

Guide to Triangle MicroWorks Licensing

Manual Revised: November 2023

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1. Overview of Licensing

1.1 Introduction

Triangle MicroWorks (TMW) provides licensing for a number of applications for testing communications protocols. Starting in 2014, these applications are protected with a sophisticated and flexible licensing system provided by Thales Inc. (formerly SafeNet Inc.) When you purchase a license from TMW, you are entering into a contractual agreement which provides you with the right to use the TMW application for an unlimited amount of time provided you agree with and abide by the terms of the licensing agreement.

TMW also provides advanced software libraries which are used to implement communication protocols. These libraries are licensed per target application.

1.2 License Options for Applications

TMW provides three types of license options for its software applications. Applications can be licensed:

- Per seat, using a software-based license
- Using a hardware-based license (dongle)
- Network-based floating license.

A single seat software based license is tied to the PC on which the license is installed. The license will only work on that PC unless it is transferred to another PC through a process that requires special license files to be created and moved between the two PCs. TMW provides special utilities to enable the license to be transferred.

A dongle based license can be moved between PCs simply by moving the USB dongle. The application will only function on the PC that has the dongle attached.

A network-based floating license will allow any PC on the same local network as the license server to access the license. A network license can be purchased and configured to allow multiple PCs to run the application simultaneously. This is called concurrency. For example, if a license is purchased that includes N concurrent users, then a single license is installed that provides access to the application for up to N users. This license will allow up to N users on the local network to run the application at the same time. A dongle option is not available for network licenses.

Whenever a license is installed on a PC, a run-time environment (RTE) is installed for the Sentinel licensing system. This RTE manages the licenses for all TMW applications on the PC and enables network access to the licenses (if applicable). The RTE also includes tools for managing and diagnosing license issues. More information on using these tools is provided later in this document.

1.3 License Options for Software Libraries

Licensing for software libraries is controlled through license contracts. The libraries are licensed per vendor product model. The licensing of software libraries is not within the scope of this document. Please contact Triangle MicroWorks sales department at sales@trianglemicroworks.com to discuss the software library products.

2. Trial License

2.1 Installing a Demo Version

All TMW applications are provided with either a 10-day or a 21-day trial license that works on a physical PC. The trial license provides full functionality of the applications.

Once you have successfully downloaded an installer for a TMW application, simply run the installer. Depending on the application, the installer will ask a series of questions relating to the details of the installation and will then place the executable and associated file in a directory called *Triangle MicroWorks* in the *Program Files* directory. The installer will also place a shortcut to the application on desktop.

If you choose to purchase the application, a product key will be sent to you to convert your trial license into a permanent license. If you do not purchase the product, you can remove the application by using the Add/Remove Programs tool in the Control Panel. Removing and reinstalling the application will not restart the trial period.

2.2 Trial License on a Virtual Machine

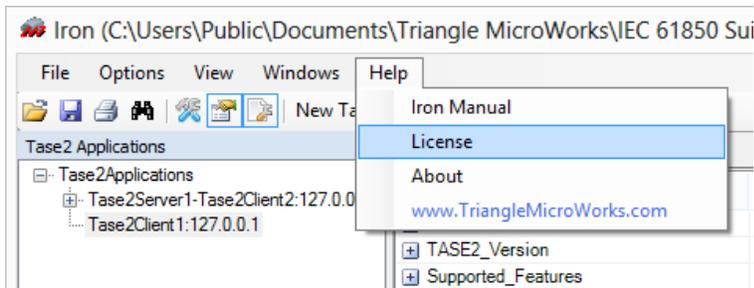
Note that the trial license that comes with the installer **does not work on a Virtual Machine**. You can install the application on a VM but when the application is run, an error message will be displayed that says a virtual machine has been detected.

If you want to perform your evaluation on a VM, please contact our support group at support@trianglemicroworks.com and we will be happy to provide you with a time limited product key. This product key will need to be activated on the VM following the same procedure for activating a purchased, seat license.

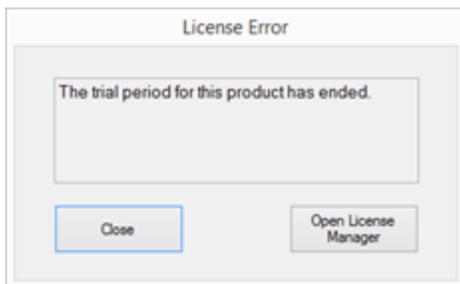
3. Licensing Tools

3.1 TMW License Manager

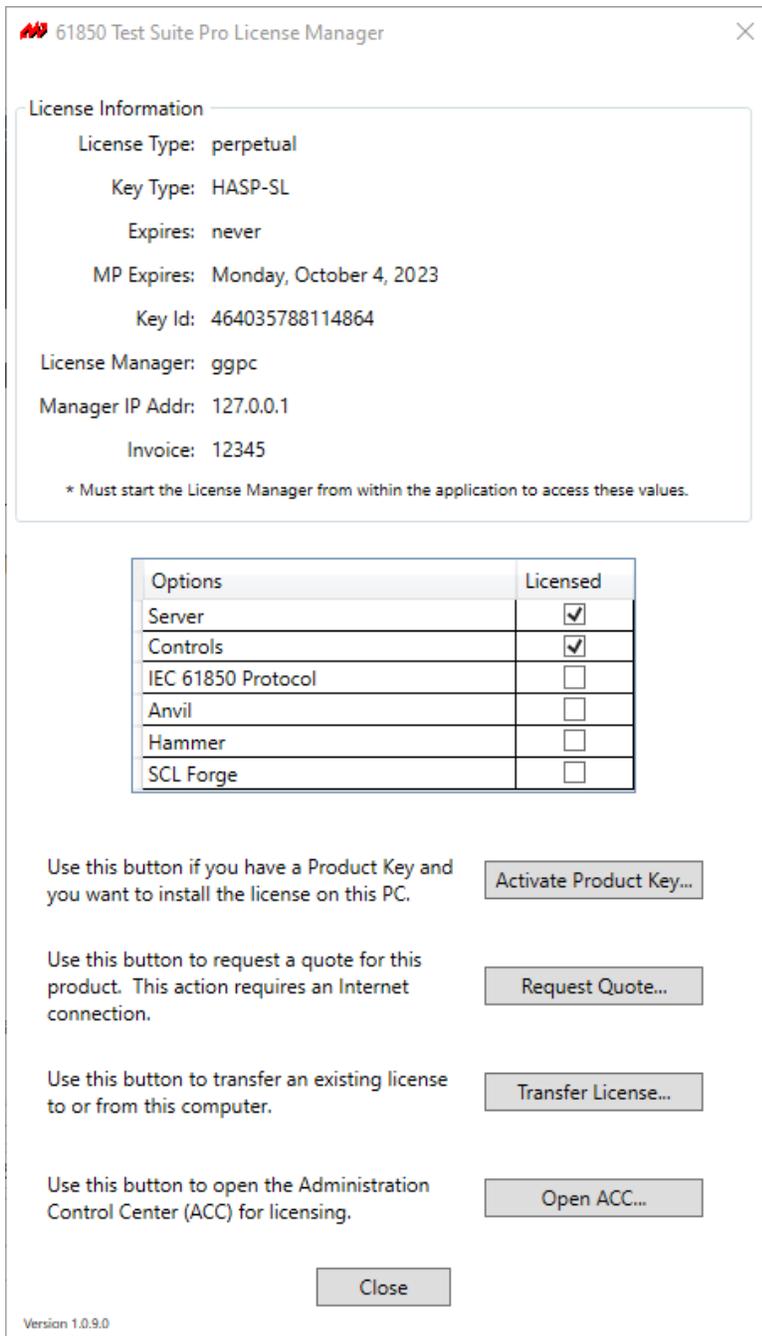
Each TMW application provides access to a License Manager. The License Manager is typically accessed through the Help Menu. The process is slightly different in the Distributed Test Manager (DTM) and is explained in the following section entitled [Starting the License Manager in DTM](#). In the example below, selecting the License option from the Help menu opens the License Manager.



If the TMW application trial period has expired or there is an error condition that does not allow the application to acquire a license, then a dialog box is displayed that contains a button that will launch the TMW License Manager.

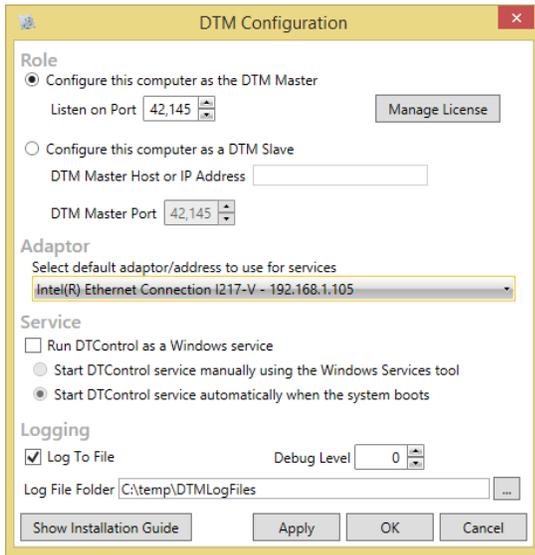


Whether selected from the menu or from the dialog box button, the License Manager dialog will appear as shown below. This example is for the Test Suite Pro application which has three available options.



3.1.1 Starting the License Manager in DTM

Licensing for the DTM system is configured via the DTM Configuration Tool which is run automatically during installation and can be launched at any time from the Windows Start Menu. Only the computer which is configured as the DTM Master needs to be licensed. To launch the License Manager press the 'Manage License' button. Once the License Manager window is displayed, other licensing functions of DTM are the same as other TMW products described in the remainder of this document.



3.1.2 License Information Section

The License Information section of the dialog contains the following items:

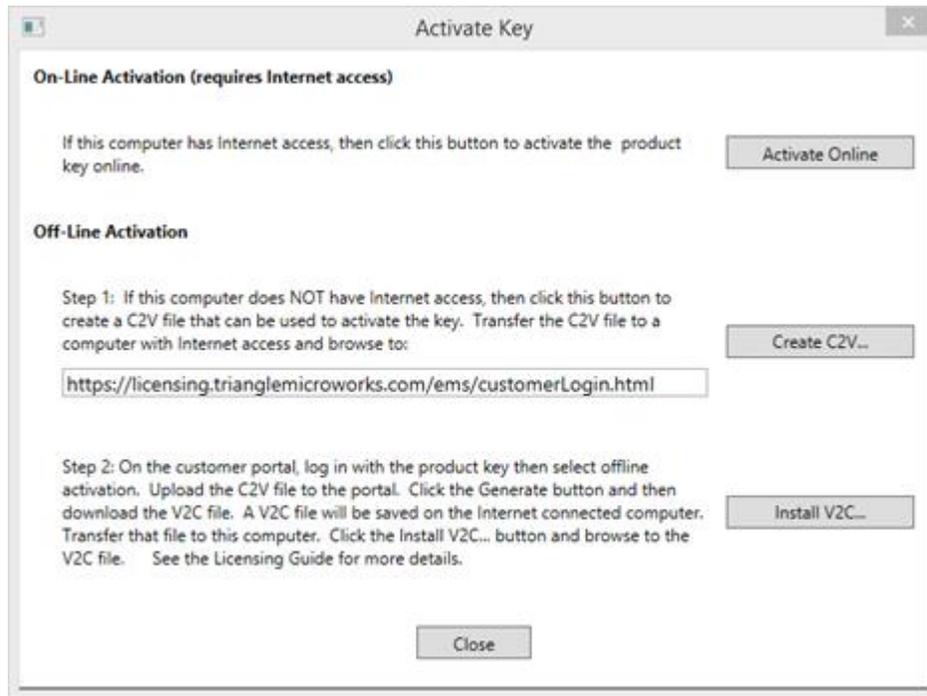
<i>License Type:</i>	This value will be either trial, permanent, or timed.
<i>Key Type:</i>	This indicates whether the license is software based or is located on a dongle. If the license is software based, the key type will be reported as HASP-SL. If the license is on a dongle, the key type will be HASP-HL.
<i>Expires:</i>	This is the date a trial or timed license will expire.
<i>MP Expires:</i>	This is the date that the current maintenance plan will expire for the license. This date is not applicable for trial licenses. The license will only work with versions of the application that were created before this date.
<i>Key Id:</i>	This is the identifier for the license.
<i>License Manager:</i>	This is the name of the computer where the license resides. For single seat type licenses, this will always be the local computer.
<i>Manager IP Addr:</i>	This is the IP address of the computer where the license resides.
<i>Invoice:</i>	This is the number of the invoice on which the license was purchased or on which the most recent maintenance plan was updated.

3.1.3 License Options

Following the License Information area, the License Manager will display a grid that shows all of the options available for the application. The options that are currently licensed will be checked. Some applications do not have any options. If no options are available, this grid will not be displayed.

3.1.4 Activate Key Button

Use this button to activate a Product Key or a Product Update Key that you have received from TMW. Pressing this button brings up this dialog box:



The Activate Key dialog box provides two methods for activating a key:

- 1) The On-Line activation method requires an Internet connection. When the Activate Online button is pressed, the application will ask for your product key. More information on this process is provided in the Section called [Activating a Key Using the Internet](#).
- 2) Activating a key without Internet access requires a two-step process and involves transferring files between the target computer and a computer that does have Internet access. The first step is to use the Create C2V button to create a file on the target computer that contains a fingerprint of the PC. The file will have an extension of “c2v” which stands for “customer to vendor”. This file must be uploaded to a webpage which will then create a “v2c” file on an Internet capable PC. The file will have an extension of “v2c” which stands for “vendor to customer”. This file must be returned to the target PC and installed using the Install V2C button on the Activate Key dialog. More information on this process is provided in the Section called [Activating a Key Offline](#).

3.1.5 Request Quote Button

This button displays a dialog that can be used to request a quote for the product from TMW. This option is particularly useful if you have a trial version and would like a quote to purchase a license. Once you have filled out the form and selected the options you are interested in, click the Email button to send the information to TMW. If you do not have an Internet connection, you can click the Save As button to save the information to a file which can be transferred to a PC with email access. The file should then be sent to sales@trianglemicroworks.com.

This is an example of a quote form for the SCADA Data Gateway product.

Protocols	Master	Slave
IEC 60870-5-101	<input type="checkbox"/>	<input type="checkbox"/>
IEC 60870-5-102	<input type="checkbox"/>	<input type="checkbox"/>
IEC 60870-5-103	<input type="checkbox"/>	<input type="checkbox"/>
IEC 60870-5-104	<input type="checkbox"/>	<input type="checkbox"/>
DNP3	<input type="checkbox"/>	<input type="checkbox"/>
Modbus	<input type="checkbox"/>	<input type="checkbox"/>
IEC 61850	<input type="checkbox"/>	<input type="checkbox"/>
TASE.2 / ICCP	<input type="checkbox"/>	<input type="checkbox"/>

OPC Components	Client	Server
Data Access	<input type="checkbox"/>	<input type="checkbox"/>
XML Data Access	<input type="checkbox"/>	<input type="checkbox"/>
Alarm and Event	<input type="checkbox"/>	<input type="checkbox"/>

3.1.6 Transfer License Button

The licensing system allows for a license to be transferred or “re-hosted” to a different PC. This transaction can be completed without contacting TMW’s support team as was required in earlier licensing systems.

Currently, the process of transferring a license on Windows Operating System must be performed using a utility called RUS_TMW.exe which is located under the *Triangle MicroWorks* directory in the *Program Files (x86)* directory.

For SCADA Data Gateway installations on Linux Operating Systems, transferring a license requires the use of the GTWSettings Utility.

Clicking the Transfer License Button will simply display a dialog box that repeats this information. More information about the RUS_TMW.exe utility is available in the Section called [Remote Update System](#).

3.1.7 Open ACC Button

The Sentinel RTE provides a very useful service called the Admin Console Center (ACC). This service has a web interface for managing the licenses for your TMW applications and any other products that use Sentinel licensing. When you click the Open ACC button, the following browser window opens.

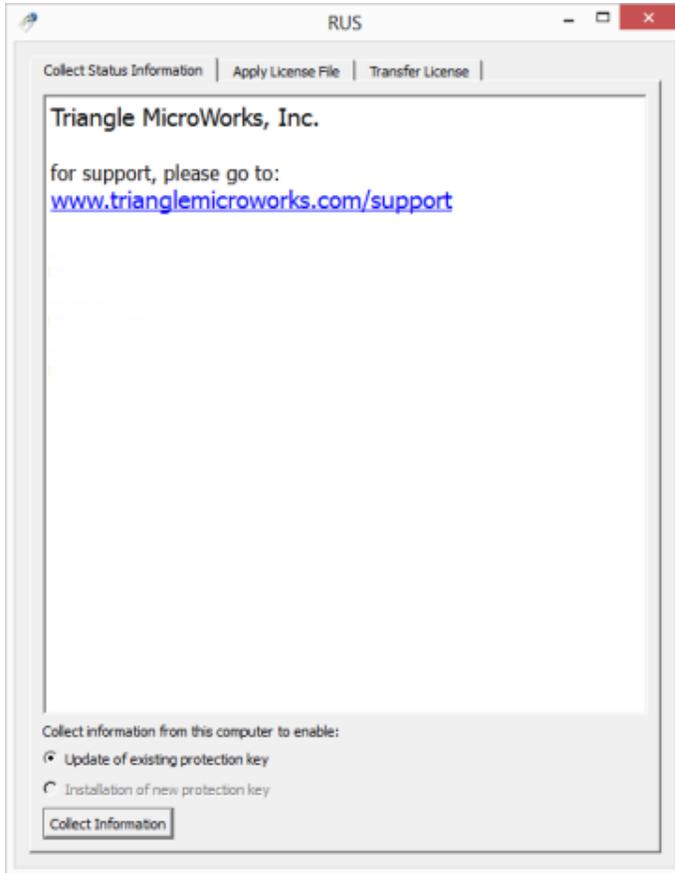
Sentinel Admin Control Center										
Sentinel Keys Host Name: greg										
Location	Vendor	Key ID	Key Type	Configuration	Version	Sessions	Actions			
Local	102099 (102099)	1027926779497330315	HASP SL AdminMode		9.13		Products	Features	Sessions	Certificates
Local	102099 (102099)	1142777674022246310	HASP SL AdminMode		9.13		Products	Features	Sessions	Certificates
Local	102099 (102099)	817761062986328742	HASP SL AdminMode Rehostable		9.13		Products	Features	Sessions	Certificates
Local	102099 (102099)	970371358018615024	HASP SL AdminMode Rehostable		9.13		Products	Features	Sessions	Certificates

This web page provides information on all licenses that are visible to your computer including those that are installed locally and on your network. For each license, you can see the products contained in the license, the features available to each product, and the currently open sessions on each license. In addition, you can use this tool to detach a network license from the license pool so that it can be used off the network. You can also control access to licenses on you PC from other PCs on the network and limit your PCs ability to see other license servers elsewhere on the network. More details are provided in the Section on [Using the Admin Control Center](#).

3.2 Remote Update System

The Remote Update System (RUS) is a simple utility that is installed with a TMW application on Windows Operating Systems. This utility can install a Product Key or a Product Update Key. It can also be used to transfer a key from one PC to another. The utility is called RUS_TMW.exe and is located in the same location that your TMW application is installed (*Triangle MicroWorks* under the *Program Files(x86)* directory). The TMW website (trianglemicroworks.com) offers a video on how to transfer a license in the Product Training section.

When you run the RUS_TMW.exe application, the screen shows this:

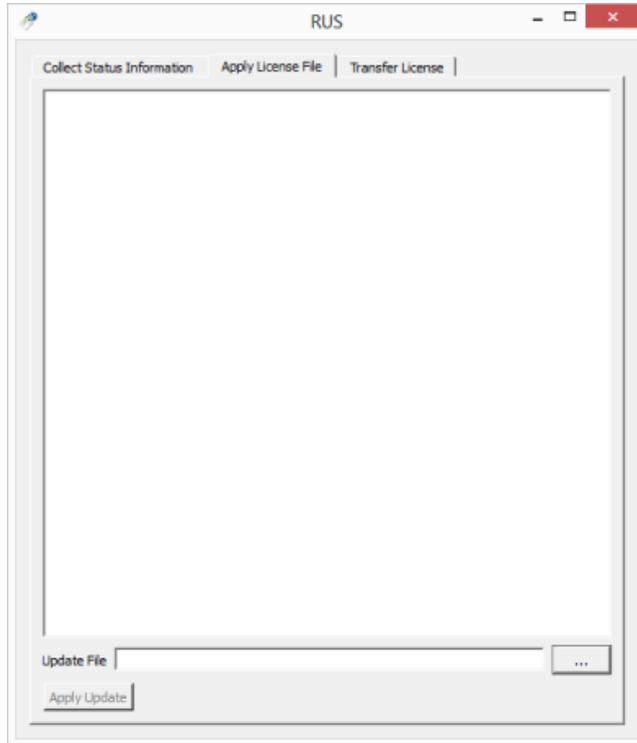


3.2.1 Collect Status Information Tab

The Collect Status Information tab is used to create a C2V file for updating a specific protection key on your PC. If your PC has multiple protection keys from TMW, you will be asked to select the appropriate key. This is important if you have purchased an extension to a Maintenance and Enhancement plan. Ensure that you have selected the correct key so that the plan extension is applied to the correct license. If you are activating your product for the first time, use the TMW License Manager rather than this utility to generate a C2V fingerprint file.

3.2.2 Apply License File Tab

The Apply License Tab is used to install a V2C file that you have received from TMW. This could be the result of performing an Offline Activation or a TMW support team member may have sent you a V2C. The action of the Apply Update button on this tab is the same as clicking the Install V2C button on the Activate Key dialog button shown in the Section called [Activate Key Button](#).

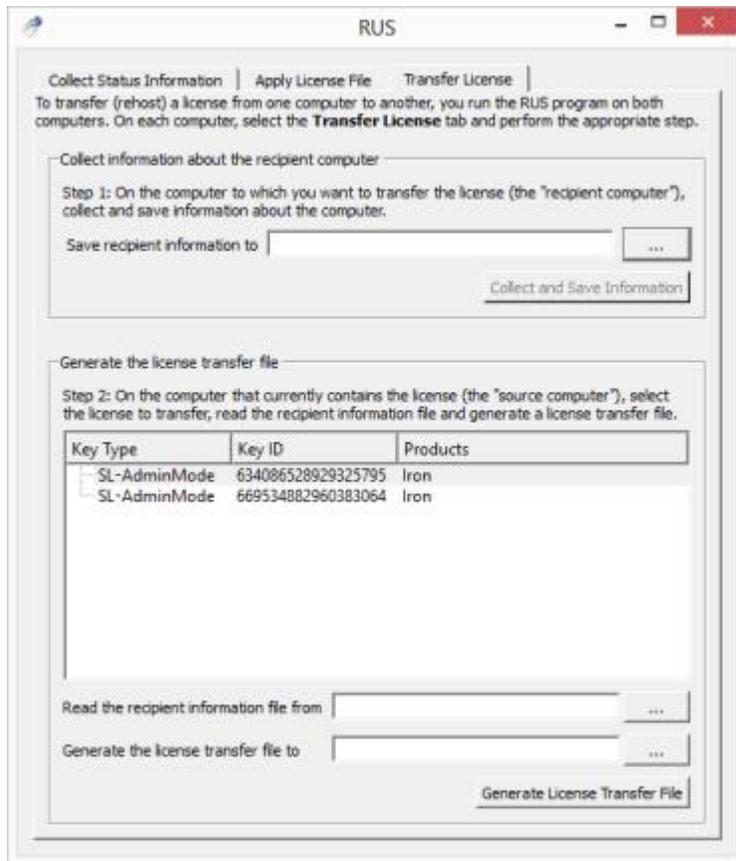


3.2.3 Transfer License Tab

The Transfer License Tab is used to move a license between computers. All TMW applications are set up to allow re-hosting. Currently, using the RUS_TMW.exe utility is the only method available to transfer a license between PCs.

In order to transfer a license from a Source computer to a Destination computer, use the following steps:

1. Install the application on the Destination computer. After installation, the application will have a 21 day trial license and will have the Sentinel RTE installed.
2. Run the RUS_TMW.exe utility on the Destination computer. Select the Transfer License Tab, choose a destination file, and click the Collect and Save Information Button to generate a Recipient Information file.
3. Move the Recipient Information file to the Source computer.
4. Run the RUS_TMW.exe utility on the Source computer (i.e., the computer the license is being transferred from). Select the Transfer license tab, and in the Step 2 area, browse to the Recipient Information File, so that it is shown in the "Read the recipient information file from" field.
5. In the Step 2 area, select the key to move in the grid. In the example image below, there are two licenses that are available to move. Make sure you select the correct key. Use the Admin Control Center to help determine the correct key ID if necessary.
6. Select a file name and path using the browse button so that the file name is shown in the "Generate the license transfer file to" field. Click the Generate License Transfer File button. The file will be created on the Source computer. This file will have a ".h2h" extension.



7. Finally, move the Transfer file to the Destination computer and browse to it using the browse button on the Apply License File Tab within RUS_TMW.exe. Click the Apply Update button and license will be moved.

Note that after the Transfer file is created, your license is now in this file and nowhere else. Do not lose this file as it cannot be recreated. If this file is lost before it is applied to the destination computer, then your license is lost.

4. Purchased Licenses

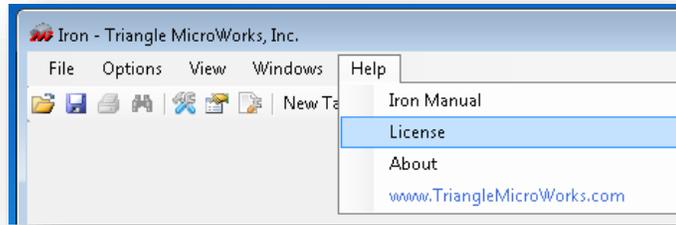
4.1 Product Key Activation

When you purchase an application from TMW, you will receive a Product Key. This Product Key must be activated on the PC that will hold the license for the application. The Product Key can be activated on the target PC through an Internet connection or by using a manual, offline process.

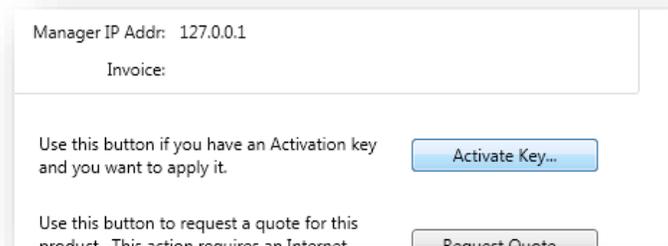
4.2 Activating a Key Using the Internet

The licensing system provides a convenient way to activate a license if you have an Internet connection. To activate the key Online, follow these steps:

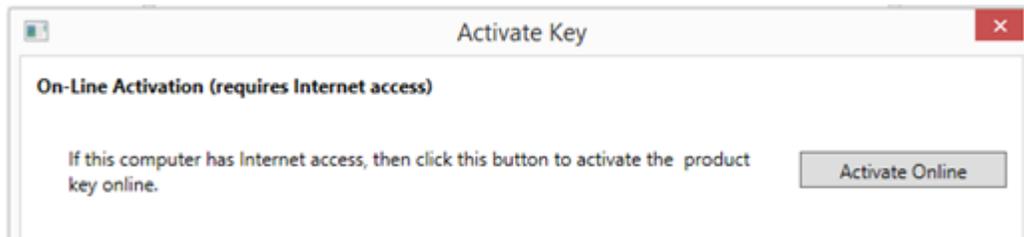
1. Open the License Manager from the Help Menu in the TMW application.



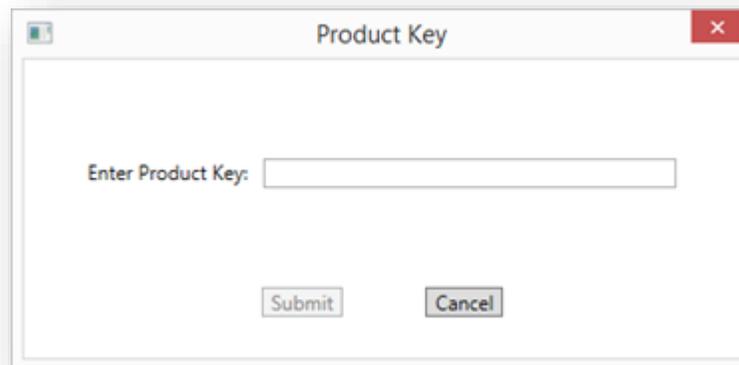
2. The License Manager Window will appear. Click the Activate Key Button.



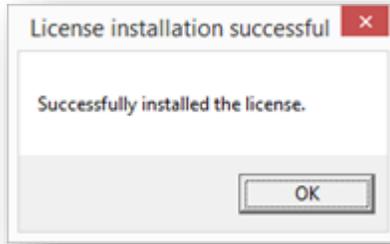
3. On the dialog box that appears, click the Activate Online Button.



4. A dialog box will appear requesting the product key that you received from TMW after purchasing the product. Enter the product key in the text box and click the Submit button.



5. The application will communicate with the TMW license server, and a license will be installed on the PC. If the process is successful, the following message will be displayed. If there are any problems with the product key or with the Internet connection, then an error message will be displayed.

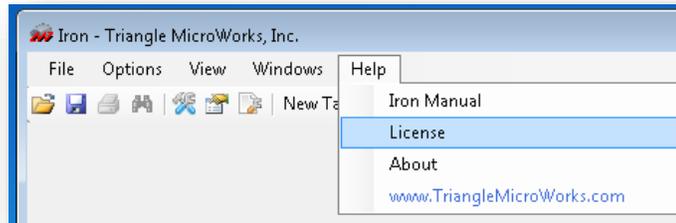


4.3 Activating a Key Offline

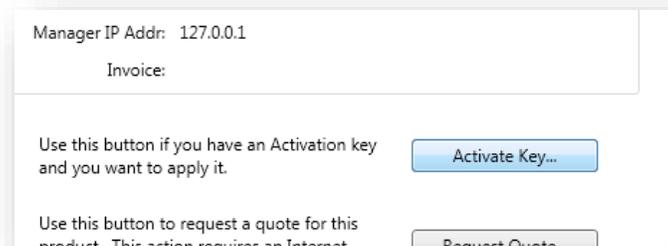
If you are trying to activate a Product Key on a PC that does not have Internet access, follow these directions.

To activate the key Offline, follow these steps:

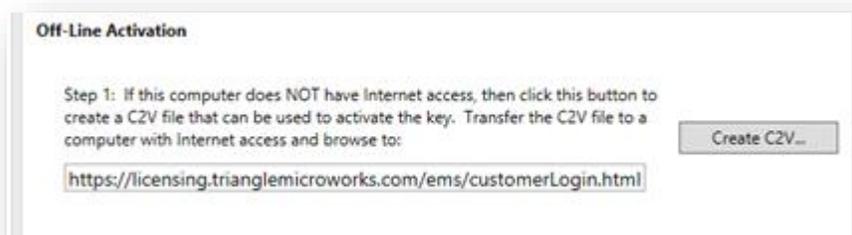
1. On the PC where the license will be installed, open the License Manager from the Help Menu in the TMW application.



2. Click the Activate Key Button on the License Manager.



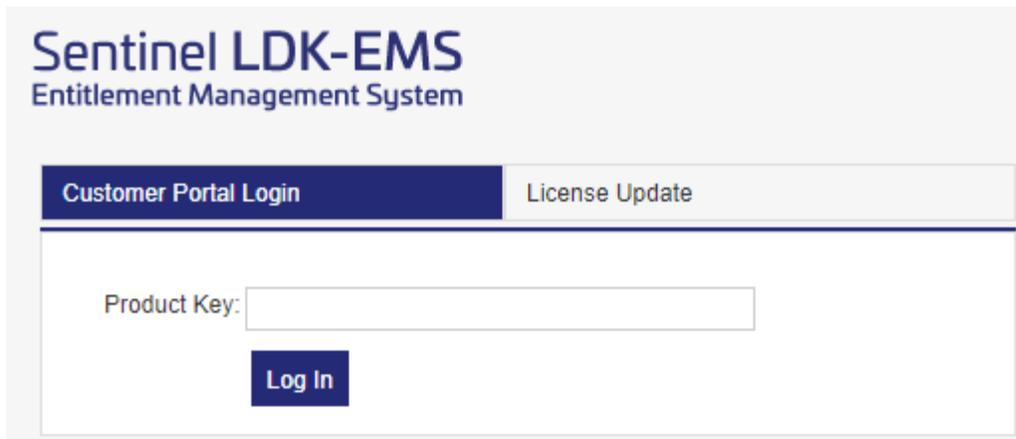
3. Click the Create C2V Button.



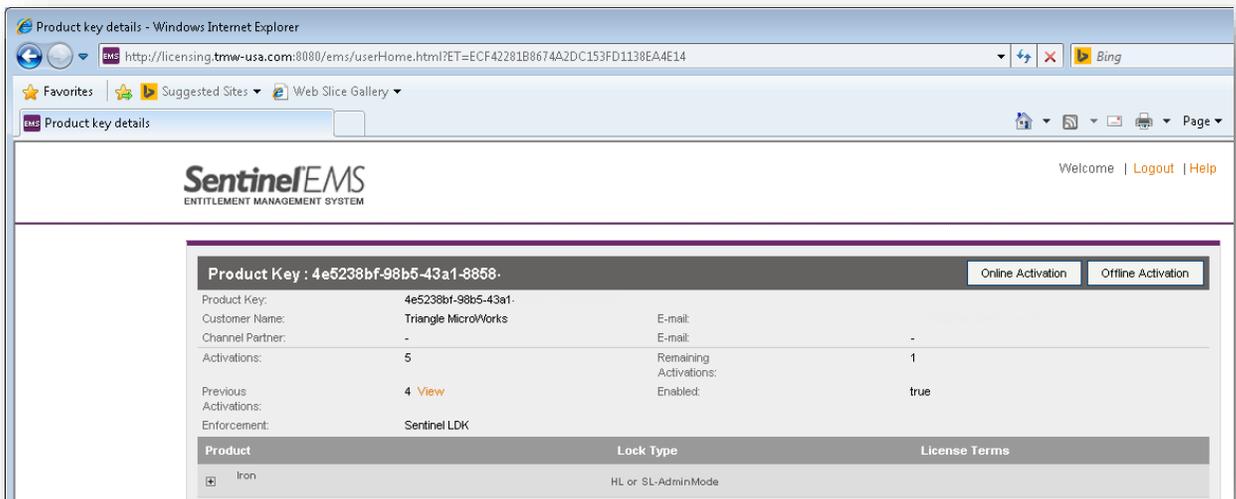
- A standard Save dialog box will open. You can save the file to any convenient location and you can name the file anything you like, but the extension must remain “.c2v”. This stands for “customer to vendor” and will be recognized by the license server at TMW.
- Save the file using the Save Button. Once the file is saved, the file must be moved to a PC that has Internet access to perform the next steps.
- On the PC with Internet access, open a browser and go to:

<https://licensing.trianglemicroworks.com/ems/customerLogin.html>

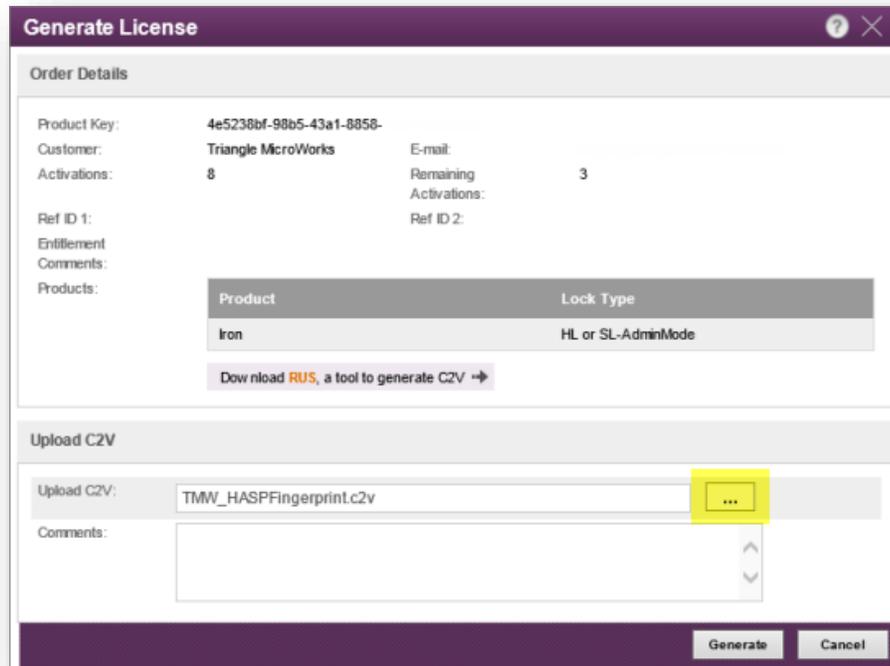
- The browser will display the Customer Login Portal. Enter the Product Key you received from TMW and click the Login Button.



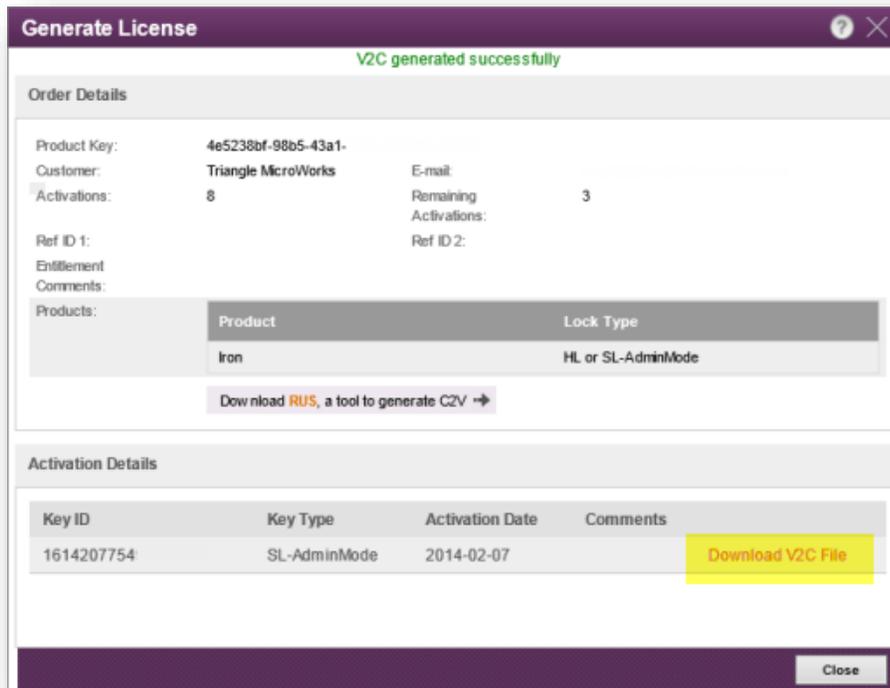
- Review the license information. There should be a non-zero value in the Remaining field indicating that one or more activations are available for this key. If everything is correct, click the **Offline Activation** Button.



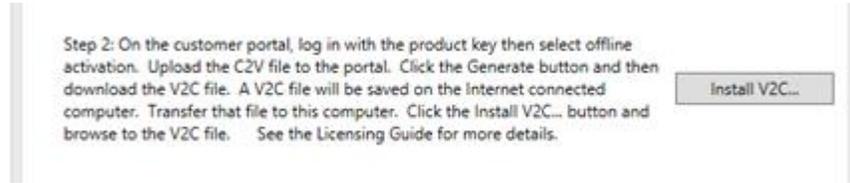
- The Generate License dialog box will display. Click on the browse button (highlighted in yellow) in the Upload C2V section and select the file you created a few steps earlier from the standard Open dialog box that opens. When the correct file is shown in the Upload C2V section, click the Generate Button.



10. The license is generated on the server and now needs to be downloaded. Click the Download V2C File link (highlighted in yellow). This will either save the file to your Downloads directory or open a Save As dialog box, depending on your browser settings. You can save the file anywhere and rename it if you like, but the extension must remain “.v2c”. This stands for “Vendor to Customer”. Do not try to run the file.



11. The .v2c file is saved to the PC. This file needs to be moved to the PC where the license will be installed. If the license will be installed on a different PC, move it to any convenient directory on that PC.
12. On the PC where the license will be installed (which now contains the .v2c file), reopen the License Manager window from within the TMW application by selecting License from the Help menu.
13. Click on the Activate Key Button, then click on the Install V2C Button on the Activate Key dialog box.



14. A standard Open File dialog box will appear. Browse to the .v2c file that you copied to the PC and click the Open Button. The key will be installed and a message will be displayed indicating the operation was completed. The TMW application will need to be restarted for the new license to take effect.

4.4 Activating a Key for a Network License

The procedure for activating a network (floating) license is the same as the procedure for a single seat license. However there are some additional considerations for where to activate the license. Other users who connect to the network license (remote users) will only be able to use the network license if the PC where the network license is installed is available to the network and running. However, once a license has been obtained from the network license server, it can be detached in order to allow use of the product when it is not connected to the network. This feature is useful, for example, for a field technician who needs to use the application at a remote site. See the section called [Detaching a Network License](#) for more information on this option.

For network licenses, the best solution is to install a copy of the application on a server and then activate the network license on that server. The license can even be installed on a virtual machine provided the VM has full access to network.

TMW applications and licenses can be installed on a virtual machine (VM), however applications will not run with a trial license on a VM. Since a trial version of the application cannot run on a VM, you will need to open the license manager from the dialog box that displays when the TMW application tries to start running.

It is possible to install the Sentinel Runtime Environment on a license server machine without installing the TMW application. If you want to host a network license without having the TMW application installer, contact our Support department and request a copy of the Sentinel RTE installer. A copy will be provided without cost.

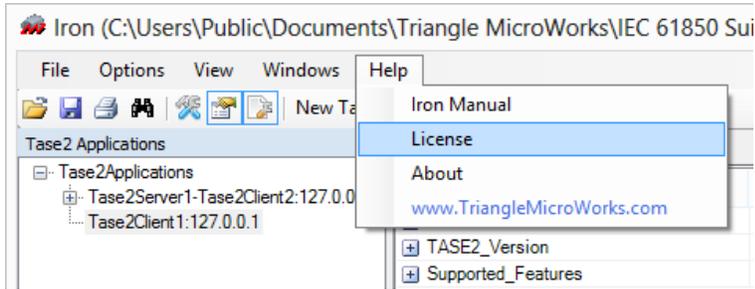
5. Using the Admin Control Center

5.1 Accessing the Admin Control Center

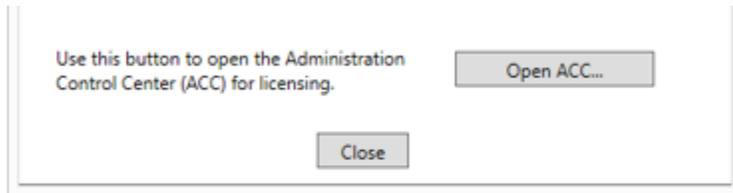
The Admin Control Center (ACC) is a powerful and convenient tool for managing the licenses for your TMW applications. Access to the tool is through a web browser. When a TMW license is installed on a PC, the license run time environment is also installed. The ACC is part of that environment.

The ACC allows you to see the status of your licenses and control how other computers on the local network see your licenses and whether you can see the licenses on other computers on the network. The ACC also allows network licenses to be detached and used on PCs that do not have access to the local network, which is a great option for service technicians working in remote locations. Finally, the ACC also help to diagnose any issues that may arise involving your licenses.

The ACC can be displayed from within a TMW application or by browsing directly to the web page. From within an application, click on the Help menu and then select the License option.



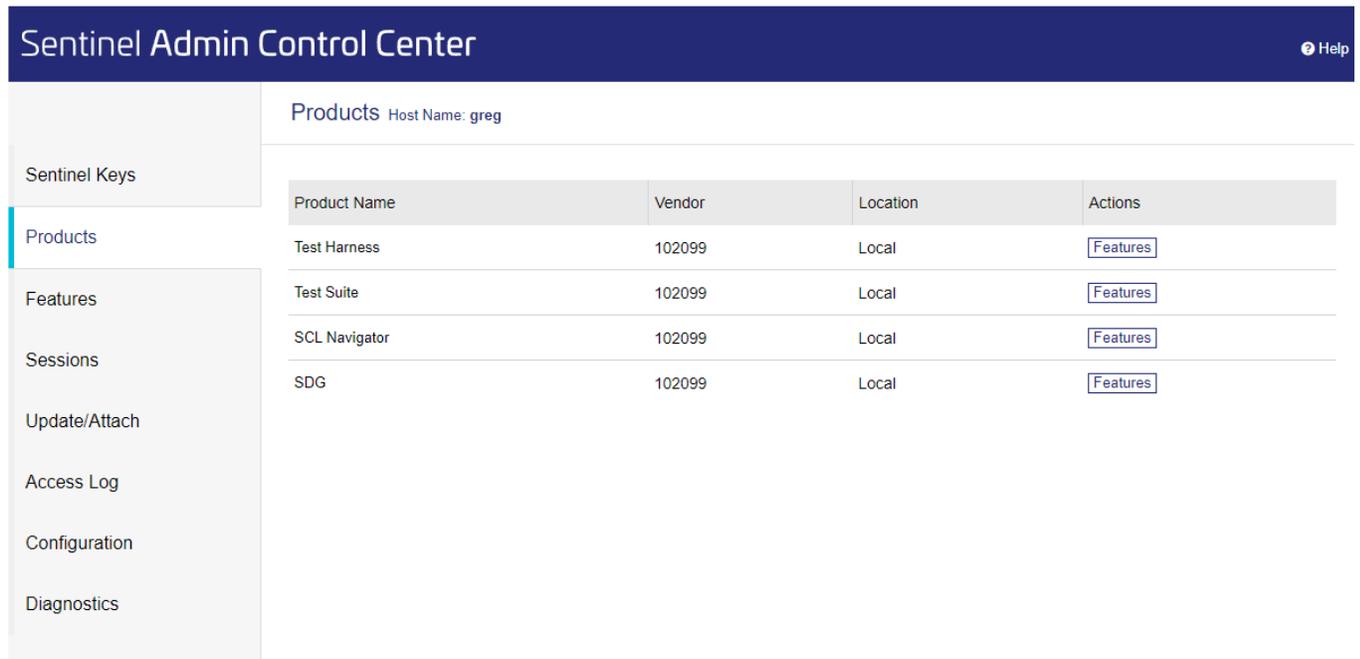
From the license manager window, click on the Open ACC.. Button.



You can also go directly to the ACC by typing this address into a web browser:

<http://localhost:1947/>

The web page will look similar to this example:



Use the links on the left side of the page to view the available pages. You can examine the license keys available both locally and on the network. You can also click to pages to see available products, features, and sessions. Sessions are listed when an application logs into a feature. Applications log into features automatically and there is no user action required.

5.2 Managing Licenses

The first link in the option list shows the licenses keys that are available to this PC. In the example below, a single license is available. The key type is HASP SL which indicates that the key is software based. If the key was on a dongle, the type would be HL.

Note that the Vendor number is 102099. This is always the Vendor number of TMW products.

The buttons on the right side of the row allow you to see which products and features are available for this key. The Session button allows you to see information on what machines are using this key. This is only relevant to network license, not for single seat licenses.

Sentinel Keys Host Name: greg							
Location	Vendor	Key ID	Key Type	Configuration	Version	Sessions	Actions
Local	102099 (102099)	10279267794973	HASP SL AdminMode		9.13		Products Features Sessions Certificates
Local	102099 (102099)	1142777674022	HASP SL AdminMode		9.13		Products Features Sessions Certificates
Local	102099 (102099)	8177610629863	HASP SL AdminMode Rehostable		9.13		Products Features Sessions Certificates C2V
Local	102099 (102099)	9703713580186	HASP SL AdminMode Rehostable		9.13		Products Features Sessions Certificates C2V

If you click on the Products button, the following screen will appear.

Products Host Name: greg			
Product Name	Vendor	Location	Actions
Test Harness	102099	Local	Features
Test Suite	102099	Local	Features
SCL Navigator	102099	Local	Features
SDG	102099	Local	Features

Here the product Iron is listed for the key. This is the only product in the key. Generally, TMW will only associate a single product to a key. Click the Feature button on this row to see the features in this particular key. If you click on the Feature link in the Options block, all features available to the PC will be displayed. Here is the result on clicking the button on the Iron row in the table:

Features Host Name: greg										
Filter by: Key: 10279267794973 Vendor: 102099										
Product	Feature	Location	Access	Counting	Logins	Concurrency	Detached	Restrictions	Sessions	Actions
	0	Local	Loc Display	Station		∞		Time Period (90 Days) Not started		Sessions
16 SCL Navigator	66 SCLNav Base Seat	Local	Loc Display	Station		∞		Time Period (10 Days) Start: Mon Nov 20, 2023 11:14 End: Thu Nov 30, 2023 11:14		Sessions
16 SCL Navigator	47 Demo Base	Local	Loc Display	Station		∞		Time Period (90 Days) Not started		Sessions

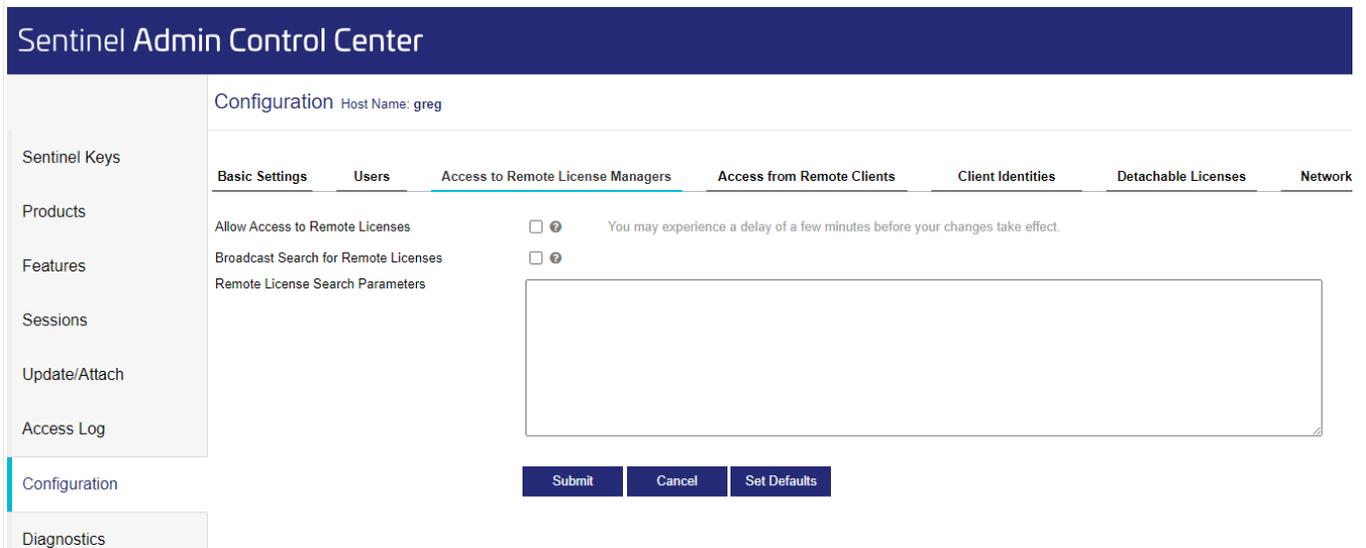
This page shows that there is a single feature for this product called Iron Base Seat. This means that the license is a fixed seat license. If it was a network license, the feature would have been called Iron Base Floating. This is a trial licenses which is evident from the Restrictions column. This trial has not started, otherwise the end date would be shown. Here are portions of the image at higher zoom values:

#	Product	Feature	Restrictions
1	4 Iron	1 Iron Base Seat	Time Period (21 Days) Not started

5.3 Managing Access

When the licensing run time environment is installed, it is configured to allow the PC to look for licenses on other license managers on the local network and to allow other license managers to see its collection of licenses. Both of these settings can be easily changed.

To control the PC’s access to other licenses managers, open the ACC and click on the Configuration link in the Option area. Then click on the tab labeled Access to Remote License Managers. The page shown below will display:



Uncheck the check boxes for Allow Access to Remote Licenses and Broadcast Search for Remote Licenses as shown above. Click the Submit Button to make the change. This will prevent the PC from trying to communicate with other licenses managers on the network.

If you are trying to access a network license on a different PC somewhere on your subnet, but the application does not find the license, enter the IP address of the PC that contains the license in the “Specify Search Parameters” box. You can also try clicking the Broadcast Search for Remote Licenses checkbox and the Aggressive Search for Remote License checkbox although these options do increase network traffic.

To prevent other license managers on the network from seeing the licenses on the PC, open the ACC and click on the Configuration link in the Option area. Then click on the tab labeled Access from Remote Clients.

Unclick the check box for Allow Access from Remote Clients as shown above. Click the Submit Button to make the change. This will prevent other license managers on the network from seeing the PC and its licenses. This option is only a consideration if the local PC is hosting network license(s).

5.4 Logging

By default, the licensing run time environment is installed with logging turned off. Logging can be enabled for debugging purposes by clicking on the Configuration link in the Options area and then the Basic Settings tab of the ACC as shown below.

Sentinel Admin Control Center

- Sentinel Keys
- Products
- Features
- Sessions
- Update/Attach
- Access Log
- Configuration
- Diagnostics

Configuration Host Name: greg

Basic Settings
Users
Access to Remote License Managers
Access from Remote Clients
Client Identities
Detachable Licenses

Machine Name

Allow Remote Access to ACC
 Disabled
 HTTPS
 HTTP

Allow Remote Access to Admin API
 Disabled
 HTTPS
 HTTP

Password Protection
 Configuration Pages [Set Password](#)
 All ACC Pages

Display Refresh Time (sec.)

Table Rows per Page ?

Idle Timeout of Session ?

Write an Access Log File
 Size Limit (KB): ? [Edit Log Parameters](#)

Include Local Requests

Include Remote Requests

Include Administration Requests

Write an Error Log File
 Size Limit (KB): ?

Write Log Files Daily

Days Before Compressing Log Files ?

Days Before Deleting Log Files ?

Days Before Deleting Old Files ?

Write a Process ID (.pid) File

Generate C2V file for HASP key Enable this option only if recommended by your software vendor.

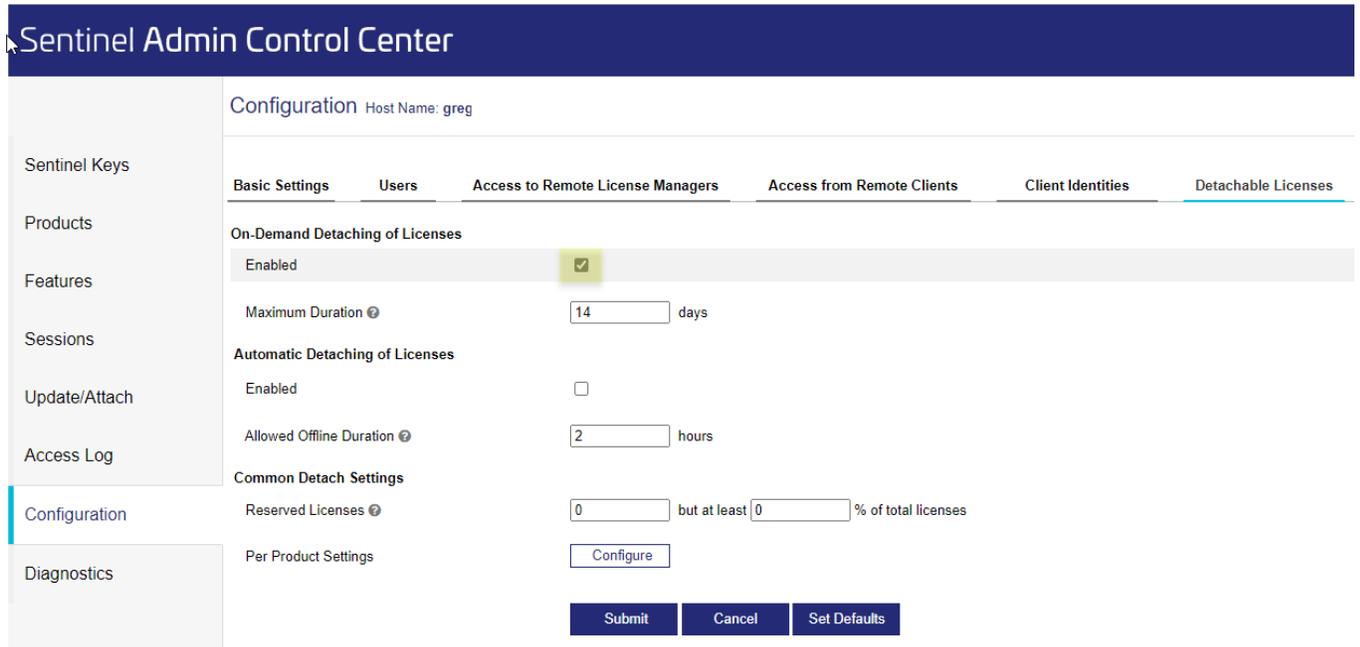
Do not load hasplmv.exe Note: SL UserMode keys will not be visible if this option is selected.

Check the Write an Access Log File checkbox to begin recording a log. Other logging options are available on this page which allow you to customize the logging. If you are having a problem with the licensing of an application, the TMW Support team may ask you to turn on the logging.

5.5 Detaching a Network License

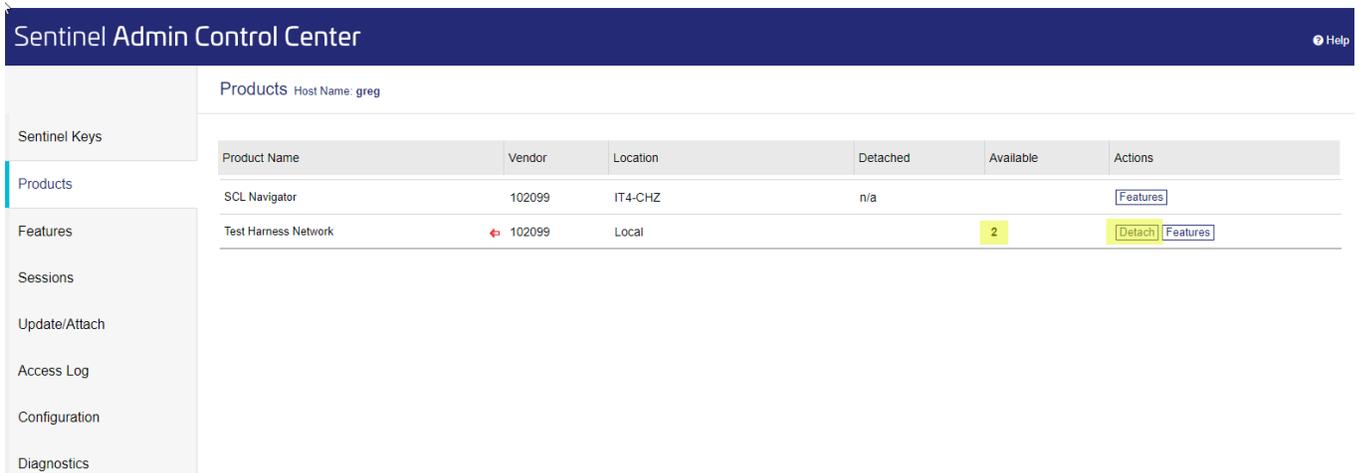
The licensing system provides a method to temporarily detach or “check out” a license from the pool of available licenses. This is only an option if you have purchased a network license. A detached license will allow a TMW application to fully function with needing to be connected to the local network to access a network license. A detached license can manually be returned to the pool of network licenses, or it can be allowed to expire after a certain number of days. If the detached license expires, the TMW application will no longer function on the remote PC and the number of available licenses in the network pool will be increased by one.

The first step in using detached licenses is to enable the feature. By default, detached licenses are not allowed. License detaching can be enabled from the ACC by selecting the Configuration link in the Option area. Click the checkbox labeled Enable Detaching of Licenses as shown below then click the Submit Button.



There are additional settings available to control detaching of licenses. The Reserved Licenses value can be used to ensure that some licenses remain available on the network. The Max. Detach Duration sets the maximum time that a license can be detached from the network before it is automatically returned to the network pool. Do not set the Max Detach Duration to a very large number (i.e. 999). If a license is detached to PC and that PC is lost or its storage is corrupted, there is no way to retrieve the detached license until the Max Detach Duration is reached. We suggest never setting the value to more than 30 days. If a PC needs a dedicated license for months or years at a time, then a network license is not the best option for licensing.

Once detaching is enabled, a network license can be detached from the Products link in the Options area. A Detach Button is now visible in the row for each network license that allows detaching. The value in the Available column indicates how many licenses can currently be detached. Note that detaching is never available for fixed seat licenses.



Clicking the Detach Button will display the following page where details about how to detach the license are provided. In the Detach Method area, the name of the PC receiving the license is provided. The PC must be on the network at the time that the detachment is made. The expiration of the detached license is provided at the bottom of the page.

