Gowin Software Quick Installation Guide

SUG501-1.3E,11/02/2021

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Revision History

Date	Version	Description
04/01/2020	1.0E	Initial version published.
08/06/2020	1.01E	The description of floating license auto-startup on boot updated.
09/09/2020	1.1E	Gowin Floating license started by Windows service added.
10/21/2020	1.1.1E	The description of Synplify Pro updated.
06/16/2021	1.2E	Synplify Pro removed.
11/02/2021	1.3E	• Beta removed from software version. • The description of license configuration updated.

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1 Software Environment

Table 1-1 Software Environment

Windows	Win7/8/10 (32 bits/64 bits) Win XP (32 bits)
Linux	Centos6.8/7.0/7.5 (64 bits) Ubuntu18.04/20.04LTS

2 Software Download

Gowin Software installation packages and Gowin License Server for floating license are available at Gowin Website: https://www.gowinsemi.com/en/support/download_eda/. There are Windows and Linux versions for you to choose.

- Installation package for Windows: Gowin Software for Win (Vx.x.x).
- Installation package for Linux is compressed with the name "Gowin Software for Linux (Vx.x.x)".
- Floating license server software for Windows: Gowin License Server for Win.
- Floating license server software for Linux is compressed with the name "Gowin License Server for Linux".

Note!

- You need to register and log in to the Gowin website before downloading the installation package.
- "x" in "Vx.x.x" means the software version.

3 Software Installation

3.1 Software Installation: Windows

After downloading, double-click Gowin Software installation package and install according to the prompt. The installation directory can be changed as required. After installation, the shortcut will be created on the PC desktop.

3.2 Software Installation: Linux

After downloading and decompressing the release, double-click Gowin Software installation package and install according to the prompt. The installation directory can be changed as required. After installation, the shortcut will be created on the PC desktop. The decompressing command is "tar -zxvf *tar.gz".

3.3 Notes for Software Installation

3.3.1 Notes for Windows

- You must close anti-virus programs before installing Gowin Software.
- The installation path should not contain any chinese characters or spaces.

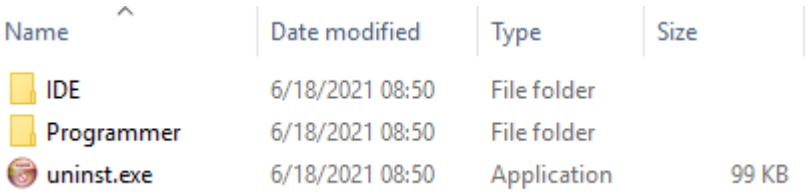
3.3.2 Notes for Linux

- Root permission is required to start programmer.
- After decompressing the file, it is recommended that you use the "chmod" command to modify the permissions of the associated executable files.

3.4 Installation Directory

When Gowin Software installed in Windows, the installation directory of IDE, Programmer, and an executable file ("uninst. exe") for uninstalling Gowin Software will be created under the installation directory "path\Gowin_Vx.x.x", as shown in Figure 3-1. There is no "uninst. exe" in Linux, other directories (IDE and Programmer) are the same as those in Windows. This section uses Windows as an example to introduce Gowin Software installation directory.

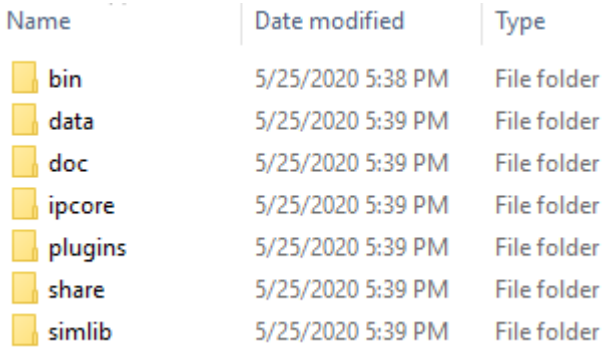
Figure 3-1 Installation Directory



3.4.1 IDE Directory

The IDE folder is the installation directory of Gowin Software, as shown in Figure 3-2. The bin folder includes executable files such as gw_ide.exe and floorplanner.exe. Double-click "bin\gw_ide.exe" to start Gowin Software directly. The doc folder contains Gowin software user guides. The simlib folder is the simulation library of Gowin Software.

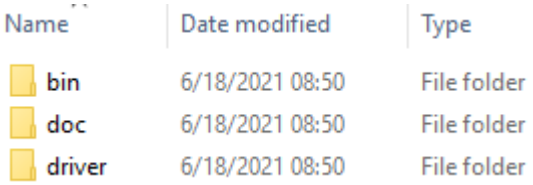
Figure 3-2 IDE Directory



3.4.2 Programmer Directory

The Programmer file is the installation directory of Gowin programmer, as shown in Figure 3-3. The bin folder is a directory of executable files. Double-click "bin\programmer.exe" to start Gowin programmer directly.

Figure 3-3 Programmer Directory



3.4.3 uninst.exe

Uninst.exe, an executable file, uninstalls Gowin software. Double-click uninst.exe and Gowin Vx.x.x Uninstall prompt box pops up, as shown in Figure 3-4. Click "Yes" to uninstall Gowin software.

Figure 3-4 Uninstall Software

4 Software License Configuration

4.1 Overview

This chapter describes the software license configuration.

4.1.1 License Definition

The software license is a format contract between the user and GOWIN Semiconductor to define and limit the rights of users and the obligations of GOWIN Semiconductor.

Software license consists of three elements: license type, MAC (Media Access Control) address, and term of validity.

4.1.2 License Type

Gowin Software licenses support node-locked license and floating license.

A Node-locked license is a license based on MAC address. A user who obtains the node-locked license can only use the software on the device with the matching MAC address.

A Floating license requires the MAC address of server being used to host the license on the LAN. There is a limit on the number of users, but there is no limit on the maximum number of users. Any user on this LAN (authorized by the administrator) can use this license.

