ProMax Security Key Information

BR&E has updated the security model for the ProMax security keys. Both hardware and software keys are now available, and software keys for remote or concurrent access have detachable license capability. This document contains information on activating, updating, or cancelling security keys, and also describes the procedure for using the detachable licenses. These procedures are performed using the BR&E Licensing Wizard distributed with ProMax, and the Sentinel Admin Control Center (ACC) installed with the Sentinel LDK Run-Time Environment. If you have any questions concerning this material, please contact our support staff at support@bre.com.

Sentinel LDK Run-Time Environment (RTE)

- The Sentinel LDK Run-Time Environment (RTE) must be installed on any system that hosts a remote network key used for concurrent access. It is also required on all systems that run ProMax, with two exceptions. The first exception is for standalone local keys that are configured in driverless mode. BR&E will notify you if you have a driverless mode key. The second exception is for concurrent license clients where the key is hosted on a remote system and that system either uses hardware keys, or software keys where detachable licenses are not used. For both of these exceptions, the installation of the RTE will not be detrimental, it only is not required.
- Even if the RTE is not required, you may still wish to install it on concurrent license clients to assist in monitoring license usage as well as configuring the location of the remote license manager. When installed, the web based Admin Control Center (ACC) can be used for both of these purposes. Without the RTE, a file based approach must be used for configuring the location of the remote license manager. This file is stored in the user profile.
- The current version of the RTE is installed by the ProMax installer unless a Custom install of ProMax is performed and the "Sentinel LDK Runtime" item is excluded.
- Standalone versions of the command line and GUI RTE installer are present on the ProMax DVD.
- Use the command "bre.haspdinst.exe /?" (or "haspdinst.exe /?") to obtain help for options on the RTE installers.
- After RTE installation, "Sentinel LDK License Manager" should always be running in the Services management console on the computer.
- Port 1947 is required to communicate with the RTE. This port must be open for TCP and UDP protocols on any system that hosts a key—remote or local. For remote keys, no firewall (or anti-virus) can block communication between the client and remote host. There should be no need to change this port number as it is a registered port by the Internet Assigned Numbers Authority (IANA).
- If necessary, communication with remote license managers can be controlled using the scope.xml file distributed with ProMax. This should rarely be required.

Admin Control Center (ACC)

- Provides a user interface for the RTE. The ACC will only be available on systems with the RTE installed.

- Monitoring license use is accomplished through the Sentinel Admin Control Center (ACC) at http://localhost:1947. The ACC is available on all systems with the RTE installed regardless of key type.

- For systems that access their key through the network, the ACC can be used as a monitoring tool to monitor concurrent license use. Click "Sentinel Keys" under Options to display all Sentinel keys including those from other vendors. BR&E keys can be identified by the vendor ID of 41301.

- The ACC is also the utility to use to specify the DNS name or IP address of the remote license manager. Without this specification, the remote license manager cannot be located unless it is on the same network and can be located through IP broadcast. Click "Configuration" under Options, then click the Access to Remote License Managers tab to specify the DNS name or IP address of the remote license manager in the space next to Specify Search Parameters as shown below. Click the Submit button to apply changes.   Note that changes in the ACC may take a couple of minutes to take effect.

- The ACC stores the configuration of the remote license manager in a file named hasplm.ini. Since the information in that file is typically the same across an organization for all users, it may be desirable to distribute the file during program installation so that each individual workstation does not require manual intervention. This can be accomplished by storing the preconfigured hasplm.ini file on an accessible network share, and setting the HASPLMINI Windows Installer property during install to the full path of this file. The hasplm.ini file is shared by all vendors that utilize the SafeNet Sentinel HASP system. Consequently, in addition to the BR&E license manager, this file may contain the addresses of other license managers from other vendors if their devices are located on different hosts. Note that a single license manager can host an unlimited number of HASP keys. Further, the license manager is backward compatible with previous versions, so as long as the most recent version is installed, compatibility with software relying on earlier releases should not be an issue.

