



Installation Guide

RLM for Tecplot Products 12.4

Tecplot, Inc.
Bellevue, WA
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License Manager Installation

To facilitate a **Network** license of one or more Tecplot products, you must install the Reprise License Manager (RLM), the third-party license manager used by Tecplot, on a computer on your network, which will become the license server. You should choose a single machine to be your network's license server even if you have licenses for multiple Tecplot products. In order to install and configure RLM, you must have Administrator privileges on the computer you designate as the license server.

With the **Network** license, a user may check out a license on a supported workstation from a server based on any supported platform. The server platform need not be the same as the workstation(s).



To act as server for a Network license of Tecplot products, the machine must:

- Be connected to the same local area network or virtual private network as the computers that will run Tecplot products.
- Have the Reprise License Manager running.
- Be of a supported hardware type and operating system. See Supported Platforms below.
- Be able to communicate via TCP/IP with all machines that will be running Tecplot products. For example, the license server should respond to **ping** from the workstations.

Technical Support

If you have difficulty performing the installation, review the [“Useful Information”](#) on page 19, or visit our detailed, searchable knowledge base online at <https://kb.tecplot.com/>.

You can also contact our responsive Technical Support Team by the following methods:

- Internet: <https://www.tecplot.com/support/>
- E-mail: support@tecplot.com
- Telephone: +1-425-653-9393

Please include your license number when contacting Support.

You may also find Reprise's Web site for RLM license administrators and users useful:

<http://www.reprisesoftware.com/admin/software-licensing.php>

Supported Platforms

The RLM Server is supported on the following platforms. Other platforms may work (especially newer versions of the ones listed, or other Linux distributions of similar age) but our ability to support them may be limited.

Windows

64-bit

Windows 7, 10

On Windows, the installation must be run as administrator.

Mac

64-bit

10.12 (Sierra)

10.13 (High Sierra)

10.14 (Mojave)

Linux

64-bit

Red Hat Enterprise Linux (RHEL) 6.7+, 7.3+

CentOS 6.7+, 7.3+

SUSE 11.4, 12.2+

Ubuntu 14.04 LTS, 16.04 LTS, 18.04 LTS

Be sure that your operating system is up-to-date with the latest security updates and service packs.

Downloading RLM

To download RLM, sign in to [My Tecplot](#) and go to the Product Releases page.

If you already have RLM installed for other products, you can download the `tec1md.set` file and copy your license file into your existing RLM installation directory. Then restart the server to begin serving the Tecplot licenses. Otherwise, download the installer for your operating system.

Transitioning RLM

If you currently have RLM 11 installed, find your operating system below for instructions on making a smooth transition to RLM 12.

Windows

Uninstalling RLM 11 deletes your existing license and settings files, so before uninstalling, copy these files to a safe place (for example, make a new folder on your desktop and put them there). The main license file is named `tecplot1m.lic` but other `.lic` files may also exist and should also be copied. If you have changed any of the `.opt` files, copy them, too.

After copying the files, uninstall RLM 11 through the Windows Control Panel. Then install RLM 12 as described in the next section.

After installing RLM 12, copy the saved *teplotlm.lic* back to the RLM installation directory, replacing the existing file. Also copy any other license files you saved.

If you added any commands to the *.opt* files, use a text editor (such as Notepad) to copy these commands from the saved files to the corresponding *.opt* files that were installed with RLM 12. *Do not copy the entire file, just any lines you added.*

In a web browser, go to <http://localhost:5054> and click the Reread/Restart Servers button on the left side. In the page that appears next, click REREAD/RESTART in the center of the page.

Your Tecplot licenses should now be available again.

Linux and Mac

Install RLM 12 as described in the next section. RLM 12 installs in a separate directory from RLM 11.

Copy the *teplotlm.lic* license file from the RLM 11 directory and paste it into the RLM 12 directory, replacing the existing file. If there are any other *.lic* files in the RLM directory, these are also license files and should be copied as well.

If you added any commands to the *.opt* files, use a text editor to copy these commands from the RLM 11 version of the files to the corresponding *.opt* files that were installed with RLM 12. *Do not copy the entire file, just any lines you added.*

From the terminal, use the `cd` command to navigate to the RLM 12 directory. Then stop the server and start it again:

```
./rlm_process stop  
./rlm_process start
```

Your Tecplot licenses should now be available again. Once migrated, the RLM 11 folder can be deleted. However, you will need to update the RLM Startup configuration again. See [“Configuring RLM Startup”](#) for more information.