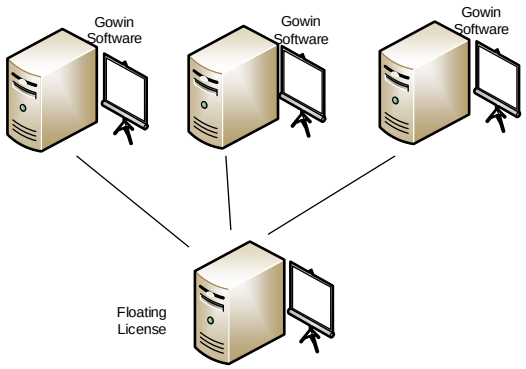
4.1.3 License Usage

Both Windows and Linux operating systems can use the node-locked or floating licenses. The use of the license is as follows:

1. A single user with a stand-alone PC in which the license and Gowin Software are installed can use either the node-locked license or the floating license.

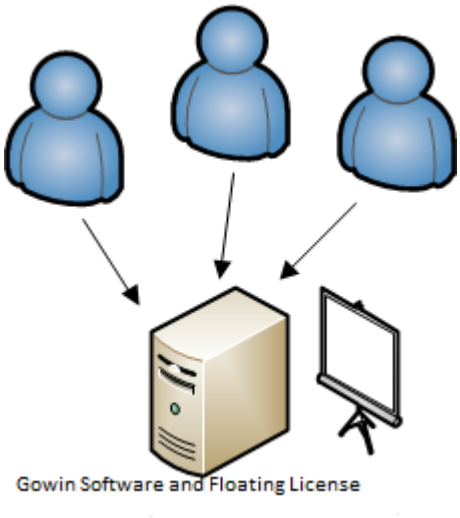
2. Multiple users with multiple stand-alone PCs in the same LAN, Gowin Software installed on each PC, can apply for a floating license. The floating license is installed on one PC in the LAN, and other users obtain the floating license by connecting to the IP of this PC, as shown in Figure 4-1.

Figure 4-1 Floating License Installed in Server



3. Multiple users with multiple stand-alone PCs in Windows operating systems in the same LAN can apply for a floating license. Install Gowin Software and floating license in the Windows server operating system. Users can log in to their accounts on their PCs (for example, log in via remote desktop) to access the Windows server, and directly use Gowin Software and license on the Windows server, as shown in Figure 4-2.
4. Multiple users with multiple stand-alone PCs in Windows operating systems in the same LAN can apply for a floating license. Install Gowin Software and the floating license in the Linux operating system. Users can log in to their accounts on their PCs (for example, log in through Exceed onDemand Desktop client) to access the Linux server and directly use Gowin Software and license on the Linux server, as shown in Figure 4-2.
5. Multiple users with multiple stand-alone PCs in Linux operating systems in the same LAN can apply for a floating license. Install Gowin software and floating license in the Windows server operating system. Users can log in to their accounts on their PCs (for example, log in through the RDP protocol) to access the Windows server, and directly use Gowin Software and license on the Windows server, as shown in Figure 4-2.
6. Multiple users with multiple stand-alone PCs in Linux operating systems in the same LAN can apply for a floating license. Install Gowin software and the floating license in Linux operating system. You can access the Linux server on their PCs (such as VNC Sever) and directly use Gowin Software and license on the Linux server, as shown in Figure 4-2.

Figure 4-2 Floating License and Gowin Software Installed on Server

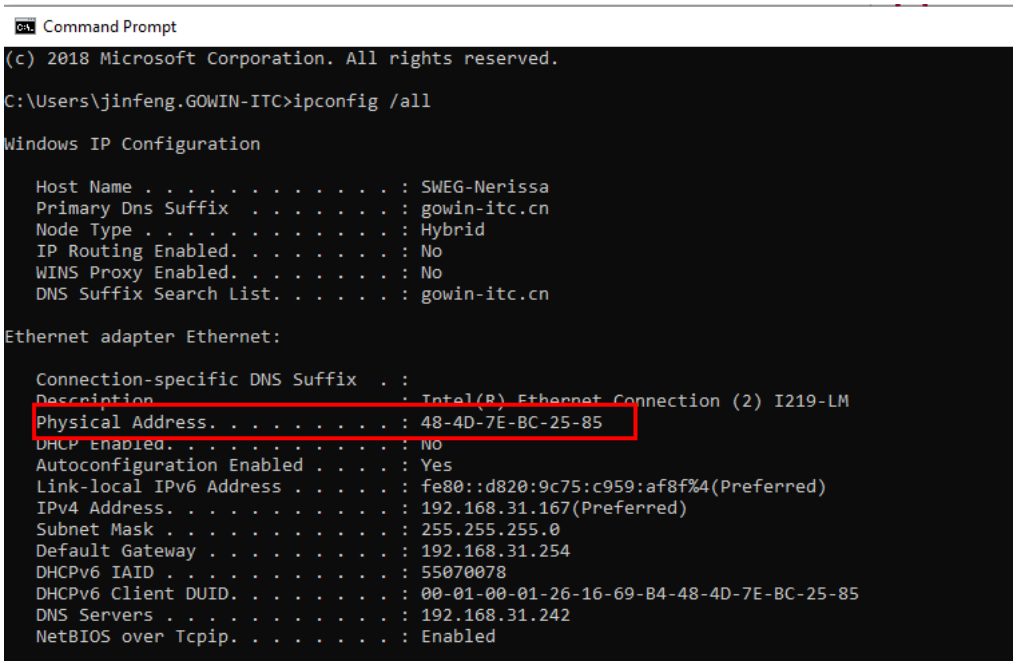


4.1.4 MAC Address Acquired

The way Windows PCs acquire MAC addresses is as follows, taking Windows 10 as an example.

1. Click "Start" menu and open command prompt.
2. Type "ipconfig/all" in the command prompt and press enter.
3. The physical address is as shown in the red box in Figure 4-3.

Figure 4-3 MAC Address in Windows 10



The way Linux PCs acquire MAC addresses is as follows, taking Centos 6.8 as an example.

1. Open terminal
2. Type "/sbin/ifconfig" at the terminal and press enter.
3. The physical address is as shown in the red box in Figure 4-4.