- Using the ACC on the license manager system allows the administration of the license manager used for access over the network. Running the ACC on the license manager system allows the
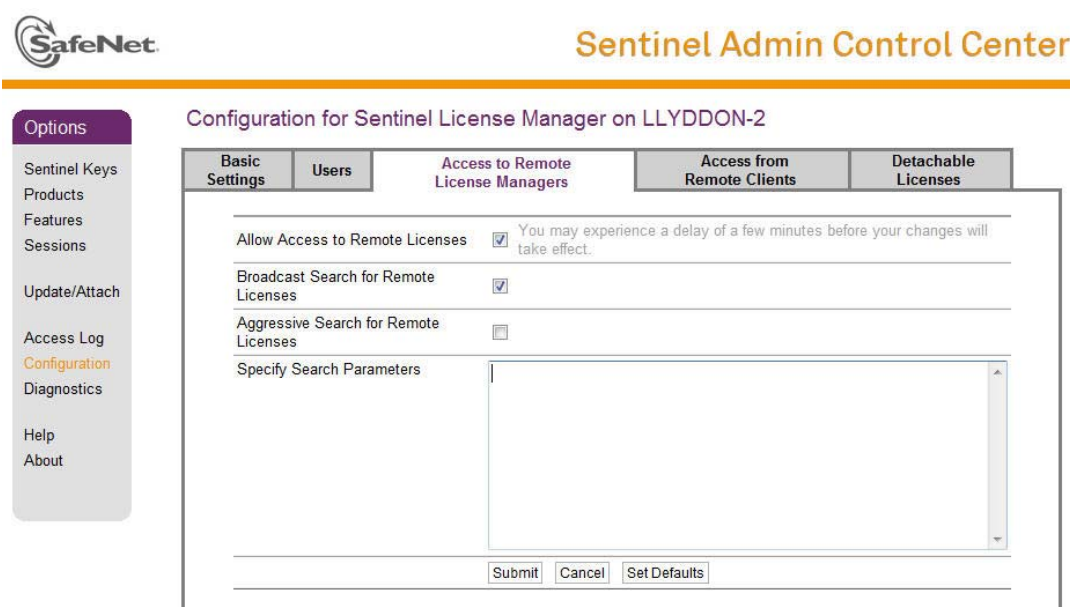
administrator to configure the availability of detachable licenses.

Systems without the RTE Installed

- The RTE is optional for systems with standalone license keys configured in driverless mode.
- The RTE is also optional for client systems that access concurrent license managers if the key on the remote license manager system is a hardware key, or a software key where detachable licenses are not used. Detachable licenses utilize software based keys and will require the installation of the RTE on client systems. Detachability can be controlled at the network license manager host through the ACC. The ACC will be available on that system because the RTE must be installed on the system hosting the key in concurrent licenses.
- With concurrent licenses on clients where the RTE is not installed, the location of the network license manager system must be configured on each client system if the systems are not located on the same subnet. This is done by creating a file named hasp_41301.ini with the following contents:

    SERVERADDR=remoteServerAddress

  where remoteServerAddress is the IP address or DNS name of the remote system hosting the key. The file must be located in the following folder for Windows XP:

  %UserProfile%/Local Settings/Application Data/SafeNet Sentinel/Sentinel LDK/

   and in this folder for Windows Vista and later:

  %LocalAppData%/SafeNet Sentinel/Sentinel LDK/

Hardware and Software Keys

- Hardware keys offer portability for local (standalone) key users and can be used in virtual environments provided the virtual system supports USB devices. Some of the hardware keys support driverless configuration for standalone licenses eliminating the need for the RTE installation. Hardware keys will be distributed unless detachable network licenses are utilized, or use of the software key is restricted to a single system typically owned by an individual.
- Software keys (for remote/concurrent and local licensees) may be distributed by BR&E at BR&E's discretion to users.
    1. Portability for software keys is limited. Software keys require a rehosting approach to move to another system. Rehosting must be enabled for a particular key by BR&E before it can be moved. Before activating the software key, network licensees should determine the system that will run the RTE and host the concurrent-based software key. Once activated, transferring the key will require contacting our product support team.
    2. Software keys are required on network license managers if detachable licenses are used. Not all network licensees will be eligible for detachable licenses.
    3. Software keys are not available for virtual systems. If detachable licenses are desired, the RTE that hosts the software key must be a physical machine. While ProMax can run in a

virtual machine and access a software key on a remote license manager, ProMax cannot run in a virtual machine using a detached license from the same license manager. For software key use on standalone systems, ProMax must not be run in a virtual machine for the same reason.

