



License Server Installation Guide

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Preface

Note: This guide applies to RiverWare version 9.2 and later but has information for RiverWare 9.1 and all prior versions as well.

About This Guide

This guide is for RiverWare license server administrators. It describes how to install the RiverWare floating license server on a Windows host.

RiverWare documentation is available at the RiverWare site:

riverware.org

RiverWare Installation and License User's Guide

This is for RiverWare users. It describes how to install RiverWare on a Windows computer and how to start RiverWare using a node-locked license, floating license, or license dongle.

<https://riverware.org/guides/RWInstallLicenseUG.pdf>

RLM License Administration Manual

For RiverWare license server administrators. This guide is published by Reprise Software, and it provides generic information about configuring and managing the RLM License Server. Some information in this guide may not apply to the RiverWare license server. Available at the following sites:

RiverWare 9.2 with RLM 15.1 and RiverWare 9.3 with RLM 15.2

https://www.reprisesoftware.com/RLM_License_Administration.pdf

RiverWare 9.4 with RLM 16.1

<https://reprisesoftware.com/docs/admin/basics-admin.html>

Reprise also has an RLM support page which provides software licensing technical resources that may answer your RLM questions and assist you troubleshoot licensing issues.

<https://reprisesoftware.com/support/admin/>

Support Information

For help with RiverWare installation and licensing, email RiverWare Installation Support.

installsupport@colorado.edu

After RiverWare is successfully installed, for help-desk type support, email RiverWare Technical Support.

riverware-support@colorado.edu

Support time can be purchased from CADSWES. See the RiverWare licensing page for more information.

<https://riverware.org/riverware/LicensingRW/index.html>

Introduction

The RiverWare floating license requires the RiverWare license server manager to be running on a designated license server machine at all times. The license server manager is a program that handles license requests from client computers.

The license server is the computer that manages the license, while the client PCs run the RiverWare application. The server machine is used to run the license server program and is not necessary to run the RiverWare applications. End users typically install RiverWare on their own computers that are clients of the server machine.

Three steps are required to set up a floating license server. Detailed instructions follow.

1. Start the license server

This step is used to test your license file. It validates the license by starting the license server on the specified machine. This is done through a Command Prompt window.

2. Install the license server as a Windows Service

This step is for installing the RiverWare license server as a Windows service. The service keeps the license server process active continuously without interruption and restarts the process automatically when the machine is rebooted. This process is done through a Command Prompt window.

3. Start the license service

Installing the license server as a Windows Service does not start the license server. You need to either reboot the server machine or start the service manually.

Once the license server is operational, the embedded RLM Web Server can be used to perform the majority of server administration tasks. You only need a web browser to use the web-based interface, which allows you to access the license server from any platform. Refer to **RLM Web Server** for instructions.

Note: The steps and the screenshots in this guide may vary slightly on your computer depending on the configuration of your system, and the versions of RiverWare and Windows you are running.

Start the License Server

This step is for testing your license file. Administrator privilege is not required to run the RiverWare license server. However, your organization may have set up specific access restrictions for performing some administrative tasks.

Instructions

- Log on to the server machine.

- Create a specific folder that will be used exclusively for running and maintaining the RiverWare license server. This step is necessary because your license is valid for all RiverWare versions, not tied to any specific RiverWare version. It is recommended to have a designated folder for storing and running the license server programs. This folder should be kept separate from any of the RiverWare installation folders. The license server program files are included in each RiverWare release. They are in the sub-folder "LMrlm" under the directory where RiverWare is installed.
 - Create the specific license server folder. For example: C:\rwlicserver. (This folder will be referred to as the RiverWare license server folder in the rest of this guide.)
 - Obtain the required license server program files: cadswes.set, rlm.exe, rlm.opt, rlm.pw, and rlmutil.exe. Download and install the latest RiverWare release and find them in the sub-folder "LMrlm" under the directory where RiverWare is installed. (Note that rlm.pw is only available in RiverWare 9.2 and later releases.)
 - Copy all the license server program files and your cadswes.lic file to the RiverWare license server folder you have just created.

- Specify port number in your cadswes.lic file. This step is optional.