Installing RLM

Follow these instructions to install the RLM server on a supported platform. You should have already downloaded the installation file.

Windows

Double-click the installer *.exe* file. You may be prompted for an administrator password.

Follow the on-screen instructions to complete the installation. When installation completes, the RLM server starts automatically.

Linux

The Linux installer is a self-extracting archive that must be run at the command line.

1. Open a terminal.
2. Use the `cd` command to navigate to the location of the downloaded installer. For example:
`cd /path/to/download/directory`
3. Type the following at the command prompt:

```
sh ./rlm*_linux*.sh
```

Hint: Once you have typed `rlm`, you should be able to press the Tab key to complete the filename.

Follow the on-screen instructions to complete the installation. When installation completes, you will be asked if you want to start the RLM server.

After installation, you may need to adjust your firewall settings. Refer to [“Firewall Settings for Hosting RLM”](#) on page 23.

Mac

The Mac installer is a self-extracting archive that must be run at the command line.

1. Open Terminal.
Terminal.app is located in the Utilities folder inside the Applications folder.
2. Use the `cd` command to navigate to the location of the downloaded installer. For example:
`cd ~/Downloads`
3. Type the following at the command prompt:
`sh ./rlm*_mac64.sh`
Hint: Once you have typed `rlm`, you should be able to press the Tab key to complete the filename.

Follow the on-screen instructions to complete the installation. When installation completes, you will be asked if you want to start the RLM server.

After installation, you may need to adjust your firewall settings. Refer to [“Firewall Settings for Hosting RLM”](#) on page 23.

Installing Tecplot Licenses

To request a license key file for your Tecplot product, sign in to [My Tecplot](#). After you receive the key file, copy it into the RLM directory. If you have licenses for multiple Tecplot products, you must request a separate key file for each license.

To make the newly-installed key file active, go to <http://localhost:5054> in a Web browser running on the license server host. If you have trouble reaching the Web server, make sure the license server is running; see [Configuring RLM Startup](#) to make sure your license server runs at startup.

In the Web browser, click the Reread/Restart Servers button on the left side of the page. Then click REREAD/RESTART in the center of the next page.

Configuring RLM Startup

Configuring RLM to run at your host's startup depends on the type of server.

Windows

A Windows service called *rlm* is installed that starts RLM when the host boots. No further action is required.

If you want to change the Web server administration port or disable the Web server completely, you can delete the service and create a new one by following these steps:

1. Go to the Start menu and search for `services.msc`, then press Enter.
2. In the Services window, locate the "rlm" service, right-click it, and choose Stop from the context menu.
3. Navigate to the RLM installation directory and double-click on *rlm.exe*.

This starts RLM without using the service. Do not close the console window that appears; if you do, RLM will stop.

4. In a Web browser, go to <http://localhost:5054> to access the RLM server administration interface. Click Manage Windows Service in the navigation on the left side.
5. Change the Service Action to Remove Service and click Apply, then Continue
6. Back at the Service Definition, change settings as desired. Click Apply, then Continue.
7. Close the console window that's running RLM
8. Go back the Services window and start the new RLM service.

Linux and Mac

At the end of the installation, you are given the option to start RLM. By default, the server administration is available at <http://localhost:5054> (replace *localhost* with the license server hostname if you're accessing it from another computer).

To manually start or stop RLM, do the following:

1. From the terminal, use the `cd` command to navigate to the RLM directory.
2. Run this command to start RLM:
`sh ./rlm_process start`
3. Run this command to stop RLM:
`sh ./rlm_process stop`
4. To see all available options in `rlm_process`:
`sh ./rlm_process`

This provides a list of all `rlm_process` subcommands, which will let you start with a different Web server port or start without the Web server.

Once you have decided on the desired startup options, you should add that command to the operating system's startup script so that RLM starts when the system boots. The output of `sh ./rlm_process` may list a recommended startup script for your system, if it can be found. We have provided some hints below for popular operating systems.

In general, you should use a startup script that runs as late as possible in the boot process to make sure network services are available.

Once you have added the RLM startup command to a startup script, reboot the server and verify that RLM starts up.

Linux with GNOME Desktop (not SUSE)

1. From the main desktop screen type Alt-F2
The Enter a Command window appears.

2. Type `gnome-session-properties` and press Enter.
The Startup Applications Preferences dialog appears.
3. Switch to the Startup Programs tab and click Add.
4. Provide a name (e.g. RLM) and the command to start the RLM server, such as `/home/rlm/rlm12.4/rlm_process start`.
You may also provide a comment if you like.
5. Click Save, then close the Startup Applications Preferences.