Figure 4-4 MAC Address in Centos6.8

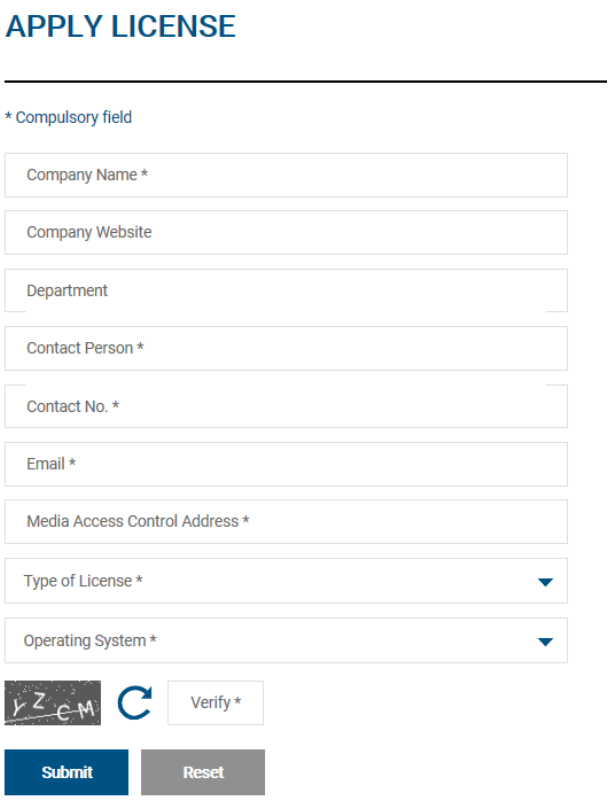
```
[siqi@JINAN9103 ~/Desktop]$ /sbin/ifconfig
em1       Link encap:Ethernet  HWaddr 52:54:00:B8:AB:E7
          inet addr:192.168.30.40  Bcast:192.168.30.255  Mask:255.255.255.0
          inet6 addr: fe80::5054:ff:feb8:abe7/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:33514179256 errors:0 dropped:0 overruns:0 frame:0
          TX packets:24657207321 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:42494776598960 (38.6 TiB)  TX bytes:8731020798773 (7.9 TiB)
          Interrupt:20 Memory:f7c00000-f7c20000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:3792343892 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3792343892 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:14093331327476 (12.8 TiB)  TX bytes:14093331327476 (12.8 TiB)
```

4.1.5 Apply for Gowin Software License

Apply for Gowin software license at Gowinsemi website: https://www.gowinsemi.com/en/support/download_eda/ or contact Gowin FAE.

The page of applying for License is shown in Figure 4-5.

Figure 4-5 Applying for License Page



License type: Node-locked and Floating.

The service period of the applied license is one year by default, and you can apply again after it expires. The floating license supports ten users by default, and there is no limit on the number of the maximum users.

4.2 Gowin License Configuration: Windows

The configuration mode in Windows system is the same, using Windows 10 as an example.

Gowin Software checks the license automatically when you open it. If the license is not correct, the software will not open, and an error message will pop up, as shown in Figure 4-6. After clicking "OK", License Manager dialog box pops up, as shown in Figure 4-7.

Figure 4-6 License Error

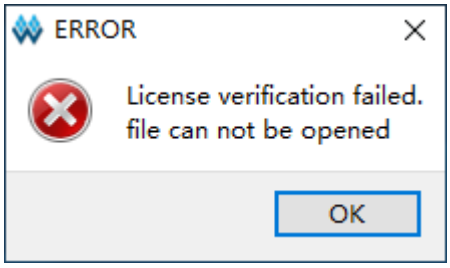
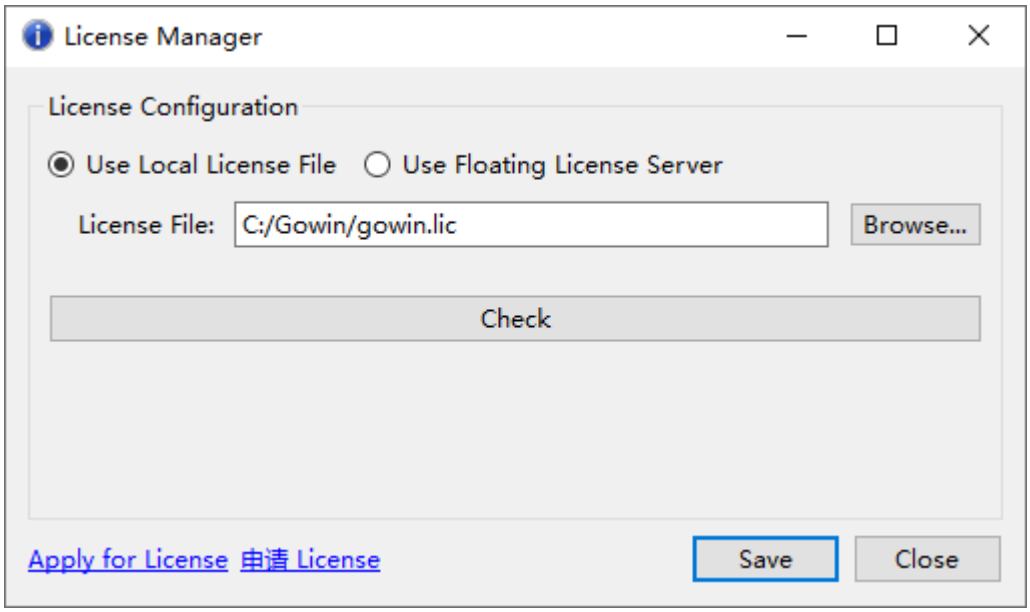


Figure 4-7 License Manager Dialog Box

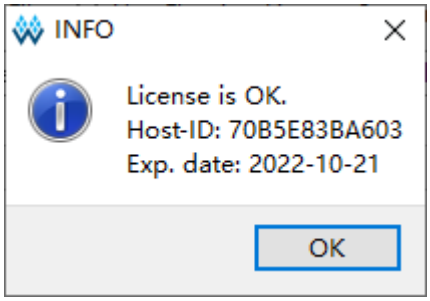


4.2.1 Node-locked License

For the first time to configure license, select "Use Local License File" and click "Browse…" to add the file path for node-locked license, as shown in Figure 4-7. Click the "Check" to test the connection, and the INFO dialog box will pop up when the connection is successful, as shown in Figure 4-8. Click "Save" to save the current configuration.

Click "Help > Manage License…" in the menu bar to open the "License Manager" to update configuration, as shown in Figure 4-7.

Figure 4-8 INFO Dialog Box



4.2.2 Floating License

Floating license needs to be authorized using Gowin License Server developed by GOWINSEMI. There are three ways to start the license server.