RiverWare license file is always issued without the TCP/IP port numbers specified. If your firewall requires that port numbers be specified to allow access, you need to add the port numbers to the license file. Make sure your firewall allows connection to both the RLM port number as well as the CADSWES port number.

- Before modifying your cadswes.lic file, make a copy of it and rename it cadswes.txt (in case you need to restore the original).
- Open the cadswes.lic file in a text editor, such as Notepad or WordPad.
- To specify the RLM port, add the port number to the end of the HOST line, as below. If not specified, it is default to use port number 5053.

Syntax:

```
HOST <hostname> <hostid> <port-number>
```

For example:

```
HOST rwlicserver 123456ABCDEF 9725
```

- To specify the CADSWES port, add the port number to the end of the ISV line, as below. If not specified, RLM server randomly select an open port to use when starting the server.

Syntax:

```
ISV cadswes port=<port-number>
```

For example:

```
ISV cadswes port=9726
```

- The following ports should be avoided.

* 1 - 1024

Most operating systems reserve these and require admin/root permissions.

- * Ports ending in 80 or 443 (e.g. 8080, 8443)

These are common ports that applications bind to for web interfaces.

- Launch a Command Prompt window and change to the RiverWare license server folder you have just created. Execute the following command to start the license server. It is recommended to specify the full directory path.

Syntax:

```
rlm -c <license-file> -dlog <log-file>
```

- * Option -c specifies the license file location.
- * Option -dlog specifies the debug log file location.

For example:

```
rlm -c C:\rwlicserver\cadswes.lic -dlog C:\rwlicserver\debug.log
```

- If you are running RLM 15.1 or 15.2, and do not want to start the RLM web server, add the option -nows in the rlm command. For example,

```
rlm -c C:\rwlicserver\cadswes.lic -dlog C:\rwlicserver\debug.log -nows
```

Refer to chapter [RLM Web Server](#) for more information.

- Keep the Command Prompt window open and check to see if the RiverWare license server has started properly. Try one of the following options:

- Start a RiverWare application on the server machine and/or client machines.
- Open the Windows Task Manager and look for the active rlm.exe process.
- View the debug.log file. You should see the following towards the end of the log file:

```
03/09 13:05 (cadswes) Server started on hostname (hostid: #####) for:
03/09 13:05 (cadswes)      riverware rlm_roam
03/09 13:05 (cadswes)
03/09 13:05 (cadswes) License files:
03/09 13:05 (cadswes)  C:\rwlicserver\cadswes.lic
```

- If you encountered an error and need to restart the server, clear out the RLM server process first. Refer to [Shut Down the License Server](#) for instructions.

Install the License Server as a Windows Service

If you start the license server from a normal Command Prompt window, the license server will be shut down when you close the Command Prompt window that started the license server. To keep the license server up and running at all times, install the license server as a Windows service process. This process is done from a Command Prompt window.

It should be noted that installing Windows services generally requires administrator privileges. When you try to install the RiverWare license service as a regular user, you may receive the following error:

Error: Access to Service Control Manager denied

Instructions

- Start a Command Prompt window as an administrator. This can be done by right click on the Command Prompt shortcut, select Run as administrator.
- Change to the RiverWare license server folder you have just created.

For example,

```
cd C:\rwlicserver
```

- Execute the following command to install the service.

Syntax:

```
rlm -install_service -service_name <name> -c <license-file> -dlog <log-file>
```

For example, (The following is one continuing line.)

```
rlm -install_service -service_name riverwarelicenseservice -c C:\rwlicserver\cadswes.lic -  
dlog C:\rwlicserver\riverwarelicenseservice.log
```

- Press the Return. The service is installed when you get the cursor back without any error message.
- Refer to chapter *Running the rlm server as a service on Windows* in the [RLM License Administration Manual](#) for complete details.

Start the Windows Service

Installing the license server as a Windows Service does not start the license server. You need to either reboot the server machine or start the service manually.

If you cannot start the service as an administrator. You need to set the RLM Service username to a non-admin account, as user NETWORK SERVICE, for starting the service. See instructions below.