Linux with KDE Desktop

1. Click the K icon to bring up the KDE window.
2. Type `autostart` in the dialog that appears.
3. A dialog appears in which you can enter the name of the program (e.g. RLM) and the command you run it with, such as `/home/rlm/rlm12.4/rlm_process start`.

Mac

1. Open Terminal, which is in the Utilities folder in the Applications folder.
2. At the command prompt, type `crontab -e`. The vi editor starts.
3. Press `i` for insert mode.
4. Add the following line:
`@reboot /Users/rlm/rlm12.4/rlm_process start`
(use the path to your actual `rlm_process` script)
5. Press Escape, then type `:wq` to write the file and quit.

The Reprise License Manager Web Server

On all platforms, the Reprise License Manager includes a Web server through which you can control and perform most license manager administration. In the following sections, you can learn about:

- [Accessing the RLM Web Server](#) and
- [Basic Operations of the RLM Web Server](#).

The Web server includes additional documentation, accessible by clicking the RLM Manual button in the left pane of the license manager web page.

Accessing the RLM Web Server

Because the RLM server administration interface is Web-based, you can administer your license server from any platform with a Web browser. The Web browser runs on port 5054.

If accessing the server on the computer on which it is running, you can access the RLM server at <http://localhost:5054>. If accessing the server from a different host on your network, replace “localhost” with the hostname or IP address of the RLM server.

Restricting Access to the RLM Web Server

By default, the RLM Web server can be accessed by anyone on the network. Every user can shut down the server, remove licenses from other users, and configure access settings. To provide different users different levels of access, you can set up a password file. There is a sample password file called *README.pw* in the RLM directory. Open the file in a text editor and refer to the included directions on how to set it up.

Basic Operations of the RLM Web Server

Using the buttons on the left side of the license administration web page, you can control several functions of the license manager, including the following.

- **Retrieve server and license statuses**

Click the Status button to view the status of the RLM server, as well as the status of your ISV server (tec1md). The top line displays the name of the host on which RLM is running, as well as the port number.

- **Shut down the license servers**

Click the Shutdown button in the left-hand pane to display the Shutdown License Server screen. This will disallow any local Tecplot product installations from contacting the **Network** license, which will shut down all local usage of the **Network** license within a few minutes. However, you can still access the RLM web server and RLM operations (RLM itself will not shut down, only the ISVs).

- **Cause servers to re-read license files**

Click the Reread/Restart Servers button to re-read license files on your network.

- **Switch debug or report log files**

By clicking on the Switch Reportlog button, you can access debug reports and report logs.

- **Move the current report log file to a new name**

By clicking on the New Reportlog button, you can append the current report log to a new file for easy access.

- **Activate License**

This button is not supported for use with Tecplot products. To activate a license, use the method described in [“Installing Tecplot Licenses”](#) on page 8.

For further information about the RLM web server, click on the RLM Manual button in the left-hand pane of the display window to open the web-based RLM End-User Manual, or view it online at this address:

http://www.reprisesoftware.com/RLM_Enduser.html.

Additional License Administration Tools

You can use other commands to control RLM, such as the included `rlmutil` executable, which provides license manager utilities accessible through the command line. This section describes how to operate RLM from the command line.

Accessing RLM from the Command Line Using `rlmutil`

To run `rlmutil`, follow these platform-specific instructions.

Linux/Mac Platforms On Linux or Mac platforms, navigate to the RLM installation folder and run `rlmutil` from a system startup script (type `./rlmutil` in the terminal or script window).

Windows Platforms On Windows, navigate to the RLM installation folder, and type `rlmutil` into the command window.

The `rlmutil` executable contains instructions for controlling RLM using the `rlmutil` commands. For further instruction, read the following section.

Controlling RLM from the Command Line using `rlmutil`

After `rlmutil` is running, follow the instructions included in `rlmutil` to execute commands. The following table lists the available license administration utilities accessible in the executable. For a more comprehensive explanation, refer to the RLM End-User Manual online at

http://www.reprisesoftware.com/RLM_Enduser.html.

Utility	Use
<code>rlmdown</code>	Gracefully shuts down selected vendor daemons (both <code>teclmd</code> and all vendor daemons) on the license server machine
<code>rlmhostid</code>	Reports the <code>hostid</code> of a system

Utility	Use
rlmnewlog	Moves existing report log information to a new file name and starts a new report log file with the existing file name
rlmremove	Releases a hung license to the pool of free licenses
rlmreread	Causes the license daemon to reread the license file and start any new vendor daemons
rlmstat	Displays the status of a license server system
rlmswitch	Controls debug log location and size
rlmswitchr	Switches the report log to a new file name

Refer to the platform-specific instructions on administering RLM for the best method of how to restart RLM after shutting it down.

