





Release Notes

SUSE Linux Enterprise Server for SAP Applications 15 GA

These are the release notes of SLES for SAP Applications. SLES for SAP Applications combines SUSE Linux Enterprise Server and its High Availability Extension with additional software specifically meant to simplify running and managing SAP applications.

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://www.suse.com/documentation/sles_for_sap/ .

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1 SLES for SAP Applications

Make sure to also review the release notes for the base product, SUSE Linux Enterprise Server 15 GA which are published at https://www.suse.com/releasenotes/x86_64/SUSE-SLES/15.

1.1 Support Statement for SLES for SAP Applications

Support requires an appropriate subscription from SUSE. For more information, see <https://www.suse.com/products/sles-for-sap>.

General Support Statement

The following definitions apply:

- L1: Installation and problem determination - technical support designed to provide compatibility information, installation and configuration assistance, usage support, on-going maintenance and basic troubleshooting. Level 1 Support is not intended to correct product defect errors.
- L2: Reproduction of problem isolation - technical support designed to duplicate customer problems, isolate problem areas and potential issues, and provide resolution for problems not resolved by Level 1 Support.
- L3: Code Debugging and problem resolution - technical support designed to resolve complex problems by engaging engineering in patch provision, resolution of product defects which have been identified by Level 2 Support.

SUSE will only support the usage of original (unchanged or not recompiled) packages.

2 Features

This section includes an overview of major new features provided by SUSE Linux Enterprise Server for SAP Applications.

2.1 `sapconf` Automatically Starts Dependent Daemons After Installation

`sapconf` now will automatically set parameters and start necessary daemons after the installation of the `sapconf` package. The following daemons will be started automatically via systemd dependencies: `tuned`, `uidd.socket`, and `sysstat`.



Important: Reboot to Enable Parameter `UserTaskMax`

During the first installation of the `sapconf` package, the parameter `UserTaskMax` will be set to the recommended value. However, to be effective, a system reboot is still needed.

2.2 `sapconf` Legacy Command-Line Interface `/usr/sbin/sapconf` Has Been Removed

The CLI of `sapconf` was deprecated since the release of SLES for SAP 12 SP1 and kept only for backward compatibility with SLES 11.

With SLES 15, `/usr/bin/sapconf` was removed completely. To enable tuning profiles, use `tuned-adm` directly: `tuned-adm profile [PROFILE]`.

2.3 New `sapconf` Profile Is Used Instead of Profiles for Specific SAP Applications

In the past, `sapconf` provided profiles for specific SAP applications that was deployed, for example, SAP HANA, SAP Netweaver, SAP ASE, SAP BOBJ, but then demanded more steps during the system configuration for SAP applications.

To simplify the system configuration for deployment of SAP applications and after a revision of the configurations needed by each profile, all configurations were consolidated in only one profile, called `sapconf` that will be used to configure the system for any SAP applications.

2.4 Package `insserv-compat` Has Been Added to SAP Application Server Base Pattern

SAP Applications depends on a `sapinit` System V script that is widely used in all SAP Applications.

The package `insserv-compat` was included to be installed on the SAP Applications Server Base pattern by default, as this pattern is used and recommended to configure a SAP Application Server. That way, it will provide the System V compatibility until SAP fully adopts systemd unit scripts.

2.5 Support for SAP HANA Workloads on Intel Optane DC Memory

SUSE Linux Enterprise Server 15 and SUSE Linux Enterprise Server for SAP Applications 15 add support for Intel Optane DC memory. This enables SAP workloads, such as SAP HANA to benefit from persistent memory in the future to shorten start times of the system and provide better overall system stability. Currently, configurations up to 12 TB of NVDIMMs plus 3 TB of regular DIMMS of supported memory and 4 socket machines have been tested. Additional configurations will be tested over time.

From a file system perspective, the XFS file system is supported for the NVDIMMs, with SAP HANA running in DAX mode. SUSE intends to keep the leading position as technology provider, working closely with SAP on future developments.

If there are `pmem` namespaces, these need to be destroyed before the installation. To mount persistent memory directly on boot, we recommend adding the `nofail` mount option in `/etc/fstab` as it can take a long time for the `/dev/pmem` devices to become usable.

For example:

<code>/dev/pmem0</code>	<code>/mnt/pmem0</code>	<code>xfs</code>	<code>dax,nofail</code>	<code>0</code>	<code>0</code>
<code>/dev/pmem1</code>	<code>/mnt/pmem1</code>	<code>xfs</code>	<code>dax,nofail</code>	<code>0</code>	<code>0</code>

Namespaces need to be created individually. That means, you need to execute the following command for each namespace you want to create:

```
ndctl create-namespace --mode=fsdax --map=dev
```

3 Installation and Upgrade

3.1 Installation

3.1.1 New SLES for SAP Applications System Role

With the adoption of a unified installer in SLE 15, system roles are the way to customize the installation for each product's needs.

The new SLES for SAP Applications system roles provides the same installation workflow provided on the SLES for SAP 12 SP3 installation media, offering specific steps specially designed for SAP Applications, such as:

- SAP Installation Wizard usage option
- Special partitioning recommendations
- RDP access enablement
- Skip the first user creation
- Base, Gnome Basic and SAP Server Pattern installation

3.1.2 Page Cache Limit Is Now Opt-in cgroup Isolation

The kernel swaps out rarely accessed memory pages to use freed memory pages as cache to speed up file system operations, for example during backup operations. Certain applications use large amounts of memory for accelerated access to business data. Rarely accessed parts of this memory are subject of this swap out. Later access to swapped out memory regions results in poor application response times.

In previous SUSE Linux Enterprise versions there was a tunable known as page cache limit to mitigate this problem. This has now been replaced with a more mature mainline mechanism known as opt-in memory cgroup isolation.

A memory cgroup can define its so-called low limit (`memory.low_limit_in_bytes`) which works as a protection against memory pressure. Work loads that need to be isolated from outside memory management activity should set the value to the expected Resident Set Size (RSS) plus some head room. If a memory pressure condition triggers on the system and the particular group is still under its low limit, its memory is protected against being reclaimed. As a result, work loads outside of the cgroup do not need the aforementioned capping.

3.1.3 sapconf SAP Tuning Tool Sets All Specified Tuning Values on OS Irrespective of Current Value

The previous solution only allowed sapconf to increase values, but in some cases a lower value may be the correct path to take. Therefore, sapconf needed to set all values irrespective of whether the current value is greater than or less than what sapconf wants to set.

sapconf provides a default set of values for SAP workloads which should apply to the majority of use cases. If a default sapconf value is not appropriate for any reason (for example, special workloads, support cases), then sapconf offers the possibility to enter own values.

4 More Information and Feedback

- Read the READMEs on the media.
- Get detailed changelog information about a particular package from the RPM:

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

FILE_NAME is the name of the RPM.

- Check the ChangeLog file in the top level of the first medium for a chronological log of all changes made to the updated packages.
- Find more information in the docu directory of first medium of the SLES for SAP Applications media.
- https://www.suse.com/documentation/sles_for_sap/ contains additional or updated documentation for SLES for SAP Applications.
- For the latest product news from SUSE, visit <http://www.suse.com/products/>.

5 How to Obtain Source Code

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