- Command line
- Auto-startup on boot

- Windows service

Command Line

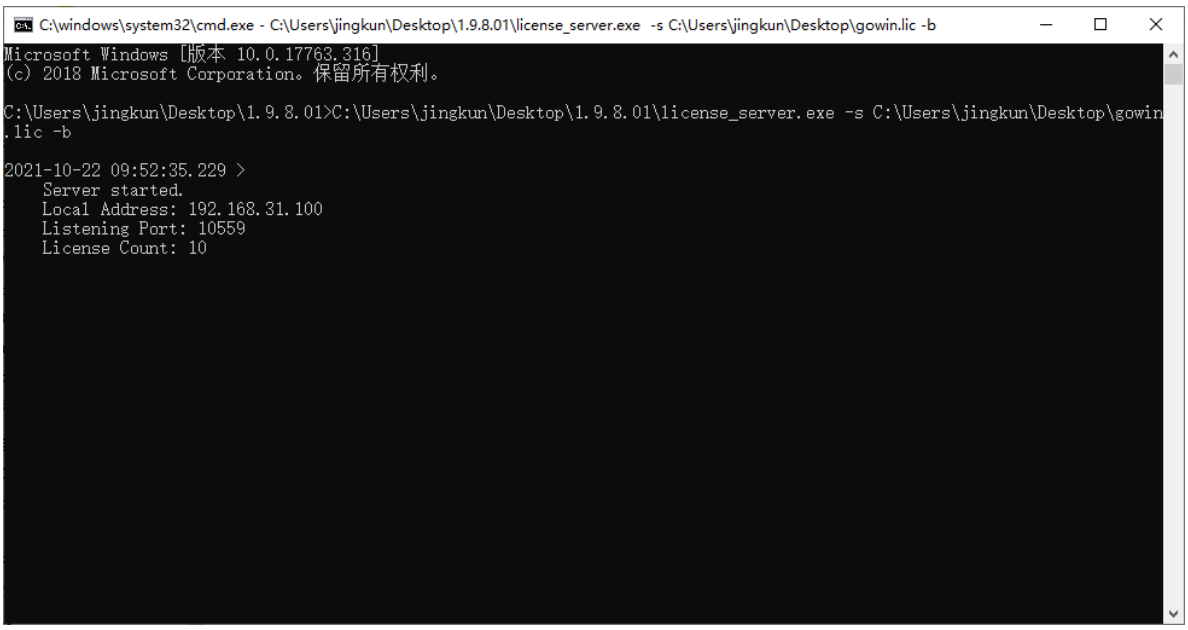
There are two ways to start.

1. Double-click "license_server.exe". Copy the floating license file (such as "gowin_license.lic") to the path where "gwlic_server.exe" is located. Rename the floating license file as "gowin.lic". Double-click "license_server.exe ".
2. In the cmd window, execute the "path\license_server.exe -s path\gowin_license.lic -b ", as shown in Figure 4-9 .

Note!

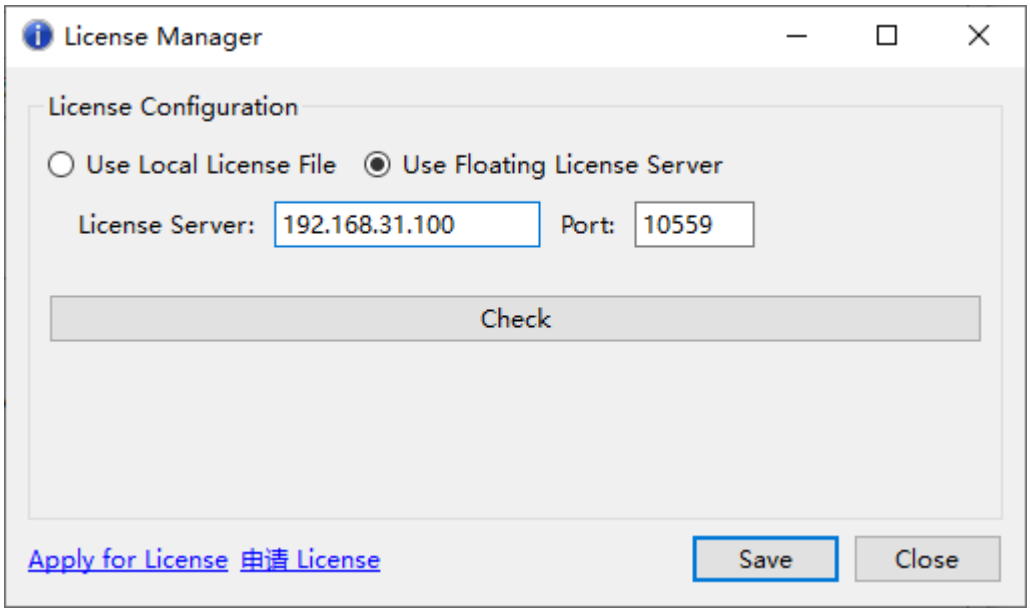
- -s: Load license file.
- -b: Run the license service in the background.
- -p: Specify the port, 10559 by default.

Figure 4-9 Gowin Floating License Server Startup Window



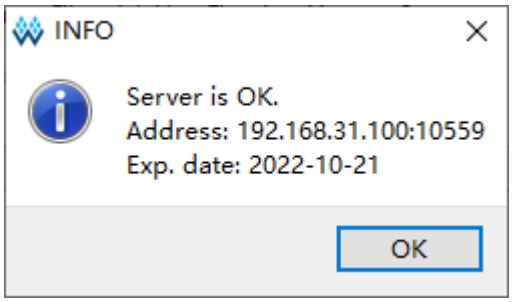
After starting successfully, type the server IP address in the "License Manager" view, as shown in Figure 4-10.