Running Multiple License Managers

Running multiple instances of RLM is difficult and not recommended. However, RLM can be run alongside other license managers (such as FlexNET) as long as the two license managers are configured to use different ports.

Upgrading RLM

If Reprise Software releases a new version of RLM, you may, if you wish, install the new version. This is generally not necessary for Tecplot products (we will tell you if you need to upgrade your license server for a particular product release), but it may be necessary for other products you have that rely on RLM for network licensing, or you may want a new administration feature that Reprise has introduced.

In our experience, RLM's backward compatibility is excellent, so there is generally little risk in upgrading your RLM server to a newer version. However, we recommend backing up

your existing installation first just in case there is some problem that requires you to roll back.

Windows

1. Download a new Windows RLM archive from [Reprise Software](#).
2. Run the *.exe* file to extract files to a new directory
3. Stop the existing install of RLM using the Services window (run *services.msc*). Right-click the RLM service and choose Stop.
4. Copy the new *rlm.exe* and *rlmutil.exe* files to the existing install directory.
5. Back in the Services window, right-click the RLM service and choose Start.

If you now open the RLM administration interface in your Web browser, you should see the new RLM version number on the main page.

Linux and Mac

1. Download a new RLM archive for your platform from [Reprise Software](#).
2. From the command line (e.g. Mac Terminal), use the `cd` command to navigate to the download location.
3. Use the `tar -xzf` command to extract the archive.
4. Stop RLM: `sh ./rlm_process stop`
5. Copy the new *rlm* and *rlmutil* files to the existing install.
6. Start RLM: `sh ./rlm_process start`

If you now open the RLM administration interface in your Web browser, you should see the new RLM version number on the main page.

Where To Go From Here

You should now have RLM installed and configured to serve Tecplot licenses. If you've run into problems, contact [Tecplot Technical Support](#).

For more information on using RLM administration features, refer to RLM_License_Administration.pdf, included in the RLM directory. On Windows, it's accessible from the Start Menu. For troubleshooting tips, refer to the next chapter.

Useful Information

This chapter covers useful knowledge about the RLM server, including the following:

- [License Type Definitions](#)
- [Using Licenses Over a Network](#)
- [Troubleshooting License Server Issues](#)
- [Changing License Servers](#)
- [Network Licenses for Multiple Tecplot Products](#)
- [Firewall Settings for Hosting RLM](#)
- [Running Tecplot Products on a Portable](#)

License Type Definitions

What license options do I have?

Three basic license types govern usage of Tecplot products: **Evaluation** licenses, **Single-User** licenses, and **Network** licenses.

- **Evaluation License** An **Evaluation** license allows a user to fully experience the software's features and functionality for a limited time.
- **Single-User License** A **Single-User** license allows a single user to install the software on up to three computers: one work computer, one home computer, and one portable computer. The one user agrees that no more than one installation will be in use at any given time. Single-User licenses cannot display remotely.
The **Single-User** license alternatively allows the installation of a Tecplot product on one computer where multiple people can use it one at a time, such as in a laboratory environment.
- **Network License** A **Network** license allows users to run the software anywhere within a local area network

(LAN) for a specified number of users. It is a “floating” license that allows you to install the software on as many computers as you desire. However, only the number of copies specified in your license can be run at any one time. For this license type, you must run the Reprise License Manager (RLM) on your network.

To set up a **Network** license, your organization must designate one person as the official contact for the license. That contact will act as liaison with Tecplot, Inc. He or she will receive a license key file from Tecplot, Inc., which should be placed in the RLM installation folder.

Using Licenses Over a Network

How does a network license work?

When you open a Tecplot product from a local machine on the network, product contacts the license server via TCP/IP and “checks out” a key from the license manager. When you exit the program, the Tecplot product “returns” the key. The license manager limits the number of keys available (and thus the number of sessions currently active) to the number of users allowed by the license.

Users of portable computers may need to use their Tecplot product while not connected to the network containing the license server. For this reason, with some Tecplot products, RLM allows users to manually borrow a license, use the product while not connected to the network, and return the license later.

The Reprise License Manager Daemon

The Reprise License Manager runs as a daemon (background application) called `r1m` on the network host. This daemon manages the allocation of keys to users of Tecplot products. During the time that a local machine has been allocated a

license, the Tecplot product running on that machine regularly sends a signal (heartbeat) to the server.

