





# Release Notes

---

## SUSE Linux Enterprise High Availability Extension 15 SP1

SUSE Linux Enterprise High Availability Extension is an enterprise-level clustering solution to implement highly available Linux clusters and eliminate single points of failure. This document provides an overview of high-level general features, capabilities, and limitations of SUSE Linux Enterprise High Availability Extension 15 SP1 and important product updates.


These release notes are updated periodically. The latest version is always available at <https://www.suse.com/releasenotes> . General documentation can be found at: <https://documentation.suse.com/sle-ha/15-SP1> .

Publication Date: 2022-04-27, Version: 15.1.20220427

## Contents

- 1 About the Release Notes 2
- 2 SUSE Linux Enterprise High Availability Extension 2
- 3 Technology Previews 5
- 4 Removed and Deprecated Features and Packages 6
- 5 Obtaining Source Code 6
- 6 Legal Notices 7

# 1 About the Release Notes

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

These Release Notes are identical across all supported architectures.

Entries can be listed multiple times if they are important and belong to multiple sections.

Release notes usually only list changes that happened between two subsequent releases. Certain important entries from the release notes documents of previous product versions may be repeated. To make such entries easier to identify, they contain a note to that effect.

Repeated entries are provided as a courtesy only. Therefore, if you are skipping one or more service packs, check the release notes of the skipped service packs as well. If you are only reading the release notes of the current release, you could miss important changes.

## 2 SUSE Linux Enterprise High Availability Extension

SUSE Linux Enterprise High Availability Extension is an affordable, integrated suite of robust open source clustering technologies that enable enterprises to implement highly available Linux clusters and eliminate single points of failure. Used in combination with SUSE Linux Enterprise Server, it helps organizations maintain business continuity, protect data integrity, and reduce unplanned downtime for their mission-critical Linux workloads.

SUSE Linux Enterprise High Availability Extension provides all essential monitoring, messaging, and cluster resource management functionality of proprietary third-party solutions, but at a more affordable price, making it accessible to a wider range of enterprises.

The tight integration of SUSE Linux Enterprise High Availability Extension and SUSE Linux Enterprise Server ensure that the most robust, secure, and up-to-date high availability solution. Based on an innovative, highly flexible policy engine, it supports a wide range of clustering scenarios.

With static or stateless content, the High Availability cluster can be used without a cluster file system. This includes web services with static content as well as printing systems or communication systems like proxies that do not need to recover data.

Finally, its open-source license minimizes the risk of vendor lock-in, and its adherence to open standards encourages interoperability with industry standard tools and technologies.

## 2.1 What Is New?

SUSE Linux Enterprise High Availability Extension 15 introduces many innovative changes compared to SUSE Linux Enterprise High Availability Extension 12.

In addition to these release notes, make sure to also review the release notes for the base product, SUSE Linux Enterprise Server 15 SP1, which are published at [https://www.suse.com/releasenotes/x86\\_64/SUSE-SLES/15-SP1](https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15-SP1) (these release notes are identical across all supported hardware architectures).

## 2.2 Important Sections of This Document

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

- *Section 2.4, “Support Statement for SUSE Linux Enterprise High Availability Extension”*

## 2.3 Support and Life Cycle

SUSE Linux Enterprise High Availability 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 High Availability Extension 15 has a 13-year life cycle, with 10 years of General Support and 3 years of Extended Support. The current version (SP1) will be fully maintained and supported until 6 months after the release of SUSE Linux Enterprise High Availability Extension 15 SP2.

If you need additional time to design, validate, and test your upgrade plans, Long Term Service Pack Support (LTSS) can extend the support you get by an additional 12 to 36 months in 12-month increments, providing a total of 3 to 5 years of support on any given Service Pack.

