SUSE

SUSE Multi-Linux Support

Registering RHEL 7 or CentOS Linux 7 with RMT

This guide explains how to register and update RHEL 7 or CentOS Linux 7 with Repository Mirroring Tool (RMT).

To register with SUSE Manager, see *Registering RHEL 7 or CentOS Linux 7 with SUSE Manager* (https://documentation.suse.com/liberty/7/html/suma-quick-start/art-suma-quickstart.html) ↗ .

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Contents

1   Introduction

> **!** **Important: End of general support for SUSE Multi-Linux Support 7**
>
> SUSE Multi-Linux Support 7 has reached the end of general support and is now in LTSS (Long Term Service Support).
>
> If you have a *SUSE Multi-Linux Support* subscription but do not have an *LTSS* subscription, you can continue to use your systems. However, registering new RHEL 7 or CentOS Linux 7 systems with the general subscription is no longer supported.
>
> To register new RHEL 7 or CentOS Linux 7 systems, and to continue receiving new updates for existing systems, you must use an *LTSS* subscription.
>
> Additionally, the optional High Availability extension is no longer supported with SUSE Multi-Linux Support 7 LTSS. You must remove this product from your system before you can register with an LTSS subscription.
>
> If you previously registered your systems with a general subscription and want to move them to an LTSS subscription, see *Section 4, "Mirroring SUSE Multi-Linux Support repositories with RMT"* and *Section 5, "Registering RHEL or CentOS Linux with RMT"*.

SUSE Multi-Linux Support is a technology and support solution for mixed Linux environments. With a SUSE Multi-Linux Support subscription, you can register and update Red Hat Enterprise Linux and CentOS Linux.

The following table shows which Linux distributions are supported by each subscription. These subscriptions also include an entitlement for a registration tool to manage package updates.

TABLE 1: SUPPORTED DISTRIBUTIONS AND REGISTRATION OPTIONS

Subscription	Supported distributions	Registration options
SUSE Multi-Linux Support Enterprise	CentOS Linux Red Hat Enterprise Linux SUSE Linux Enterprise Server	SUSE Manager Repository Mirroring Tool
SUSE Multi-Linux Support Professional	CentOS Linux Red Hat Enterprise Linux	SUSE Manager Repository Mirroring Tool

Subscription	Supported distributions	Registration options
SUSE Multi-Linux Support Basic	CentOS Linux	SUSE Manager Repository Mirroring Tool
SUSE Multi-Linux Support Lite	CentOS Linux Includes *one* entitlement for SLES to host RMT	Repository Mirroring Tool

❗ CentOS Stream is not supported.

❗ Registering RHEL or CentOS Linux directly with SUSE Customer Center is not currently supported.

This guide describes how to register with Repository Mirroring Tool (RMT). RMT is a proxy system for SUSE Customer Center. The RMT server is registered with SUSE Customer Center, and other systems are registered with the RMT server and receive packages from it directly.

To register with SUSE Manager, see *Registering RHEL 7 or CentOS Linux 7 with SUSE Manager* (https://documentation.suse.com/liberty/7/html/suma-quickstart/art-suma-quickstart.html) ↗.

PROCEDURE OVERVIEW

- If you already have an RMT server and only need to **register your RHEL 7 or CentOS Linux 7 system**, skip straight to *Section 5, "Registering RHEL or CentOS Linux with RMT"*.

- If you already have an RMT server but still need to **mirror the SUSE Multi-Linux Support 7 repositories**, go to *Section 4, "Mirroring SUSE Multi-Linux Support 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"*.

✎ Note: *SUSE Multi-Linux Support* and *SUSE Liberty Linux* or *Expanded Support*

SUSE Multi-Linux Support was previously named *SUSE Liberty Linux* and *SUSE Linux Enterprise Server with Expanded Support*. During the transition period, some components might still use one of these names.

