



Red Hat Enterprise Linux for SAP Solutions 9

9.x Release Notes

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Abstract

The Release Notes provide high-level coverage of the improvements and additions that have been implemented in Red Hat Enterprise Linux for SAP Solutions and document known problems, as well as notable bug fixes, Technology Previews, deprecated functionality, and other details.

Table of Contents

MAKING OPEN SOURCE MORE INCLUSIVE	3
PROVIDING FEEDBACK ON RED HAT DOCUMENTATION	4
CHAPTER 1. OVERVIEW	5
CHAPTER 2. SUPPORTED ARCHITECTURES	6
CHAPTER 3. INCLUDED FEATURES	7
CHAPTER 4. DISTRIBUTION OF CONTENT	8
CHAPTER 5. NEW FEATURES AND ENHANCEMENTS	9
5.1. RED HAT ENTERPRISE LINUX 9.0 FOR SAP SOLUTIONS	9
5.2. RED HAT ENTERPRISE LINUX 9.3 FOR SAP SOLUTIONS	10
5.3. RED HAT ENTERPRISE LINUX 9.4 FOR SAP SOLUTIONS	10
CHAPTER 6. DEPRECATED FUNCTIONALITY	12
CHAPTER 7. KNOWN ISSUES	13
CHAPTER 8. CERTIFIED SAP APPLICATIONS ON RHEL 9	14
CHAPTER 9. SUPPORT POLICIES	15

MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code and documentation. We are beginning with these four terms: master, slave, blacklist, and whitelist. Due to the enormity of this endeavor, these changes will be gradually implemented over upcoming releases. For more details on making our language more inclusive, see our [CTO Chris Wright's message](#).

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate your feedback on our documentation. Let us know how we can improve it.

Submitting feedback through Jira (account required)

1. Make sure you are logged in to the [Jira](#) website.
2. Provide feedback by clicking on [this link](#).
3. Enter a descriptive title in the **Summary** field.
4. Enter your suggestion for improvement in the **Description** field. Include links to the relevant parts of the documentation.
5. If you want to be notified about future updates, please make sure you are assigned as **Reporter**.
6. Click **Create** at the bottom of the dialogue.

CHAPTER 1. OVERVIEW

Red Hat® Enterprise Linux® for SAP Solutions combines the reliability, scalability, and performance of Linux with technologies that meet the specific requirements of SAP workloads. It is certified for integration with SAP S/4HANA® and built on the same foundation as the world’s leading enterprise Linux platform, Red Hat Enterprise Linux (RHEL).

For more information on RHEL for SAP Solutions, see the [Red Hat Enterprise Linux for SAP Solutions](#) product page.

CHAPTER 2. SUPPORTED ARCHITECTURES

The first version of Red Hat Enterprise Linux 9 for SAP Solutions to include E4S and EUS repositories as well as packages for SAP was RHEL 9.0, which is available for the following architectures:

- Intel 64-bit architecture (x86_64)
- IBM Power, Little Endian (ppc64le)

For more information, see [Red Hat Enterprise Linux Technology Capabilities and Limits](#) .

CHAPTER 3. INCLUDED FEATURES

Built on the foundation of Red Hat Enterprise Linux, the RHEL for SAP Solutions subscription includes the following additional components:

- SAP-specific technical components to support S/4HANA, SAP HANA, and SAP Business Applications.
- High Availability solutions for S/4HANA, SAP HANA, and SAP Business Applications.
- RHEL System Roles for SAP, which can be used to automate the configuration of a RHEL system to run SAP workloads.
- Smart Management and Red Hat Insights for lifecycle management and proactive optimization.
- SAP HANA tested in-place upgrades and kernel live patching capabilities to maximize SAP business uptime.
- Update Services for SAP Solutions / Extended Update Support, providing up to four years of support on specified minor releases.

CHAPTER 4. DISTRIBUTION OF CONTENT

RHEL 9 for SAP Solutions is installed using ISO images. For more information, see [Installing RHEL 9 for SAP Solutions](#).

For information on RHEL for SAP Solutions offerings on Certified Cloud Providers, see [SAP Offerings on Certified Cloud Providers](#).

If you need help installing your product, contact Red Hat [Customer Service](#) or [Technical Support](#).