Instructions

There are two ways to start the service manually.

1. Using command sc (service control) from the Command Prompt window.

Enter the following command in the same Command Prompt window where you installed the service and in the same folder.

Syntax:

```
sc start <service-name>
```

For example:

```
sc start riverwarelicenservice
```

You should see a message returned similar to the one below.

```
C:\rwlicserver-15.2>sc start riverwarelicenservice

SERVICE_NAME: riverwarelicenservice
        TYPE               : 10  WIN32_OWN_PROCESS
        STATE                : 2   START_PENDING
                        (NOT_STOPPABLE, NOT_PAUSABLE, IGNORES_SHUTDOWN)
        WIN32_EXIT_CODE       : 0    (0x0)
        SERVICE_EXIT_CODE   : 0    (0x0)
        CHECKPOINT          : 0x0
        WAIT_HINT           : 0x1388
        PID                 : 15452
        FLAGS                :
C:\rwlicserver-15.2>
```

2. Start from the Services window.

- Select the Windows Start icon. Select Settings > Control Panel > Windows Tools. Right click on the Services, select Run as administrator. The Services window will open.

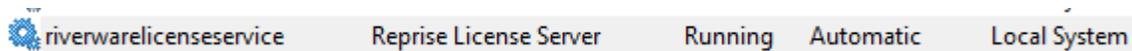
-OR-

Select the Windows Start icon. In the "Search" box, enter Services. Right click on the Services from the drop-down list, select Run as administrator. The Services window will open.

- From the Services window, under the Name column, find and select the service name you just installed. (The riverwarelicenservice in the example above.)
- Select the Start the service.

3. Confirm the service has started.

From the Services window, the status for your service shows "Running" as shown below.

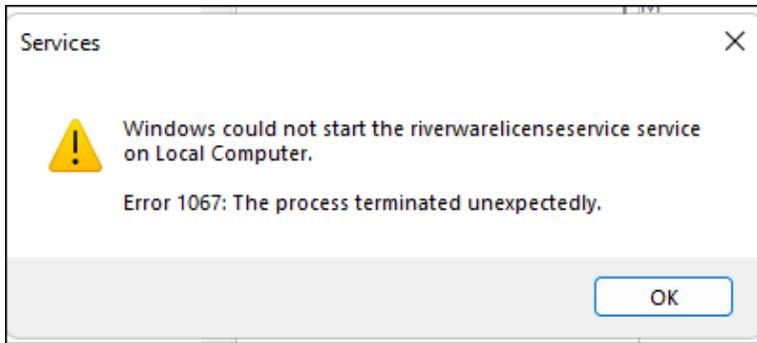


Special notes for RiverWare 9.1 and prior releases

[Special notes for using the license server programs included in RiverWare 9.1 and prior releases.](#)

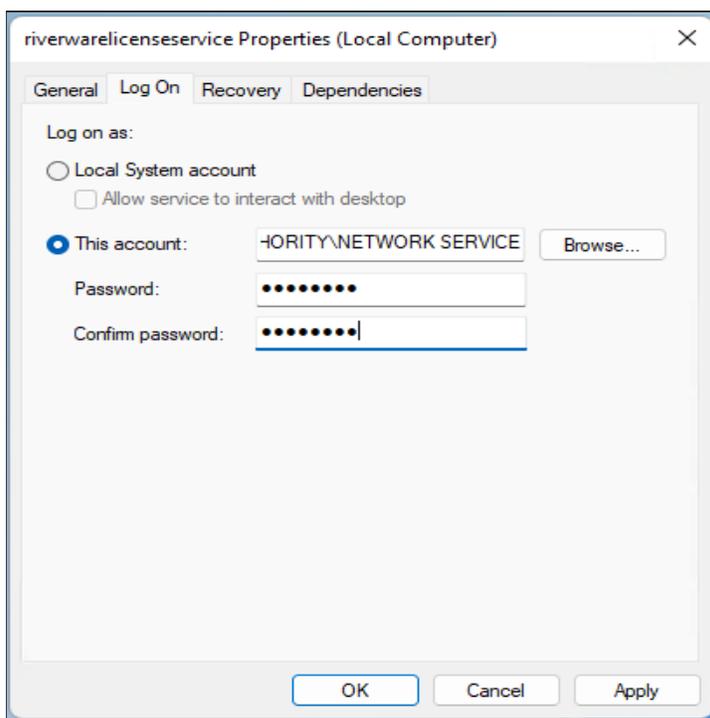
The RLM version in RiverWare 9.1 does not allow the license server to be run by an admin account, but an admin account is required to install the Windows Service for the license server. This issue has been fixed in RLM 15.1, which is included with RiverWare 9.2. It is strongly recommended that floating license users upgrade the license server using the server program files included in the RiverWare 9.2 version.

