

# Adopción de SUSE Linux Enterprise 16

Diferencias principales entre las versiones 15 y 16 de SUSE Linux Enterprise

## DESCRIPCIÓN

Este artículo describe las diferencias clave entre SLE 15 y SLE 16.

## INTENCIÓN

Este artículo le ayudará a evaluar la necesidad de actualizar a SLE 16.

## ESFUERZO

Se tardan aproximadamente 10 minutos en leer el artículo.

## OBJETIVO

Comprender cuál es la mejor manera de adoptar SLE 16.

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# 1 Compatibilidad con arquitectura de CPU mínima

	AMD64/ Intel 64 (x86-64)	IBM POWER (ppc64le)	IBM Z (s390x)	Arm (AArch64)
SLES 15	x86-64-v1	POWER8	z12	ARMv8.0-A
SLES 16	x86-64-v2 <sup>1, 2</sup>	POWER10 <sup>3</sup>	z14	ARMv8.0-A

<sup>1</sup> Para mejorar el rendimiento general, SLES 16 también incluye algunas bibliotecas compartidas optimizadas para x86-64-v3. Estas bibliotecas se instalarán y utilizarán automáticamente en sistemas compatibles con la versión 3. Para saber si un paquete está optimizado, compruebe si su nombre incluye la cadena `x86_42_v3`.

<sup>2</sup> En SLES 16 se ha eliminado la compatibilidad con aplicaciones de 32 bits. El kernel de Linux todavía puede habilitar llamadas al sistema de 32 bits instalando el paquete `grub2-compat-ia32` desde el Centro de paquetes SUSE.

<sup>3</sup> SLES 16 se puede ejecutar en Power9, pero SUSE solo admite Power10 y superior.

## 2 Control de versiones y ciclo de lanzamiento

- SLE 15 usa paquetes de servicio (SP) para las actualizaciones anuales, como SP1, SP2, SP3, SP4, SP5, SP6 y SP7, que es el último paquete de servicio lanzado para SLE 15.
- SLE 16 introduce un nuevo esquema de nombres para las versiones: usa versiones menores como 16.0, 16.1, en lugar de paquetes de servicio. El lanzamiento de las versiones es anual, siempre en noviembre. La versión inicial, la 16.0, está prevista para noviembre de 2025.

## 3 Ciclo de vida útil

- SUSE Linux Enterprise Server 15 ofrece asistencia general durante 1,5 años para cada paquete de servicio (con excepciones) y ofrece varias opciones de asistencia extendida como LTSS (asistencia de paquetes de servicio a largo plazo) y ESPOS (compatibilidad con

la superposición de paquetes de servicios extendidos). La asistencia total para SLE 15 cubre hasta 13 años (10 años de asistencia general + 3 años de LTSS). La asistencia general de SLES 15 SP7 es hasta el 31/7/2031, con LTSS hasta el 31/7/2034 y con LTSS Core hasta el 31/12/2037. Los paquetes de servicio de SUSE Linux Enterprise Server for SAP applications 15 tienen un período de asistencia total de 4,5 años.

- SLES 16 está listo para el futuro más allá de 2038. Se espera que la asistencia general finalice en noviembre de 2035, y con LTSS o Extreme LTSS hasta después de 2040. SUSE Linux Enterprise Server for SAP applications 16 tiene asistencia general durante 1,5 años, más 3 años de asistencia extendida.

## 4 Gestión de sistemas

- En SLE 15 y versiones anteriores, se usaba YaST para la instalación, configuración y gestión de sistemas. Las instalaciones no supervisadas y mediante guiones se realizaban con AutoYaST.
- En SLE 16, hay cambios significativos en la gestión de sistemas:
  - La instalación (incluidas las instalaciones no supervisadas) pasa a Agama. Agama es un nuevo instalador con una interfaz de usuario basada en Web, una interfaz de línea de comandos y una API para integración. La instalación se centra en herramientas de gestión de configuración de software (SCM). Agama admite la importación repetida de configuraciones.
  - La gestión de la configuración utiliza Salt y Ansible a través de SUSE Multi-Linux Manager. Esto ayuda a los clientes a disponer de una automatización lista para funcionar desde el primer momento.
  - La gestión remota está a cargo de Cockpit, una interfaz basada en Web para la gestión entre pares.

Estos cambios en SLE 16 tienen como objetivo proporcionar una mejor integración con Salt y Ansible, permitir la instalación remota a través de un navegador Web y ofrecer diferentes interfaces (Web, interfaz de línea de comandos, API HTTP) para controlar el proceso.