- *Repository Mirroring Tool Guide* (https://documentation.suse.com/sles-15/html/SLES-all/book-rmt.html) ↗

- *Registering RHEL 7 or CentOS Linux 7 with SUSE Manager* (https://documentation.suse.com/liberty/7/html/suma-quickstart/art-suma-quickstart.html) ↗

- *Registering RHEL 8 or CentOS Linux 8 with SUSE Manager* (https://documentation.suse.com/liberty/8/html/suma-quickstart/art-suma-quickstart.html) ↗

- *Registering RHEL 8 or CentOS Linux 8 with RMT* (https://documentation.suse.com/liberty/8/html/quickstart/art-quickstart.html) ↗

- *Registering RHEL 9 with SUSE Manager* (https://documentation.suse.com/liberty/9/html/suma-quickstart/art-suma-quickstart.html) ↗

- *Registering RHEL 9 with RMT* (https://documentation.suse.com/liberty/9/html/quickstart/art-quickstart.html) ↗

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 Multi-Linux Support subscription to register this machine.

> 💡 **Tip: Other installation options**
>
> 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) ↗ .
>
> To deploy SLES in the public cloud, see Deploying a SUSE Linux Enterprise Server instance to support RMT in the public cloud (https://documentation.suse.com/sles-15/single-html/SLES-rmt/#rmt-public-cloud) ↗ in *Repository Mirroring Tool Guide*.

REQUIREMENTS

- You have a SUSE Multi-Linux Support subscription.

- You have a SUSE Customer Center (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 Multi-Linux Support 7 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 Multi-Linux Support 7 LTSS repository size**
>
> The SUSE Multi-Linux Support 7 LTSS repositories will grow over time because older package versions are not removed. Based on the current[1] size of the repositories, to meet the 1.5 times size recommendation you will need approximately 15 GB of disk space for the default `LTSS-Updates` repository. If you need the optional `LTSS-Source` and `LTSS-Debug` repositories, you will need an additional 39 GB.
>
> SUSE Multi-Linux Support 7 LTSS also has optional frozen `BASE` repositories that contain the packages from the non-LTSS repositories. If you need these repositories, to meet the 1.5 times size recommendation you will need approximately 210 GB for the `BASE-Updates` repository and 730 GB for the `BASE-Source` and `BASE-Debug` repositories.

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.*

---

[1] As of 31 October, 2024

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 Multi-Linux Support:

    ```
    # 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 Multi-Linux Support 7 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/) ↗

- Virtualization Guide (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.

- 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/)↗ account and organization credentials.

PROCEDURE 3: CONFIGURING THE RMT SERVER

1. On the SLES machine, install RMT:

   ```
   # zypper install 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 SUSE Customer Center (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 Multi-Linux Support repositories with RMT

Use this procedure to mirror the SUSE Multi-Linux Support LTSS repositories for Red Hat Enterprise Linux 7 and CentOS Linux 7.

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 Multi-Linux Support repositories will grow substantially over time.

- Your organization credentials appear correctly in `/etc/rmt.conf`.

- You have a SUSE Multi-Linux Support subscription activated in SUSE Customer Center (https://scc.suse.com/) ↗.

> **❗ Important: New repository structure for SUSE Multi-Linux Support 7 LTSS**
>
> The repository structure has changed in SUSE Multi-Linux Support 7 LTSS. The non-LTSS subscription had one default repository and one optional `Source` repository. The LTSS subscription has a default `LTSS-Updates` repository, an optional `BASE-Updates` repository, and optional `Source` and `Debug` repositories for both `LTSS` and `BASE`.

`BASE` repositories are frozen and contain the existing packages from the non-LTSS repositories. `LTSS` repositories contain new packages for SUSE Multi-Linux Support 7 LTSS.

There are no new High Availability repositories. High Availability is not supported with SUSE Multi-Linux Support 7 LTSS.

If you previously mirrored the SUSE Multi-Linux Support repositories with the general subscription, clean up these repositories first before you start mirroring the new LTSS repositories:

1. Disable the original product. This also disables all repositories associated with the product:

   ```
   # rmt-cli products disable 1251
   ```

2. If your previous subscription included the High Availability extension, disable this product too:

   ```
   # rmt-cli products disable 1252
   ```

   High Availability is not supported with SUSE Multi-Linux Support 7 LTSS.

3. Free up space on the server by cleaning up the files associated with the disabled repositories:

   ```
   # rmt-cli repos clean
   ```

PROCEDURE 4: MIRRORING THE SUSE MULTI-LINUX SUPPORT LTSS 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 Multi-Linux Support 7 LTSS using the product ID `2702`:

   ```
   # rmt-cli products enable 2702
   ```

This enables the default `RES-7-LTSS-Updates` repository.

3. If you also need the `BASE`, `Source` or `Debug` repositories, enable them with the following commands:

- `RES-7-BASE-Updates`:

