

Ejecución de comandos como superusuario con `sudo`

DESCRIPCIÓN

Conozca los conceptos básicos de `sudo` y cómo utilizarlo como usuario normal.

INTENCIÓN

Algunos comandos requieren privilegios de administrador. Para ejecutar un comando con derechos de administrador, se puede utilizar el comando `sudo`.

ESFUERZO

Leer este artículo le llevará unos 20 minutos. Si tiene alguna pregunta específica, puede pasar directamente al capítulo correspondiente.

OBJETIVO

Comprender los conceptos básicos de `sudo` y ejecutar comandos con `sudo` para determinados casos de uso.

REQUISITOS

- Privilegios de `root` o `sudo`. Solo están disponibles si es el administrador del sistema. Para obtener más información, consulte la [Sección 1, "Conceptos básicos de `sudo`"](#).
- El paquete `sudo` debe estar instalado. Está disponible en SUSE Linux Enterprise Server for SAP applications por defecto.

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1 Conceptos básicos de **sudo**

Conozca los conceptos básicos de **sudo** y cómo funciona en los sistemas SUSE Linux Enterprise Server for SAP applications.

sudo es un comando de Linux que se utiliza para ejecutar programas temporalmente como otro usuario. Es la abreviatura de substitute user and do y toma prestados los privilegios de otro usuario, por ejemplo, el usuario root. De esta forma, **sudo** le ayuda a realizar las tareas de administración del sistema sin entrar como root.

1.1 **sudo** en sistemas Linux en general

Como usuario normal de Linux, tiene permisos reducidos que son suficientes para la mayoría de las tareas. El usuario root es el superusuario de Linux y el equivalente al administrador.

sudo permite que determinados usuarios (no root) o un grupo de usuarios ejecuten tareas con privilegios, como llamar a funciones del sistema como root u otro usuario. Mediante un archivo de configuración, el administrador del sistema puede controlar qué usuarios pueden ejecutar comandos de **sudo** y para qué tareas.

1.2 **sudo** en sistemas SUSE Linux Enterprise Server for SAP applications

Por motivos de seguridad, todos los sistemas SUSE Linux Enterprise Server for SAP applications separan al usuario normal del usuario root. Como usuario normal, no puede escribir en directorios del sistema ni instalar programas. Cualquier usuario con acceso a la contraseña de root puede obtener estos privilegios y dañar el sistema de forma accidental o maliciosa.

Por ejemplo, ha iniciado sesión como usuario normal y accede a un sitio Web malintencionado. Un atacante no puede instalar software malicioso en su sistema a sus espaldas, ya que ha iniciado sesión como usuario normal, es decir, sin ningún permiso administrativo.

Como se ha explicado anteriormente, no se recomienda iniciar sesión como usuario root de forma permanente por motivos de seguridad. Un enfoque más seguro es permanecer conectado con el usuario habitual y ejecutar un comando restringido precedido de **sudo**.



Nota: **sudo** requiere derechos de administrador

En un equipo de un solo usuario, en el que ha definido su propia contraseña de root, tiene los derechos necesarios para administrar el sistema mediante el comando **sudo** y para configurar los ajustes de **sudo** usted mismo.

Para obtener más información sobre cómo configurar **sudo**, consulte <https://documentation.suse.com/smart/systems-management/html/sudo-configure-superuser-privileges/index.html>.

En un entorno multiusuario, como en las empresas, los privilegios de **sudo** los gestiona un administrador del sistema y los permisos del usuario root se pueden restringir. Es posible que no se le permita cambiar ciertos directorios o archivos del sistema, incluso al ejecutar el comando con **sudo**.

1.3 Cómo funciona **sudo**

Al ejecutar un comando precedido por **sudo**, el sistema le solicita la contraseña de la cuenta de root. Después de autenticarse correctamente, el comando se ejecuta con privilegios de superusuario.

Dependiendo de la configuración de **sudo**, los privilegios elevados persisten durante un período de tiempo determinado y mientras esté trabajando en la misma sesión de terminal. Por lo tanto, no es necesario volver a proporcionar la contraseña al ejecutar otro comando **sudo**.

Para ejecutar un comando con **sudo**, se utiliza esta sintaxis:

```
> sudo [command]
```

2 Ejecución de un comando precedido de **sudo**

Como usuario normal, puede ejecutar cualquier comando como root añadiendo antes **sudo**. Se le pedirá que proporcione la contraseña de root. Si se autentica correctamente, se ejecuta el comando como root.