When you try to start the service as an administrator, you may receive the following error:



The error means that you cannot start the service as an administrator. Perform the following steps:

- From the Services window, under the Name column, find the service name you just installed. (riverwarelicenseservice in the example above.).
- Right click on it and select **Properties**.
- Select the **Log On** tab.
- Select This account.
- **Enter NT AUTHORITY\NETWORK SERVICE in the entry box. (Note, the screenshot below does not display the entire entry you need to enter.)**
- In the Password box, enter **password**. (your entry will be displayed as below)
- In the Confirm password, enter **password**. (your entry will be displayed as below)
- Select OK.



- You may receive the following notification. Click on OK.



- Now select the service name (riverwarelicenseservice) and click on start the service.
- You should see the Status of the service (riverwarelicenseservice) show Running.
- Start a RiverWare application to verify the server is up and running properly.

Shut Down the License Server

This step clears out the server process. It is safe to execute it even when no server is running. This step is recommended when:

- You need to restart the server from the license server folder where it was started from. You may need to do this when you test your license file.
- You need to shut down the current server in order to start a new server with the new cadswes.lic file you received. The current server is the one that was started with the previous cadswes.lic file by the server's Windows service.

Instructions

- Launch a Command Prompt window and change to the RiverWare license server folder where the license server was started from. This is where the program rlmutil.exe is located.
- Execute the following command to shut down the license server.

```
rlmutil rlmdown RLM
```

- Note that "RLM" is in upper cases.
- Enter y to the question: shutting down RLM - are you sure? [y/n]:

Delete the Installed Windows Service

The active license server needs to be shut down first before the service can be deleted. Refer to [Shut Down the License Server](#) for instructions.

Instructions

- Launch a Command Prompt window as an administrator. This can be done by right click on the Command Prompt shortcut, select Run as administrator.

- Change to the license server folder which contains the server programs and the cadswes.lic used for the installed service.

For example,

```
cd C:\rwlicserver
```

- Execute the following command to delete the service.

Syntax:

```
rlm -delete_service -service_name <name> -c <license-file> -dlog <log-file>
```

For example, (The following is one continuing line.)

```
rlm -delete_service -service_name riverwarelicenseservice -c C:\rwlicserver\cadswes.lic
-dlog C:\rwlicserver\riverwarelicenseservice.log
```

Start RiverWare on a Client Computer

Instructions

- For RiverWare end users to check out a license when starting RiverWare on a client machine, a copy of the current cadswes.lic needs to be present in the parent directory (i.e., one level up) of the RiverWare installation directory. For example, if RiverWare 9.4 is installed in: C:\Program Files\CADSWES\RiverWare 9.4 folder (riverware.exe is in the C:\Program Files\CADSWES\RiverWare 9.4 folder), then the license file needs to be at: C:\Program Files\CADSWES\cadswes.lic
- The content of the cadswes.lic file on a client computer can be one of the following:
 - a full copy of the original cadswes.lic file
 - contains only the HOST line from the original cadswes.lic file

- Your license works for all versions of RiverWare. Therefore, we recommend end users to install all versions of RiverWare in subfolders under a single parent folder and save the license file in the parent folder. By using this folder organization, you only need to maintain one copy of the license file. As an example:

```
C:\Program Files\CADSWES\cadswes.lic
```

```
C:\Program Files\CADSWES\RiverWare 9.3\
```

```
C:\Program Files\CADSWES\RiverWare 9.4\
```

- The cadswes.lic is a plain text file. Do not make any changes to its contents (except for adding the port numbers), and do not save it to any other format.
- Make sure that there are no other files that have a file name extension of .lic exist in the same directory where cadswes.lic file is located.
- After RiverWare has started successfully on a client machine, users can identify where RiverWare obtained the license by doing the following:
 - In the RiverWare Workspace window, click Help > About RiverWare....