A license can be detached in an online or offline mode. In the example below, the offline mode is shown. Here the detaching is done on the license server itself and the detached license is saved to a file. That file is then sent to a remote PC where the file is read by the ACC using the Update/Attach Option.

Sentinel Admin Control Center Help

Detach License Host Name: greg

Product	Test Harness Network (ID:13)
Vendor	102099 (ID:102099)
Available Licenses	2 available for detaching
Max. Duration	14 days
Sentinel Key	6926268252625
License Host	Local (only offline detach is possible)

Detach Method:

Online (Online Detach is not possible because this is a local product)

Offline Detach license as an H2R file for use on the recipient machine selected below:

Concurrency:

Allow Concurrency for Detached Licenses

Total Number of Seats:

Detach of multiple seats is allowed only for a cloud license with a limited number of seats.

Expiration Date for Detached License:

Day: Month: Year:

Comment (optional):

Once the required information is provide, click the Detach Button. If the license is successfully detached, the following page is displayed.

Sentinel Admin Control Center

Detach License Host Name: greg

License Detached Successfully

Recipient Name	cyril
Product	Test Harness Network (ID:13)
Vendor	102099 (ID:102099)
Sentinel Key ID	69262682526

License successfully detached for offline use.
Save the H2R file and transfer it to the recipient machine:

A backup of this H2R file can be found in the 'detached' directory of the hosting License Manager.
Filename: 20231120_221437_0001.h2r

The detached license is saved in a file with an H2R extension. The file must be saved to the local hard drive by clicking the Save As... Button. Save the file to a convenient location, but do not change the extension. Once the file is saved, it must be moved to the destination PC (if it is different from the one the detaching is occurring on). The H2R file must be applied to the license manager of the destination PC. This is done in the same manner as applying a V2C file using either the License Manager Dialog box in a TMW application or the RUS_TMW.exe utility. The file can also be activated using the Update/Attach link in the Options area of the ACC page.

If you click the Update/Attach link in the Options area of the ACC page on the destination PC, the following page is displayed.

Sentinel Admin Control Center

Update/Attach License Host Name: cyril

Select File: Select File... ?

File Format: V2C, V2CP, H2R, R2H, H2H or ID file

Apply File Cancel

Sentinel Keys

Products

Features

Sessions

Update/Attach

This page provides a description of the various file types that can be activated using this page. Click the Browse Button to find the file to be activated, then click the Apply File Button.

To use the online mode of detaching a license, the remote PC must be able to see the network license in its list of Products therefore the PC must be connected to the same network as the license server. The Detach button is then clicked as shown in the image above on the remote PC after which the Online Detach method can be selected. The license will be installed locally and there are not further steps required.

6. Transferring an SDG License on Linux

6.1 Using GTWSettings

On Windows PCs, licenses can be transferred using RUS_TMW.exe. This application is not available for Linux. Instead, the GTWSettings utility must be used. The utility can be found in the directory `/usr/lib/tmw/sdg/`. The following instructions explain how to transfer a SCADA Data Gateway from one Linux machine to another. These instructions are only related to SDG running on a Linux computer.

In order to transfer the SDG license from a Source computer to a Destination computer, use the following steps:

1. Install the SDG application on the Destination computer. After installation, the application will have a 21 day trial license, and the Sentinel Run Time Environment will be installed and running.
2. Run the GTWSettings utility on the Destination computer using the following command line parameters:

```
GTWSettings -i "fingerprint.id"
```

This will create a file called "fingerprint.id" which will contain information identifying the destination (recipient) computer.

3. Move the Recipient Information file to the Source computer.
4. Run the GTWSettings utility on the Source computer using the following command line parameters:

```
GTWSettings -t "fingerprint.id" "transferfile.h2h"
```

This will create a new file called transferfile.h2h which contains the license for the SDG. If more than one license is found, you will be asked to select the file to transfer from an ordered list.

5. Move the Transfer file to the Destination computer.
6. Run the GTWSettings utility on the Destination computer using the following command line parameters:

GTWSettings -l "transferfile.h2h"

This will install the SDG license from the transferfile.h2h file. This command will only work on the Destination computer where the original Recipient Information file was created in Step 2.

Note that after the Transfer file is created, your license is now in this file and nowhere else. Do not lose this file as it cannot be recreated. If this file is lost before it is applied to the Destination computer, then your license is lost.

7. Troubleshooting

7.1 Installation Related

7.1.1 After installation, a H0041 Feature has expired error

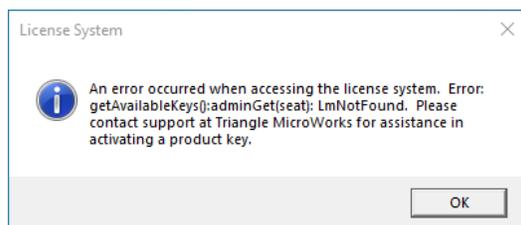
The H0041 message occurs because a trial license was used on the PC and it expired more than 90 days ago. After 90 days, the licensing system will deactivate all components of a trial license which can make activating a product key troublesome.



To fix the problem, we have included a small utility call **SNReset.exe** in the executable directory of all TMW applications. This can typically be found in C:\Program Files\Triangle Microworks*application name*. By running this application, the components of the licensing system required to activate a product key will be reactivated.

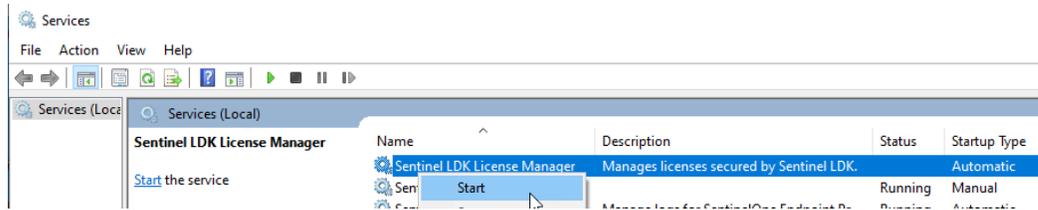
7.1.2 After installation, the licensing service did not start

The licensing system is controlled by a service that is set to start up automatically. On some machines, this service does not start up successfully after the installation is completed. In this case the service needs to be started manually after which it will run and restart without any additional problems. The error dialog box for this condition is:



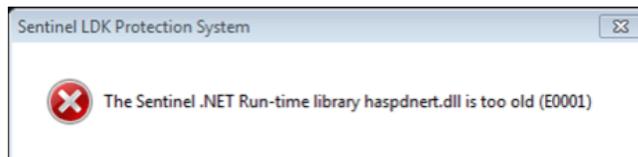
A message indicating that a license could not be found for the application may also be displayed. Another indication that the service is not running is that the ACC cannot be displayed when trying to access localhost:1947 in a browser.

In order to start the service, click the Windows Start button and type “Services”. Start the Services utility and search for Sentinel LDK License Manager. If the service is not running, right click on the service name and select Start from the menu as shown below.



7.1.3 Runtime Library is too old

After installing an application and after applying a new license, an error can occur that says the runtime library is too old. The error message typically looks like this one:

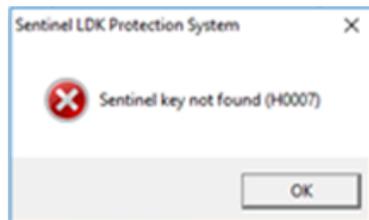


This means that the license the TMW provided requires a newer version of the Sentinel runtime environment. This can also happen when a network license is being used, but the PC holding the network license has an old version of the Sentinel runtime than the PC that is trying to acquire the license. To see the version of the runtime that is installed on a PC, open the ACC on a browser by going to localhost:1947. The click on the Diagnostics link on the left side of the page. The runtime package version is listed near the bottom of the page as shown here:

Run-time	Run-time Installer	8.11
	Run-time Package	8.11
	hardlock.sys	3.93
	fridge_lib	1.8
	aksdf.sys	1.52
	aksfridge.sys	1.81

7.1.4 After installation, a H0007 sentinel key not found

The H0007 message occurs because the licensing service could not be found or accessed. The error is similar to the one described in Section 7.1.2.



Check that the Sentinel LDK License Manager service is running. If this service is running, the problem could be that port 1947 is blocked by a firewall policy. The Sentinel licensing system requires that the application has access to port 1947.

7.2 Problems with Network Licenses

7.2.1 Cannot Find the Network License

If a Network license has been successfully installed on a PC than other PCs on the same subnet should be able to access that license. The number of PCs that can acquire the license depends on the number of concurrencies that were purchased with the license.

If a PC cannot access the license, first check that the Sentinel LDK License Manager service is running on both the

If a PC still cannot access the license, review the steps in Section 5.3 and make sure that the IP address of the license server is listed in the Specify Search Parameters box.

If the PC still cannot access the license, the problem is likely a firewall setting, antivirus, or other corporate policy setting.