Figure 4-10 License Manager Dialog Box



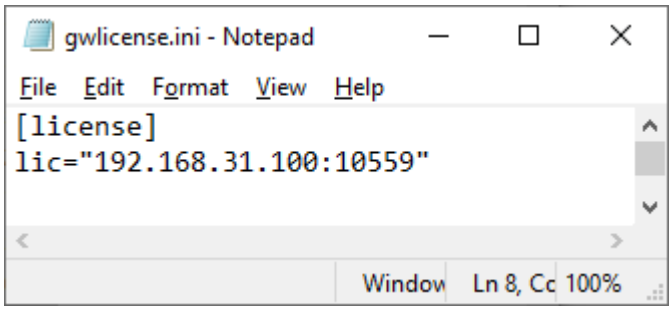
Click "Check" to test the connection. If it is successful, INFO dialog box will pop up, as shown in Figure 4-11.

Figure 4-11 INFO Dialog Box



No matter what type of license is configured or updated, the software will automatically write the license configuration information to the configuration file "\IDE\bin\gwlicense.ini" in the installation directory, as shown in Figure 4-12 .

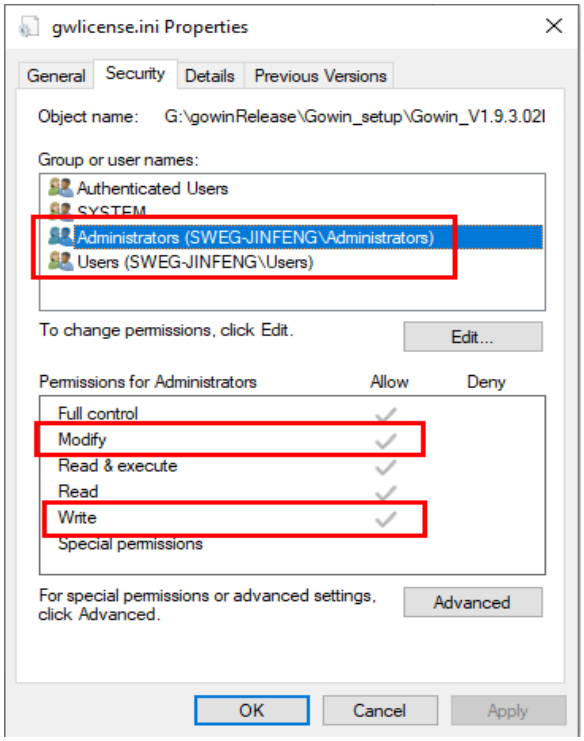
Figure 4-12 License Configuration File



Note!

If the gwlicense.ini file cannot be saved due to the lack of permissions of the configuration file in Gowin Software installation directory, click "Save" button, and a prompt will pop up. At this point, you need to add write or modification permissions to the gwlicense.ini file. Right-click the file and select the "Property > Security", as shown in Figure 4-13. After the permissions changed, the license will be configured again.

Figure 4-13 Permission Changed



Auto-startup on Boot

Use Windows 10 system as an example to introduce the auto-startup, and the startup needs to run with Administrator account.

1. Preparation for the batch file
   Create a batch file with extension.bat, such as, "startFloatingLicense.bat". You can write the command into the file, such as "start path\license_server.exe -s path\gowin.lic -b".
2. Copy the batch file to the startup folder.
   Open Run dialog box (win +R) and type "shell:startup", as shown in Figure 4-14. Press Enter to pop up the folder as shown in Figure 4-15 and copy the "startFloatingLicense.bat" to this folder.

Figure 4-14 Run shell:startup

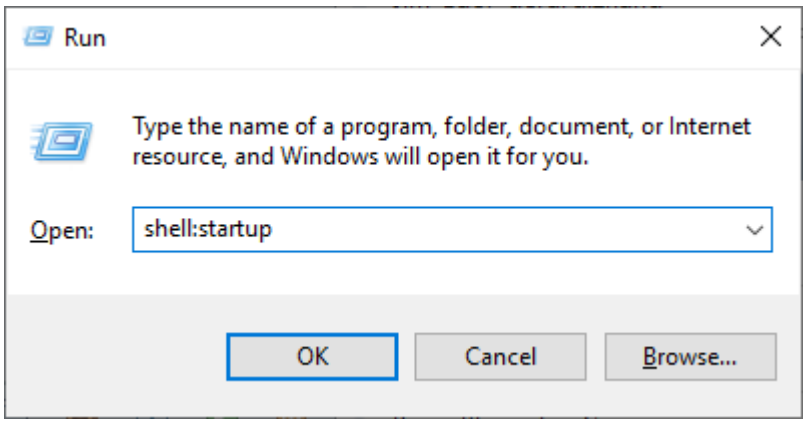
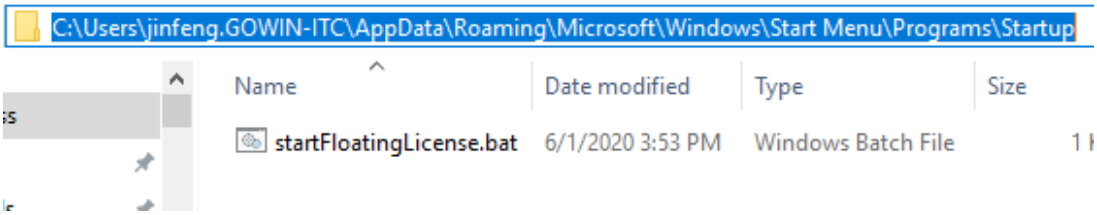
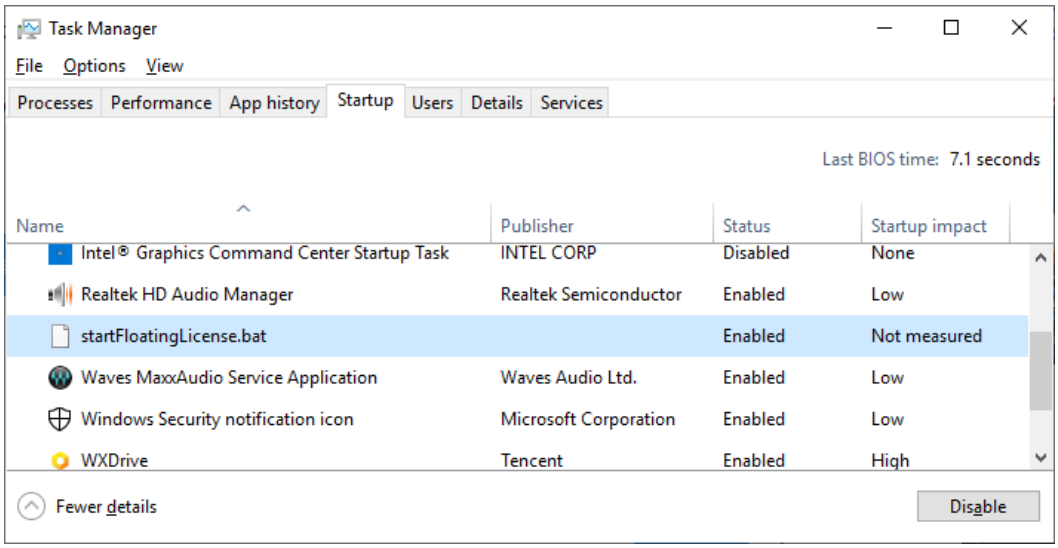


Figure 4-15 Startup Folder



3. Check the setting.
   Open task manager to check the setting. If the "startFloatingLicense.bat" is enabled, the setting is successful, as shown in Figure 4-16.

