. The example uses the Vagrant Box for openSUSE Tumbleweed:

```
vagrant init opensuse/Tumbleweed.x86_64
vagrant up
# your box is now going to be downloaded and started
vagrant ssh
# and now you've got ssh access to the new VM
```

4.7.1.1 Vagrant Boxes for SUSE Linux Enterprise Server and SUSE Linux Enterprise Desktop

Starting with SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2, we are providing official Vagrant Boxes for SUSE Linux Enterprise Server and SUSE Linux Enterprise Desktop for x86_64 and AArch64 (only for SLES using the libvirt provider). These boxes come with the bare minimum of packages to reduce their size and are not registered, thus users need to register the boxes prior to further provisioning.

These boxes are only available for direct download via SCC and must be manually registered with Vagrant as follows:

```
vagrant box add --name SLED-15-SP2 SLED15-SP2-Vagrant.x86_64-15.2-libvirt-  
*.vagrant.libvirt.box
```

The box is then available under the name **SLED-15-SP2** and can be used like other Vagrant boxes:

```
vagrant init SLED-15-SP2  
vagrant up  
vagrant ssh
```

5 Known Issues & Workarounds

This is a list of known issues for this release.

5.1 Enabling GNOME Session Restore Does Not Work

You can have GNOME restore your previous desktop session when logging in. In the past, this could be achieved by enabling the dconf entry [/org/gnome/gnome-session/auto-save-session](#). In GNOME 3.34, the upstream GNOME project disabled this functionality because it caused issues under newer versions of systemd. As SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension uses GNOME 3.34, the functionality cannot be used in SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2 anymore.

6 Removed and Deprecated Features and Packages

This section lists features and packages that were removed from SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension or will be removed in upcoming versions.

6.1 Removed Features and Packages

The following features and packages were removed from SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension 15 SP2.

6.2 Deprecated Features and Packages

The following features and packages are deprecated and will be removed with a future service pack of SUSE Linux Enterprise Desktop/SUSE Linux Enterprise Workstation Extension.

7 Obtaining Source Code

This SUSE product includes materials licensed to SUSE under the GNU General Public License (GPL). The GPL requires SUSE to provide the source code that corresponds to the GPL-licensed material. The source code is available for download at <https://www.suse.com/download/sled/> on Medium 2. For up to three years after distribution of the SUSE product, upon request, SUSE will mail a copy of the source code. Send requests by e-mail to sle_source_request@suse.com (mailto:sle_source_request@suse.com).


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