Al ejecutar un comando precedido por **sudo**, el sistema le solicita la contraseña de la cuenta de root. Después de autenticarse correctamente, el comando se ejecuta con privilegios de superusuario.

Dependiendo de la configuración de **sudo**, los privilegios elevados persisten durante un período de tiempo determinado y mientras esté trabajando en la misma sesión de terminal. Por lo tanto, no es necesario volver a proporcionar la contraseña al ejecutar otro comando **sudo**.

PROCEDIMIENTO 1: EJECUCIÓN DE UN COMANDO PRECEDIDO DE **sudo**

El siguiente procedimiento describe cómo utilizar el comando **sudo** para copiar un archivo en un directorio donde solo el usuario root tiene derechos de edición.

1. Abra un terminal y cree un archivo de prueba con:

```
> touch test.txt
```

2. Copie el archivo en el directorio /usr/local/bin/ con:

```
> cp test.txt /usr/local/bin
```

El terminal devuelve, por ejemplo:

```
cp: cannot create regular file '/usr/local/bin/test.txt': Permission denied
```

Este mensaje también aparece si no se han otorgado los privilegios necesarios a **sudo**.

3. Ahora, introduzca el mismo comando precedido por **sudo**.

```
> sudo cp test.txt /usr/local/bin
```

4. Se le solicitará que introduzca la contraseña de root. Tenga en cuenta que la contraseña no se muestra durante la introducción, ni como texto no cifrado ni como caracteres enmascarados.

```
[sudo] password for root:
```

5. Después de autenticarse correctamente, el archivo de prueba se copia en /usr/local/bin.

Ha ejecutado su primer comando **sudo**.

3 Comandos comunes de **sudo**

Si se añade **sudo** antes de cualquier comando, se pueden ejecutar comandos con permisos elevados. También puede ejecutar comandos como otro usuario y utilizar sus variables de entorno.

Esta sección proporciona ejemplos de comandos comunes que a menudo requieren privilegios administrativos.

Repetir el último comando con sudo

Para repetir el último comando como administrador, ejecute sudo !! e introduzca la contraseña. Por ejemplo, un usuario sin privilegios administrativos no puede crear un directorio en el directorio /etc/. Para crearlo, ejecute sudo !!.

```
> mkdir /etc/test/
mkdir: cannot create directory '/etc/test/': Permission denied

> sudo !!
sudo mkdir /etc/test/
[sudo] password for root:

> ls -alrt /etc | grep test
drwxr-xr-x 1 root root      0 Apr 20 12:48 test
```

Gestionar paquetes mediante sudo y zypper

Para ejecutar comandos de gestión de paquetes como administrador, añada sudo antes del comando:

```
> sudo zypper [--GLOBAL-OPTIONS] <COMMAND> [--COMMAND-OPTIONS] [ARGUMENTS]
```

Por ejemplo, para instalar la plataforma de contenerización Docker CE desde su repositorio oficial de paquetes, ejecute los siguientes comandos con sudo:

```
> sudo zypper addrepo https://download.docker.com/linux/suse/docker-ce> sudo zypper
refresh> sudo zypper search docker-ce> sudo zypper install docker-ce
```

No es necesario añadir sudo antes de los comandos zypper que no modifiquen el sistema ni proporcionen acceso privilegiado a la información. Por ejemplo, puede mostrar los repositorios de los paquetes de software instalados en el sistema sin utilizar sudo:

```
> zypper lr
```

Gestionar los servicios del sistema mediante sudo y systemctl

En los sistemas que utilizan systemd para gestionar servicios, puede utilizar el comando systemctl con sudo. Por ejemplo, para reiniciar el servicio NetworkManager, ejecute:

```
> sudo systemctl restart NetworkManager
```

No es necesario añadir **sudo** antes de los comandos **systemctl** que no modifiquen el sistema ni proporcionen acceso privilegiado a la información. Por ejemplo, puede mostrar el estado de Network Manager sin utilizar **sudo**:

```
> systemctl status NetworkManager
● NetworkManager.service - Network Manager
   Loaded: loaded (/usr/lib/systemd/system/NetworkManager.service; enabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/NetworkManager.service.d
            └─NetworkManager-ovs.conf
   Active: active (running) since DAY YYYY-MM-DD HH:MM:SS TIMEZONE; 1h 21min ago
   Docs: man:NetworkManager(8)
   [...]

```

Modificar una cuenta de usuario mediante **sudo** y **usermod**

Para ejecutar el comando **usermod** para modificar cuentas de usuario, utilice:

```
> sudo usermod [OPTION] USERNAME
```

Por ejemplo, para definir **30** como el número de días para inhabilitar permanentemente la cuenta de usuario **tux** después de que caduque la contraseña, ejecute:

```
> sudo usermod --inactive 30 tux
```

Modificar la propiedad de archivos y directorios mediante **sudo** y **chown**

Para cambiar la propiedad de los archivos y directorios del propietario actual a uno nuevo, utilice:

```
> sudo chown [OPTION] [OWNER:[GROUP]] FILE
```

Por ejemplo, para asignar a **tux** la propiedad de los archivos y subdirectorios del directorio **/home/test/tux-files**, ejecute:

```
> sudo chown tux /home/test/tux-files/ --recursive
```

Puede probar el cambio de propiedad ejecutando el siguiente comando:

```
> ls -alrt /home/test/tux-files/ --recursive
```

Ejecutar un comando como otro usuario mediante **sudo -s**

En lugar de usar el comando **su** para cambiar a un usuario diferente y luego ejecutar comandos, puede usar el comando **sudo -s**. Una shell ejecutada por el comando **sudo -s** hereda el entorno del usuario actual. El comando **sudo -s** también ofrece algunas medidas de control de privilegios.

Para ejecutar un comando como un usuario diferente, utilice:

```
> sudo -s -u USERNAME COMMAND
```

Por defecto, el comando se ejecuta desde el directorio del usuario anterior, ya que el usuario de destino hereda el entorno del usuario anterior.

Por ejemplo, para mostrar de forma recurrente los archivos y subdirectorios del directorio `/home/test/tux-files/` como usuario de destino `tux`, ejecute:

```
> sudo -s -u tux ls -alrt /home/test/tux-files/ --recursive
```

Si se utiliza el método `sudo -s` para ejecutar un comando como un usuario diferente, el comando se registra en el historial.

Ejecutar un comando como otro usuario con un entorno limpio mediante `sudo -i`

Al utilizar el comando `sudo -s`, el usuario de destino hereda el entorno del usuario anterior. Puede evitarlo mediante el comando `sudo -i`, donde el usuario de destino obtiene un entorno limpio y empieza en su propio directorio `$HOME`.

Para ejecutar un comando como un usuario diferente con un entorno limpio, utilice:

```
> sudo -i -u USERNAME COMMAND
```

El comando `sudo -i` ejecuta una shell de inicio de sesión interactiva del usuario de destino. Como resultado, hay guiones de inicio de shell como archivos `.profile` y `.bash_profile`. Por ejemplo, para mostrar los archivos y subdirectorios del directorio `/home/test/tux-files/` como `tux`, ejecute el siguiente comando:

```
> sudo -i -u tux ls -alrt /home/test/tux-files/
```

Si se utiliza el método `sudo -i` para ejecutar un comando como un usuario diferente, el comando se registra en el historial.

4 Diferencia entre `sudo` y `su`

Conozca la diferencia entre los comandos `sudo` y `su` y cuándo utilizarlos.

En los sistemas Linux, puede preceder un comando tanto con `sudo` como con `su`. Ambos permiten ejecutar comandos como `root`.

4.1 Características del comando **sudo**

- **sudo** permite ejecutar un comando como root. Dependiendo de la configuración, no es necesario que introduzca la contraseña de root, sino solo la del usuario. De esta forma, no es necesario compartir información confidencial con todos los demás usuarios (normales).
- Con el archivo de configuración **sudo**, el administrador del sistema puede controlar qué usuarios pueden utilizar **sudo** y restringir el uso a determinadas tareas.
- **sudo** almacena en caché la contraseña durante un período de tiempo determinado. Después de este período, se le solicitará la contraseña de nuevo al ejecutar otro comando **sudo**.
- Todos los comandos ejecutados con **sudo** se registran individualmente. El archivo de registro realiza un seguimiento de la fecha y la hora, el usuario que ejecutó el comando y el propio comando.

4.2 Características del comando **su**

- **su** permite ejecutar un comando como root, pero requiere que conozca la contraseña de root.
- No se puede configurar para restringir el acceso a determinados usuarios y tareas, ni para aumentar los privilegios de cualquiera que conozca la contraseña de root.
- Los privilegios son elevados durante toda la sesión de terminal. Mientras permanezca en la sesión, no se le volverá a pedir la contraseña.
- Los comandos ejecutados con **su** no se registran individualmente, ya que todas las acciones solo se pueden registrar con la cuenta de usuario.

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