Figure 4-16 Task Manager



Windows Service

Use Windows10 system as an example to introduce Windows service startup. The service runs with administrator permission and make sure that

the LAN communication is normal before startup.

There are two ways to add Windows service.

1. Go to the service startup package directory gowinLicenseServer\gowinLicenseServerForWindows\bin, right-click and select administrator to run the batch file "gowinLicensingServiceAdding.bat".
2. Or you can open the command window as an administrator and execute the batch file "gowinLicensingServiceAdding.bat".

A prompt "Windows service has added successfully!" pops up if succeed, as shown in Figure 4-17; and the service is in the Stopped status, as shown in Figure 4-18.

Note!

If the LAN communication is not normal, you can try to shut down the system firewall and use the ping command to test whether the LAN communication is normal.

Figure 4-17 Startup Window

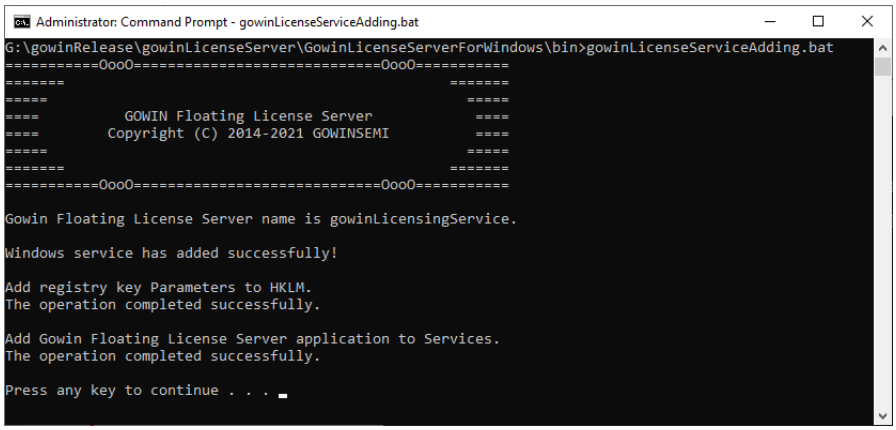
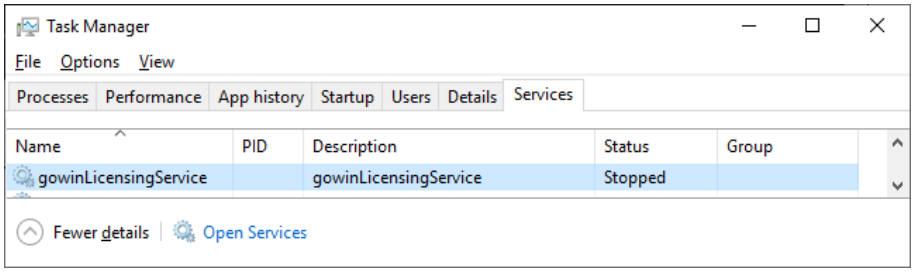


Figure 4-18 Task Manager

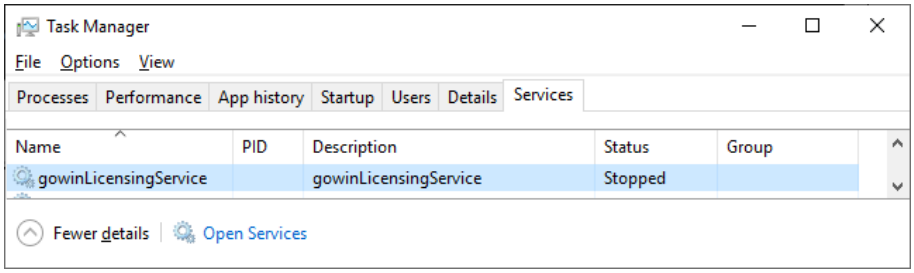


There are three ways to run the service and here it uses the service name "gowinLicenseService" as an example.

- The command line: After executing sc start gowinLicenseService, you can check the status through the task manager, as shown in Figure 4-19.

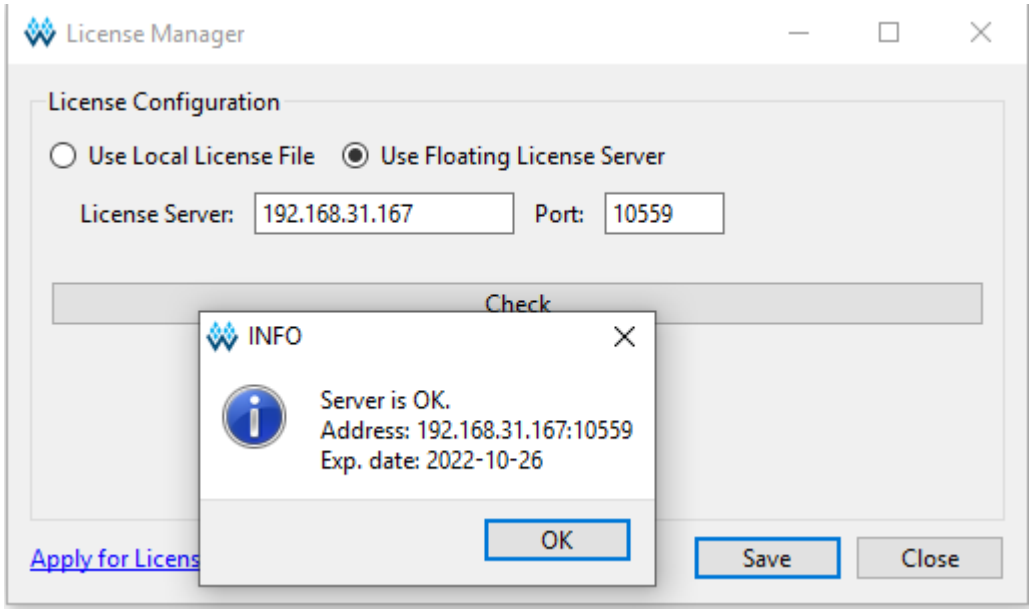
- GUI: You can start the task manager and right-click gowinLicenseService to select "Start". It displays "Running" if succeed.
- Restart the system to automatically run the service.