SAP specific content is available on separate SAP repositories and ISOs and only for SAP-supported architectures (Intel x86_64, IBM Power LE).

See [How to subscribe SAP HANA systems to the Update Services for SAP Solutions](#) .

- [Performing a standard RHEL 9 installation](#)
- [Package manifest](#)
- [Considerations in adopting RHEL 9](#)

CHAPTER 5. NEW FEATURES AND ENHANCEMENTS

5.1. RED HAT ENTERPRISE LINUX 9.0 FOR SAP SOLUTIONS

- **RHEL System Roles for SAP**

- **Ansible Core support for the RHEL System Roles**

As of the RHEL 9 GA release, Ansible Core is provided, with a limited scope of support, to enable RHEL supported automation use cases. Ansible Core replaces Ansible Engine which was provided on previous versions of RHEL in a separate repository. Ansible Core is available in the AppStream repository for RHEL. For more details on the supported use cases, see [Scope of support for the Ansible Core package included in the RHEL 9 AppStream](#).

If you require Ansible Engine support, or otherwise need support for non-RHEL automation use cases, create a Case at Red Hat Support.

- **Full Support for rolesap_hana_install**

With the role **sap_hana_install**, installing SAP HANA standalone or scale-out is simple and reliable and requires no interactive user input, and there is no need to learn how to configure the **hdblocm configfile** for doing an unattended installation. This role had initially been shipped in Technology Preview support and is now fully supported.

- **SELinux file labeling for SAP**

The roles **sap_general_preconfigure** and **sap_hana_preconfigure** now support setting SELinux file labels for running SAP HANA or SAP ABAP application instances on RHEL systems with SELinux in enforcing or permissive mode.

- **SAP HANA Pacemaker**

System roles have been enhanced to allow the setup of two-node SAP HANA pacemaker clusters. For Red Hat Enterprise Linux 9.0, it is provided as Technology Preview. For information on Red Hat's scope of support for Technology Preview features, see [Technology Preview Features Support Scope](#).

- **HA solutions for SAP**

- **SAP HANA Multitarget System Replication**

SAP HANA Multitarget System Replication is now supported in combination with the HA solution for managing SAP HANA Scale-Up System Replication. See [Configuring SAP HANA Scale-Up Multitarget System Replication for disaster recovery](#) for more information.

- **resource-agents-sap-hana**

The following enhancements have been made in version 0.162.1:

- A new parameter, **HANA_CALL_TIMEOUT** has been added. It fixes the issue of **hard-coded timeouts for most `HANA_CALL`** commands.
- Provision of systemd support.
- Start and stop resource operation timeouts can now be used for increased **WaitforStarted/WaitforStopped** timeouts. The minimum timeout remains 3600s.
- The logging has been improved.
- The error handling has been improved.

5.2. RED HAT ENTERPRISE LINUX 9.3 FOR SAP SOLUTIONS

- HA solutions for SAP
 - When using the HA solutions for managing HANA Multitarget System Replication, it is also possible to set up a separate inactive cluster for managing the HANA instances at the DR site, which can be activated manually in the event of the primary cluster becoming unavailable. For more details, please refer to [Configuring SAP HANA Scale-Up Multitarget System Replication for disaster recovery](#).
 - RHEL HA solutions for SAP now support managing SAP HANA Multitarget System Replication for both HANA Scale-Up and HANA Scale-Out environments, allowing for automated failover with 3 and more replicates. For more details, please refer to [Multitarget System Replication](#).

5.3. RED HAT ENTERPRISE LINUX 9.4 FOR SAP SOLUTIONS

- HA solutions for SAP
 - Enabling the SAP HANA `srServiceStateChanged()` hook for `hdbindexserver` process failure action
 - Starting with version 0.162.3, the **resource-agents-sap-hana** package provides a new SAP HANA hook script for dealing with situations where the HANA **hdbindexserver** process has crashed or is hanging:
 - The **ChkSrv.py** hook script uses the SAP HANA **srServiceStateChanged()** hook to process HANA events and allow the HA cluster to react to dying or hanging SAP HANA **hdbindexserver** processes.
 - The **CHkSrv.py** hook script provides the option to choose the reaction to a crashed or hanging HANA **hdbindexserver** process: either stop or kill the HANA DB, or only log events for monitoring purposes.
 - All activity related to the **srServiceStateChanged()** HANA hook is logged in a dedicated SAP HANA tracefile.

