User's Manual

Software for Floating License Management V2.09.00 (for Linux)

User's Manual

Target Device

RL78 Family

RX Family

RH850 Family

Renesas Electronics
www.renesas.com

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How to Use This Manual

This manual describes the license management for developing applications and systems for RL78 family, RX family, and RH850 family, and provides an outline of its features.

Readers	This manual is intended for users who develop application systems using the Renesas Electronics development environment.
Purpose	This manual is intended to help users understand the license management functions and to serve as a reference for software development using the Renesas Electronics development environment.
Organization	This manual can be broadly divided into the following units. 1. GENERAL 2. FUNCTIONS 3. MESSAGE
How to Read This Manual	It is assumed that the readers of this manual have general knowledge of electricity, logic circuits, and microcontrollers.

Conventions	Data significance:	Higher digits on the left and lower digits on the right
	Active low representation:	XXX (overscore over pin or signal name)
	Note:	Footnote for item marked with Note in the text
	Caution:	Information requiring particular attention
	Remarks:	Supplementary information
	Numeric representation:	Decimal ... XXXX Hexadecimal ... 0xXXXX

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1.GENERAL

This chapter describes the outline of the license in the form of a floating license for managing the license of development environment for developing applications and systems for microcontrollers (RH850, RX and RL78).

For managing floating licenses on the client side, refer to the License Manager User's Manual for Windows or Linux.

Notes:

1. When ‘sudo’ is attached to the file name, you must enter the password for the current user.
2. When ‘sudo’ is attached to the file name, you must specify the full path to the command because the PATH environment variable is fixed by default.

1.1 Introduction

Floating licensing is a licensing approach in which a limited number of licenses for software used by multiple users are managed by a single computer (server) and the users of any computers (clients) connected to the network can use the software within the limit of the number of licenses. Floating licenses support multi-user environments and can be assigned to individual users of Linux or Windows.

Table 1-1 Steps in Using a Floating License

Step	Client		Server
	Software Subject to licensing	License Manager	Floating license server management
(Preparation)			An administrator adds a license key.
1	Launched by a user.		
2	Requests the license. →		
3		Send a requests for the floating license to the server. →	
4			← Grants the floating license to the client.
5		← Responds to the tool stating the availability of a license.	

Administrator: License administrator
User: Floating license user

A floating license cannot be used unless the computer is connected to the server. Offline mode is a mechanism that occupies the license for a certain period in order to use the license in a state disconnected from the network environment.

Table 1-2 Steps for using the offline mode of a Floating License

Step	Client	Server	State of

	Software Subject to licensing	License Manager	Floating license server management	Connection between the Client and Server on the Network
(Preparation)			An administrator adds a license key.	Connected.
1		A user requests the floating license (offline mode).		
2		Sends a requests for the floating license (offline mode) to the server. →		
3			← Grants the floating license (offline mode) to the client.	
4	Launched by a user.			Not connected.
5	Sends a requests for the license to the license manager. →			
6		← Responds to the tool stating the availability of a license.		

Administrator: License administrator
User: Offline Mode user

Floating licenses are available as permanent licenses which place no limit on the period of validity, and as annual licenses which are valid for one year. The valid period is one year from initial registration with MyRenesas on the Renesas Web site of the license acquisition code which accompanies the compiler product. Once the period of an annual license has expired, the development tool covered by the license cannot be used.

1.2 Operating Environment

Software for floating license management operates in the following environment.

- OS
  - Ubuntu 22.04 LTS
  - Ubuntu 24.04 LTS
- Hardware
  - Conforming to the specifications required for the OS
- Development environment

  - Floating License (permanent and annual)
    - CC-RL V1.13.00 or later
    - CC-RX V3.06.00 or later
    - CC-RH V2.06.00 or later
- License Manager
  - V2.08.00 (Linux) or later
  - V2.08.00 (Windows) or later

1.2.1 Supported Licenses

The following licenses are supported.