4. Software keys require vendor specific libraries for their use. If ProMax is installed on the system, these libraries will be installed in addition to the RTE unless a Custom install of ProMax is performed and the "Sentinel LDK Runtime" item is excluded. For remote license hosts on a system that does not have ProMax installed, the command line application bre.haspdinst.exe on the DVD must be used to install the vendor libraries. This will also install or upgrade the RTE if necessary. If the generic haspdinst.exe (or the GUI equivalent) was used to install the RTE, the vendor specific bre.haspdinst.exe must be used to install the BR&E vendor libraries.

- Both hardware and software keys must be activated before their initial use using the Licensing Wizard. To activate a software key, you must have your product key available. The activation process is discussed below.
- The NetHASP License Manager used with previous versions of ProMax is no longer used. It may be removed from the system if no other software requires it. Port 475 is no longer required with ProMax. Further, NetHASP.ini/NetHASP.xml files are no longer used.

BR&E Licensing Wizard

- The Licensing Wizard is installed with ProMax but is also present on the ProMax installation DVD.
- Prerequisites for the Licensing Wizard are the Microsoft .Net Framework 4 Client Profile and the Microsoft Visual C++ 2010 SP1 redistributables which are installed by the ProMax installation package. If the Licensing Wizard is used on other systems where ProMax is not installed, the prerequisites will need to be installed if not present. Both are available from the Microsoft download site, but are also present on the ProMax installation DVD for your convenience.
- The Licensing Wizard requires an Internet connection using http. It also may require Internet proxy configuration at your site, especially if proxy authentication is required.
- Once installed, Licensing Wizard features may be limited through the use of Group Policy Objects (GPO). A GPO template file (adm) is distributed with ProMax and can be added to the Group Policy management console in Active Directory for policy setting.
- Access the Licensing Wizard using Start -> All Programs -> Bryan Research & Engineering Inc -> ProMax and click on the Licensing Wizard for Windows 7 and earlier. The Licensing Wizard is also located on the Metro screen for Windows 8 and 8.1 systems.
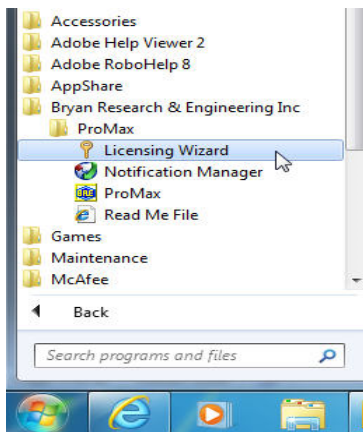
- The Licensing Wizard serves 4 basic functions: 1) Initial Activation of Keys, 2) Updates and Cancellation of Keys, 3) Acknowledgement Returns of Manually Applied Licensing Terms, and 4) Network License Detachment. Each of these functions is discussed below.
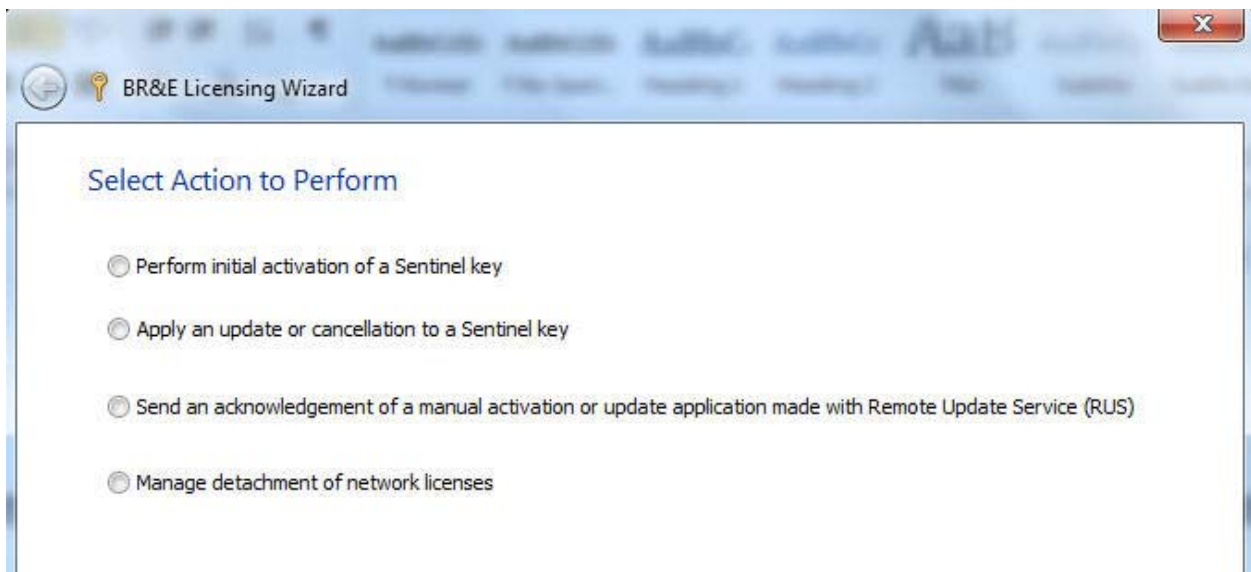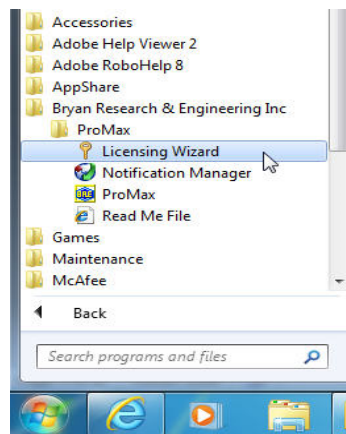