Figure 4-19 Task Manager



You can test the service. Open the license manager window and fill in the host IP address in "License Server" and the port in "Port"; click "Check", an INFO prompt will pop up, displaying "Service is OK", "Address", and "EXP. date", as shown in Figure 4-20.

Figure 4-20 License Configuration



You can run following commands to stop and delete service.

- Service stop command: sc stop gowinLicenseService
- Service delete command: sc delete gowinLicenseService

4.3 Gowin License Configuration: Linux

License configuration in Linux is the same, using Centos6.8 as an example to illustrate.

Gowin Software checks the license automatically when you open it. If the license is not correct, the software will not open, and an error message will pop up, as shown in Figure 4-21. After clicking "OK", License Manager dialog box pops up, as shown in Figure 4-22.

Figure 4-21 License Error

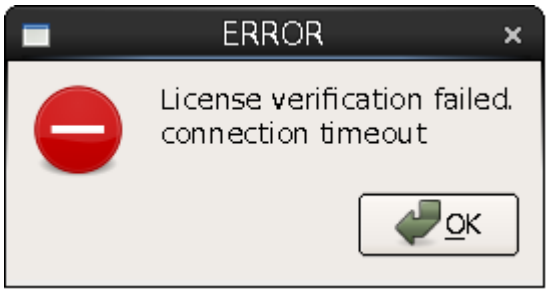
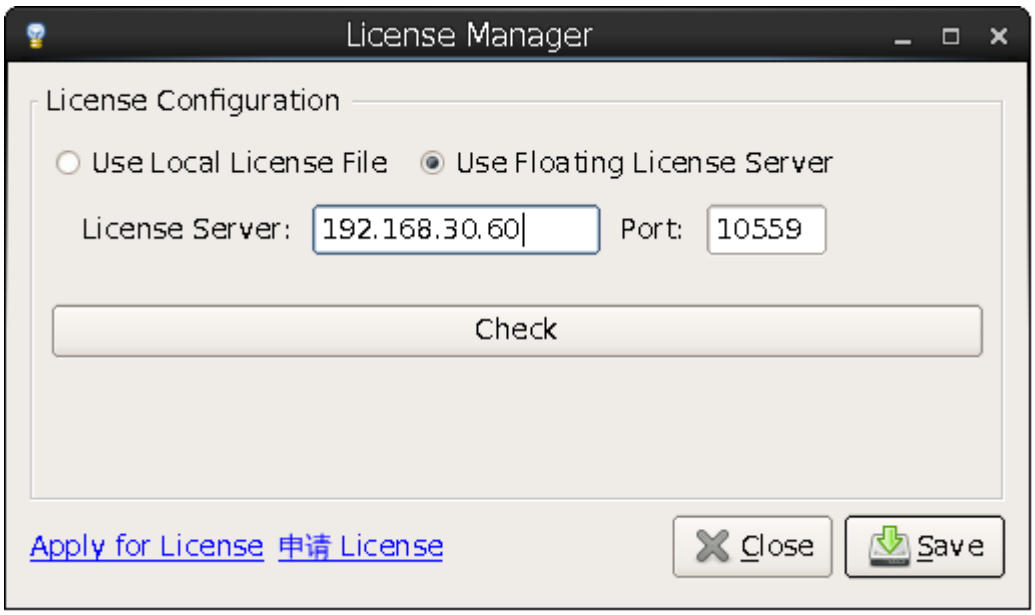


Figure 4-22 License Manager Dialog Box

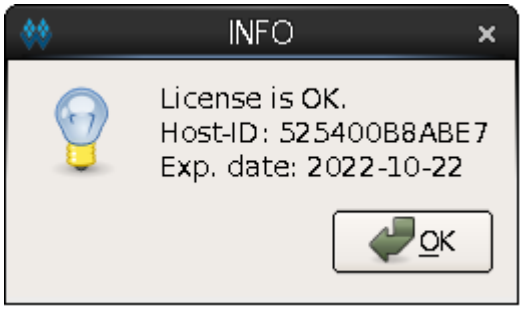


4.3.1 Node-locked License

For the first time to configure, select "Use Local License File" and click "Browse…" to add the file path for node-locked license, as shown in Figure 4-22. Click "Check" to test the connection, and the INFO dialog box will pop up when the connection is successful, as shown in Figure 4-23. Click "Save" to save the current configuration.

Click "Help > Manage License…" in the menu bar to open the "License Manager" to update configuration, as shown in Figure 4-22.

Figure 4-23 INFO Dialog Box



4.3.2 Floating License

Floating license needs to be authorized using Gowin License Server. There are two ways to start the license server.

1. Double-click " license_server" to start. Copy the floating license file (such as gowin_license.lic) to "license_server". Rename the floating license file as "gowin.lic"; double click-on "license_server".
2. Commands Mode. In the Terminal window, execute path/license_server -s path/gowin.lic, as shown in Figure 4-24.

Figure 4-24 Gowin License Server Startup Window

```
[changhui@jinan9102 30]$ ./license_server -s gowin.lic

2021-09-30 10:47:24.102 >
    Server started.
    Local Address: 192.168.30.30
    Listening Port: 10559
    License Count: 50
```

Note!

- -s: Load the license file.
- -p: Specify the port, 10559 by default.
- If you copy the floating license file (such as gowin_license.lic) to the path of "license_server" and rename it to "gowin.lic", you can start Gowin License Server using the command line just typing path/license_server, as shown in Figure 4-25.