Table 1-3 Supported License

License	Compiler V1 for RL78 (CC-RL)	Compiler V3 for RX (CC-RX)	Compiler V2 for RH850 (CC-RH)
Standard edition Floating License (permanent)	•	•	•
Standard edition Floating License (annual)	•	•	•
Professional edition Floating License (permanent)	•	•	•
Professional edition Floating License (annual)	•	•	•
Upgrade (version) Standard edition Floating License (permanent)		V2→V3	V1→V2
Upgrade (version) Professional edition Floating License (permanent)		V2→V3	V1→V2

1.2.2 Upgrade (version) License

The version (permanent) as the source of the upgrade can be upgraded to version+1 (permanent).

Table 1-4 Upgrade (version) License

	Source of the Upgrade	Upgrade (version)	Destination of the Upgrade

	(*version*) Standard edition Floating License (permanent)	(*version*+1) Upgrade (version) Standard edition Floating License (permanent)	(*version*+1) Standard edition Floating License (permanent)
	(*version*) Professional edition Floating License (permanent)	(*version*+1) Upgrade (version) Professional edition Floating License (permanent)	(*version*+1) Professional edition Floating License (permanent)
Example	Compiler **V2** for RX (CC-RX) Standard edition Floating License (permanent)	**V3** Upgrade (version) Standard edition Floating License (permanent)	Compiler **V3** for RX (CC-RX) Standard edition Floating License (permanent)

Remarks: An annual license cannot be specified as the source of the upgrade.

A Professional edition can be upgraded to (version+1) Standard edition.

	Source of the Upgrade	**Upgrade (version)**	**Destination of the Upgrade**
Example	Compiler **V2** for RX (CC-RX) **Professional** edition Floating License (permanent)	**V3** Upgrade (version) **Standard** edition Floating License (permanent)	Compiler **V3** for RX (CC-RX) **Standard** edition Floating License (permanent)

Remarks: A Standard edition cannot be upgraded to an Upgrade (version) Professional edition.

2.FUNCTIONS

This chapter describes functions of a floating license server.

2.1 Installing Floating License Server

Specify the installer file name and enter the following in the terminal.

$ sudo dpkg -i renesas-floating-license-server_2.09.00_amd64.deb

The installation location is as follows.

/usr/local/renesas-mcutools-license-server/bin/

2.2 Uninstalling Floating License Server

Enter the following in the terminal.

$ sudo dpkg -r renesas-floating-license-server

If you uninstall, the following warning will be displayed because the configuration file of the Software for Floating License Management exists in the installation directory.

“directory ’<path>' not empty so not removed”

If you reinstall it, you will be able to use it with the same settings, so there is no need to delete it. If you want to delete all directories and files, delete the following directories after uninstallation.

/var/local/renesas-mcutools-license-server/

/usr/local/share/renesas-mcutools-license-server/

2.3 Using a Floating License Server

This section explains how to use an installed floating license.

Enter the following in the terminal.

$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-administrator [OPTION]..

2.3.1 Option

Multiple options other than conflicting ones (e.g. –enable-* at the same time as –disable-*) can be simultaneously specified. The same options are handled in the order in which they are specified.

Category	Short Option	Long Option	Arguments	Description
Display floating licenses	-l	--list		Display a list of valid registered licenses.

Category	Short Option	Long Option	Arguments	Description
		--detail <license key>		Displays information of specify license key.
Floating license		--add <license key>		Add the floating license of specify license key.
		--delete <license key>		Delete the floating license of specify license key.
Offline mode		--release-offline-mode <license key>		Ending use of the floating license in offline mode. This is used when the client is unable to return the license from the client due to a failure of the client PC. Normally, release them from the client.
Floating license server settings		--enable-server-setting [<port> [<allow-upper-level-license>[<disclose-usage-to-clients>]]]		Enable floating license server settings.
			<port> >	Specify port number of server. If omitted, the value set is used. The initial value is 6723.
			<allow-upper -level-license>	Specify whether to allow the use of a higher-level license when there are no available lower-level licenses by specifying true/false. If omitted, the configured value will be used. The default value is true.