## 5 Infraestructura de seguridad

- SLE 15 utiliza AppArmor por defecto. SELinux se entrega sin directivas.
- SLE 16 incluye SELinux con directivas por defecto para más de 400 módulos, de forma que se restringe casi todo el sistema. Algunas partes del sistema pueden funcionar sin restricciones si así se desea. SUSE Linux Enterprise Server for SAP applications 16 ha mejorado el aislamiento de la carga de trabajo con SELinux, proporcionando aislamiento para datos y flujos de datos, así como para contenedores.

## 6 Pila de red

- En SLE 15 se usaba wicked y NetworkManager.
- SLE 16 se centra en una sola pila, y usa NetworkManager.

## 7 Distribución

- SLE 15 ofrecía imágenes listas para ejecutar para máquinas virtuales o nubes públicas, así como medios de instalación para la implantación manual con YaST o automatizada con AutoYaST. Se usaba un entorno de instalación especial con una configuración dirigida por **linuxrc**. La importación de perfiles de AutoYaST era una tarea que se realizaba una sola vez.
- SLE 16 utiliza imágenes listas para ejecutar para máquinas virtuales o nubes públicas, e implantación manual/automatizada con Agama. Se puede acceder al instalador de Agama a través de una interfaz Web, una interfaz de línea de comandos o una API HTTP. Agama admite la importación repetida de configuraciones. Utiliza un medio en directo estándar con **dracut**, **systemd** y NetworkManager y proporciona una capa de compatibilidad con versiones anteriores con opciones de **linuxrc** seleccionadas.

## 8 Sistema init

- SLE 15 usaba systemd con unidades nativas y compatibilidad para guiones init SysV de terceros.
- SLE 16 completa la transición desde init SysV y usa exclusivamente unidades nativas de systemd.

## 9 Configuración de sistema operativo por defecto

- En SLE 15, la configuración por defecto del sistema operativo estaba principalmente en /etc.
- En SLE 16, los valores por defecto están en /usr, y /etc se usa para la personalización. Esta separación de los valores por defecto proporcionados por el proveedor y la personalización del administrador permite realizar actualizaciones de forma más sencilla y, opcionalmente, disponer de sistemas de archivos /usr de solo escritura.

## 10 /tmp usa tmpfs

- En SLE 15, /tmp era una carpeta o partición normal. En la configuración predeterminada con Btrfs como sistema de archivos raíz, era un subvolumen de Btrfs.
- En SLE 16, /tmp usa el sistema de archivos tmpfs, que almacena datos en RAM física o espacio de intercambio, por lo que es muy rápido para las operaciones de lectura y escritura.



### Importante: /tmp ya no es persistente

En tmpfs, el contenido de /tmp no persiste de un arranque a otro. Si tiene aplicaciones que escriban datos persistentes en /tmp, modifique su configuración para que usen una ubicación diferente, como /var/cache.

## ! Importante: no sobredimensione /tmp

Si las instancias del sistema de archivos `tmpfs` se sobredimensionan más allá de la suma de RAM física y el espacio de intercambio de un sistema se pueden producir situaciones de bloqueo en las que el sistema deje de responder debido a que no hay suficiente memoria disponible.

## 11 Entorno de escritorio

- SLE 15 usaba GNOME como entorno de escritorio por defecto. SUSE Linux Enterprise Desktop y SUSE Linux Enterprise Workstation Extension compartían herramientas de productividad de escritorio.
- SLE 16 usa un escritorio GNOME mínimo. Esto ayuda a minimizar la superficie de seguridad. No se prevé tener SUSE Linux Enterprise Desktop en la versión 16.0.

## 12 Pila de alta disponibilidad modernizada

	SLE HA 15	SLE HA 16
Pacemaker	Versión 2	Versión 3
Corosync	Versión 2	Versión 3
Sistema de archivos distribuido	OCFS2, GFS2 (solo lectura)	GFS2 (totalmente compatible)
Agentes de fencing	Todos los agentes en un solo paquete	Agentes en distintos paquetes

## 13 Tecnología retirada

En SLE 16 se han retirado ciertas tecnologías para reducir la huella del sistema operativo y los posibles vectores de ataque de seguridad:

- Sistema: se ha eliminado la compatibilidad con aplicaciones de 32 bits. El kernel de Linux todavía puede habilitar llamadas al sistema de 32 bits instalando el paquete `grub2-compat-ia32` desde el Centro de paquetes SUSE.
- Sistema: los guiones init SysV se han eliminado. Ahora se usan en su lugar unidades nativas de `systemd`.
- Red: `wicked` se ha sustituido por NetworkManager.
- Red: ya no se utiliza NIS; puede elegir LDAP en su lugar.
- Red: el servidor ISC DHCP se ha eliminado y se ha sustituido por uno más moderno: DHCP de Kea.
- Subsistema Windows para Linux: la compatibilidad de WSL1 se ha eliminado y se ha sustituido por WSL2, que ofrece un kernel de Linux completo con compatibilidad completa de llamadas al sistema.

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