

Quick Start Guide

Software Protection and Licensing with Virbox Soft Lock (Offline)

Version 2.0





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The specifications contained in this document are subject to change without notice.

Documentation Improvement

Any suggestion to this manual from you are welcome, We are glad to hear any feedback from you which will help us to continuously improve the documents quality and support and serve the developer to protect software products more efficiently.

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About this document

This document is designed to help Software developer to quickly start to use **Virbox Protector** and **Virbox Developer Center** to protect software and issue soft license (Offline) to software user. And describes the operation process step by step for how to sign up in Virbox Developer Center (Virbox LM), how to protect software by use of Virbox Protector and issue the license to software user.

Target User: R & D or Operation staff of software developer who is responsible to protect software and license issuing;

Requirement & Environment:

- Software developer has already signed up and upgraded to be a standard developer in **Virbox Developer Center**; 
- Software developer has installed "**Virbox Protector**" in computer; 

Objective: Software developer will have basic skill to use Virbox Protector to protect software application and issue a license to Soft Lock (Offline) that can be used by Software User;

For Software Protection and Licensing with Virbox EL5 Acme, please refer to:

Quick Start Guide:



[*Software Protection and Licensing with Virbox EL5 Acme;*](#)

For Software Protection and Licensing with Virbox EL5 Acme (Network Mode), please refer to:

Quick Start Guide:



[*Software Protection and Licensing with Virbox EL5 Acme \(Network Mode\);*](#)

For Software Protection and Licensing with Cloud license by use of Virbox Protector and Virbox Developer Center (Virbox LM), please refer to:

Quick Start Guide:



[*Software Protection and Licensing with Virbox Cloud Lock;*](#)

For Software Protection and Licensing with Soft license (Online) by use of Virbox Protector and Virbox Developer Center (Virbox LM), please refer to:

Quick Start Guide:



[*Software Protection and Licensing with Virbox Soft Lock \(Online\);*](#)

For Software Developer who use Unity 3D to develop Gaming software or other software applications, please refer a series of documentation of Unity 3D Quick Start Guide separately.

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1. General Introduction

Virbox Soft License (Soft Lock) is a software product that based on Virbox LM “**account**”, Software Developer can sign up on Virbox LM to be a Standard Software developer then can start software protection and License distribution.

The Virbox LM link is: <https://developer.lm-global.virbox.com/home.jsp>

Virbox LM is Cloud based Software protection, License Entitlement Solution and cloud service which provides to software developer with lowest total cost ownership, Top Security of Software Copyright Protection and Easy to use in whole software life cycle. By use of Virbox Cloud, Developers can achieve extremely protection to software copyright and IP and flexible to issue license to end user with minimal effort and investment.

Virbox LM License Type supports: hardware lock (Elite 5 Acme), Soft Lock (Soft license) & Cloud Lock (Cloud license) and suitable to deploy in different Software implementation scenario, on line, offline, firewall isolated environment etc. Virbox provides flexible license mode to support ISV/software developer Software monetization which includes: Perpetual, trial, time based, feature on demand, subscription, concurrent; etc.

Tips: Soft Lock (Soft license), is the license type which hardware independently, with low cost, flexible to be used both in online or offline environment, and can be bind with specified hardware by use of the hardware fingerprint.

Installation and Working Environment:

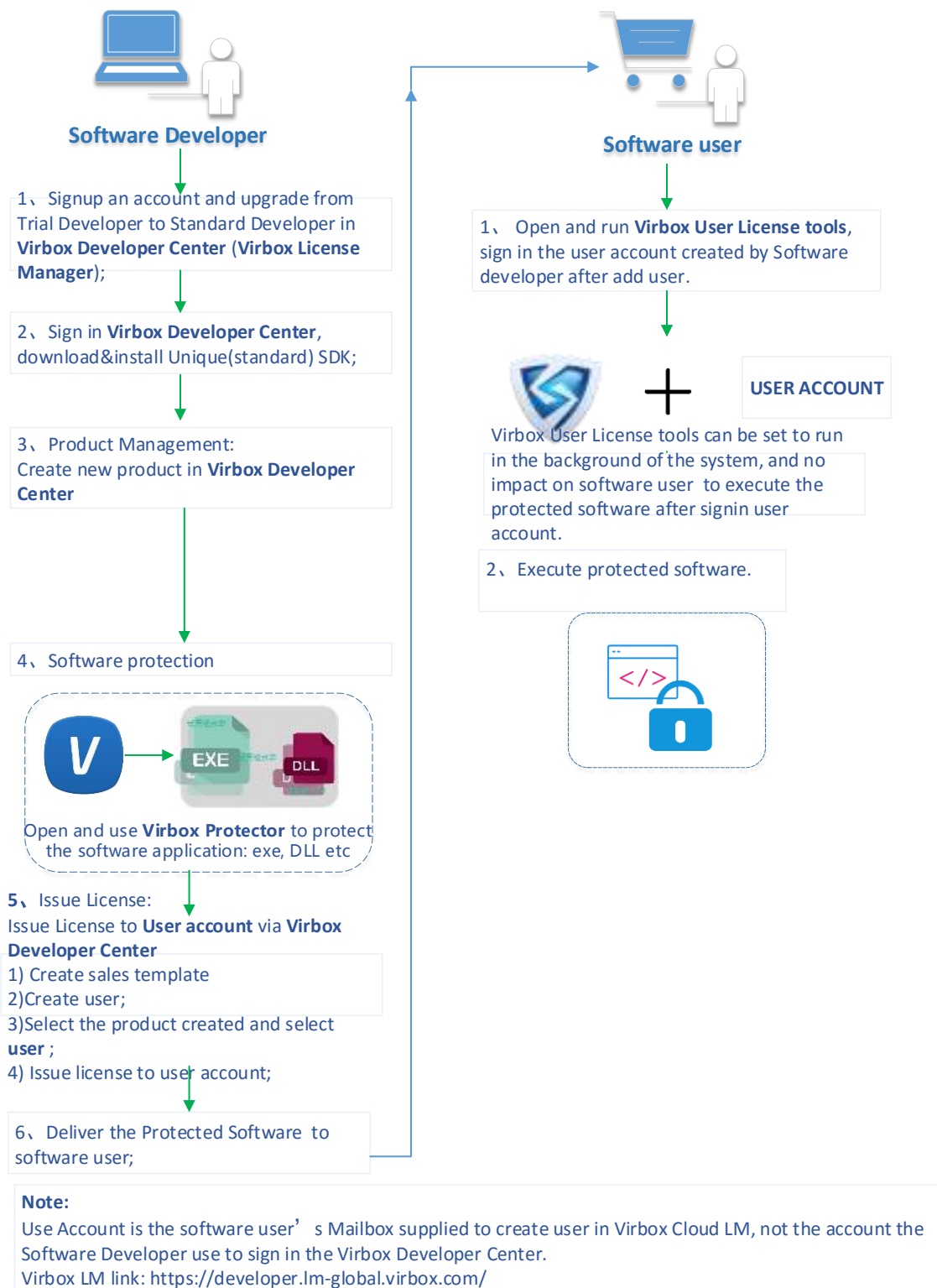
Windows: Support Windows XP sp3 and above version;

Linux OS: Support Debian, Ubuntu, CentOS, Fedora, OpenSUSE, Ubuntu Kylin OS

Mac OS: Support MAC OX10.9 and above version

The Procedure to Software Protection/Encryption, Licensing and deliver to the user are shown as blow.

Evaluation- Protect&Licensing Process: Soft Lock(Offline)



2. Virbox Developer Center (Virbox LM)

2.1 Virbox SDK Introduction

Why Software Developer Need to sign up a developer account in Virbox Developer Center (Virbox LM)?

- When you are Protecting the software, you need install SDK(Software Development Kit)
Virbox LM use Unique SDK to protect Software application; before using the Soft lock to protect your software, Developer need to sign up on Virbox LM and upgrade to be Standard Developer, then download the dedicated SDK for each Standard Developer.
- The only way for Software Developer to obtain unique and tailor made SDK is signup in the Virbox Developer Center and download SDK;
- Virbox Developer Center signup and sign in link:

Signup link: <https://developer.lm-global.virbox.com/reg.html>

Sign in link: <https://developer.lm-global.virbox.com/login.jsp>


The Virbox Developer Center will be show as blow:



If you do not have an account, you need to sign up in **Virbox Developer Center**.

Virbox Developer center

中国站



Virbox LM login

[Forgot password](#)

[Read and accept Terms of Service](#)

[Read and accept Privacy Policy](#)

Note:

Please Read and Accept "**Terms of Service**" and "**Privacy Policy**" of Virbox LM before signup.

The fields with red mark are required.

Developer information

★ Developer name

For company developers, please fill in the company name; for individual developers, please fill in the individual's name.

★ Country/Region


★ Time Zone

This is important, please select accurately. You can search by name

Administrator account information

★ Email

★ CAPTCHA



★ Email verification:

★ Create password

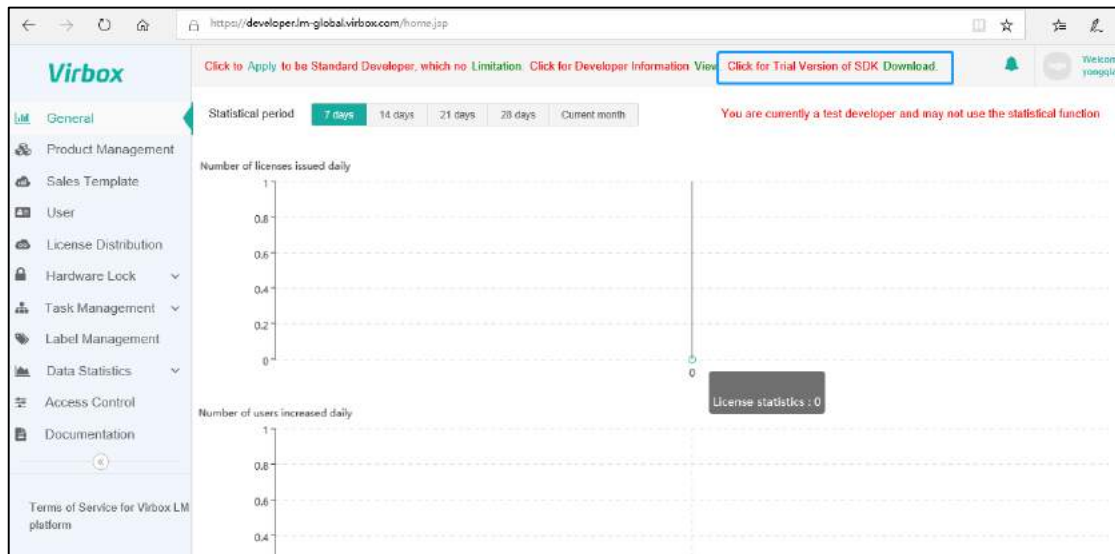
Weak Medium Strong

★ Confirm password

[Terms of Service for Virbox LM platform](#)

[SenseShield Privacy Policy](#)

After signup in Virbox Developer Center, you can sign in and download a trial version SDK for testing and evaluation, like the picture attached:



■ Virbox provides 2 version of SDK to Developer: **Trial version** and **Standard version**.

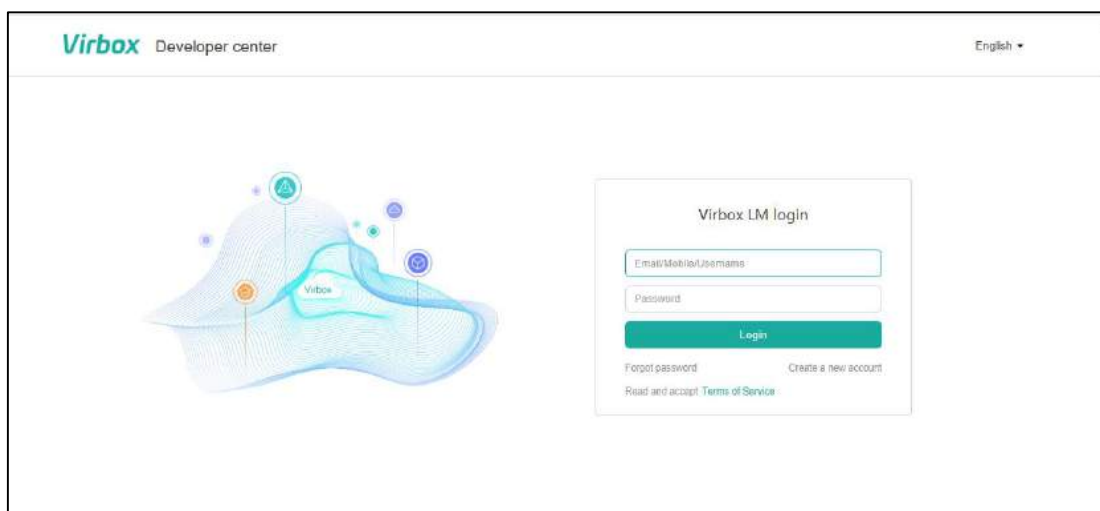
Standard version: A Standard version SDK have unique developer ID, API Password, private key and matched digital certificate of Authorization. All of the developer's SDK (standard version) are different. There will be no general crack solution available for Hacker to software application protected by Virbox.

Trial Version: The Developer ID, API password, private key and certificate of authorization of trial SDK are same for all trial developer.

Note: Trial SDK use common SDK, CA, Private key and API password, Trial SDK will be only used for Developer for internal evaluation and would not be used for official software protection and distribution.

2.2 Login Virbox Developer Center for SDK

Signin to Virbox Developer Center with your account ID and password.

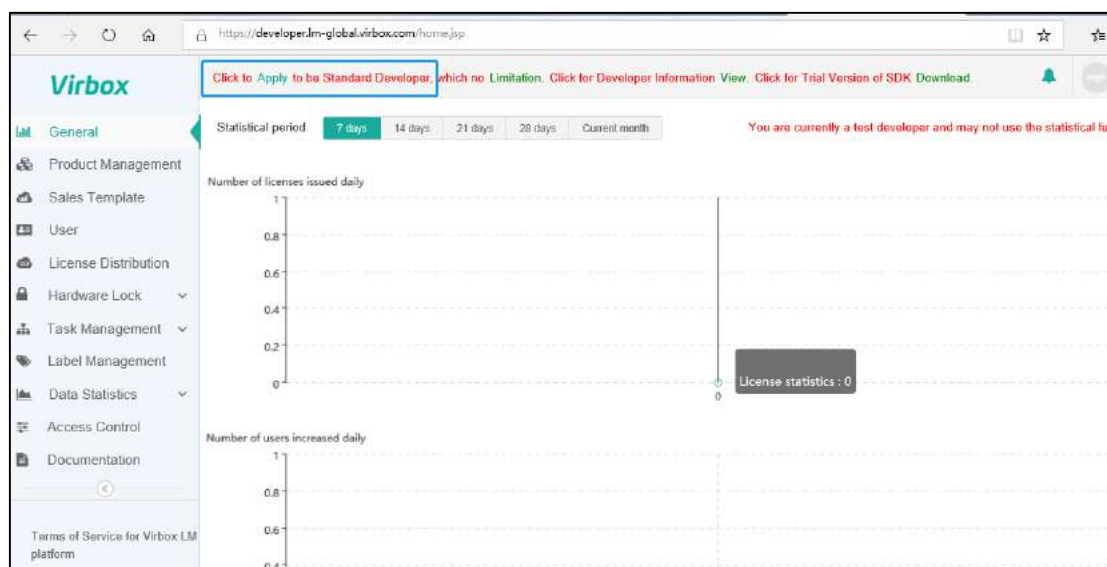


Apply to be a standard developer and download SDK:

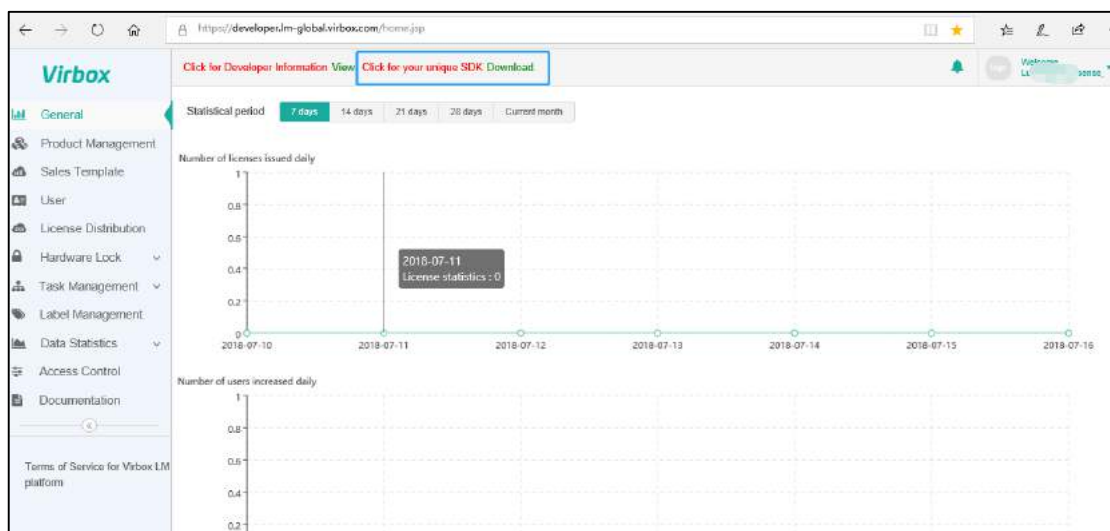
■ After successfully signup an account in the Virbox Developer Center, (now your account is trial developer)

account), you can download a Trial version SDK, this version is for learning how to use Virbox solution to protect your software and issue license and evaluation. Trial version SDK is not used for official published software protection and software distribution.

- If evaluation is successful and you want to choose Virbox to protect your application and issue license, please apply to upgrade your trial account to be “**Standard Developer**” account via Virbox Developer Center. You may get unique SDK after upgrading to be a **Standard Account**. Please be patient waiting for approval to be a standard account, it will take short time by Virbox Developer Center.



In the picture blow is a standard account and the place to download a standard SDK:



Note: Please upgrade from trial developer account to standard developer account if you want to evaluate and protect your software with **Soft Lock**.

2.3 Virbox SDK Installation Introduction

Developer may download and obtain latest version of Virbox SDK from:

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<https://developer.lm-global.virbox.com/home.jsp>

Download and install your SDK package in your computer, it will create 2 folder under directory of "C:\Program Files (x86)\senseshield: **ss** and **ss_dev**"

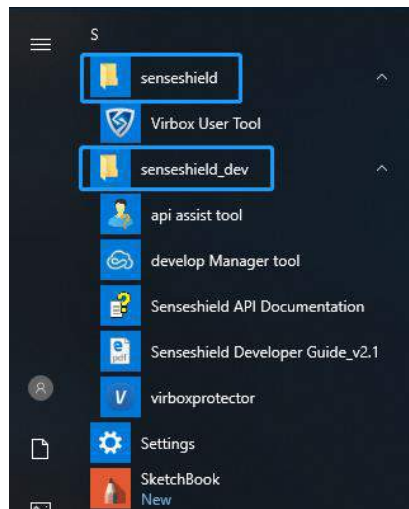
senseshield: This folder reserved and contains following software tools for Software users:

- **Virbox User License Tool**
- **Driver of Virbox EL5 dongle**
- **Log File**
- **Configuration File**

senseshield_dev: This folder reserved and contains following software tools for Software Developer


- **API sample lib**, support multi Program language.
- **Developer Utility** (Developer Manager Tool).
- **Virbox Protector** (this is the tool for Developer to wrap/Envelope/Encryption for software be protected).
- **Manual: Virbox Developer Guide** and other Virbox Documents
- **API Assistant**: Online help tools for Software Developer.

Take **Windows 10** computer installation as an example, it will create shortcuts in the start menu, senseshield and senseshield_dev folders can be viewed in the start menu.



3. Product Management

3.1 Product Management by use of Virbox Developer Center (Virbox LM)

In this chapter we will use Virbox Developer Center (Virbox License Manager) to create new Product 

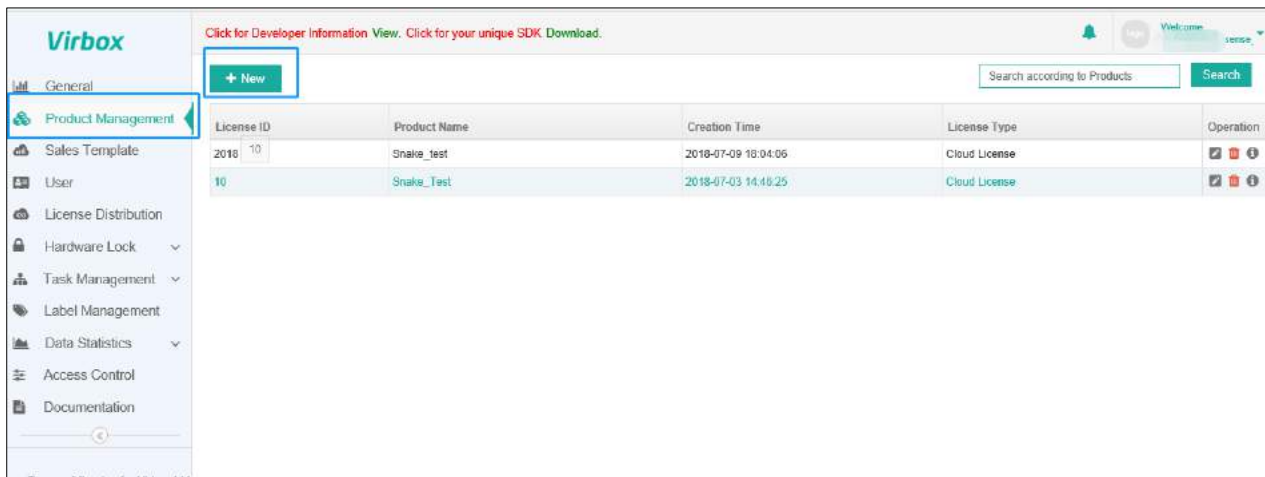
Usually, there are more than one software product need to be protected, licensing and distributed to software user for one Software developer. So it is necessary for Software developer to well plan product ID for each product at the beginning phase. In order to avoid misunderstanding and confusion in the future.







What's more, it is also quite important for the Owner of software developer to setup a **principle** to Product Management in advance, since it will also make some difficulty for product management and maintenance in future in case without well planning for product management due to R&D and operation staff left company.

3.2 Create Product

The following steps will introduce how to create and manage a product with **Virbox LM**.

- Create a New Product in the "Product Management" by click "+New":



License ID	Product Name	Creation Time	License Type	Operation
2018-10	Snake_test	2018-07-09 16:04:06	Cloud License	  
10	Snake_Test	2018-07-03 14:48:25	Cloud License	  

Then a window that needed to input the Product detail information will popup, as blow:

- Note:** License ID defined here must be in line with the License ID input when protect software by use of **Virbox Protector**. Then the software user can verify license and run the protected software successfully.

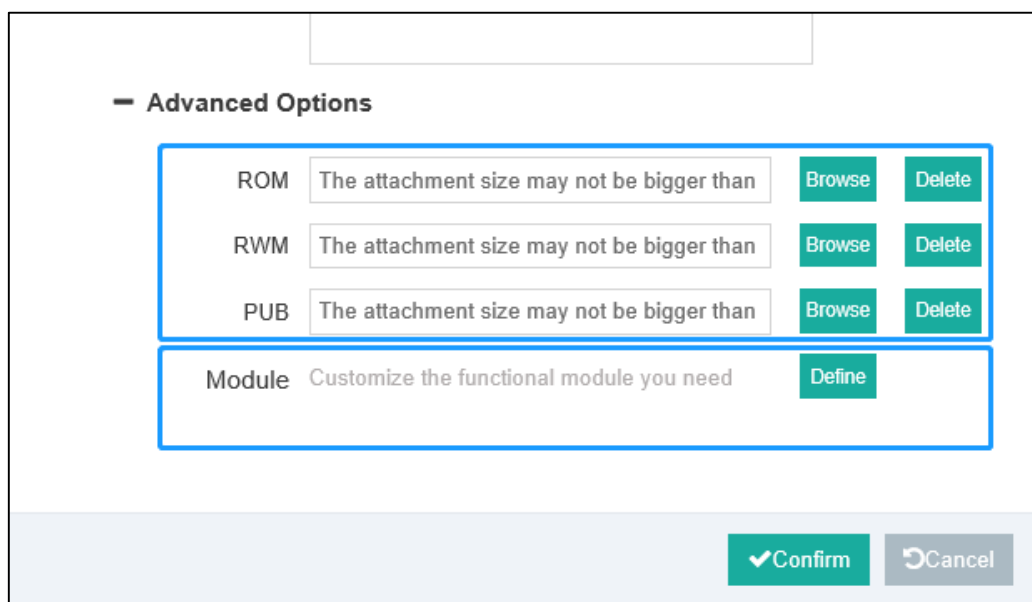
- **Display Name:** This is the name will be show to software users in **Virbox User License Tool**.
- **License Type:** select to be “**Soft Lock**”, here have two option: “**Cloud**” and “**Soft**”. In this document we take “**Soft**” as an example. For the usage of “**Cloud**”, please refer the related document.
- **Product Logo:** You can also upload your own company logo or product logo, this logo can also be seen in the **Virbox User License Tool**. For detail setting, like the request pixel, please read the remind information nearby.
- **Product Introduction** (Optional): Input short description for the product or the function of the software

that to be protected;

- **Advanced Option:** Each license ID can be attached to three data areas to store license-related data. The three data areas are: **Read-Write**, **Read-Only**, and **Public** area. The size of every area can be set up to 64K. Corresponding to different access attributes to adapt to different application scenarios.

Note: For **new starter** of Virbox developer, you can skip this part to next chapter.

- ◆ **Read-write area:** This area can be **read** and **write**. For example, some data that needs to be saved during the software operation can be stored here. For how to input/write data to this area please refer the related document.
- ◆ **Read-only area:** This area can only be read. For some configuration file, or other file that you do not want to be changed by other people, you can store it here.
- ◆ **Public area:** Both Software users and developers can see this area, such as the product name or some information about the product that can be shown to software users, you can put it here.

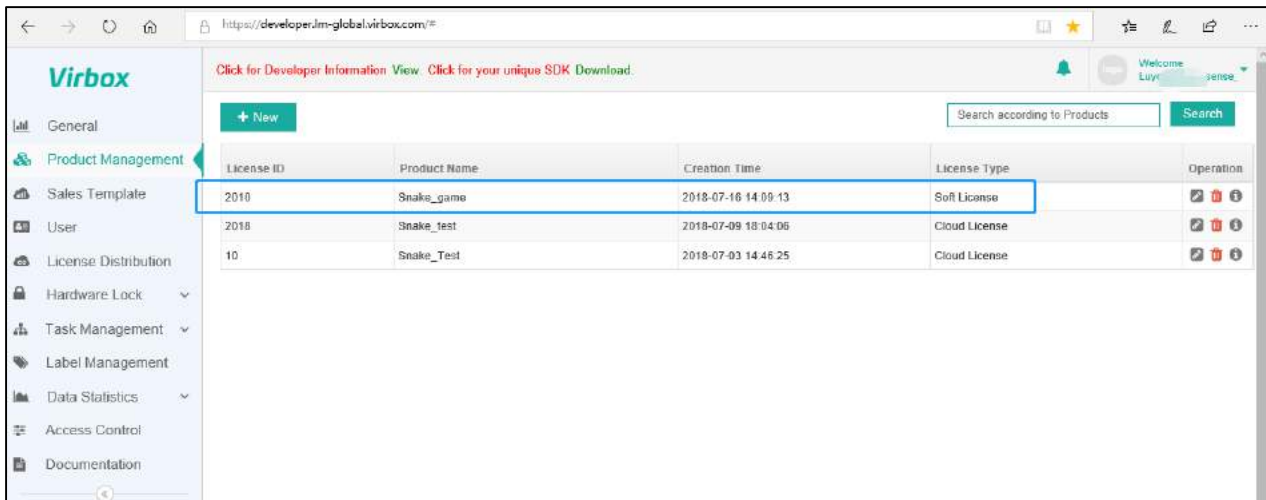


Note:

For how to use these three area, you can see the related document for detail.

If software developers have a lot of software module, and need to issue the license of different modules to different users, this can be implemented through the sub module function. Software module is a Boolean value, each License can have 64 sub modules, for detail information please refer the related document.

If you have already input all of the required information. We have completed the creation of the product, like in the picture blow:



License ID	Product Name	Creation Time	License Type	Operation
2010	Snake_game	2018-07-16 14:09:13	Soft License	[Edit] [Delete] [Info]
2018	Snake_test	2018-07-09 18:04:06	Cloud License	[Edit] [Delete] [Info]
10	Snake_Test	2018-07-03 14:46:25	Cloud License	[Edit] [Delete] [Info]

So far, Product Creation has been completed. If you have more than one kind of software need to be protected, you need to define more license ID and repeat the steps above.

Note: The License ID of the product you created here, need to be in line with the License ID you use to protect software in next chapter, and in line with the License ID you use to issue license, please make sure they are same. In order to make sure a successful license distribution.

Next chapter we will use "**Virbox Protector**" to protect the software.

4. Protect/Encrypt Software

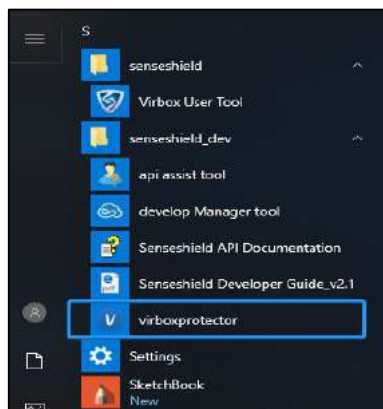
4.1 Virbox Protector Introduction

To protect the software we will use “Virbox Protector”. 

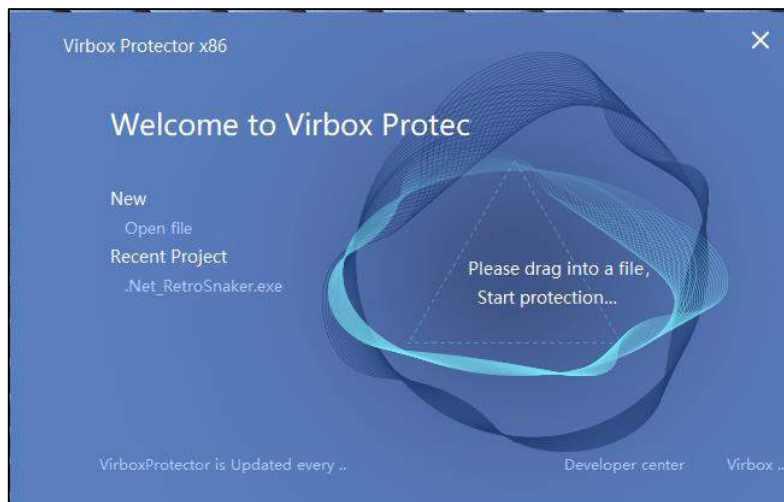
Virbox Protector is the latest envelope tool for software protection and encryption, it provides top security level to the software being protected with this tool, it integrated multi technology including **Virtualization**, **Obfuscation**, **Compression**, **Code transplantation** and **Code Snippet** and **Encryption** to protect software with flexible and easy to use features for software developer.

Developer even can protect software with top security level without any kind of coding which will save lot of workload for developer. If developer issue license to Virbox EIS Acme, or issue **Soft License** or **Cloud License** to software user, all of the license issuing will need to use the Software protected by **Virbox protector**.

Also take Windows 10 as an example, open the start menu to open the Virbox protector, like the picture showing blow:



The appearance is like this:



Application can be protected with Virbox Protector:

Windows application: **EXE** and **DLL**.

Plugin maybe protected with **Virbox Protector** is:

AutoCAD ARX, Revit etc.

Program **Language** may protected with Virbox Protector:

- | | |
|------------------------|-----------------------|
| ✓ C | C++ |
| ✓ VB6.0 | VC6 |
| ✓ VC2003,VS2005-VS2017 | Delphi7 DeliphXE-XE10 |
| ✓ BCB6.0 | C# |
| ✓ .Net | Java |
| ✓ ARX(AutoCAD) | Unity3D |
| ✓ Revit(Plugin) | Framework2.0~4.6 |

Virbox Protector is a fast Deployed Protection/Encryption tool, without any coding Competence, all Protection/Encryption Option can be setup via Virbox Protector;

Virbox Protector is suitable for fast deployed encryption and protection to your software application, software developer may protect software by use of Virbox Protector through setup/configure each option of Encryption/Protection without any coding effort for developer, which still can enhance security level.

For more detail operation instruction to Virbox Protector, please refer (you can get this document from the installation path):

 "**User Manual: Virbox Protector**"

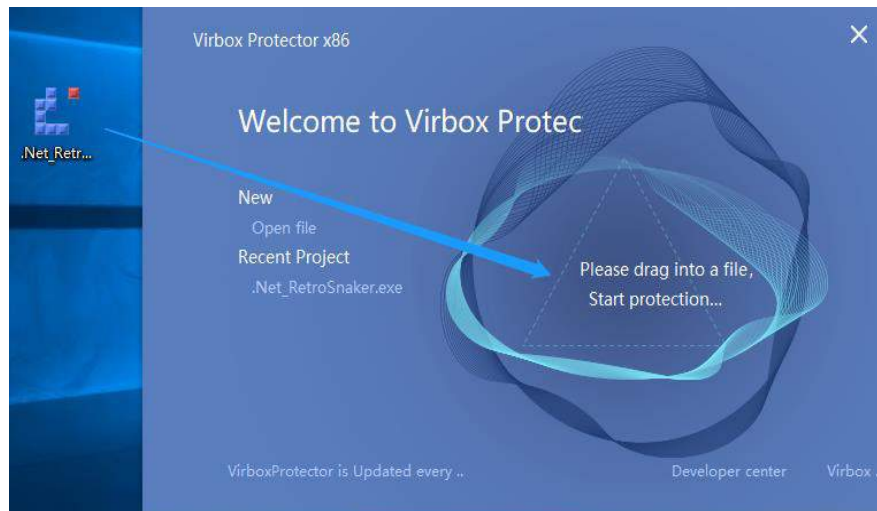
Software developer may obtain latest version of Virbox Protector via below link:

<https://developer.lm-global.virbox.com/home.jsp>

4.2 Setup Virbox Protector (License Configuration)

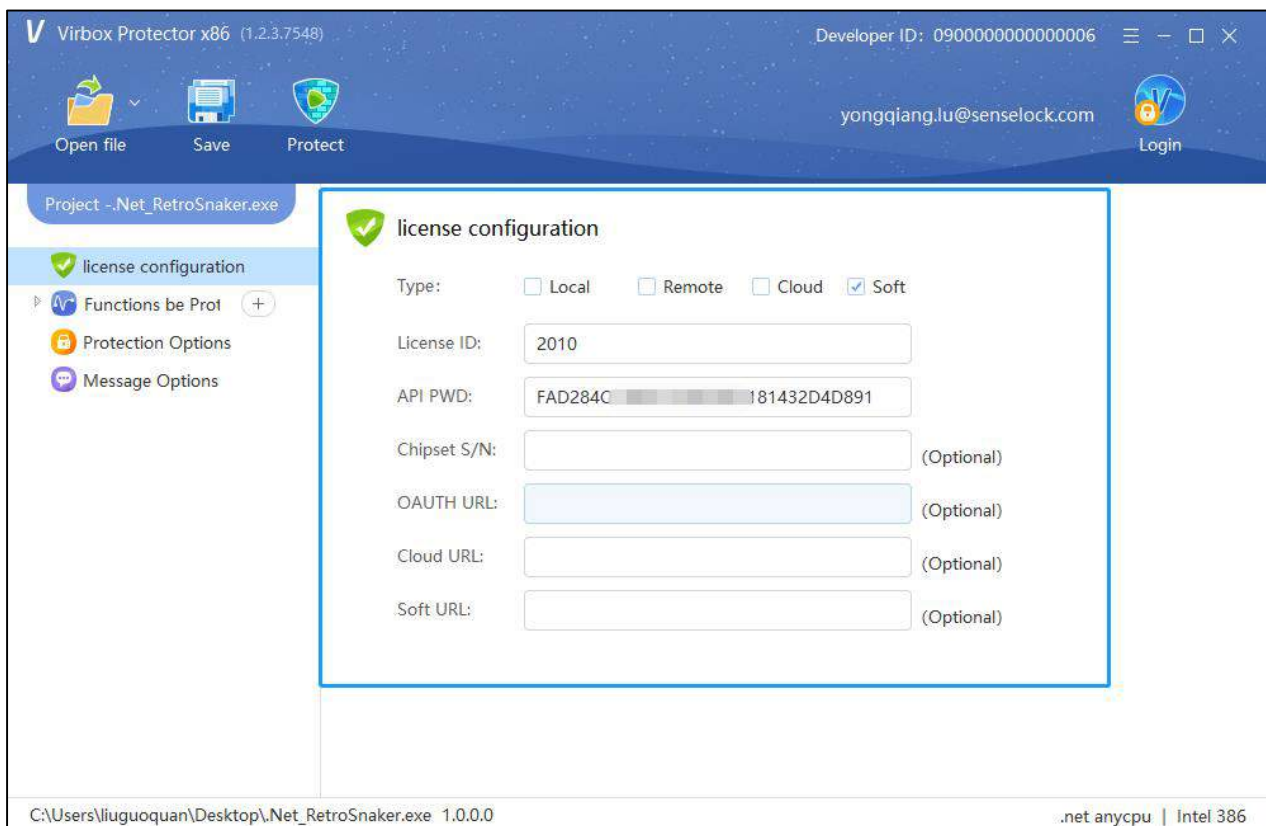
Here we will take a “Snake” application as an example, which is a .Net program.

- Drag the software you wanted to protect into the protect area.



Protect Steps:

- **Basic License configuration:** In this section, we will introduce the basic License configuration for the product which created in Chapter 3:

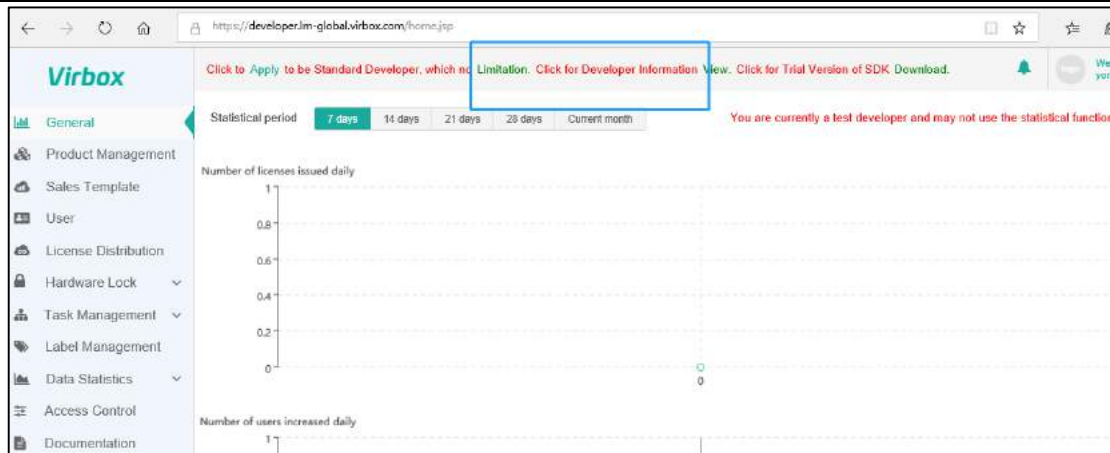


- ◆ **Login Virbox Protector** with Virbox LM account, on the left top pane.
- ◆ Select **License Type: Soft** type.

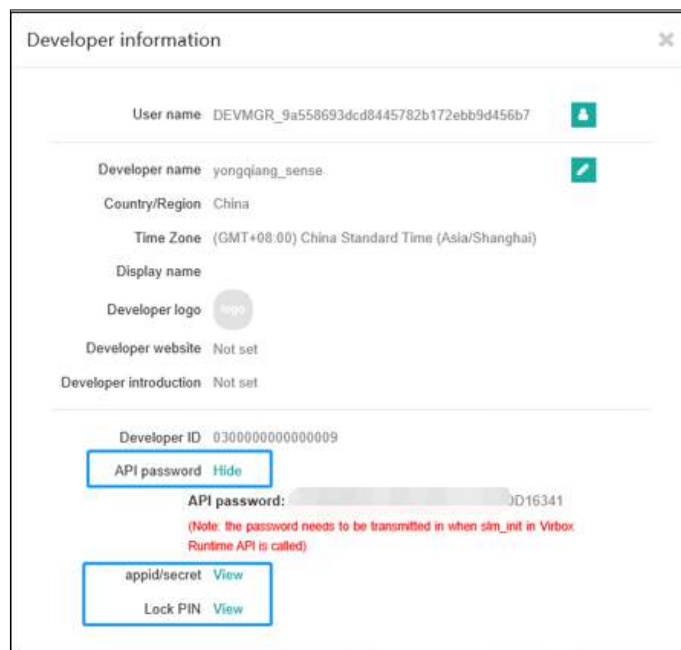
Note: Virbox Protector support following license Type: **Local License Type**, **Remote (Network) Type**, **Cloud License Type** and **Soft License Type**. Input **License ID**, i.e. The License ID you input must be in line with the License ID you have input and created in **Virbox LM** in previous step.

- ◆ **License ID**, input the license ID we created in chapter 3.
- ◆ Input **API Password**. (If you don't know how to get an API password, please refer the **Tips** blow.

Tips: To get API password, you need to login on **Virbox develop center** and click" **view**" shown in the picture. What's more, API password is very **important** parameter, please keep it in top security.



Click "**view**", you can copy it here.



- ◆ **Chipset S/N (Optional):** If you input Chipset S/N here, then protected Software will be only valid and executed with the lock with this Chipset S/N. This function is for Hardware Lock.

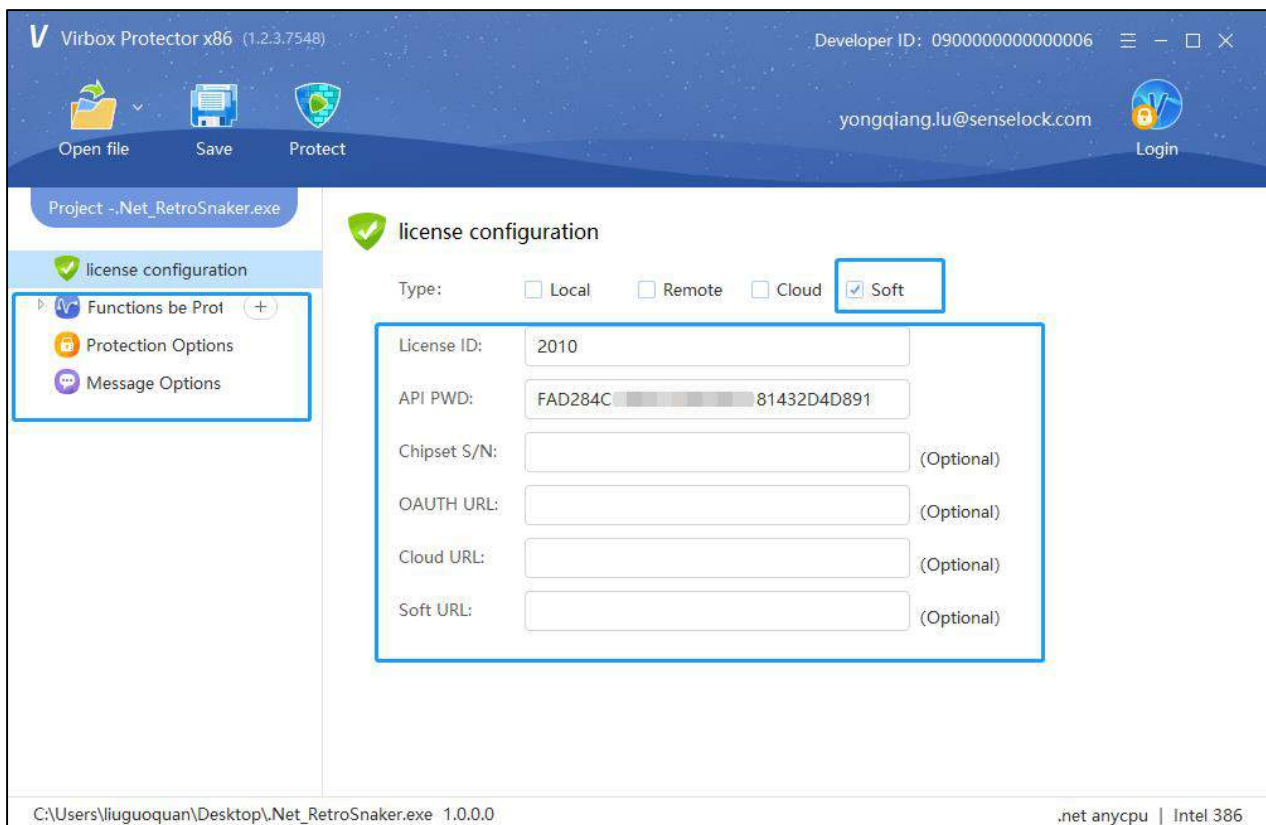
Note: Because PE program would not generate function name in the list, only function address could be displayed. Recommend Developer use **third party program** to generate the map file. Put the generated map files in same folder with protected software, and then drag the software to be

protected into Protector, in this way you can see the name of the function in the function list.

4.3 Protection Setup Process by use of Virbox Protector

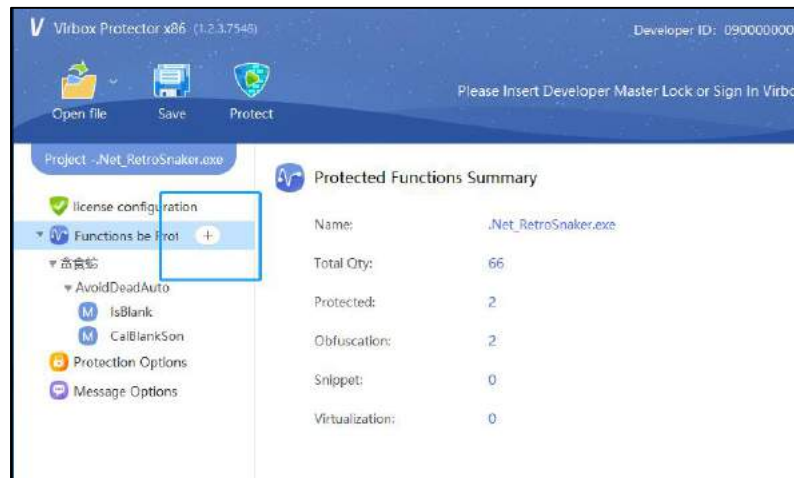
Developer can configure following detail parameters before software protection according to specific software features, functions, etc.

- **Select Functions be protected;**
- **Setup Protection Options;**
- **Setup Prompt Message Information;**



The following are the detail explanation and configuration.

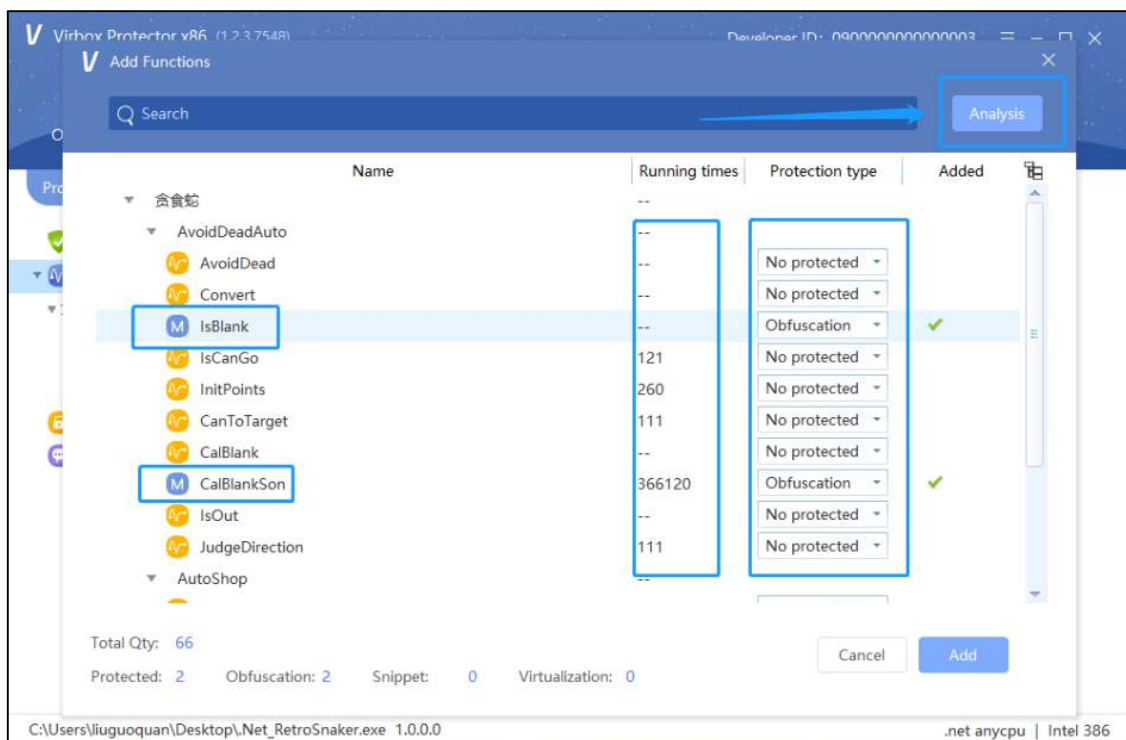
4.3.1 Select Functions to be protected



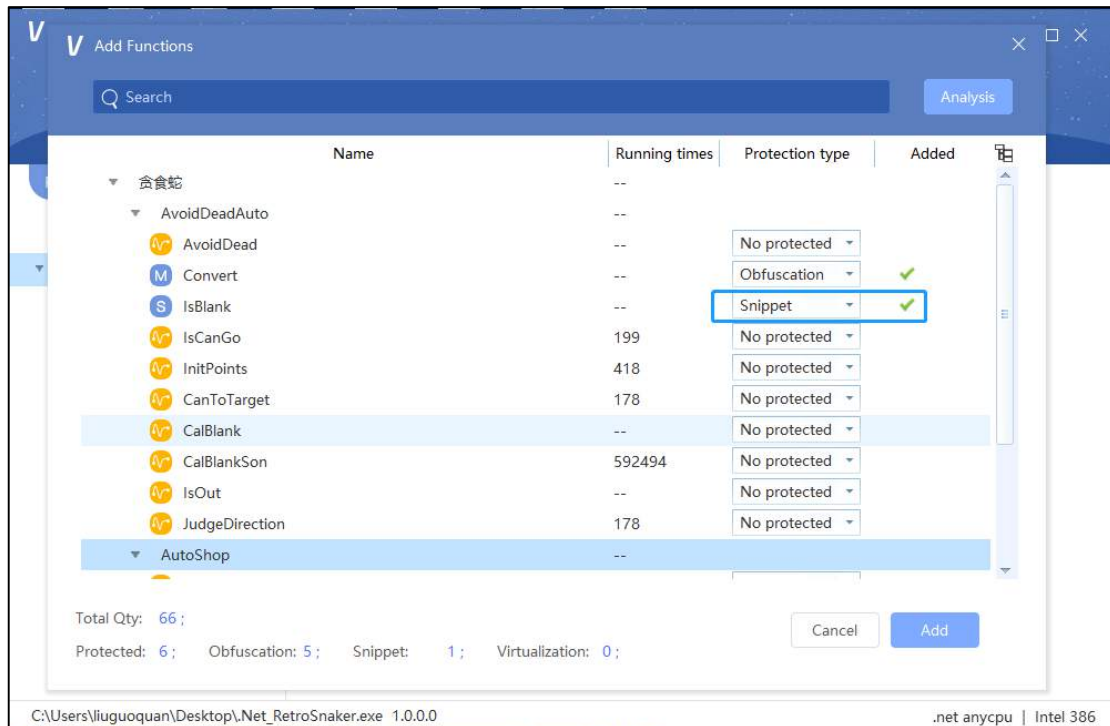
Click "+" (See picture attached). Usually, software developer need to balance the performance and protection level before software protection.

Note: Be careful to select and protect these frequently called functions, since it will decrease software execution performance after protection and encryption.

The **Virbox protector** will list all of the functions used in this software in the left pane, and the functions called times will be displayed in right pane. We can also start to **Analysis** functions by clicking "Analysis" before protect software.



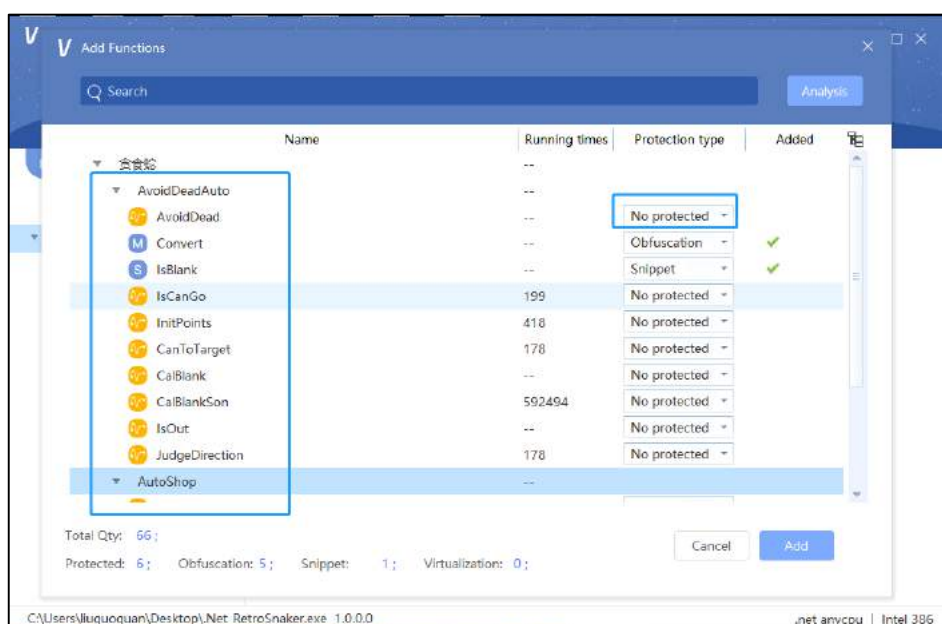
Running times: The Functions called times during this analysis process, after you have run the program for some time (several minutes).



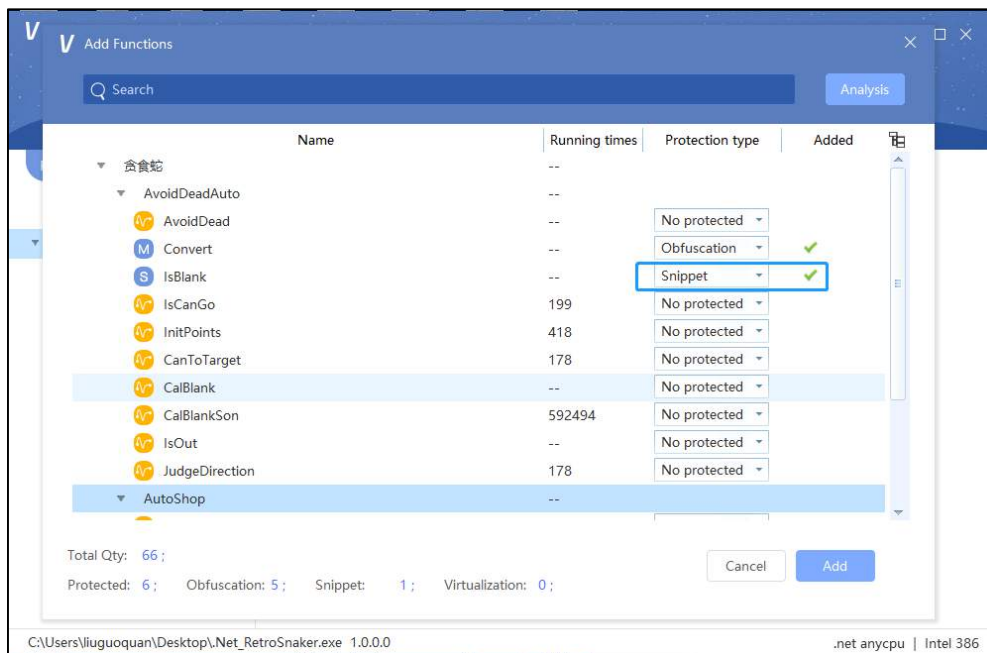
To protect the functions of the software, following functions protection mode can be selected: **No protected**, **Obfuscation**, **Snippet** and **Virtualization**.

- ◆ For the function which call frequently, Select "**No Protection**" option, since if you protect the functions which is called frequently, it will decrease software's running performance when software is executed;

Note: You will find "**Call Times**" for each function after press "**Analysis**" Button after the software to be protected have been run for some time.

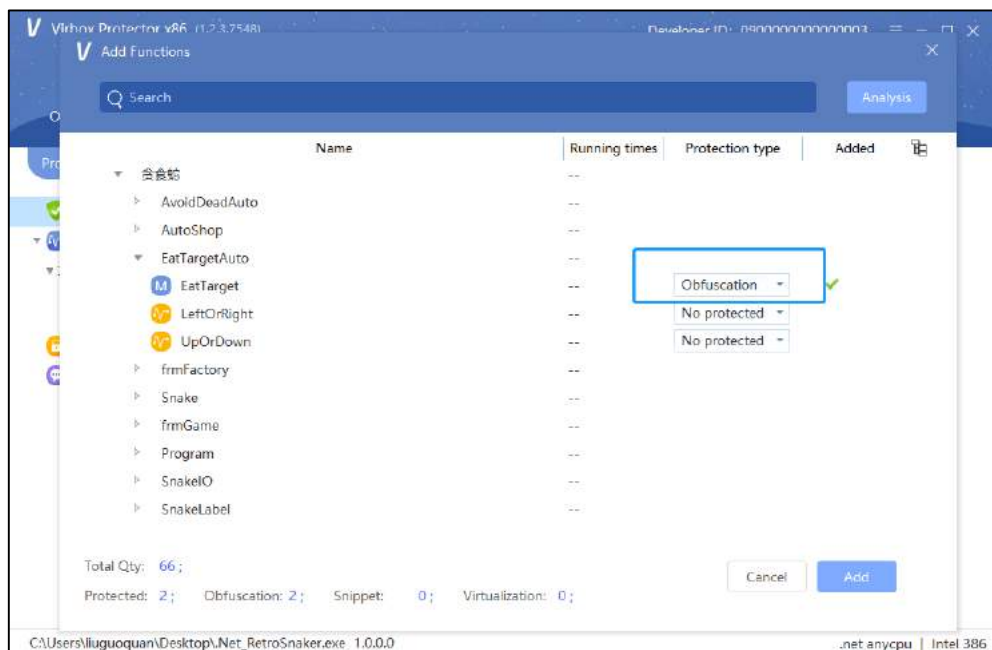


- ◆ Select **"Code Snippet"** Protection mode for Important Functions, which will increase protection level for those important functions or IP.

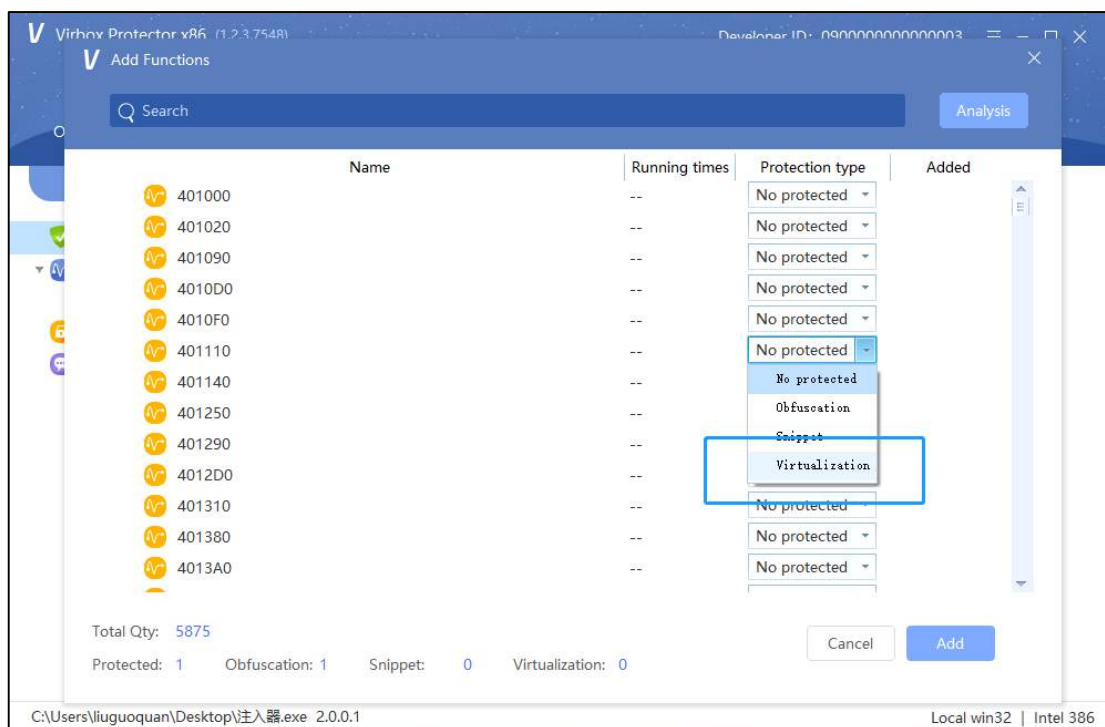


Note: Do not select too many functions with **"Code snippet"**, since it will decrease software execution performance when selected too many functions be protected with this option;

- ◆ Select **"Obfuscation"**: Virbox Protector will translate the code instruction into a stream of pseudo-code that neither the machine nor the human can recognize. When the pseudo-code executed, the software will translate and interpret to restore the code into the original code. To let it executable.



- ◆ Select **"Virtualization"**: Virbox Protector will compile instructions into virtual code and run them in the specified virtual machine.



Note: For .Net Programs, Support function protection options: **No protect, Obfuscation, and Snippet;**

For **Other** Programs (PE or local program): Support Function protection options: **No protect, Obfuscation, Snippet and Virtualization.**

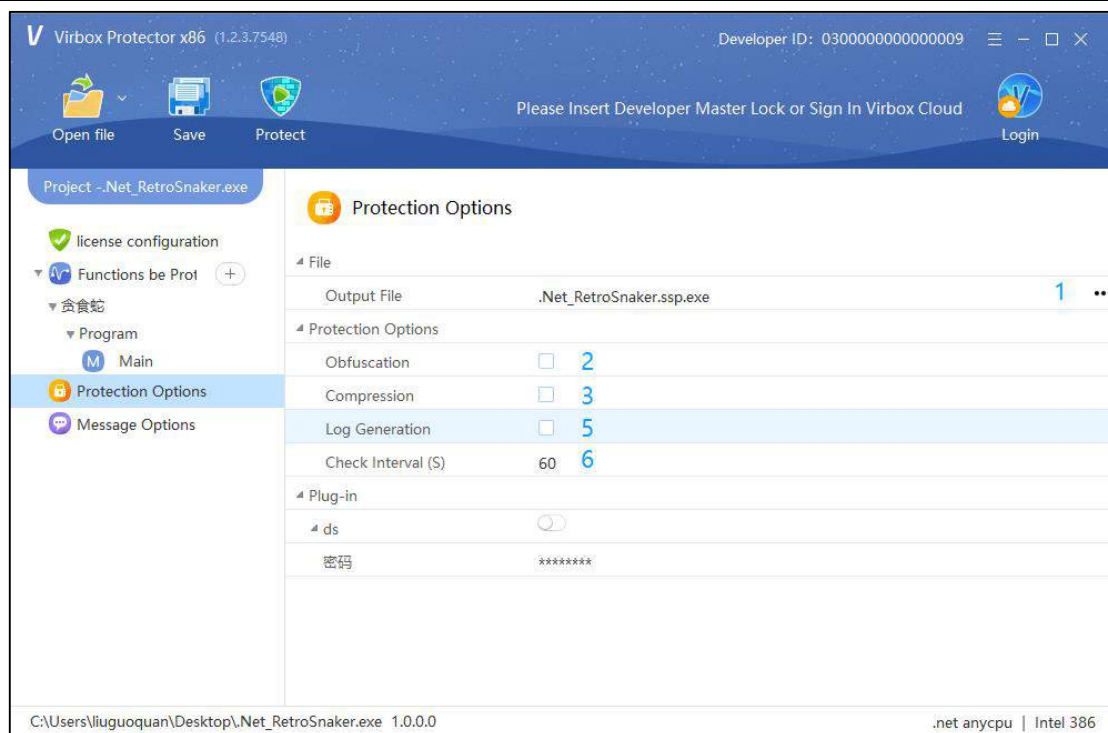
Here is a suggestion:

- ◆ Select "**Code Snippet**" protection option for Important Functions, which increase protection level for those important functions or IP;
- But do not select too many functions and protected with "**Code Snippet** ", since it will decrease software execution performance;

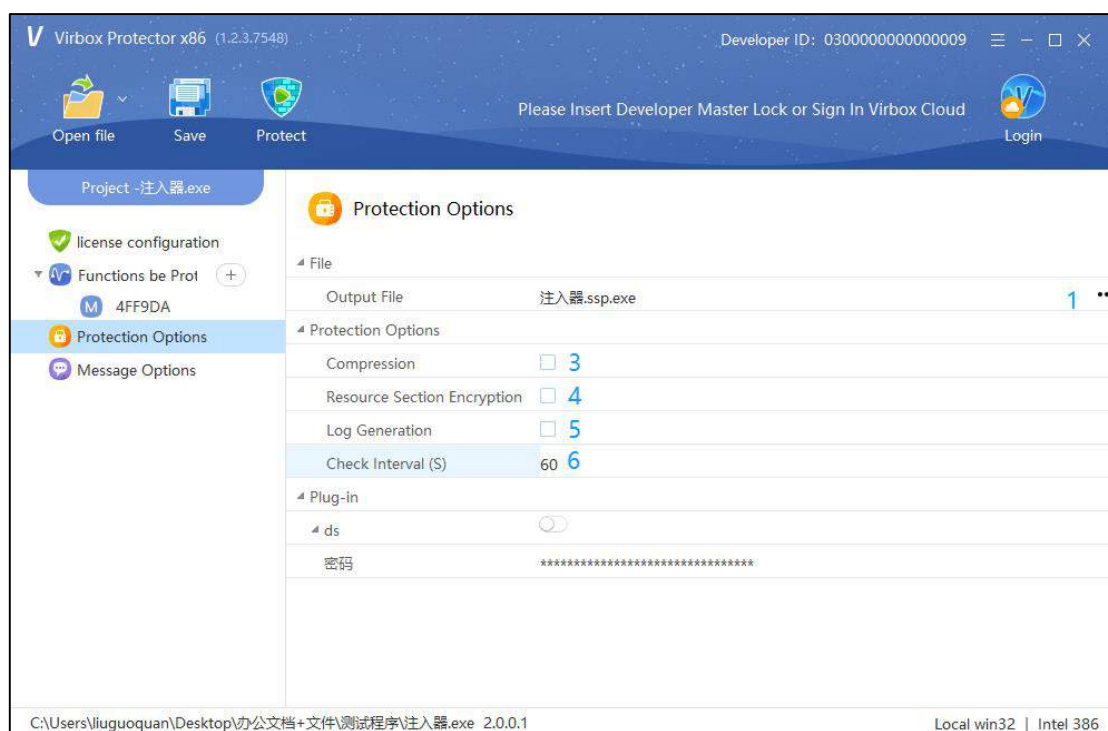
4.3.2 Setup Protection Options for protected software

Protection Option setting will be different for different program, Virbox Protector also provides "**Protection Option**" functions for professional developer when they protect software application, This "**Protection Option**" functions have little difference for PE (local program) and .NET application due to difference of PE and .NET technology. Developer can select and setup these "**Protection Option**" in actual project.

For **.NET program**, following options could be set and selected:



For **local program (PE)**, following options could be set and selected:



Press the "**Protection Option**"

1. **Output File:** Here you can change the output file path of the software.
2. **Name Obfuscation:** Obfuscation to each Functions name;

Note: Only support .Net program, do not support IIS type program.

3. **Compression:** Compression means to compress the application after protection and reduce size of

application, it is also prevents static anti-compile the software application by hacker who use static anti-compiler tools. When you select Compression: It will keep and control the size of protected software application not too big size. Also will enhance protected software's Security level after compression; For relatively big size program this function will be obvious to make the program smaller size.

Note: Do not support .Net dynamic library, ARX library compression.

4. **Resource Section Encryption:** Encrypts the resource section of the protected program, and requires the user to use the corresponding license to decrypt the program when executing the program.

Note: Encrypt the resource section. Only local programs are currently supported.

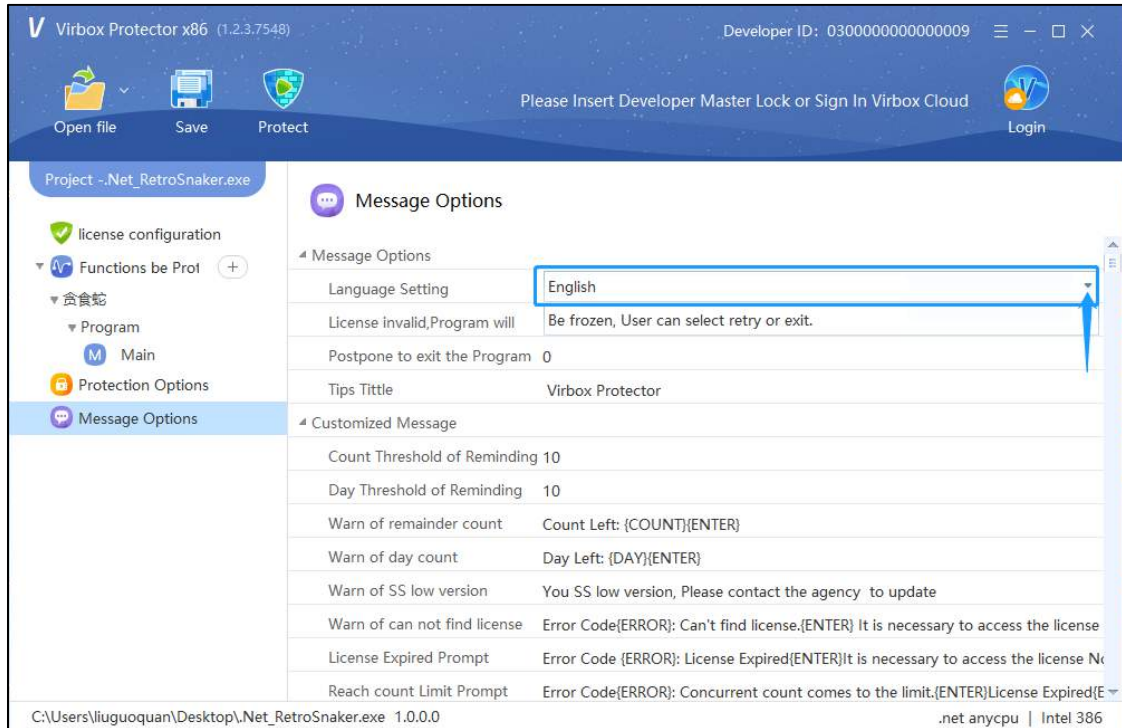
5. **Log Generation:** Log file will be created when select this option, when the protected software have problem when it is running, the generated log will be helpful for trouble shooting;
6. **Check Interval:** (In Seconds): Setup license check interval in seconds. If no valid license has been found in next check interval, the executed application will either quit or prompt error message if developer setup prompt message. If developer set "**Check Interval**" time to be 0 second, then the application will not check license.

Note: Plug-in, this is for **Resource Section Encryption**, if you want to protect resource, you need to open this option. For detail information please refer the related document.

4.3.3 Message Option

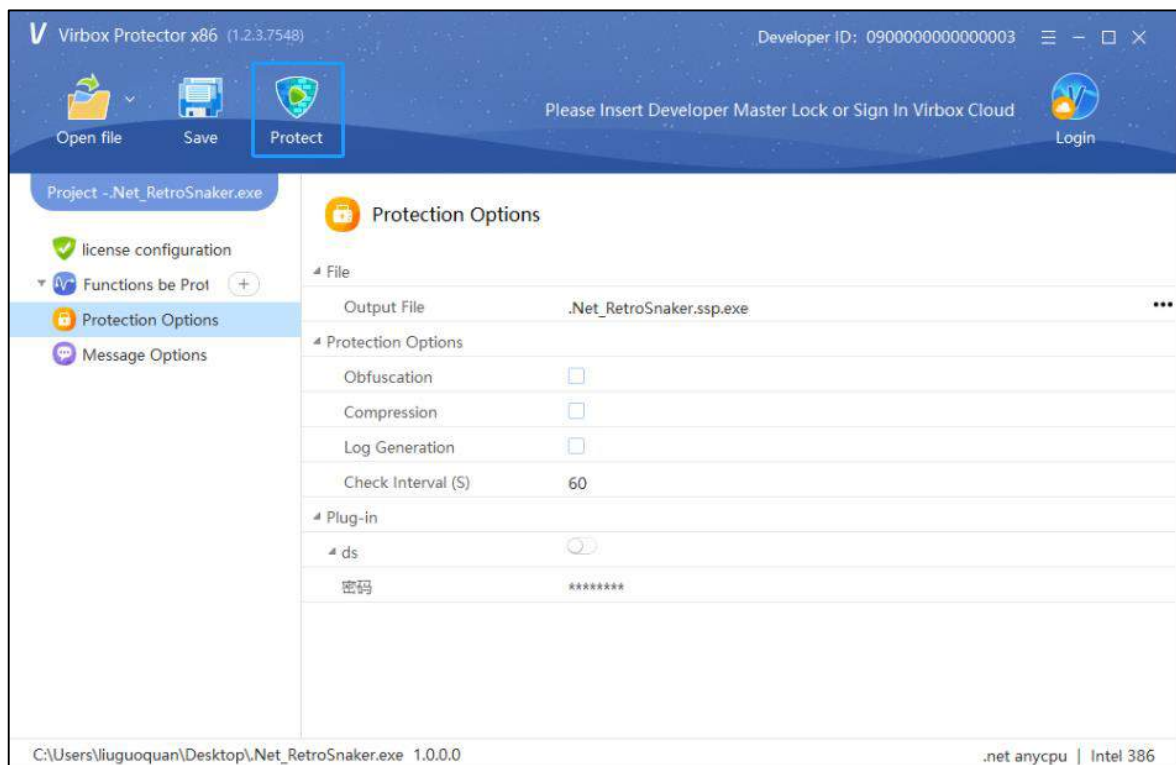
- ◆ Setup the prompt message information to software user when License become invalid, includes setup the title of Message, left time before license expired, left counts (Consumption) and other message. This is helpful for software user to understand software operation status and locate the problem happened when the protected software are running.
For example: In "**License Invalid Program will**" field, if you input message "**Invalid License**", when the license is invalid, a window of "**Invalid License**" will remind you the reason why the protected software stop running.

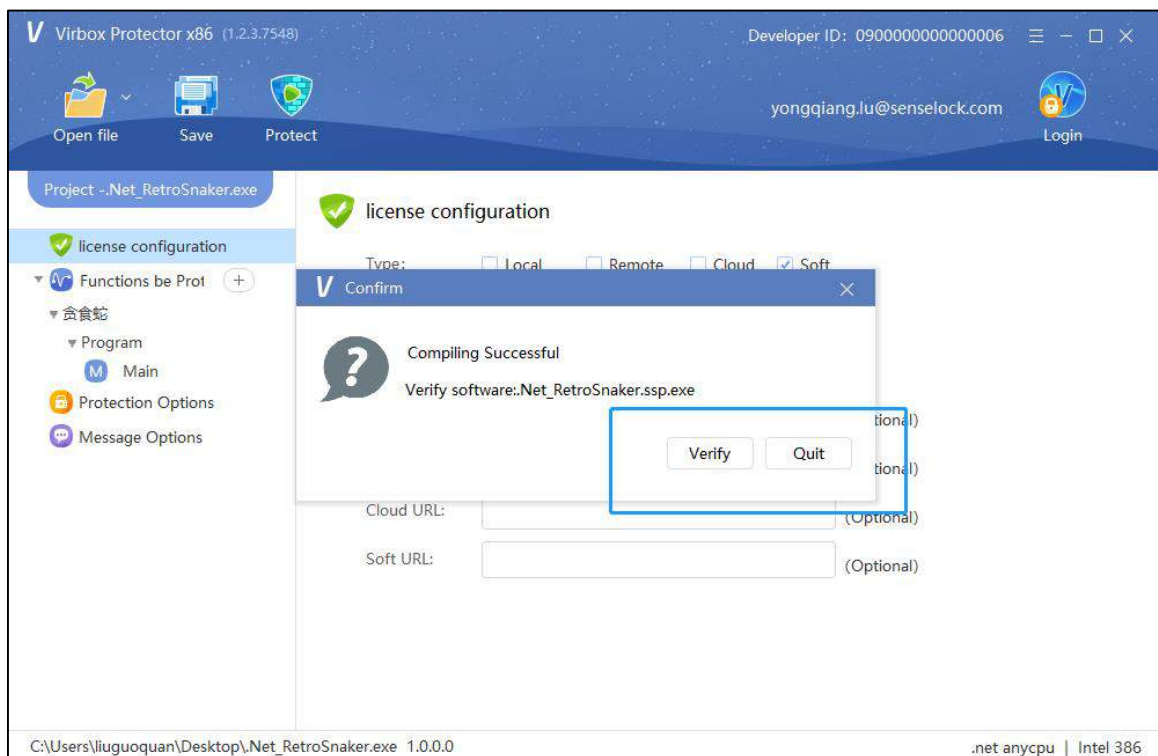
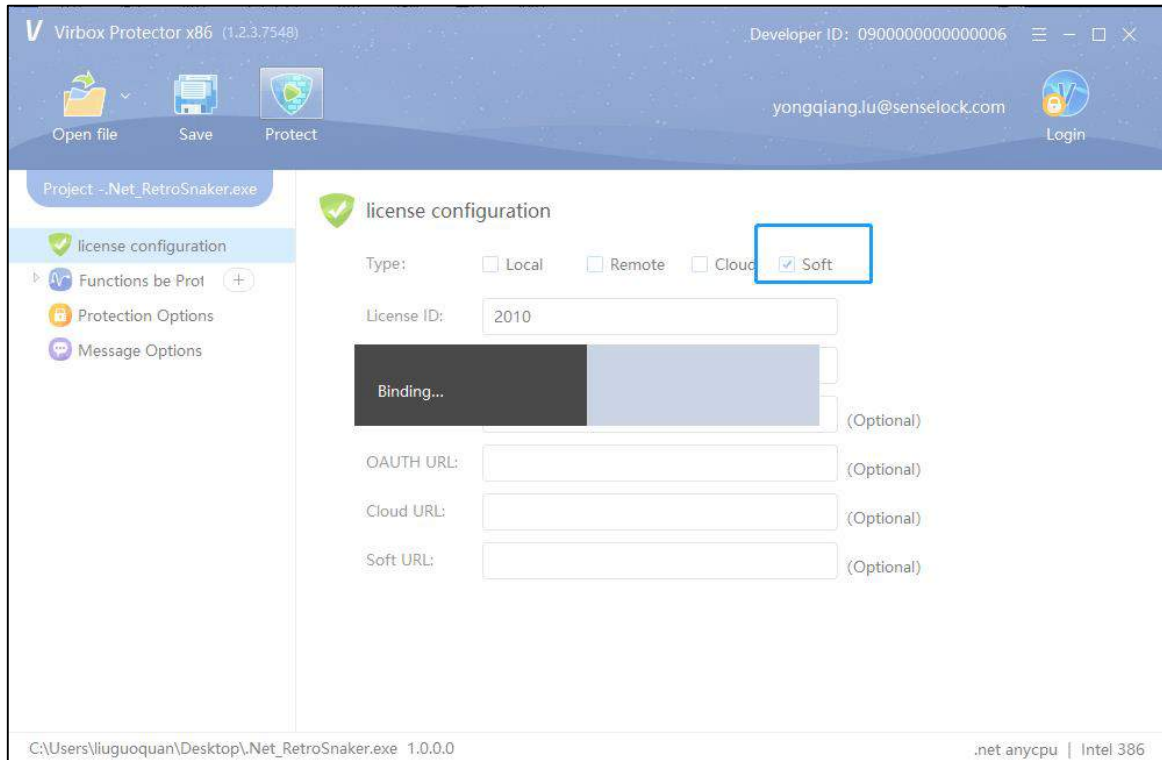
Note: Please set language to **English** as the arrow remind in the picture, default is Chinese. Coming version, we will set the default language to be English.



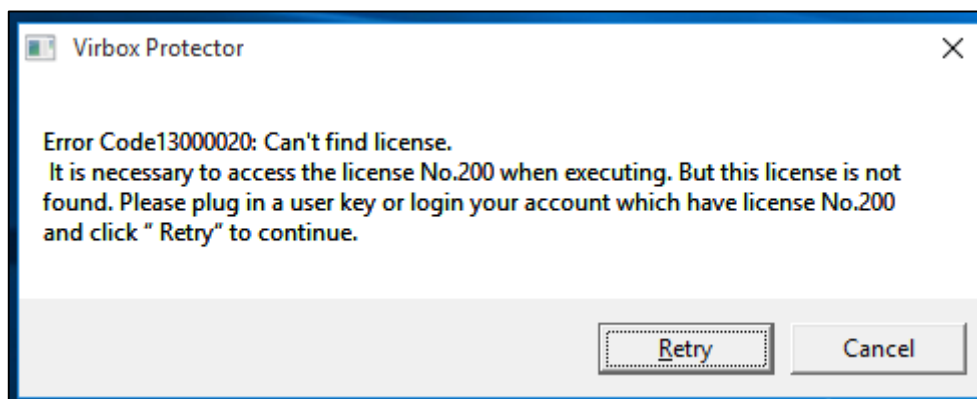
4.3.4 Protect the Software

When you complete each option Setup, click the Button "**Protect**" on the top of Menu to protect this software; It will start to protect the software.





Virbox Protector will pop up to **verify** the license after protection completed, if you press "**Verify**" button of "Pop up Window", then a prompt message will pop up and show: "No license has been found, please plug in User Lock or login Cloud Account".




The reason to pop up this message is because of Virbox split the software protection and license into 2 steps, and you just completed the protection of software and haven't issue the license to EL5 Acme dongle or issue soft license or cloud license yet.

4.4 Protected Software


Now we can take a look at the folder before software protection and after protection.




The original folder before Software protection shows below:

Name ^	Date modified	Type	Size
 .Net_RetroSnaker	2017/5/24 19:48	Application	183 KB

Only the original software will be protected.

The folder after software protection finished is as blow:



Name ^	Date modified	Type	Size
 .Net_RetroSnaker	2017/5/24 19:48	Application	183 KB
 .Net_RetroSnaker.exe.ssp	2018/5/24 18:41	SSP File	5 KB
 .Net_RetroSnaker.ssp	2018/5/24 18:41	Application	6,207 KB

1. Original Software application;
2. A configuration file has been generated after software protection which contains some configuration information and API password accordingly, this can be deleted;
3. The protected software, with all kinds of encryption option you setup earlier; we Suggest you to modify

this application name to be the original application name;

Note: The default path to generate the protected software is same with the Original Software.

Software protection has been completed till now, we will create correspondence sales template for different market segment by use of *Virbox Developer Center* (Virbox License Manager) in next chapter.

5. Issue License

In Chapter 3, we have created "**Snake_game**" product by use of **Virbox Developer Center** and protected product by use of Virbox Protector in Chapter 4. In this chapter, we will use **Virbox Developer Center (Virbox LM)** to create sales template for this product and issue license.

5.1 Create a new Sales Template (By use of Virbox Developer Center)

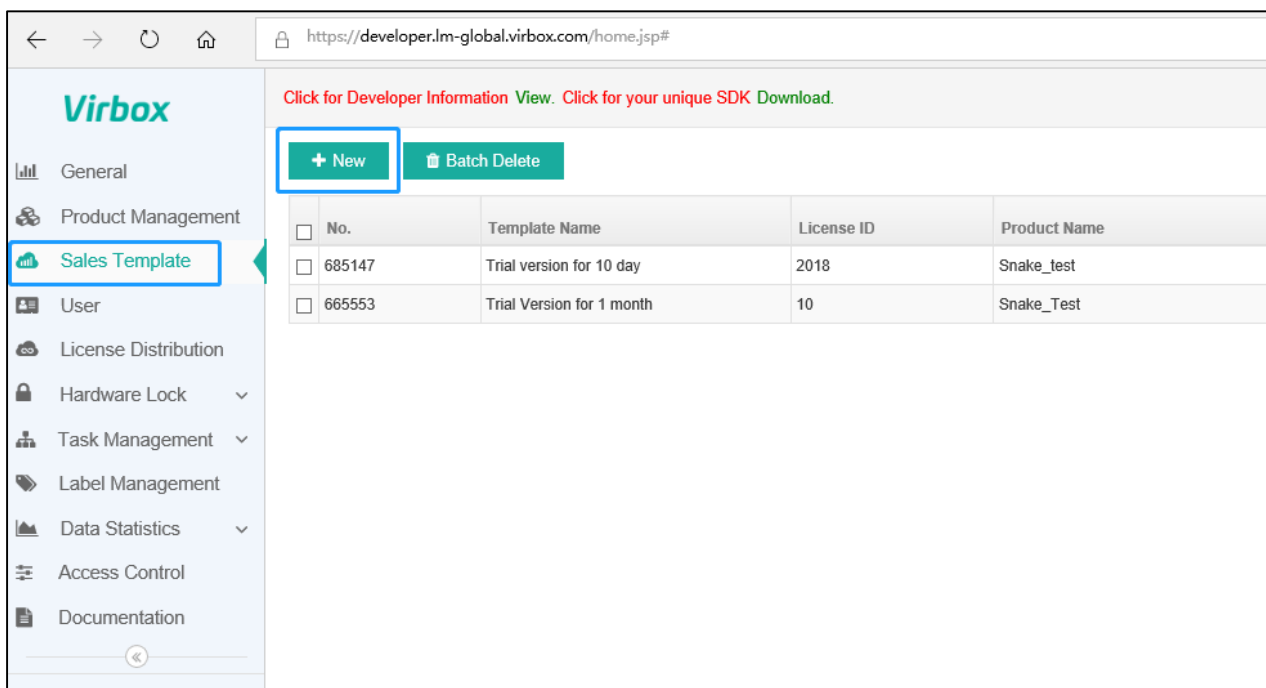
Why we need a Sales Template?

Except of Some software application are customized to specific project, most of software applications are developed for mature markets and sell these software with volume, the bigger the market in potential, the more quickly delivery software are requested.

The purpose to create sales template is to support developer to Licensing software in volume and deliver software more quickly to target client according to different market strategy.

Create a new Sales Template:

Sign in Virbox Developer Center, click "**Sales Template**",



Click for Developer Information [View](#). Click for your unique SDK [Download](#).

[+ New](#) [Batch Delete](#)

<input type="checkbox"/>	No.	Template Name	License ID	Product Name
<input type="checkbox"/>	685147	Trial version for 10 day	2018	Snake_test
<input type="checkbox"/>	665553	Trial Version for 1 month	10	Snake_Test

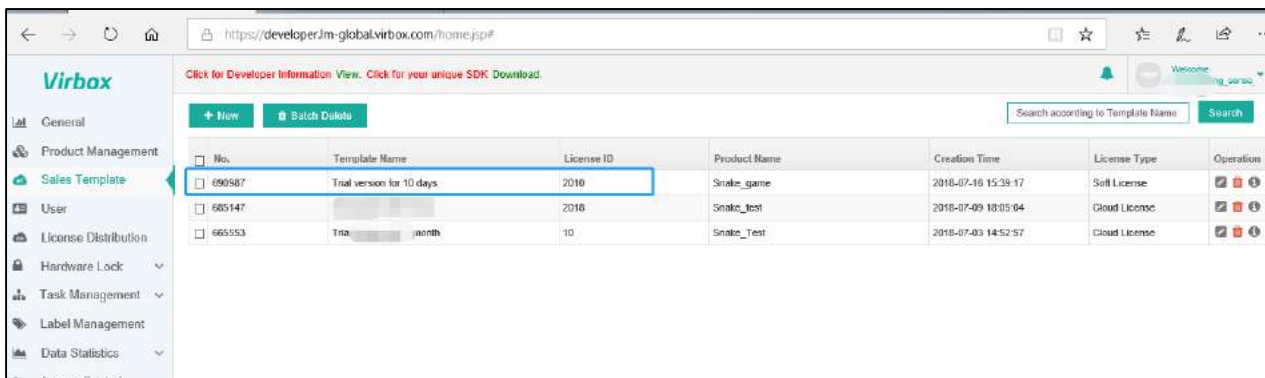
We need to create a new template, so click "**New**" button, then the new window will pop up, You need to select the product you want to sell and you can input the detail information of the sales template here.

In the picture we take a "**Snake_game**" product trial version for 10 days for an example.

- 1) Enter **Template Name** into the "**Template Name**". In general, the name of the template definition should be clearly available, easy to find, and preferably consistent with the corresponding business scenario. In our example we use "**Trial version for 10 days**" for an example which clearly describe this sales mode.
- 2) **Product**: Select the Product you created in chapter 3.
- 3) **Perpetual Licensing**:
 - If switch off "**Perpetual Licensing**", you can setup License valid time period;
Time limit:
 - ◆ If you select Specific time, Setup License start time and end time, the license will be valid only during specific time period;
 - ◆ If you select "**Set license issuing time as license start time**", the license issuing time will be license issuing time, in combination with the setting of Time Span, This license will become invalid when time span expired.
 - **Perpetual Licensing**: If you switched on this option, Issue license to be a "**Perpetual Licensing**", then this license issue to software user will be perpetual license and never be expired;
- 4) **Time Span**: License start time start from when software user first time to verify license, the license will be valid during time period setting;

- 5) **Usage Count** (Consumption): Set a limited number of use conditions, each time use, the number you can use the software will decrease, License will be expired when counting to zero.
 - 6) **Off-line duration**: Soft license (online) requires regular online activation to ensure the security of the key and software. The offline duration indicates the days of the license can be used offline. Without online activation within the time period set the soft license will be invalid. The maximum setting is 180 days.
 - 7) **Number of concurrent devices**: that is, the number of devices bound at the same time with the same license after logging into the same "**user account**", the number of devices bound at the same time decreases with each binding count, if the number count to "0", you can't bind more device.
 - 8) **Accumulated number of binding devices**: Set a accumulate number of binding devices of the license, each time the License bind one more device, the number decreases, if the count returns to zero you can't not bind any more device.
 - 9) **Offline binding**: For Soft license (online), which need regular online verification in certain time of period, for the software user is always in offline environment. Virbox launched offline verification solution. If you choose "**support**" means this soft license support off-line verification (This can be set in "off-line Duration" feature set). In this document we use offline verification, so we choose "**Supported**" here.
- Click "**OK**" to create the Sale Template you want to create, then new sales template will be created successfully. It is successfully created here:

Note: Connect to Internet to verification at regular interval means Virbox user license tool to connect to Internet. This is to update secret key information to make sure the security of the software.



No.	Template Name	License ID	Product Name	Creation Time	License Type	Operations
<input type="checkbox"/> 690587	Trial version for 10 days	2010	Snake_game	2018-07-16 15:39:17	Soft License	
<input type="checkbox"/> 605147		2010	Snake_test	2018-07-09 18:05:04	Cloud License	
<input type="checkbox"/> 665553	Trial version for 1 month	10	Snake_Test	2018-07-03 14:52:57	Cloud License	

5.2 Add User

Why we need to create user?

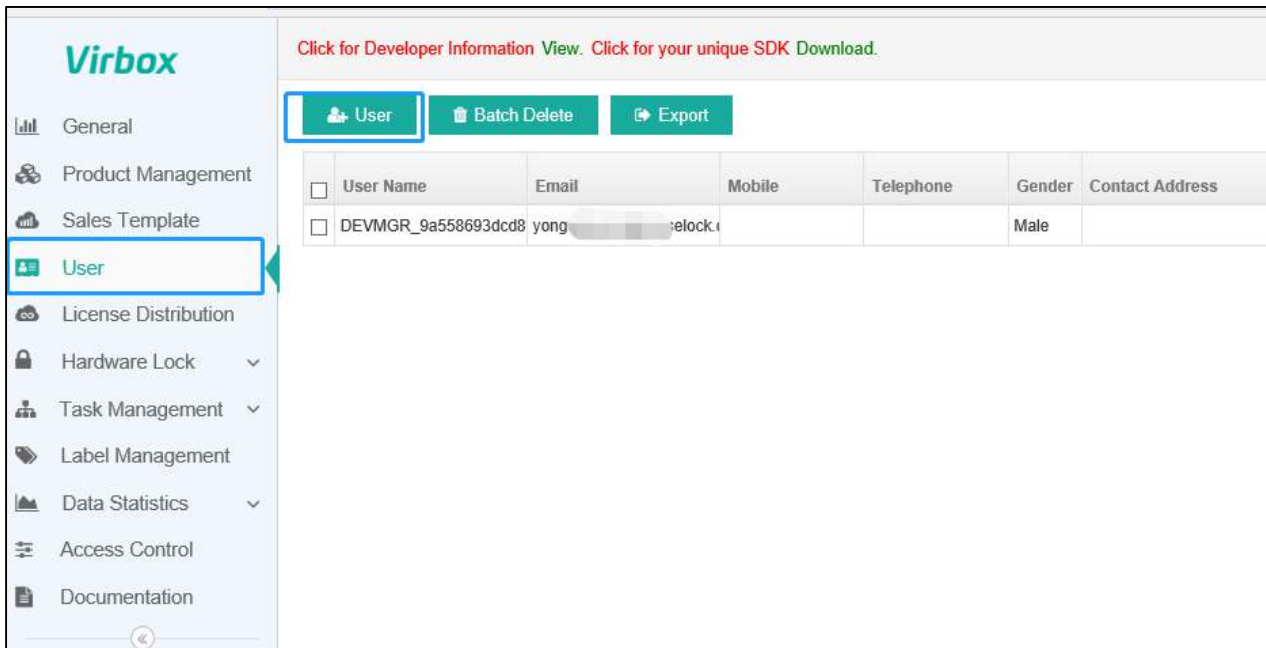
If the software user want to use the protected software, software developer need to issues license to software user. And they need use Mailbox or other information as a way to bind the license with software user's information.

Software Developer can **create and manage user**. Every user can have multi License in same account.

Developers can browsing and searching, edit, and delete users. After the user is successfully created, the email or mobile phone information can't be changed, and the release license could be bound to the user's mailbox or mobile phone number.

Following steps will show you how to **Add User**:

- ◆ Click User item on the left pane, and click “+User”,



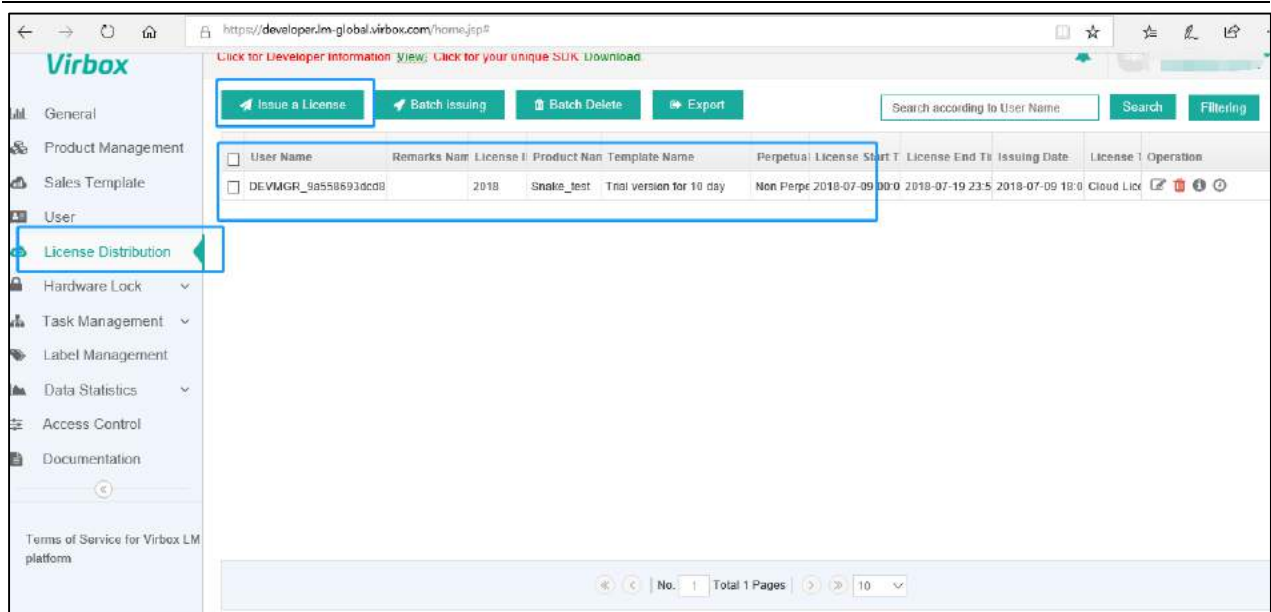
Virbox

Click for Developer Information [View](#). Click for your unique SDK [Download](#).

[+ User](#) [Batch Delete](#) [Export](#)

<input type="checkbox"/>	User Name	Email	Mobile	Telephone	Gender	Contact Address
<input type="checkbox"/>	DEVMGR_9a558693dcd8	yong	elock		Male	

- ◆ Input the detail information to create a new user(The fields with red mark are required), Email address or phone number can also be inputted.



A window to input the detailed information will pop up, you need to select the “**Sales Template**” you just created,

Issue a License

* Template

Trial version for 10 days

View

ProductSnake_game

Module

View

License TypeSoft based license

PerpetualNo

Time LimitSpecific time

Start time

2018-07-16 00:00:00

(GMT+08:00) China Standard Time (Asia/Shanghai)

End time

2018-07-25 23:59:59

(GMT+08:00) China Standard Time (Asia/Shanghai)

Time span--

Usage count--

Off-line duration2

Number of concurrent devices5

Accumulated number of binding devices10

Offline bindingUnsupported

* User

Selected user list

Select

User

Name:DEVVMGR_9a558693dcd8445782b172ebb9

name:

Issuing

Cancel

Click **"Select"** to select user:

Select user

Please input a user name to search

Search

<input type="checkbox"/>	User name	Email	Mobile	Remarks name
<input checked="" type="checkbox"/>	DEVMMGR_9a558693dcy	u@sensel		

«

<

No. 1

Total 1 Pages

>

»

10

▼

Select

Cancel

Click” Issuing”,

Now you have completed the issuing of the License, you can check it like in the picture:

The screenshot shows the Virbox Developer Information page. The left sidebar contains navigation links: General, Product Management, Sales Template, User, License Distribution (highlighted), Hardware Lock, Task Management, Label Management, Data Statistics, Access Control, and Documentation. The main content area has a header with links for Developer Information, SDK Download, and a search bar. Below the header is a table of licenses. The first row of the table is highlighted with a blue box.

User Name	Remarks Name	License ID	Product Name	Template Name	Perpetual	License Start Time	License End Time	Issuing Date	License Type	Operation
<input type="checkbox"/> DEVMGR_9a58693dc0344		2010	Snake_game	Trial version for 10 days	Non Perpet	2018-07-16 00:00	2018-07-25 23:59	2018-07-17 11:42	Soft License	Edit Info Refresh Delete
<input type="checkbox"/> DEVMOR_9a58693dc0344			Snake_test	Trial ver...	Non Perpet	2018-07-09 00:00	2018-07-19 23:59	2018-07-09 18:06	Cloud License	Edit Info Refresh Delete

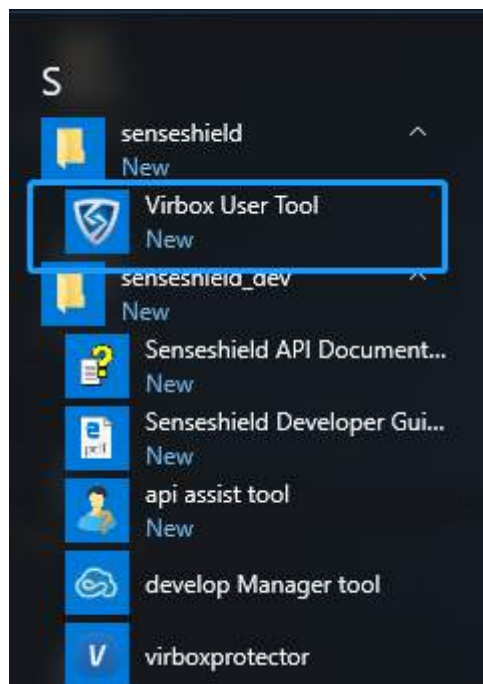
6. License Verification & Using Protected Software

6.1 Run Virbox User License Tool on Online Computer

If you want to verify the protected software, you need to start the Virbox User License Tool and sign in the Virbox LM account to let the soft lock bind to your computer.(To let the account bind with the hardware 's fingerprint)
As the software user's offline (Offline computer) computer can't connect to Network directly, to verify License, you need to use one computer that can connect to Internet (Online Computer) to generate the verification file.
So now we need one online computer and install Virbox User license Tool on both **Online** and **Offline** computer.

The software download link is: <https://lm-global.virbox.com/resource.html>

Open "Virbox User License Tool" as in the picture blow:



The Virbox User License Tool will start.

The main steps to finish the Hardware fingerprint binding are as follows:

- Generate c2d file on offline computer with Virbox User License Tool.
- Copy c2d file to online computer, generate the d2c file with c2d file with Virbox User License Tool.
- Copy d2c file to offline computer, and finish verification on offline computer with Virbox User License Tool.

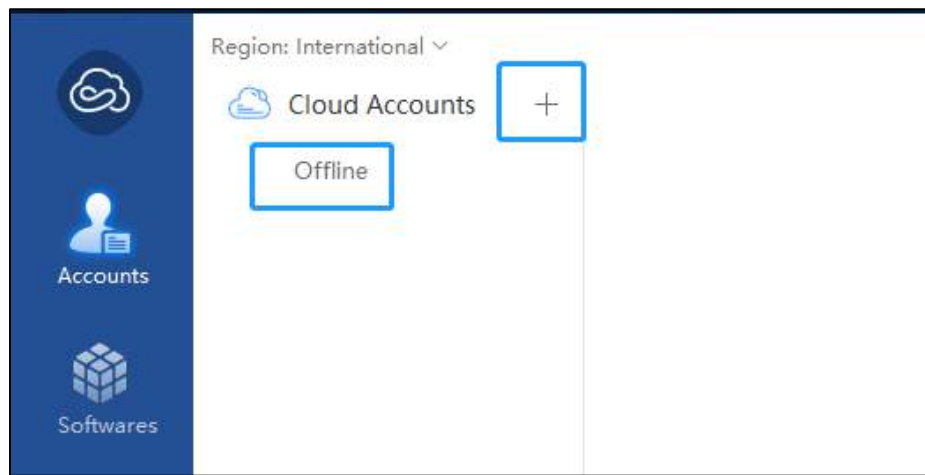
Next will be the detail configuration of above steps.

6.2 Offline software verification (Hardware fingerprint binding)

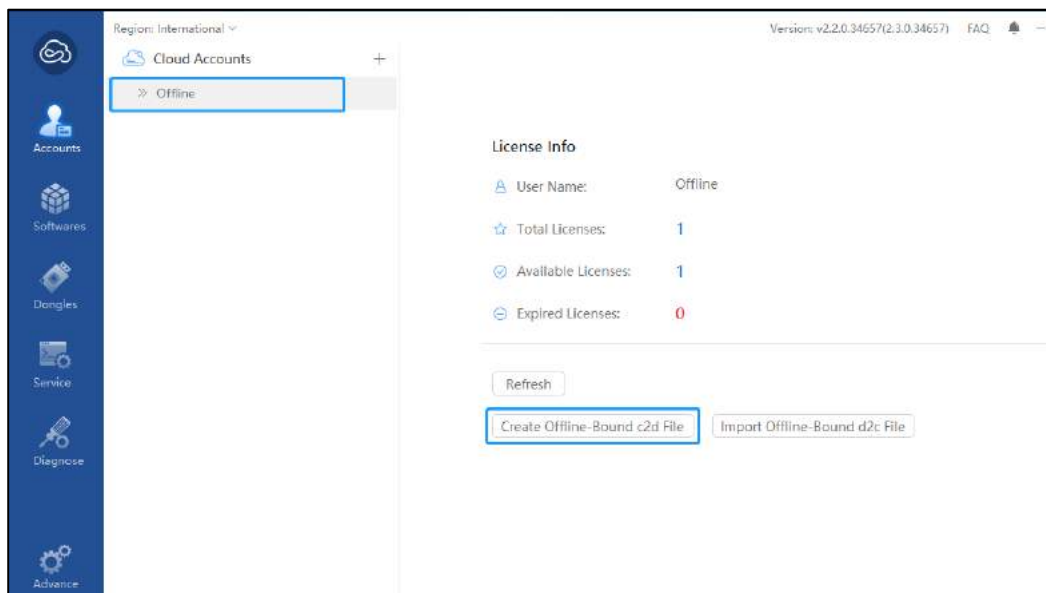
Following steps will show you how to do offline binding in detail

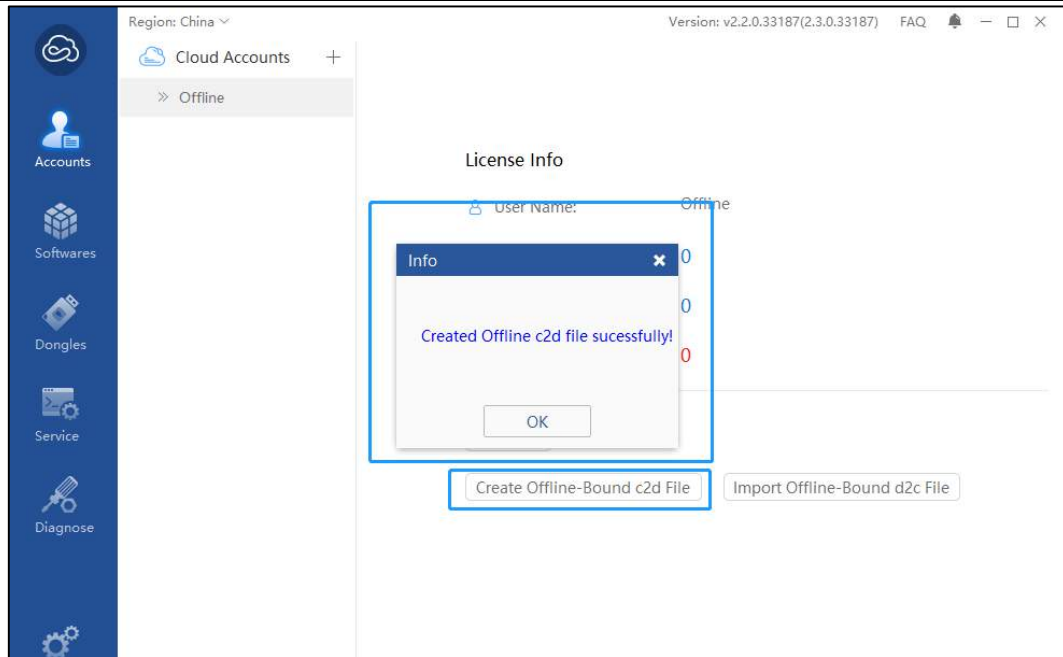
6.2.1 Generate c2d file on the Offline computer

- ◆ Open Virbox User License Tool, click “Accounts”,
- ◆ Click “Offline”,



- ◆ Generate offline bind c2d file, and save the .c2d file.



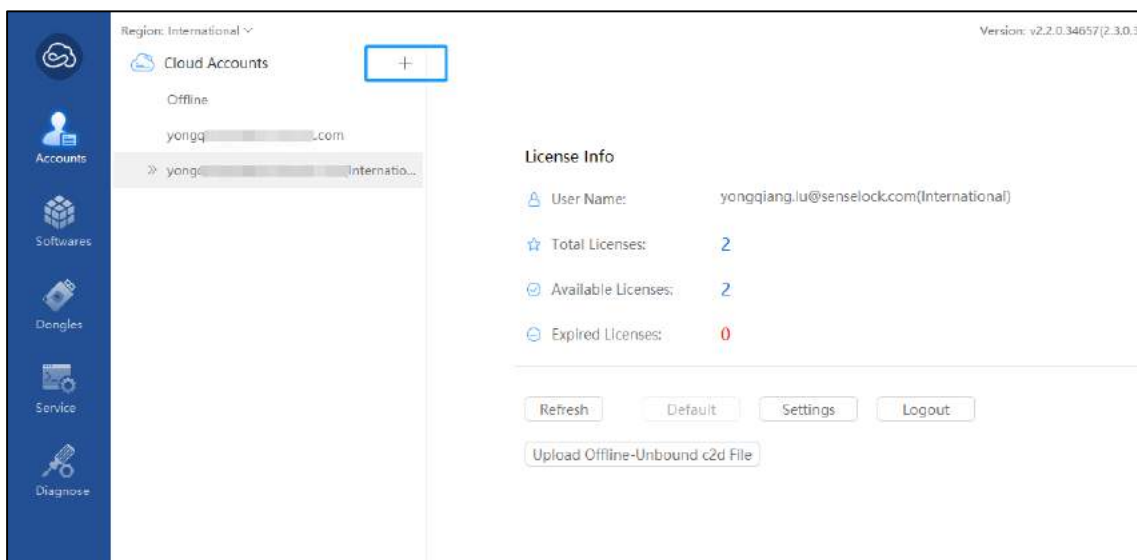


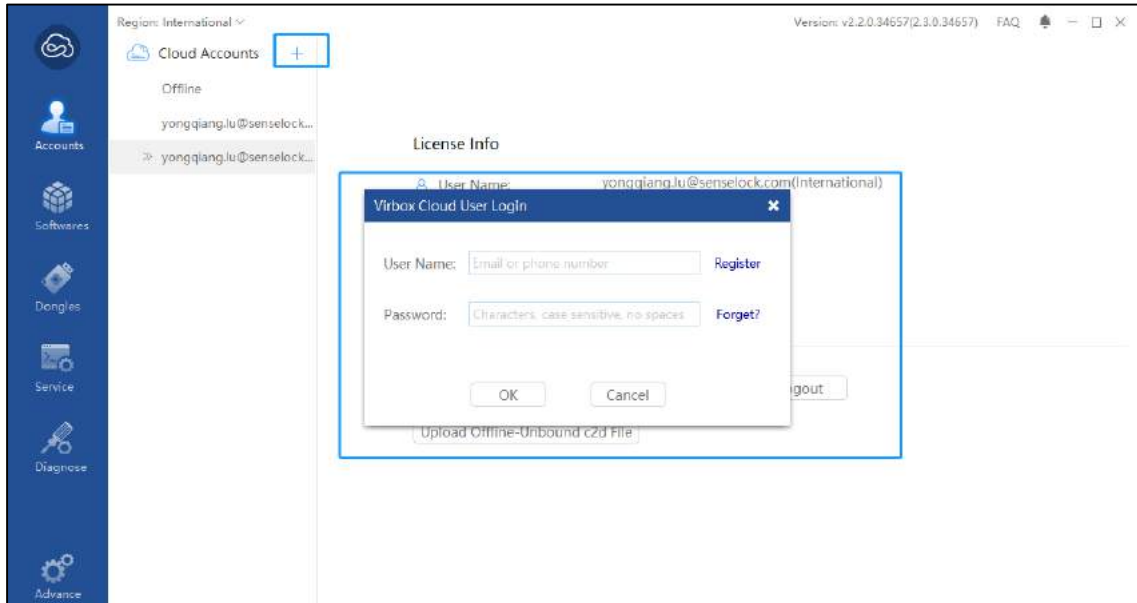
Now we have created c2d file successfully. We need to copy this c2d file to online computer.

6.2.2 Create d2c file on the computer Online

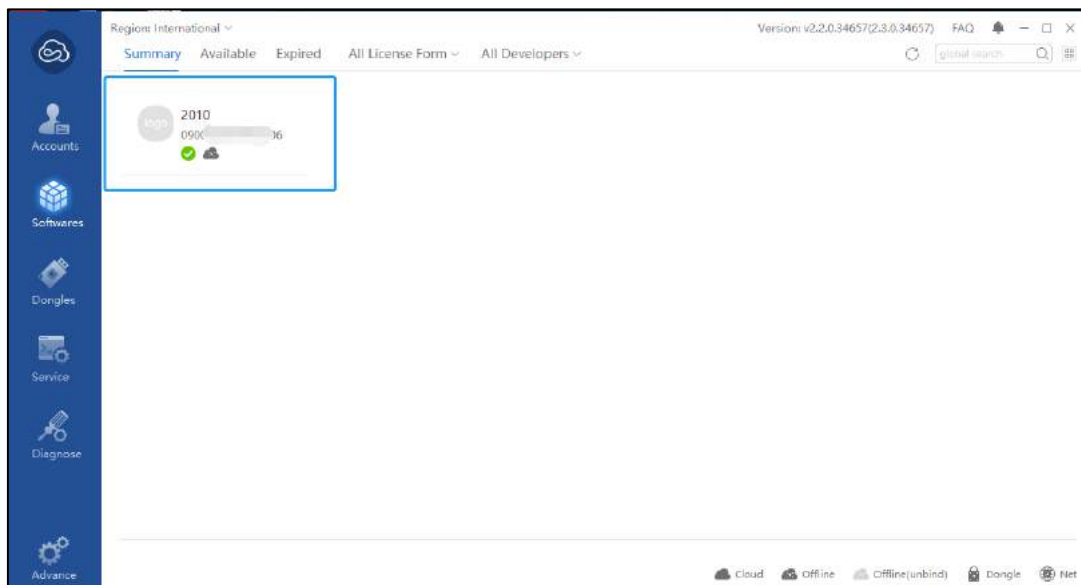
How to do?

- ◆ Also need open Virbox User license Tool.
- ◆ Click “+” to login (This account need provided by software developer, and is authorized. The License should be soft lock and support offline verification), In the “Add user” step, you have the email address as an account and the password you received in your mailbox (Chapter 5.2).
- ◆ Login the account.

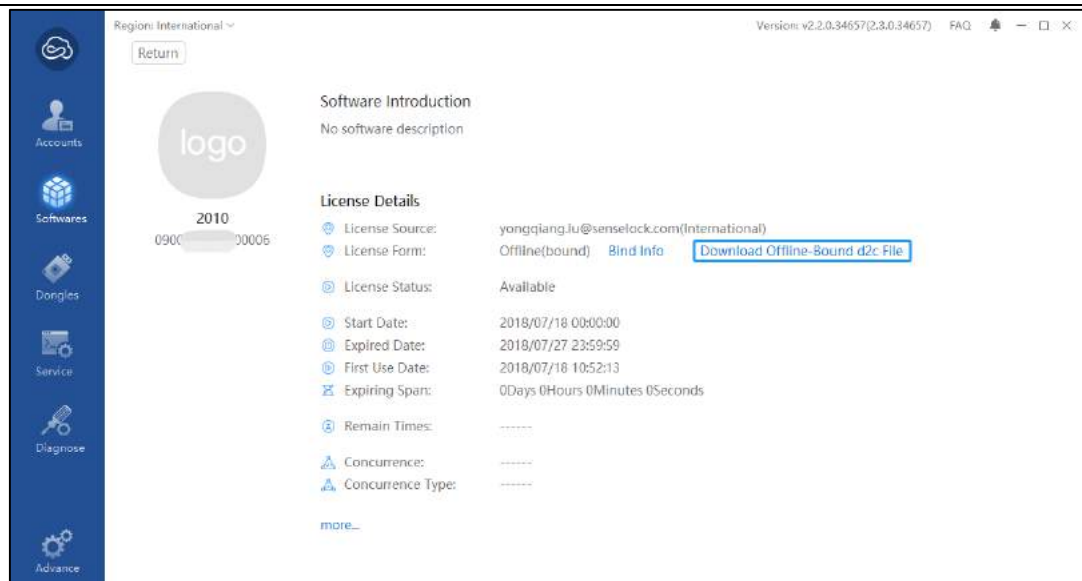




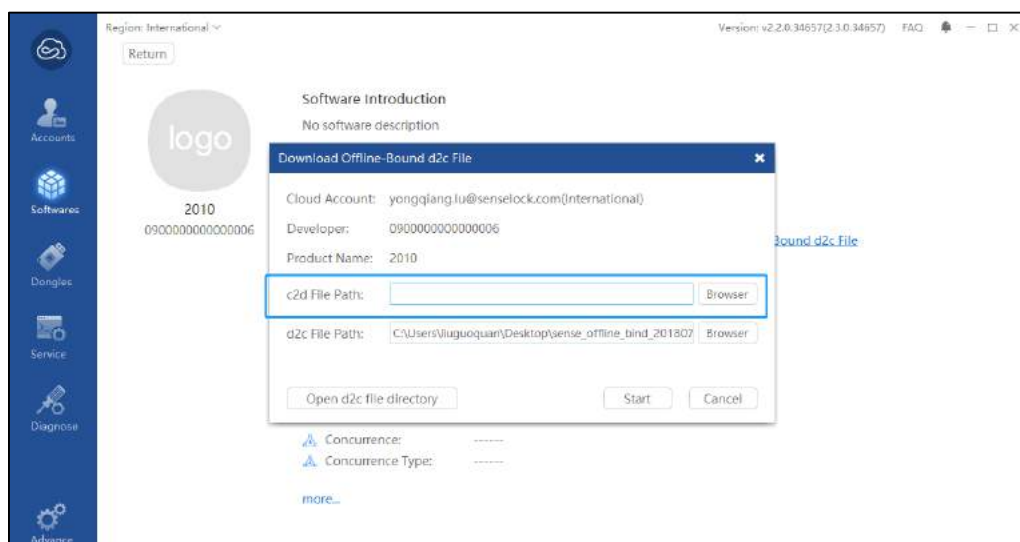
- ◆ Click **“Software”**,



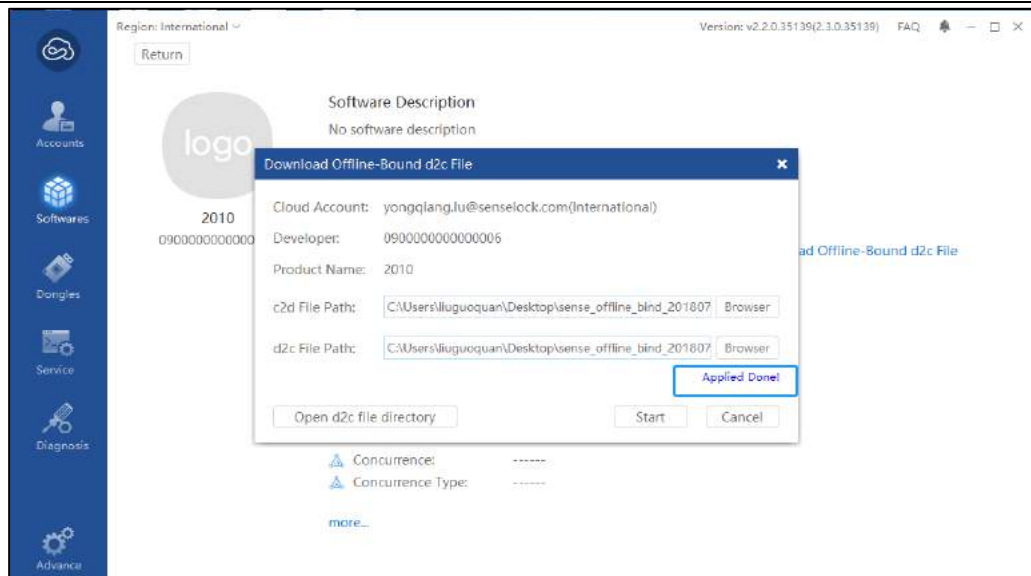
- ◆ Double click the license, the detail information of the license will show:



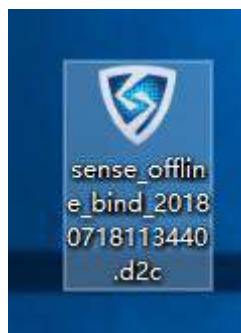
- ◆ Click “**Download Offline Bound d2c file**”



- ◆ Selected the **c2d** file, you generated from last step on the Offline computer, software user need to copy it here.
- ◆ Click “**Start**”,



You can select the path to generate d2c file, here I put it to desktop. If the file is generated successfully, it will show “**Applied Done**” like in the picture.

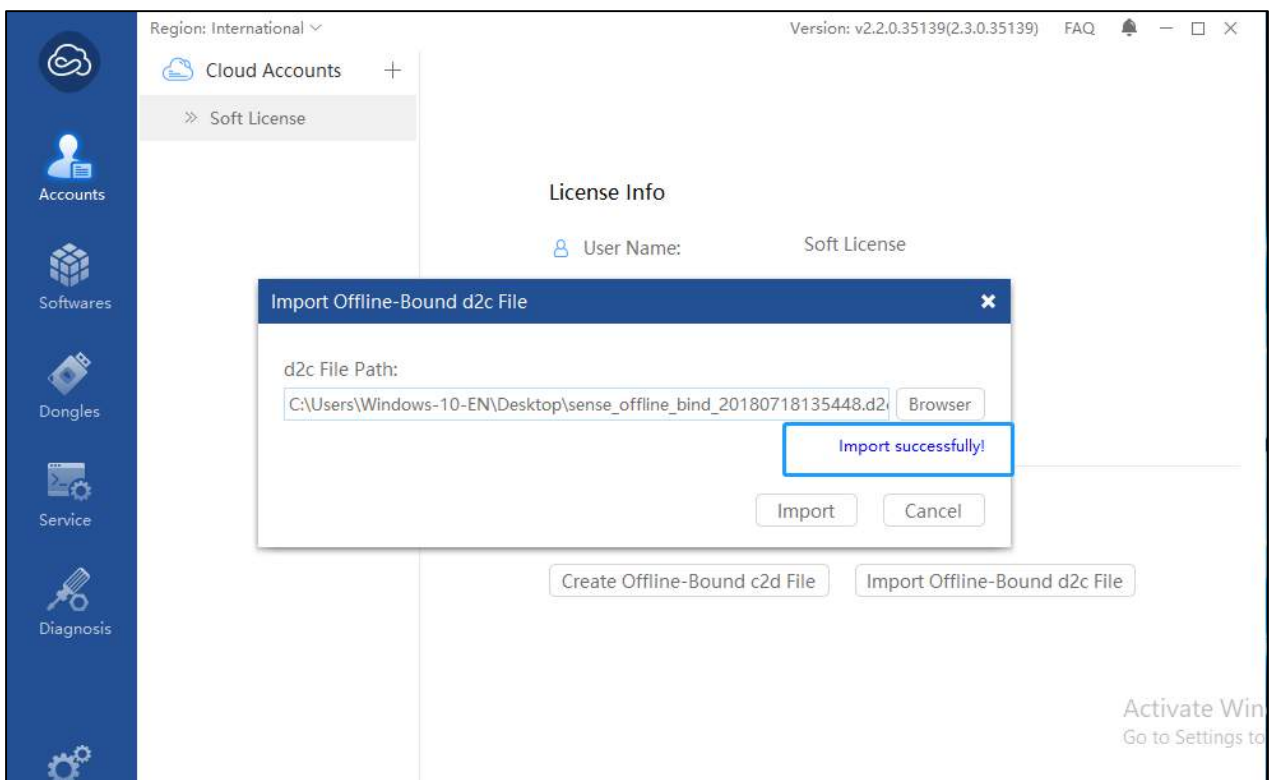
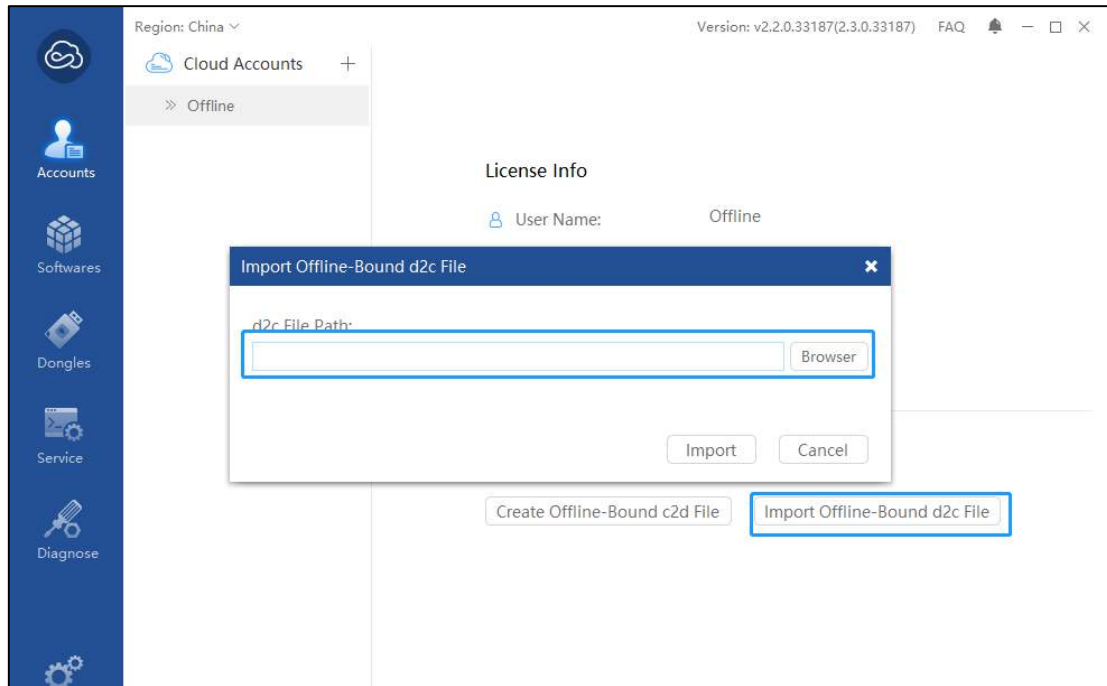


Note: 1. Click “**open d2c file directory**”, also will show the path of the file. 2. The valid time of this d2c package is 24 hour, please finish binding during this time.

6.2.3 Verify d2c file on the Offline computer

Now we need to copy d2c file to the computer offline and complete verification.

- ◆ Copy the **d2c** file generated from the computer that can connect to Internet (Online computer).
- ◆ Import it in to the computer that will use protected software that can't connect to internet (Offline computer).

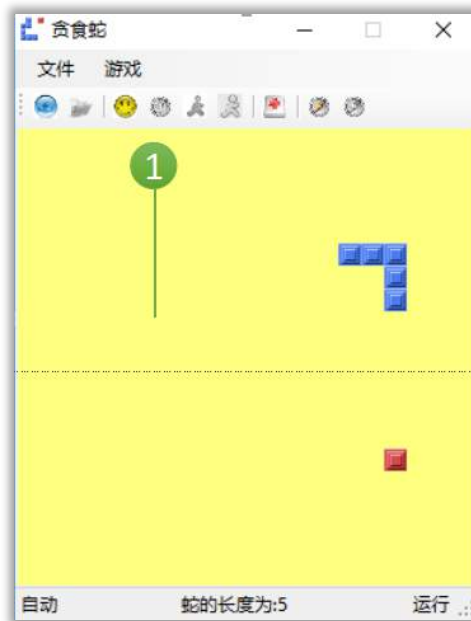


Now we have verified the license on the Offline computer.

If you have upload a logo in 3rd chapter when you create the product, you also can see the **logo** in the left top side.

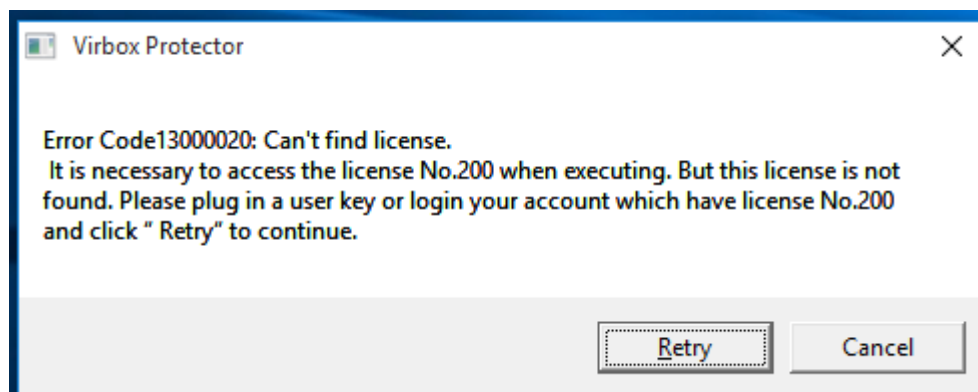


Execute with valid license on the offline computer, please see attached sample program;



It can be run successfully.

When valid license is not found or the binding is not succeed, the software execution will stop and pop up following window:



7. Virbox User License Tool

- The functions of Virbox User License Tool is setup security tunnel between Protected Software application and Soft License (Offline) which stored license, it is not necessary for developer to maintain this tool in daily operation. Virbox will provide continuously update/upgrade this tool and reduce developer workload which will help developer focus to develop their software only.
- Virbox User License Tool uses API for license verification and support device independently, Virbox User License Tool support license verification to all kinds of license repository: Hardware based Dongle, Soft Lock and cloud based lock.
- Virbox User License Tool support with Security API, Security driver software and other security technology, it provides dynamic security and protection to software being protected.
- Every software user must install the Virbox User License Tool for license verification, it is not necessary for software user to download and install developer SDK, and just install this user license tool for software execution, please go to following website to download latest version of Virbox User License tool.

Download Link: <https://lm-global.virbox.com/resource.html>

Any Question or Technical inquiry to Virbox solution, please visit Virbox LM website (<https://lm-global.virbox.com/>) for downloading latest Virbox Software and get online support from Virbox Technical team!

Summary

We have briefing for Software developer the whole Operation process of:

- How to Define and Well Plan a software Product and Product ID (License ID)=>**Virbox Developer Center**;
- How to use Virbox Protector to protect/Encrypt the software application=> **Virbox Protector**
- How to Create Sales Template in the **Virbox Developer Center**;
- How to Issue Soft license to software user =>**Virbox Developer Center**
- Executed protected Software with Soft License (Offline): License verification via Virbox User License Tool in the software user premise.

Appendix

Glossary

Virbox Elite 5 Acme	Virbox EL5 Acme is latest Generation of Virbox hardware Lock which improved both in Hardware performance and Security Performance. Virbox EL5 Acme is key component and License repository of Virbox LM solution. Virbox EL5 Acme can be used to be a standalone dongle without connect to Virbox LM, and also can be used seamless integrated with Virbox LM with additional and advance feature available. Virbox EL5 Acme support and suitable to deploy in tough industry environment. Software Developer can use this product to protect the Software copyright and IP. It will supports developer to protect software with most security technology, best performance and easy to use. For detail Specification of Virbox EL5 Acme, please refer to the Virbox EL5 Acme datasheet.
Virbox LM	Virbox LM is cloud based Software protection, License Entitlement solution and cloud service which provides software developer with lowest total cost ownership, Top Security of Software Copyright Protection and Easy to use in whole software life cycle. By use of Virbox LM, Developers can achieve extremely protection to software copyright/IP and flexible to issue license to software user with minimal effort and investment. Virbox LM One Stop Solution consist of following components: Virbox License Manager (Virbox Developer Center), Software Protection (Envelope) Tools (Virbox Protector), Local License Manger (Virbox Developer Utility) and Virbox License Service and User License Tool (Virbox User License Tool) and other support tools and documents. Virbox License Type supports: Hardware lock (Elite 5 Acme Dongle), Soft Lock (Soft license) & Cloud Lock (Cloud license) and suitable to deploy in different Software implementation scenario, on-line, offline, firewall isolated environment etc. Virbox provides flexible license mode to support ISV/software developer Software monetization which includes: Perpetual, trial, time based, feature on demand, subscription, concurrent, etc.
Virbox Developer Center	Virbox Developer Center consists of Developer website and Open API, It provides cloud based Service and website for License Issue and License Entitlement solution to software developer, Developer may use [Virbox Developer Center] (https://developer.lm-global.virbox.com/) to manage software product, user management, License Issue and Entitlement, Virbox

	Developer Center is online License solution for software developer, By use of Virbox Developer Center, it is not necessary for developer to build up in house License entitlement system and save the investment both in Capex and Opex.
Virbox Protector	Virbox Protector is the latest envelope tools for software protection and encryption, Virbox Protector integrated multi security technology including Virtual Machine, Code Snippet (Code Fragmentation) and other static and dynamic technology/Service and provides top secure protection level to developer's software, Developer may protect software automatically by select protection options without any coding competence and can save lot of workload and effort in software protection process.
Virbox Developer Utility	Virbox Developer Utility is local License Manager provided by Virbox LM, this Utility helps developer to issue the license to hardware lock (Virbox EL5 Acme) quickly. With Virbox Developer Utility, Developer will save capex and opex and not necessary to spend money to build up the In House License System.
Virbox User License Tool	A software installed in software user's site that can be used for license verification, update and transfer service, Virbox User License Tools works with Virbox License service and provides static and dynamic protection service to software installed in software user's site.
Product	Virbox Use "Product" refer to the Software application developed by software developer, software publisher which need to encrypt, protect the "product" by use of Virbox Protector.
Sales Template	The Sales mode for mature commercial software should support different sale mode and charging policy to meet the requirement of software users: pay per year/month/day, per usage, or pay for perpetual license. Above charge policy is independence with Product functions but depends on sales strategy to each market segment. So, Virbox designed the following "Concept" in Virbox License system to reduce duplicate workload for developer in protection and license process: *Sales Template*, developer may setup the different limitation to same product in different Sales Template to meet different sales and marketing strategy.
License ID	License ID is the unique indicator which used in the software protection and license issuing/distribution process in the Virbox LM system, which represents the License No. for software. For details introduction to Virbox License Management and License concept, please refer to "Virbox License System" Developer must assign associate License ID to the product created. And the

	License ID must not be duplicated assigned and used for other product. The License ID associated with specific product will be use unique ID No. and Indicator to presents for this product in all protection and license process. The protected software will verify the associated License when software user execute the software.
Account	Account sign up by "user" in Virbox developer Center or Virbox User Center, For software developer, they can sign up account in Virbox developer center to evaluate and test the Virbox Solution for software protection and licensing to their product; For Software user, they can sign up an account or assign a account in Virbox User center by software developer, this user account will be the unique identifier for user to use and verify license issued by developer;
Master Lock	Virbox Solution provides 2 kinds of hardware lock for software developer: Master Lock and User lock ; master lock is the unique Identity for each Software developer to protect software and issue license, it is mainly used for software encryption , protection, issue license and issue upgrade package to EL5 Acme user lock.
User Lock	User lock is the hardware based lock deliver to software user which contains the license file issued by Software developer, Virbox Provides following Virbox EL5 user lock to developer: EL5 Acme, EL5, EL5 RRTC, EL5 Genii.
Soft Lock	Soft Lock contains software license, saved in local safety environment. Which used to verify the protected software. Software developer may issue the Soft license from Virbox Developer Center to licensed software user account, Soft lock supports both online mode and offline mode.
Cloud Lock	The cloud license (cloud lock) is one of license type supported by Virbox LM, , Cloud License issued by developer from Virbox Developer Center and stored in Virbox Cloud and used to verify the protected software. The cloud license must be bound with the software user account. Users can use the protected software in online status (Access internet) and successfully logged in Virbox User Account.
API	Virbox SDK provides a complete package of APIs (Application Program Interface) for license management and licensing that will help software developer get the most licensing function out of the Virbox licensing system. Developers can flexibly implement their own encryption scheme by calling these APIs, and combine the functions of encryption, decryption and data area provided by

	Virbox license to realize deeply protection scheme and further increase the difficulty of cracking.
Control API	<p>This API is the management interface of Virbox License Manager, here referred to as Control API. Control API will mainly be used and provides the inquiry to the hardware lock (dongle)'s information, inquiry to license terms and status, inquiry to license session etc.</p> <p>More details to how to use Control API and use case, please refer to Virbox License Architecture.</p>
Runtime API	<p>The API interface to access Virbox license, referred to as Runtime API, is the most critical interface for the Virbox licensing system. Runtime API is the key API interface for developer to use and call API, the software of Developer will use this API to access license. More details to how to use runtime API and use case, please refer to Virbox License Architecture.</p>
d2c API	<p>Virbox SDK provides "Developer Utility", the local License Manager, for developer to issue the license to hardware lock (Virbox EL5) quickly. D2c API provides the interface to developer to issue license to hardware lock. Developer may call the "D2C API" to issue license with more flexible operation and flexible to combine different license terms.</p> <p>the d2c package created by d2c API is the only license update package which can be recognized and identified by Virbox EL5 Acme hardware lock, d2c package includes digital signature and encryption to the license terms which will guarantee the integrity and security of license data, on the other hands, the Virbox EL5 hardware lock provides the function to anti-replay, all d2c license update package will be used one time in the hardware lock only.</p> <p>Note: Calling d2c API is quite complicate process, more details, please refer to sample file.</p>
Open API	<p>Open API is the API that Virbox LM provides to developers to access the Virbox Developer Center. Open API can be used for integration with existed third party system in developer site, such as CRM or ERP system.</p> <p>Developers may use and call this OPEN API for user sign up, license issue, license distribution and other operations via third party system. For details, please refer to [Open API Guide V2.0/Virbox Developer Center]</p>
API Assistant	<p>API Assistant is a quick starter tool that helps software developers learn and understand the Virbox API. Execute the API via friendly GUI prompts message to view the API execution result, and can also get the demo code. You can</p>

	<p>quickly familiarize with API and functions without coding.</p> <p>API Assistant is suitable for developers to quickly learn and understand the usage/calling of the API and verify the feasibility of the encryption scheme.</p>
<p>Code Fragmentation Execution</p>	<p>"Code Snippet Execution" or we can named with more simple and easy understanding: "Code Fragmentation Execution". Code Snippet Execution will utilized latest and mature technology in "Extracting the coding" and select and extract large amount of "coding" from original program code, and executed in the security virtual environment after encryption and obfuscation and integrated with Virbox Encryption Compiling Engine, Virtualization and driving technology, all technology integrated together makes protected software in more security during execution process.</p> <p>The Code Snippet Execution" can be simply understand as breaking down the functions or modules of software into code of fragments and execute these "fragments" into a secure environment, so that the crackers can't start to use hacker tools to analysis and get the original code and execution result. "Code Snippet Execution" is major milestone and breakthrough in the Software Encryption and Protection field. In addition to high Security, Code Snippet also rely on and work with "Virbox License Service" middleware to shield the interface from the fundamental layer and also compatible with Virbox Cloud Lock and Soft Lock, and help developer to realized business agility with different kind of license type.</p>
<p>Anti-Hacker Service</p>	<p>The Anti-Hacker service is composed of kernel state protection component and suspicious feature database collection component. It will keep on upgrade and collect the suspicious features of hacker, which will be used to help to protect the software being protected. And will protect the memory from being tampered. To make the software protection from static to be dynamic.</p>

Let's Start Your Software Protection and Licensing Journey!

Virbox will help you to protect your software Copyright/IP Value and Create Revenue for you.