Category	Short Option	Long Option	Arguments	Description
			<disclose-usage-to-clients>	Specifies whether the license manager displays the usage status when acquiring offline use mode with true/ false. If omitted, the configured value will be used. The default value is false.
		--disable-server-setting		Disable the floating license server settings.
	-s	--server-info		Display floating license server settings information.
Logging status of use		--logging-setting <size> [<detail> [<directory>]]		The status of usage of the licenses are recorded in a log file.
			<size>	Specifies the maximum size 10-9999 (unit: MB).
			<detail>	Details of the program's internal operation are also recorded if true and not if false. If omitted, the configured value will be used. The default value is false.
			<directory>	Specifies the path for the directory in which the log files are to be saved. The initial values are as follows. /var/local/renesas-mcutools-license-server/LicenseServerInfo/Log
	-g	--logging-info		Display logging setting information.
		--report [<start> [<end>]]		Display license usage.

Category	Short Option	Long Option	Arguments	Description
			<start>	Specify the start date and time. If omitted, the log will be recorded from the beginning. format: "yyyyMMdd H:mm" example) "20250101 0:00"
			<end>	Specify the end date and time. If omitted, the log will continue to the end. format: "yyyyMMdd H:mm" example) "20251231 23:59"
Other	-h	--help		Display usage information.
	-v	--version		Display version.
		--lang <culture>		Display in the specified culture.
			<culture>	Specify ja-JP for Japanese and en-US for English.

2.3.2 Exit Status

Normal exit is 0, and abnormal exit is 1.

2.3.3 Setting up the server

The following option validates the settings of the floating license server.

--enable-server-setting [<port> [<allow-upper- level-license>[<disclose- usage-to-clients>]]]

Server Activation Example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --enable-server-setting
$
```

Specify the port number to be used by the floating license server. If there is a problem with the initial value (6723), specify the port number to be used for the <port> argument.

You can check the settings with the –server-info option.

Example of checking the settings

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --server-info
Status: Enabled Server Port: 6723
Offer the upper-level license if lower-level license is empty: True
Publish usage to the license manager: False
$
```

You can invalidate the settings with the --disable-server-setting option.

Server Disablement Example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --disable-server-setting
$
```

2.3.4 Setting up the firewall

Check whether the firewall is enabled or disabled with the following command.

sudo ufw status

Example of checking whether the firewall is enabled or disabled

```
$ sudo ufw status Status: inactive
$
```

When the firewall is inactive:

You need not open the port because a firewall has not been set.

When the firewall is active:

Open the port specified for the floating license server by using the following command.

sudo ufw allow <port number>

Example of opening a port

```
$ sudo ufw allow 6723
```

You can check whether or not the port is open with the following command.

sudo ufw status

Example of checking port open status

```
$ sudo ufw status

Status: active
To      Action  From
--      ------  ----
6723    ALLOW   Anywhere
...
6723(v6)ALLOW   Anywhere (v6)
...
$
```

2.3.5 Adding a license

You can add a floating license by using the –add option and then confirm addition of the license with the –list option.

Adding a floating license example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --add XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
$
```

Cautions:

1. Enter the license key compliant with the floating license. The Add License dialog box show the invalid key error if the non-compliant license key is entered.
2. To register the license key for an Upgrade (version) license, a license key for a floating license (permanent) must have been registered as the source of the upgrade. Start by adding the license key as the source of the upgrade to the license server or add the license keys of the Upgrade (version) license and the license for the source of the upgrade at the same time.

2.3.6 Assigning a floating license to the client

When the floating license server receives a license request from a client, the server assigns an unused license to the client.

Client	**Term of validity of a floating license**
Software Subject to licensing	30 minutes from the time that the license is acquired
Acquiring a license in offline mode with the license manager	Number of days (up to 99) specified by the license manager

For acquiring a license in offline mode with the license manager, refer to the License Manager User's Manual for Windows or Linux.

2.3.7 Confirming the states of the floating licenses

You can confirm the state of registration of a license by using the –list option.