The minimum required SAP HANA version to enable this feature is SAP HANA 2.0 SPS4. For more details, refer to [Enabling the SAP HANA `srServiceStateChanged\(\)` hook for `hdbindexserver` process failure action \(optional\)](#).

- In addition to the new feature, version 0.162.3 (and later) of the **resource-agents-sap-hana** package also provides the following enhancements:
 - Avoids explicit and implicit usage of the **/tmp** file system to keep the **SAPHanaSR** resource agents working even in situations where the **/tmp** file system is full.
 - If the **SAPHanaSR.py** hook script successfully reports a **srConnectionChanged()** event to the cluster, a still existing fallback state file is removed to prevent an override of an already reported SR state.
 - Improves supportability as it provides the current process ID of the resource agent, logged in resource agent output, and HANA tracefiles.
 - Improves the logging of status and actions that the resource agents perform.
- RHEL System Roles for SAP

- The following enhancements have been made for the roles given below:
 - **collection**: Ensures Ansible 2.16.1, 2.15.8, 2.14.12 (cve-2023-5764) compatibility.
 - **collection**: Minimum Ansible version is now 2.14.
 - **preconfigure**: Includes SLES related code. Configuring SLES managed nodes is nevertheless unsupported by Red Hat.
 - **sap_hana_preconfigure**: Implements SAP HANA requirements for RHEL 8.8 and RHEL 9.2 and is less restrictive with RHEL versions that are not yet supported for SAP HANA.
 - **sap_ha_pacemaker_cluster**: Improves VIP resource and constraint setup per platform.

For more details refer to [Red Hat Enterprise Linux System Roles for SAP](#) .

- **Security**

- You can now learn about processes and practices for securing Red Hat Enterprise Linux systems against local and remote intrusion, exploitation, and malicious activity. These approaches and tools can create a more secure environment for running SAP HANA. For more details, refer to:
 - [Security hardening guide for SAP HANA](#)
 - [Configuring fapolicyd to allow only SAP HANA executables](#)
 - [Using SELinux for SAP HANA](#)

CHAPTER 6. DEPRECATED FUNCTIONALITY

- HA solutions for SAP
 - Cluster setups using promotable clones for managing (A)SCS/ERS instances with the old “Standalone Enqueue Server” (ENSA1) are no longer supported for RHEL 9.

CHAPTER 7. KNOWN ISSUES

There are no known issues to date.

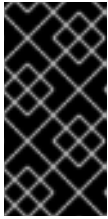
CHAPTER 8. CERTIFIED SAP APPLICATIONS ON RHEL 9

- SAP Max DB 7.9.10.02 and later (See SAP Note [1444241](#))
- SAP ASE 16 (See SAP Note [2489781](#))
- SAP HANA 2.0 SPS04 and later (See SAP Note [2235581](#))
- SAP BI 4.3 and later (See SAP Note [1338845](#))
- SAP NetWeaver (See SAP Note [2772999](#))

In general, SAP documents support of their products for certain versions of Red Hat Linux Enterprise in their [SAP Product Availability Matrix](#).

CHAPTER 9. SUPPORT POLICIES

- Supported for certain RHEL releases: RHEL for SAP Solutions follows the general [RHEL product lifecycle and related policies](#).



IMPORTANT

SAP defines its own release strategy regarding the support of operating systems and operating system versions. For SAP NetWeaver-based solutions, refer to the [SAP Product Availability Matrix](#). For SAP HANA, see SAP Note [2235581](#). For general information, see SAP Note [2369910](#).

Production environments must comply with Red Hat and SAP support conditions. Additional SAP certifications may apply.

- Support for RHEL HA clusters, as part of RHEL for SAP Solutions: The RHEL for SAP Solutions subscription includes the Red Hat Enterprise Linux (RHEL) High Availability Add-on. Users of RHEL High Availability clusters should adhere to general [Support Policies for RHEL High Availability Clusters](#) in order to be eligible for support. In addition, RHEL for SAP Solutions provides resource agents, scripts and documentation for integration with & support of the following SAP applications and scenarios: [Red Hat HA Solutions for SAP HANA, S/4HANA and NetWeaver based SAP Applications](#).