For more information, see:

- The support policy at <https://www.suse.com/support/policy.html>
- Long Term Service Pack Support page at <https://www.suse.com/support/programs/long-term-service-pack-support.html>

## 2.4 Support Statement for SUSE Linux Enterprise High Availability 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\\_High\\_Availability\\_Extension](https://www.suse.com/support/programs/subscriptions/?id=SUSE_Linux_Enterprise_High_Availability_Extension).

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 High Availability Extension 15 SP1 is delivered with L3 support for all packages, except for the following:

- Technology Previews, see *Section 3, "Technology Previews"*
- Sound, graphics, fonts and artwork
- Packages that require an additional customer contract

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

## 2.5 Documentation and Other Information

### 2.5.1 On the Product Medium



- For general product information, see the file README in the top level of the product medium.
- For a chronological log of all changes made to updated packages, see the file ChangeLog in the top level of the product medium.
- Detailed change log information about a particular package is available using RPM:

```
rpm --changelog -qp FILE_NAME.rpm
```

(Replace *FILE\_NAME.rpm* with the name of the RPM.)

- For more information, see the directory docu of the product medium of SUSE Linux Enterprise High Availability Extension 15 SP1.

### 2.5.2 Externally Provided Documentation

- <https://documentation.suse.com/sle-ha/15-SP1>  contains additional or updated documentation for SUSE Linux Enterprise High Availability Extension 15 SP1.
- Find a collection of White Papers in the SUSE Linux Enterprise High Availability Extension Resource Library at <https://www.suse.com/products/highavailability/#resources> .

## 3 Technology Previews

Technology previews are packages, stacks, or features delivered by SUSE which are not supported. They may be functionally incomplete, unstable or in other ways not suitable for production use. They are included for your convenience and give you a chance to test new technologies within an enterprise environment.

Whether a technology preview becomes a fully supported technology later depends on customer and market feedback. Technology previews can be dropped at any time and SUSE does not commit to providing a supported version of such technologies in the future.

Give your SUSE representative feedback about technology previews, including your experience and use case.

## 4 Removed and Deprecated Features and Packages

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

### 4.1 Deprecated Features and Packages

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

#### Options for Order Constraints

Starting with SUSE Linux Enterprise High Availability Extension 15 SP1, support for using scores to enforce ordering constraints is deprecated. Use the `kind` option instead. For more information, see the guide *Pacemaker 2.0 Configuration Explained* ([https://clusterlabs.org/pacemaker/doc/en-US/Pacemaker/2.0/html/Pacemaker\\_Explained/s-resource-ordering.html](https://clusterlabs.org/pacemaker/doc/en-US/Pacemaker/2.0/html/Pacemaker_Explained/s-resource-ordering.html)) by the upstream Pacemaker project.

## 5 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/sle-ha/> 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 [mailto:sle\\_source\\_request@suse.com](mailto:sle_source_request@suse.com). SUSE may charge a reasonable fee to recover distribution costs.

## 6 Legal Notices

SUSE makes no representations or warranties with regard to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, SUSE reserves the right to revise this publication and to make changes to its content, at any time, without the obligation to notify any person or entity of such revisions or changes.

Further, SUSE makes no representations or warranties with regard to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, SUSE reserves the right to make changes to any and all parts of SUSE software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classifications to export, re-export, or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in U.S. export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical/biological weaponry end uses. Refer to <https://www.suse.com/company/legal/> for more information on exporting SUSE software. SUSE assumes no responsibility for your failure to obtain any necessary export approvals.

Copyright © 2010-2022 SUSE LLC.

This release notes document is licensed under a Creative Commons Attribution-NoDerivatives 4.0 International License (CC-BY-ND-4.0). You should have received a copy of the license along with this document. If not, see <https://creativecommons.org/licenses/by-nd/4.0/>.

SUSE has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <https://www.suse.com/company/legal/> and one or more additional patents or pending patent applications in the U.S. and other countries. For SUSE trademarks, see SUSE Trademark and Service Mark list (<https://www.suse.com/company/legal/>). All third-party trademarks are the property of their respective owners.