License registration status example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --list
Compiler Standard V1 for RL78 (CC-RL)
XXXXX-XXXXX-XXXXX-XXXXX-XXXXX YYYYY-YYYYY-YYYYY-YYYYY-YYYYY
$
```

You can confirm the state of usage of a floating license by specifying the license key displayed with the --list option as the --detail option.

License Usage Example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --detail XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
      Client IP Address:
       Client User Name:
           Serial Number: 00000000
             License Key: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
            License Type: Floating License (annual) License Status: Unused
License Expiration Date: YYYY/MM/DD hh:mm:ss (Utc)

$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --detail ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ
      Client IP Address: NNN.NNN.NNN.NNN Client User Name: UUUU
           Serial Number: SSSSSSSS
             License Key: ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ-ZZZZZ
            License Type: Floating License (annual) License Status: Using
  Client Beginning Date: YYYY/MM/DD hh:mm:ss Client Expiration Date: YYYY/MM/DD hh:mm:ss
License Expiration Date: YYYY/MM/DD hh:mm:ss

$
```

2.3.8 Deleting a floating license

You can delete a floating license by using the –delete option.

Deletion example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --delete XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
$
```

After deletion, you can confirm that a license has been deregistered by using the –list option.

License registration status example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --list
Compiler Standard V1 for RL78 (CC-RL)
YYYYY-YYYYY-YYYYY-YYYYY-YYYYY
$
```

Caution: While a license key for an Upgrade (version) license is registered, a license key for a floating license (permanent) as the source of the upgrade cannot be deleted. Start by deleting the license key for the Upgrade (version) license.

2.3.9 Forcibly leaving offline mode

You can forcibly terminate a floating license (offline mode) acquired by the license manager of the client by using the --release-offline-mode option.

For terminating offline mode of the license manager, refer to the License Manager User's Manual for Windows or Linux.

2.3.10 Confirming the states of the floating licenses

The state of usage of a license can be displayed by the --report [<start> [<end>]] option in the format below.

```
, name of license 1, name of license 2, …
date and time specified in [Start date],the number of machines holding licenses under
license 1 at the start of logging,
the number of machines holding licenses under license 2 at the start of logging, …
...
date and time when the number of licenses held changed, the number of machines holding
licenses under license 1
before the change, the number of machines holding licenses under license 2 before the
change,
…
date and time when the number of licenses held changed, the number of machines holding
licenses under license 1
after the change, the number of machines holding licenses under license 2 after the
change, …
...
date and time specified in [End date],the number of machines holding licenses under
```

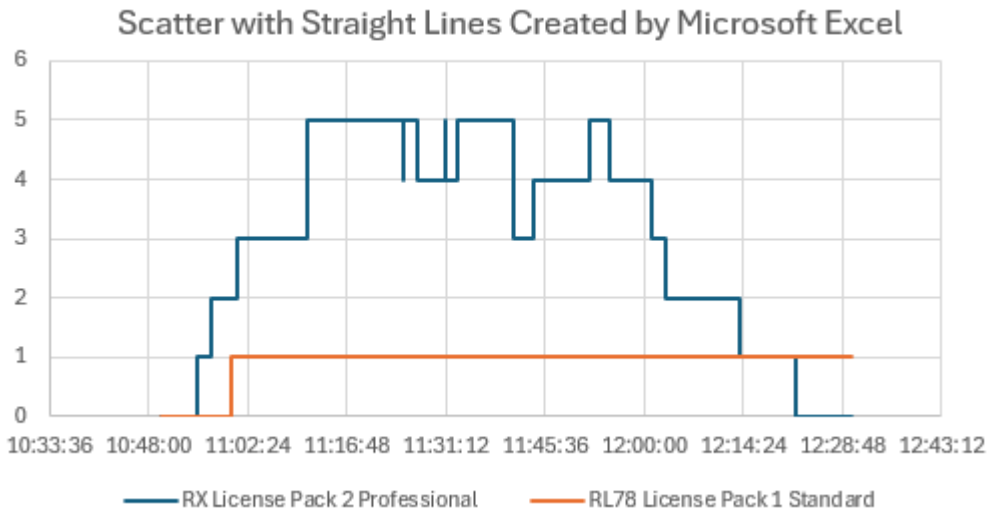
Two lines indicating date and time are output when the number of instances of usage of a license changes; the first line indicates the number of licenses in use before the change, and the second line indicates the number after the change.