- Under License, the "File" displays the location of the license file; the "Expires" displays the expiration date and the number of days remaining until the license expires.
- To check out a license temporarily from the network and use RiverWare offline, refer to the chapter *Running RiverWare With a Floating License > Using a Roaming License* in the [Installation and License User's Guide](#).

RLM Web Server

Introduction

The RLM embedded web server is a web-based administration tool for monitoring the license usage. The web server interface can be started on any machine on your network, not just on your server machine.

It should be noted that using the web server interface is completely optional. If you do not want to use the web server interface, follow the instructions in section [Disable the RLM Web Server](#).

RiverWare 9.2 and 9.3 include RLM 15.1/15.2, whereas RiverWare 9.4 incorporates RLM 16.1. While the licensing servers' operations remain comparable, the web server interface has changed significantly from RLM 15.2 to RLM 16.1. The most notable differences are the user interface and that RLM 16.1 does not require the password file `rlm.pw`, which is required in RLM 15.1/15.2. As a result, the procedures for running the two RLM web servers differ. For more details, refer to the sections [Running RLM 15.2 included in RiverWare 9.2 and 9.3](#) and [Running RLM 16.1 included in RiverWare 9.4](#).

Start the Web Server

- By default, the RLM web server is started automatically on port 5054 when the RLM license server is started. If you need to use a different port for running the RLM web server, specify the port number by using the `-ws` option when you execute the `rlm` command (the command for starting the RLM license server):

Syntax:

```
rlm -c <license-file> -dlog <log-file> -ws #####
```

For example,

```
rlm -c C:\rwlicserver\cadswe.lic -dlog C:\rwlicserver\debug.log -ws 9727
```

- To start the web server interface after starting the license server, open a browser window and input the RLM web server's hostname and port number in the address bar.
 - For RiverWare 9.3 and prior versions:

Syntax:

```
http://ServerHostName:PortNumber
```

For example:

```
http://rwlicserver:5054
```

- For RiverWare 9.4 and later versions:

Syntax:

`https://ServerHostName:PortNumber`

For example:

<https://rwlicserver:5054>

Note, 5054 is the default port number.

Running RLM 15.1/15.2 included in RiverWare 9.2/9.3

rlm.pw – Required password file

Beginning with RiverWare 9.2 with the incorporated RLM v15.1 and later v15.2, the RLM web server requires a password file named rlm.pw for additional security protection, and a password must be entered into rlm.pw within 10 minutes of the licensing server being up and running. Otherwise, the server will shut down automatically.

- Each RiverWare release will include a default rlm.pw with the default credentials of “admin” for username and “admin” for password. (The rlm.pw.default file in the same location serves as a backup copy of rlm.pw in case it is lost.)
- The rlm.pw file must be in the same directory as the rlm.exe.
- Any rlm.pw files created before rlm v15.1 will need to be deleted before the newer version can be used. (This should be a onetime thing. Going forward, password files created with v15.1 should be able to be used with future RLM versions.)
- Users in the rlm.pw must be added/changed using the web server interface, not by manually editing the rlm.pw file.
- If rlm.pw does not exist, RLM will create it automatically at startup. The default user account is given the username "admin" and the password "admin," same as the default rlm.pw file that comes with each RiverWare release.