```
# rmt-cli repos enable 6986
```

- `RES-7-LTSS-Source-Updates` and `RES-7-BASE-Source-Updates`:

```
# rmt-cli repos enable 6748 6987
```

- `RES-7-LTSS-Debug-Updates` and `RES-7-BASE-Debug-Updates`:

```
# rmt-cli repos enable 6985 6988
```

> 💡 `BASE` repositories are frozen and contain the existing packages from the non-LTSS SUSE Multi-Linux Support repositories. `LTSS` repositories contain new packages for SUSE Multi-Linux Support 7 LTSS.

4. 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) ↗

5 Registering RHEL or CentOS Linux with RMT

Use this procedure to register Red Hat Enterprise Linux 7 or CentOS Linux 7 with the RMT server.

❗ CentOS Stream is not supported.

- The RMT server is running `rmt-server` version 2.18 or later.

- The SUSE Multi-Linux Support 7 LTSS 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 Multi-Linux Support only supports the latest minor release of RHEL 7 or CentOS Linux 7.

- You have a SUSE Multi-Linux Support subscription activated in SUSE Customer Center (https://scc.suse.com/) ↗.

- You have removed the system from any Red Hat subscription services it was registered to.

❗ ## Important: New registration setup for SUSE Multi-Linux Support 7 LTSS

The repository structure and registration setup has changed in SUSE Multi-Linux Support 7 LTSS. If you previously registered your system with a general SUSE Multi-Linux Support subscription, de-register your system from the original subscription before you re-register with the LTSS subscription:

1. De-register your system:

```
# SUSEConnect --de-register
```

This command also removes the High Availability extension if it was installed on your system. High Availability is not supported with SUSE Multi-Linux Support 7 LTSS.

2. Clean up the registration status:

```
# SUSEConnect --cleanup
```

1. 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 Server release file
  (RES-LTSS/7/x86_64)

  Registered


---------------------------------------
```

4. Verify the available repositories:

```
# yum repolist all
```

The default repository `RES-7-LTSS-Updates` should be `enabled`.

You will also see optional `BASE`, `Source` and `Debug` repositories with the status `disabled`. Be aware that these repositories are listed even if they are not mirrored on the RMT server. You can check the mirrored repositories by browsing the directory listing at `https://RMT_SERVER/repo/SUSE/Updates/` or by logging in to the RMT server and running **`rmt-cli repos list`**.

> 💡 `BASE` repositories are frozen and contain the existing packages from the non-LTSS SUSE Multi-Linux Support repositories. `LTSS` repositories contain new packages for SUSE Multi-Linux Support 7 LTSS.

5. If you need any of the `BASE`, `Source` or `Debug` repositories, enable them with the following command:

```
# yum-config-manager --enable REPO_ID
```

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

```
# yum update
```

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

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 Multi-Linux Support does not 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.

Registering RHEL 7 or CentOS Linux 7 with RMT

Setup script cannot access the SUSE Multi-Linux Support repositories

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-ng` because of package dependencies

SUSE Multi-Linux Support only supports the latest minor release of RHEL or CentOS Linux. If your system is running the latest version and `suseconnect-ng` 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:

   ```
   $YUM install sles_es-release-server suseconnect-ng librepo --skip-broken
   ```

2. Run the script and accept any proposed package changes. `suseconnect-ng` 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-ng`.

`yum update` fails with `[Errno 14] HTTPS Error 404 - Not Found`

The repository shown in the error message might not be mirrored on the RMT server. The optional `BASE`, `Source` and `Debug` repositories can be enabled with **`yum-config-manager`** even if they are not available from RMT.

1. Run **`yum repolist all`** to show the status of the repositories.

2. If the repository shown in the error message has the status `enabled`, disable it with the following command:

   ```
   # yum-config-manager --disable REPO_ID
   ```

3. Run **`yum update`** again to see if the issue is resolved.

4. If you need the unavailable repository for your system, see *Section 4, "Mirroring SUSE Multi-Linux Support repositories with RMT"*.

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