License usage sample output

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --report
,RX License Pack 2 Professional,RL78 License Pack 1 Standard
2016/9/12      10:50:00,0,0
2016/9/12      10:55:11,0,0
2016/9/12      10:55:11,1,0
2016/9/12      10:57:23,1,0
2016/9/12      10:57:23,2,0
2016/9/12      11:00:34,2,0
2016/9/12      11:00:34,2,1
2016/9/12      11:01:13,2,1
2016/9/12      11:01:13,3,1
2016/9/12      11:11:23,3,1
2016/9/12      11:11:23,4,1
2016/9/12      11:11:50,4,1
2016/9/12      11:11:50,5,1
2016/9/12      11:25:12,5,1
```

```
2016/9/12       11:25:12,4,1
2016/9/12       11:25:53,4,1
2016/9/12       11:25:53,5,1
2016/9/12       11:27:25,5,1
2016/9/12       11:27:25,4,1
2016/9/12       11:31:00,4,1
2016/9/12       11:31:00,5,1
2016/9/12       11:31:13,5,1
2016/9/12       11:31:13,4,1
2016/9/12       11:33:09,4,1
2016/9/12       11:33:09,5,1
2016/9/12       11:41:24,5,1
2016/9/12       11:41:24,4,1
2016/9/12       11:41:51,4,1
2016/9/12       11:41:51,3,1
2016/9/12       11:44:02,3,1
2016/9/12       11:44:02,4,1
2016/9/12       11:52:29,4,1
2016/9/12       11:52:29,5,1
2016/9/12       11:55:53,5,1
2016/9/12       11:55:53,4,1
2016/9/12       12:01:00,4,1
2016/9/12       12:01:00,3,1
2016/9/12       12:03:09,3,1
2016/9/12       12:03:09,2,1
2016/9/12       12:14:02,2,1
2016/9/12       12:14:02,1,1
2016/9/12       12:22:29,1,1
2016/9/12       12:22:29,0,1
2016/9/12       12:30:00,0,1
$
```

When those outputs are saved into a CSV file or copied and pasted to a text editor to be saved as a CSV file and then opened in Microsoft Excel, the latter can convert this CSV file into a scatter diagram with straight lines to form a graph of usage as shown below.



2.3.11 Allowing the use of an upper-level floating license when no lower-level floating licenses are available

Specifying the <allow-upper-level-license(true/false)> argument of the --enable-server-setting option below specifies whether or not the server is to allow the use of an upper-level floating license when the server has no available lower-level floating license.

--enable-server-setting [<port> [<allow-upper-level-license(true/false)>[<disclose-usage-to-clients>]]]

This can be used to specify that the server is to allow the client to use an upper-level floating license (e.g. Professional) when the client requests a lower-level floating license (e.g. Standard) and the server has no available lower-level floating licenses, but has an available upper-level floating license.

If true is specified, the server responds to a request from the client with an upper-level floating license. If false is specified, the server responds with an error message to notify the client that the server has no available floating licenses.

Example of specifying argument

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --enable-server-setting 6723 true
$
```

Example of specifying argument

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --server-info
Status: Enabled Server Port: 6723
Offer the upper-level license if lower-level license is empty: True
Publish usage to the license manager: False
$
```

Caution: This setting must be specified as true in cases where only a higher-level floating license (e.g. Professional) is registered on the server but the client is requesting a lower-level floating license (e.g. Standard).
This applies in cases such as where some compiler options which require the Professional edition floating license are not enabled. The default setting is true.

2.3.12 Disclosing the states of usage of the licenses when the license manager displays candidates for use as floating licenses (offline mode)

Specifying the <disclose-usage-to-clients> argument of the --enable-server-setting option as shown below specifies whether or not the license manager of the client discloses the states of usage of the licenses when it displays candidates for use as floating licenses (offline mode).

--enable-server-setting [<port> [<allow-upper-level-license>[<disclose-usage-to-clients>]]]

Example of specifying the argument

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --enable-server-setting 6723 true true
$
```