1. Initial Activation of Keys

Initial activation is required for all newly distributed hardware keys or for initial placement of software keys on systems that will host software keys. Activation must be performed before the key is used with ProMax. Two basic modes of operation are available—automatic and manual.

> **Automatic Activation** - If automatic mode is used, the key must be physically attached to the system or the system must be the host system for a software key. Automatic activation will normally be used to activate local hardware and software keys as these keys are typically

activated by the system that runs ProMax. In order to prevent having to run the Licensing Wizard on systems that host remote hardware keys, the key can be moved temporarily to a system with ProMax installed for initial activation as this system will usually have the Licensing Wizard installed by the ProMax installer. For remote software keys, the Licensing Wizard will have to be copied to the system that will host the key if automatic mode is to be used unless ProMax is installed on the system. Additionally, the prerequisites must be installed as stated above to run the Licensing Wizard.

In order to activate a key using Automatic Activation on a system *with ProMax installed*, perform the following steps:

1. Start the Licensing Wizard using the Start menu (Start -> All Programs -> Bryan Research & Engineering Inc -> ProMax) or Windows Metro screen (Windows 8 and 8.1).


2. Select "Perform initial activation of a Sentinel key" and click Next.
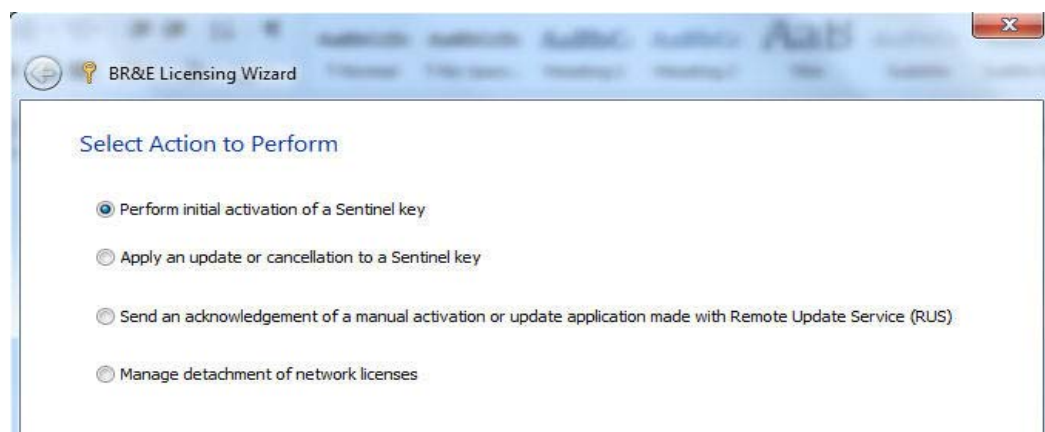
3. Provide user information on the next page of the Licensing Wizard and click Next.
4. Provide the physical address (or press "Use Previous" if appropriate) of the key, or of the system hosting the software key and click Next.

5. If BR&E has supplied you a product key to use in activation, select the checkbox next to "Activate using a product key supplied by BR&E" and enter the product key. