

Registering RHEL 9 with RMT

This guide describes how to use SUSE Liberty Linux to update Red Hat Enterprise Linux 9.


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1 Introduction

SUSE Liberty Linux is a technology and support solution for mixed Linux environments. With a SUSE Liberty Linux subscription, you can register and receive updates for Red Hat Enterprise Linux and SUSE Linux Enterprise Server. An optional High Availability extension is also available.

 CentOS Stream is not supported.

You can register RHEL 9 with one of the following tools:





- Repository Mirroring Tool (RMT)
- SUSE Manager

This guide describes how to register with an RMT server. RMT is a proxy system for the SUSE Customer Center. The RMT server is registered with the SUSE Customer Center, and other systems in the network are registered with the RMT server and receive packages from it directly.

PROCEDURE OVERVIEW

- If you already have an RMT server and only need to **register your RHEL 9 system**, skip straight to [Section 5, “Registering RHEL with RMT”](#).
- If you already have an RMT server but still need to **mirror the SUSE Liberty Linux 9 repositories**, go to [Section 4, “Mirroring SUSE Liberty Linux repositories with RMT”](#).
- If you still need to **set up the RMT server**, start with [Section 2, “Installing a virtual machine to host RMT”](#) and [Section 3, “Configuring the RMT server”](#).

RELATED INFORMATION

- [Repository Mirroring Tool Guide \(https://documentation.suse.com/sles-15/html/SLES-all/book-rmt.html\)](https://documentation.suse.com/sles-15/html/SLES-all/book-rmt.html) 
- [Registering RHEL 7 or CentOS Linux 7 with RMT \(https://documentation.suse.com/liberty/7/html/quickstart/art-quickstart.html\)](https://documentation.suse.com/liberty/7/html/quickstart/art-quickstart.html) 
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2 Installing a virtual machine to host RMT

Use this procedure to install a SLES Minimal VM, a preconfigured virtual machine image that contains a slimmed-down version of SUSE Linux Enterprise Server (SLES). This machine will be the Repository Mirroring Tool (RMT) server. You can use your SUSE Liberty Linux subscription to register this machine.

 If you would prefer to install a full SLES machine on bare metal, see [Installation Quick Start \(https://documentation.suse.com/sles-15/html/SLES-all/article-installation.html\)](https://documentation.suse.com/sles-15/html/SLES-all/article-installation.html).

REQUIREMENTS

- You have a SUSE Liberty Linux subscription.
- You have a [SUSE Customer Center \(https://scc.suse.com/\)](https://scc.suse.com/) account.
- The VM must have a static IP address and host name. This guide includes steps for configuring the VM's network setup, but you must have basic networking knowledge to fill in the details.
- You have the infrastructure to run virtual machines. This guide explains how to set up the VM to host RMT, but does not describe how to use different virtualization products. See the relevant documentation for your product.
- The RMT server needs enough available disk space to mirror the SUSE Liberty Linux 9 repositories. Downloaded packages are stored in `/var/lib/rmt/public/repo/`. The amount of storage required depends on the number of repositories you mirror. We recommend at least 1.5 times the total size of all enabled repositories.

Important: SUSE Liberty Linux 9 repository size

The SUSE Liberty Linux repositories will grow over time because older package versions are not removed. To meet the 1.5x size recommendation, based on the current¹ size of the SUSE Liberty Linux 9 repositories, you will need approximately 320 GB of disk space available for the RMT server.

If you also need the [Source](#) and [Debug](#) repositories, you will need an additional 625 GB available.

¹ As of 17 September, 2024

PROCEDURE 1: INSTALLING A VIRTUAL MACHINE TO HOST RMT

1. Download the appropriate Minimal-VM image for your virtualization infrastructure from <https://www.suse.com/download/sles/>.
2. Use the Minimal-VM image to start the virtual machine.
The default disk size for SLES Minimal VM is 24 GB. If you can customize the configuration before the installation begins, increase the available storage so there is enough disk space for repository mirroring.
3. When the JeOS Firstboot screen appears, select *Start*.
4. Choose your keyboard layout and select *OK*.
5. Review the End User License Agreement and select *EXIT*. To agree with the terms of the license, select *Yes*.
6. Choose your time zone and select *OK*.
7. Enter a root password and select *OK*, then confirm the password and select *OK* again.
8. JeOS Firstboot shows the command to use to register this VM. You do not need to write this down; the command is explained in this procedure. Select *OK*.
9. When the VM is ready, log in as the root user with the password you entered during setup.
10. Register the VM using your SUSE Customer Center email address and the registration code for SUSE Liberty Linux:

```
# SUSEConnect -e EMAIL_ADDRESS -r REGISTRATION_CODE
```

This activates the Basesystem, Server Applications, and Python 3 modules.

11. If you did not already increase the VM's disk space before the installation began, increase it now. You might need to shut down the VM to do so. The VM must have enough space to mirror the SUSE Liberty Linux 9 repositories.

You must also configure a static IP address and host name for the VM. If you are familiar with any networking tools in SLES, configure the network with your preferred tool. If not, use the YaST graphical interface:

PROCEDURE 2: SETTING A STATIC IP ADDRESS IN YAST

1. Install YaST and the YaST network module:

```
# zypper install yast2 yast2-network
```

2. Start the YaST `network` module:

```
# yast2 lan
```

3. In the *Overview* tab, select *Edit* to change the settings of the `eth0` device. The *Network Card Setup* dialog opens.
4. In the *Address* tab, activate *Statically Assigned IP Address*.
5. Fill in the *IP Address*, *Subnet Mask*, and *Hostname* fields.
6. Select *Next*.
7. Switch to the *Hostname/DNS* tab and fill in the *Static Hostname* field.
8. Change *Set Hostname via DHCP* to `no`.
9. Fill in at least one *Name Server* field.
10. Switch to the *Routing* tab and select *Add*. A new dialog opens.
11. Fill in the *Gateway* field. Make sure to remove the `-` character.
12. From the *Device* drop-down list, select `eth0`.
13. Select *OK* to close the dialog.
14. Select *OK* to complete the configuration and close YaST.
15. Check the network settings:

```
# ip addr
```

Check that the network interface can access external networks:

```
# ping www.suse.com
```

Cancel the ping with `Ctrl-C`.

You can now install RMT on the virtual machine.


MORE INFORMATION

- [Introduction to SLES Minimal VM \(https://documentation.suse.com/smart/virtualization-cloud/html/minimal-vm/\)](https://documentation.suse.com/smart/virtualization-cloud/html/minimal-vm/) ↗
- [Virtualization Guide \(https://documentation.suse.com/sles/15-SP5/html/SLES-all/book-virtualization.html\)](https://documentation.suse.com/sles/15-SP5/html/SLES-all/book-virtualization.html) ↗

3 Configuring the RMT server

Use this procedure to configure the Repository Mirroring Tool (RMT) on SUSE Linux Enterprise Server (SLES) 15.

REQUIREMENTS

- A SLES 15 virtual machine is installed as described in *Section 2, “Installing a virtual machine to host RMT”*.
- The SLES machine has a static IP address and host name.
- You have a [SUSE Customer Center \(https://scc.suse.com/\)](https://scc.suse.com/)  account and organization credentials.

PROCEDURE 3: CONFIGURING THE RMT SERVER

1. On the SLES machine, install RMT:

```
# zypper in rmt-server
```

2. Install the following packages, which are not installed by default on a SLES Minimal VM:


```
# zypper install yast2-rmt mariadb nginx
```

3. Start the YaST `rmt` module:

```
# yast2 rmt
```

4. Enter your *Organization Credentials*, then select *Next*.



To find your organization credentials, log in to the [SUSE Customer Center \(https://scc.suse.com\)](https://scc.suse.com/) , select your organization from *My Organizations*, and click *Proxies*. Your organization's *Mirroring credentials* are in the top right corner.

5. Enter *Database Credentials* for a new MariaDB database user, then select *Next*. The new user is created.
6. When prompted, enter and confirm a new password for the MariaDB root user, then select *OK*.
7. Enter a *Common Name* for the SSL certificates. The common name is usually the host name of the server.

8. If the server has other domain names or IP addresses, enter these as *Alternative common names*. Select *Add* to add new names. When all common names are entered, select *Next*.
9. If prompted, enter and confirm a password for the CA private key, then select *OK*.
10. Activate the check box *Open Ports for HTTP and HTTPS in Firewall*, then select *Next*.
11. YaST displays the *RMT Service Status*. If there are no issues, select *Next*.
12. Review the *Configuration Summary*, then select *Finish* to close YaST.

YaST enables and starts all RMT `systemd` services and timers.

MORE INFORMATION

- RMT installation and configuration (<https://documentation.suse.com/sles-15/html/SLES-all/cha-rmt-installation.html>) ↗

4 Mirroring SUSE Liberty Linux repositories with RMT

Use this procedure to mirror the SUSE Liberty Linux repositories for Red Hat Enterprise Linux 9.

REQUIREMENTS

- The RMT server is installed and up to date.
- The RMT server has enough storage available for repository mirroring. The amount of storage required depends on the number of repositories you mirror. We recommend at least 1.5 times the total size of all enabled repositories. Be aware that the SUSE Liberty Linux repositories will grow substantially over time.
- Your organization credentials appear correctly in `/etc/rmt.conf`.
- You have a SUSE Liberty Linux subscription activated in the [SUSE Customer Center \(https://scc.suse.com/\)](https://scc.suse.com/) ↗.

PROCEDURE 4: MIRRORING THE SUSE LIBERTY LINUX REPOSITORIES WITH RMT

1. On the RMT server, update the available product and repository metadata:

```
# rmt-cli sync
```

Synchronization is also performed automatically by `rmt-server-sync.timer`. You can check the status and the next scheduled synchronization time with the following command:

```
# systemctl status rmt-server-sync.timer
```

2. Enable SUSE Liberty Linux 9 using the product ID [2538](#):

```
# rmt-cli product enable 2538
```

This enables all the default repositories associated with the product.

3. If your subscription includes the High Availability extension, enable the extension using the product ID [2539](#):

```
# rmt-cli product enable 2539
```



To check whether the High Availability extension is available, run this command:

```
rmt-cli products list --all --name="Liberty" --version=9
```

4. If you also need the [Source](#) or [Debug](#) repositories, find and enable them with the following commands:

```
# rmt-cli repo list --all | grep SLL-  
# rmt-cli repo enable REPO_ID
```

5. Start package mirroring for the enabled repositories:

```
# rmt-cli mirror
```

Packages are downloaded to the RMT server once per day by `rmt-server-mirror.timer`. You can check the status and the next scheduled download time with the following command:


```
# systemctl status rmt-server-mirror.timer
```

MORE INFORMATION

- [Mirroring repositories on the RMT server \(https://documentation.suse.com/sles-15/html/SLES-all/cha-rmt-mirroring.html\)](https://documentation.suse.com/sles-15/html/SLES-all/cha-rmt-mirroring.html) ↗

5 Registering RHEL with RMT

Use this procedure to register Red Hat Enterprise Linux 9 with the RMT server.

 CentOS Stream is not supported.

REQUIREMENTS

- The RMT server is running `rmt-server` version 2.10 or later.
- The SUSE Liberty Linux 9 repositories are available on the RMT server.
- The system you want to register can access the RMT server.
- The system you want to register is up to date. SUSE Liberty Linux only supports the latest minor release of RHEL 9.
- You have a SUSE Liberty Linux subscription activated in the [SUSE Customer Center \(https://scc.suse.com/\)](https://scc.suse.com/).
- You have removed the system from any Red Hat subscription services it was registered to.

PROCEDURE 5: REGISTERING RHEL WITH RMT

1. On the RHEL system, download the `rmt-client-setup-res` script:

```
# curl http://RMT_SERVER/tools/rmt-client-setup-res --output rmt-client-setup-res
```

2. Run the `rmt-client-setup-res` script with the URL of the RMT server as a parameter:

```
# sh rmt-client-setup-res https://RMT_SERVER
```

The script installs **SUSEConnect** and its dependencies, then downloads and runs the `rmt-client-setup` script, which performs the following tasks:

- Downloads all keys from `http://RMT_SERVER/repo/keys`.
- Imports the keys with `gpg --import` and `rpm --import`.
- Downloads the CA certificate from `https://RMT_SERVER/rmt.crt`.
- Imports the CA certificate to the trust store.
- Uses **SUSEConnect** to register the system with the RMT server. Registering the system using **SUSEConnect** adds and enables all default repositories.

You should see Successfully registered system.

3. Verify the installed product:

```
# SUSEConnect --status-text
```

You should see the following output:

```
Installed Products:
-----

SUSE Liberty Linux release file
(SLL/9/x86_64)

Registered

-----
```

4. Verify the available repositories:

```
# dnf repolist
```

You should see SLL-9-Updates, SLL-AS-9-Updates, and SLL-CB-9-Updates.

5. If your subscription includes the High Availability extension, activate it with the following command:

```
# SUSEConnect -p SLL-HA/9/x86_64
```



To check whether the extension is available, run the SUSEConnect --list-extensions command.

6. Run the update command to make sure there are no errors:

```
# dnf update
```

You can now keep your system up to date from repositories provided by SUSE Liberty Linux.

6 Troubleshooting

nginx.service is inactive after installing the rmt-server package

Continue the procedure to configure RMT in YaST. This often resolves the issue. If that fails, Apache might be installed on your server, and must be disabled. Apache conflicts with NGINX because both web servers listen on port 80.

SUSE Liberty Linux doesn't appear in rmt-cli products list after rmt-cli sync

Check your network. If the network is down, rmt-cli sync fails without showing an error.

Mirroring completes with errors

If some packages could not be downloaded because of timeouts, rerun the rmt-cli mirror command until all packages are downloaded.

Setup script cannot access the SUSE Liberty Linux repository

The repodata directory on the RMT server will not be available until all of the packages for that repository are downloaded. If some packages could not be downloaded to the RMT server because of timeouts during the first mirroring, rerun the rmt-cli mirror command until all packages are downloaded.

Setup script cannot install SUSEConnect because of package dependencies

SUSE Liberty Linux only supports the latest minor release of RHEL. If your system is running the latest version and SUSEConnect still has package dependency issues, try the following workaround:

1. Edit the rmt-client-setup-res script to add --skip-broken to the following line:

```
$DNF install SUSEConnect librepo --skip-broken
```

2. Run the script and accept any proposed package changes. SUSEConnect will be skipped.
3. Run the script a second time. The package changes from the first attempt can sometimes resolve the package dependency issues, allowing the second attempt to successfully install SUSEConnect.

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