When rlm.pw file does not exist, the debug log file contains the following message:

```
Your rlm.pw file contains usernames with empty
passwords and/or the default admin account.
If these passwords are not set in the next
10 minutes, rlm will exit.
```

If no username and password are set in the rlm.pw within 10 minutes, the server shuts down automatically, and the debug log file contains the following message:

```
Your rlm.pw file still contains usernames with
empty passwords and/or the default admin account.
RLM will now shut down
Shutdown request by passwords@empty
Sending shutdown msg to cadswes (pid: 16504)
cadswes - SHUTDOWN
Shutting down rlm
```

- The rlm.pw file has one line for each user. Each line has 3 fields separated by the ":" character, formatted as below:

Username:password:list-of-permissions

1. The username.
2. The password. It is displayed as an encrypted hash of the actual password, not in clear text. For example:
admin:vyG6o3AIRB+oocg8DCb1Rw==:all
3. The list-of-permission is a comma-separated list of the various privileges assigned to the user.

For instructions of adding new users, and the complete list of all the privileges, refer to chapter *Access Control to the RLM Web Interface* (page 50) in the [RLM License Administration manual](#).

Reset the password in rlm.pw

- This step is for running the license server included in the RiverWare 9.2 and 9.3.
 - From the Reprise License Server Administration main page, Log in using the following credentials:
Username: admin
Password: admin
 - After logging in, immediately change your password by selecting the "Change Password" tab from the list on the left. The new password will be saved to the rlm.pw file.
 - To reset the entire password file, delete the rlm.pw file and restart the license server. Restart the web server and log in with the default username and password.
 - To add a new user, refer to *Adding New Users* (page 51) in the [RLM License Administration manual](#).
- After the RLM web server has started in your browser, select a command from the list on the left to execute the operation you would like to perform. For example, to find out the current license usage:
 - Select "Status" from the command list on the left.
 - From the "Status for "rlm" on hostname (port #####)" page, select cadswes under License Usage column.
 - In the Get License Usage page, cadswes is entered for ISV by default. Select the GET License Usage tab.
 - The status of the license usage will be displayed on the top of the page under "License status for ISV cadswes." If no license is checked out, the message "No Licenses in use for ISV cadswes for product [any], user [any], host [any]" will be displayed.
- Refer to the [RLM License Administration Manual](#) provided by Reprise for complete license server administration information.

Running RLM 16.1 included in RiverWare 9.4

rlm.pw file no longer required

- The password file rlm.pw required in RLM 15.1/15.2 is no longer in use starting with RLM 16.1. The password and any other settings (e.g.: users, logins) is preserved in the C:\ProgramData\Reprise\rlmdb file between releases.
- HTTP access is disabled. HTTPS is used by default and user must enter the URL with HTTPS.
https://hostname:<port_number>
For RLM 15.2 and earlier versions, you may need to use http://hostname:<port_number> to access the web server interface.
- HTTPS is enabled by default and will generate a self-signed certificate (rlm-cert.pem) and key (rlm-key.pem) on startup if they do not exist. To use your own certificate and key, refer to chapter “Enabling HTTPS in the RLM Web Server” in the RLM License Administration Manual published by Reprise, which is linked below:
<https://reprisesoftware.com/docs/admin/basics-admin.html>
- Due to the self-signed nature of the automatically generated certificate, your browser will likely display a warning before you can get to the web server. Traffic to the web server will still be encrypted.
- Logins are required for access to the web interface. On initial login you will be prompted to set a new password. The default login is:
Username: admin
Password: admin
- To view the status of cadswes server, select cadswes from the Server list on the License Server Status page.

For detailed information on how to set up and operate a floating license server, refer to the RLM License Administration Manual published by Reprise, which is linked below:

<https://reprisesoftware.com/docs/admin/basics-admin.html>

From the menu on the left under License Administration, select Administration Basics > The RLM Web Server. This manual is also available by selecting the Documentation link on the top of the License Server Status page. (Not all of information in this manual applies to the RiverWare license server.)

Disable the RLM Web Server

Using the RLM web server is optional. You do not have to use it. When starting the license server, the web server is automatically started. If you do not want to use the web server, deactivate it using the "-nows" (no web server) option when starting the license server. The option instructs the rlm server not to start the embedded web server. As a result, the password

file rlm.pw in RLM 15.1/15.2 is not used, and the license server will no longer shut down automatically.

To disable the web server, add the option to the end of the command line when starting the license server. As an example,

```
rlm -c C:\rwlicserver\cadswes.lic -dlog C:\rwlicserver\debug.log -nows
```