Example of checking settings

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --server-info
Status: Enabled Server Port: 6723
Offer the upper-level license if lower-level license is empty: True
Publish usage to the license manager: True
$
```

2.3.13 Recording the states of usage of the licenses in a log file

The following option enables setting of the maximum size to be recorded in a log file, recording of details, and the directory for saving the log file.

--logging-setting <size> [<detail(true/false)> [<directory>]]

Logs are recorded with the numerical part of the file name of the form “FloatingLicense.xxx.log” (where xxx is a 3-digit numerical value) changed every 3 Mbytes.

When a log is recorded immediately after the maximum size of the log file has been reached, the oldest log file is deleted to keep the file size within the size specified by this setting.

If the recording of details is specified, the internal operations of the program are also recorded. If the recording of details is not specified, only requests for the acquisition and releasing of licenses by clients and the results for the requests are recorded.

You can confirm the settings by using the --logging-info option.

Example

```
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --logging-setting 10 false
$ sudo /usr/local/renesas-mcutools-license-server/bin/floating-license-server-
administrator --logging-info
Folder for saving log file: /var/local/renesas-mcutools-license-server/
LicenseServerInfo/Log4
Max log file size(MB): 10
Save detailed status: False
$
```

2.4 Restoring the Server Following Replacement or Failure

When the server is to be changed due to a failure or replacement, follow the procedure shown in this document again to start up the new server and register the license keys.

All of the licenses that a client has acquired from the old server become invalid the moment the client is connected to the new server.

3.MESSAGES

This chapter describes internal error messages, fatal error messages, information messages, choice messages and warning messages that Floating License outputs.

The messages are output to the standard output of the terminal or a log file, etc.

3.1 Message Types

The message types (1 alphabetic character) when Floating License is operated are as follows. Message Types

Message Type		Description
C	Internal error	Processing was terminated (suspended) due to an internal error.
E	Fatal error	Processing was terminated (suspended) due to a fatal error.
M	Information	Informational message. Check the message and continue processing.
Q	Choice	This type of message is displayed when a choice is necessary to carry on with the next operation and run the selected action.
W	Warning	Warning message. Check the message and continue processing.

3.2 Internal Errors

C0171004	[Message]	Failed to load file. *xxx*
C0171005	[Message]	Failed to save file. *xxx*
C0190002	[Message]	*xxx* is too large.
C0190003	[Message]	*xxx* is too small.

3.3 Fatal Errors

E0172012	[Message]	Failed to save CSV file. *xxx*
E0172013	[Message]	No log file in log folder.
E0172014	[Message]	Failed to write log file.
E0174010	[Message]	Failed to load option file. *xxx*
E0174011	[Message]	Failed to save option file. *xxx*
E0174012	[Message]	Failed to load license information. *xxx*
E0174013	[Message]	Failed to save license information. *xxx*
E0174014	[Message]	Failed to start license service. *xxx*
E0195400	[Message]	*option* option requires arguments.
E0195401	[Message]	*option1* and *option2* options cannot be specified at the same time.
E0195402	[Message]	Unknown option: *option*
E0195403	[Message]	The <*argument*> argument of the *option* option is invalid.: *size*: Please specify *min* to *max*.
E0195404	[Message]	The <*argument*> argument of the *option* option is invalid.: *value*: Please specify *spec*.
E0195405	[Message]	Floating license is disabled. Please enable it with *option*.
E0195406	[Message]	Invalid License Key: *key*

3.4 Information

M0191707	[Message]	Assigned license *xxx*/*yyy* : *zzz*
M0191709	[Message]	Released license: *xxx*/*yyy* : *zzz*
M0195000	[Message]	Please run *command* --help for more information.

3.5 Choices

Q0174110	[Message]	This function should be used when a client cannot release a license because there was trouble in the client's PC. Normally, a license should be released from the client. Do you still want to continue?

3.6 Warning

W0195200	[Message]	The value of the *argument* argument for the *option* option is too large. : *value*: set to *max*
W0195201	[Message]	The value of the *argument* argument for the *option* option is too small. : *value*: set to *min*

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