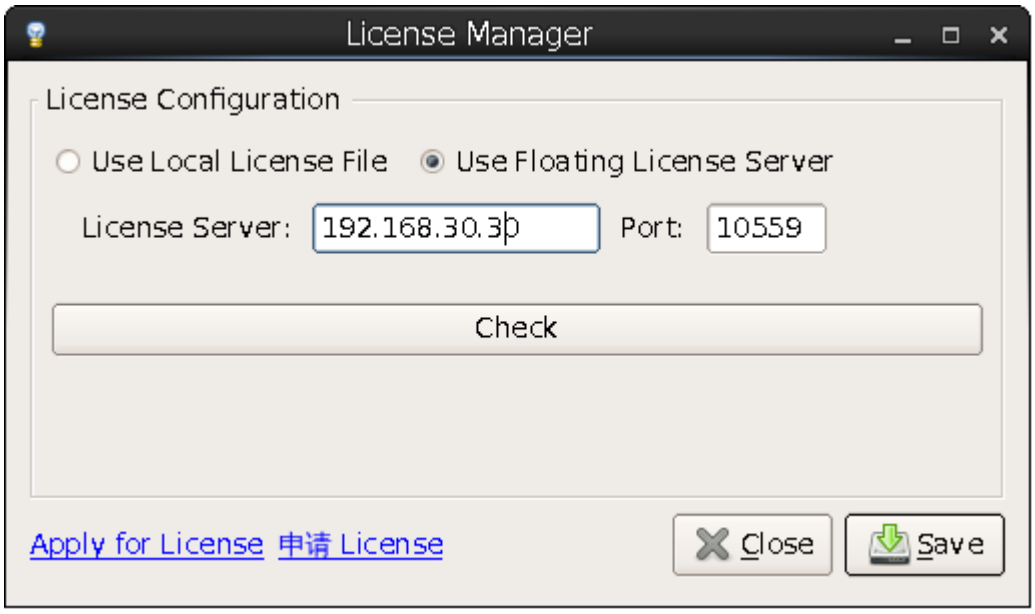
Figure 4-25 Gowin License Server Startup Window

```
[changhui@jinan9102 30]$ ./license_server

2021-10-25 14:38:45.392 >
    Server started.
    Local Address: 192.168.30.30
    Listening Port: 10559
    License Count: 50
```

After successfully starting the server, type the license server IP

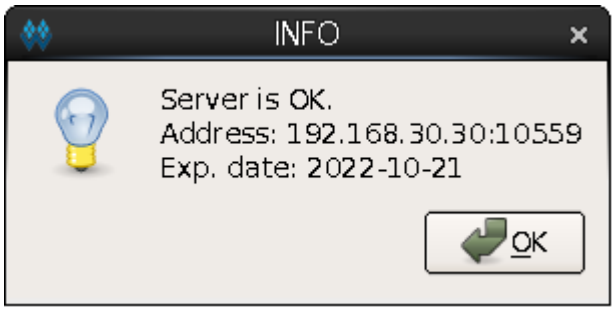
address in the "License Manager" dialog box, as shown in Figure 4-26.

Figure 4-26 Floating License Configuration



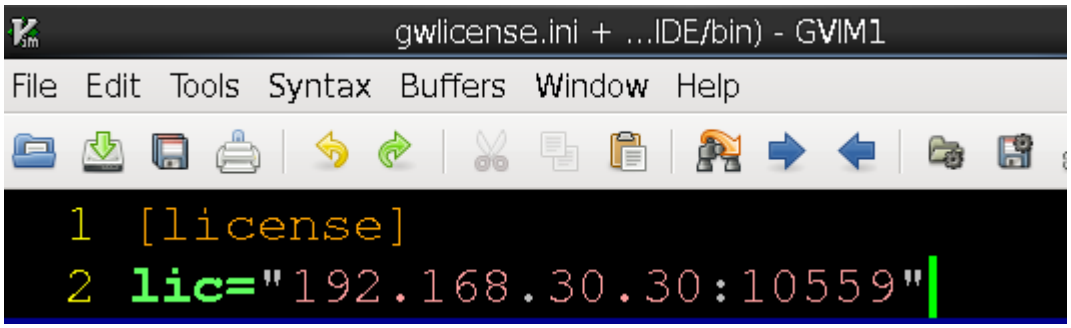
Click "Check" to test the connection. If it is successful, INFO dialog box will pop up, as shown in Figure 4-27.

Figure 4-27 Test Connection



No matter what type of license is configured or updated, the software will automatically write the license configuration information to the configuration file "\IDE\bin\gwlicense.ini" in the installation directory, as shown in Figure 4-28 .

Figure 4-28 License Configuration File



Note!

If the gwlicense.ini file cannot be saved due to the permissions of the configuration file in Gowin software installation directory, click "Save", and a prompt will pop up; you need to add the write permission to the gwlicense.ini file; execute the command "chmod +x <file>" in the terminal to modify the file permission.

5 Start

5.1 Start Software in Windows

Use Windows 10 system as an example.

5.1.1 GUI Mode

- Double-click the shortcut " " to start Gowin Software.
- Double-click the "gw_id.exe" file in the "installation directory \Gowin_Vx.x.x\IDE\bin".
- Open cmd window and type "installation directory\Gowin_Vx.x.x\IDE\bin\gw_ide.exe".
- Double-click the project file ".gprj".

5.1.2 Command Line Mode

In the cmd prompt, enter "path\IDE\bin\gw_sh.exe". See appendix A of SUG100, Gowin Software User Guide.

5.2 Start Software in Linux

Use Centos6.8 system for an example.

5.2.1 GUI Mode

- Double click the "gw_ide" file in "installation directory Gowin_Vx.x.x\IDE\bin ".
- Run the command in the terminal: path/Gowin_Vx.x.x/IDE/bin/gw_ide.

5.2.2 Command Line Mode

In the terminal, type "path\IDE\bin\gw_sh". See appendix A of SUG100, Gowin Software User Guide

6 Exit

6.1 Exit Software in Windows

There are two ways to exit the software:

- Select "File > Exit";
- Click the " " icon on the upper right of the software.

6.2 Exit Software in Linux

There are two ways to exit the software:

- Select "File > Exit";
- Click the " " icon on the upper right of the software.

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