If the RLM daemon does not get an expected heartbeat signal, the server assumes that the software has been exited or has quit unexpectedly and, after a period of time, frees up the license and no longer associates it with that instance of the product.

From the other end, if the heartbeat check fails, the Tecplot product will no longer allow the user to use most features of the product, but will allow the user to save the current session (for example, to a layout file) to avoid losing work. The user must check out a new license from RLM, usually by exiting and re-launching the product, to regain full use of the software.

The system that runs the Reprise License Manager daemon must have a license key file installed to enable network licensing of Tecplot products. If you do not have a license key file, see [“Installing Tecplot Licenses”](#) on page 8.

License Roaming

Tecplot products released in May 2015 and later support roaming: borrowing network licenses for a period of time when you expect to be disconnected from the network (for example, while traveling). To manage roaming, use **Help > License Roaming** in your Tecplot product.

Troubleshooting License Server Issues

Users cannot obtain a license

An error message appears if the product installation folder does not contain the *teplotlm.lic* file, or if that file does not contain a valid license key (for a **Single-User** license) or license server address (for a **Network** license) from which a valid license can be obtained. Users may enter new license information when they do not have a valid license.

For **Network** licenses, make sure users have specified the correct address of the license server when activating their licensing, that a valid license key is installed on the server for the product being used, that the license server daemon is running, and that enough licenses are available on the server. Also, make sure that the license server host can be reached from the workstation in question (for example, using ping), and that the workstation's firewall is not denying outbound access to the license server port (typically port 27100). Finally, make sure the host name used for the license server resolves to the correct IP address, or use the IP address.

Obtaining License Key Files

To request a license key file, use one of these methods:

- **Internet:** <https://my.tecplot.com/portal/licenses-keys>
Sign in to My Tecplot and follow the instructions to receive your license file. It is usually the easiest way to activate your license.
- **E-mail:** support@tecplot.com.
- **Telephone:** +1-425-653-9393

Remember to specify your license number and include your Host ID information (*myhostids.txt*) when requesting a license key file.

You can find your Host ID information (*myhostids.txt*) in the following location, according to your installation type and platform.

All Platforms: Installation of a Tecplot product generates and saves a file called *myhostids.txt* in your installation folder. For a **Network** license, you need the *myhostids.txt* for the computer that will run the license server. This file is automatically saved in the RLM installation folder. You do not need *myhostids.txt* from any of the client machines that will be using the server.

Linux and Mac Platforms: For a **Network** license installation on your host machine, if you cannot find the *myhostids.txt* file in your RLM installation folder, you can run the `setuplic` utility (located in the RLM installation folder) and choose:

1. Get HOSTID information.

Changing License Servers

What if I want to change which machine hosts my network license?

Your license key is linked to your Host ID, which is based on your license server's MAC (physical Ethernet) address or other information unique to your server hardware. If you wish to move the license manager to a different host, or install a new network card, send a request for a new key file to Technical Support or your local distributor. Include your license number and the *myhostids.txt* file from your RLM installation directory in your request.

Network Licenses for Multiple Tecplot Products

If you purchase network licenses for multiple Tecplot products, you will receive one file per license. To install them, copy each file into the RLM directory. You may rename the files if you like; as long as the file's name has a *.lic* extension, the file will be accepted by RLM.

Firewall Settings for Hosting RLM

If you have a **Network** license, the machine on your network that hosts the license manager must allow other machines to contact RLM. To allow for this:

- **Windows Platforms** The RLM server installation for Windows platforms automatically adds *rlm.exe* to the Windows firewall exceptions list (accessible from the **Control Panel**). Usually, no manual configuration is needed.

- **Macintosh/Linux Platforms** On Macintosh and Linux platforms, RLM operates on the port number specified at the end of the HOST line of the license key, which by default is 27100.

The Tecplot license management utility, `teclmd`, operates on the port specified at the end of the ISV line (by default, 27101).

The port that RLM uses and the port that `teclmd` uses must both be open to successfully manage licenses.

You can use port 5054 to make the web server available from other machines in your network.

The procedure to open a port varies by platform. Consult your operating system help or documentation for detailed instructions.

Running Tecplot Products on a Portable

If you use Tecplot products on a portable computer, you must have your computer's network card enabled (though not necessarily connected).

If you are using a **Network** license, you may be able to borrow a license for use while not connected to the network using **Help > License Roaming**.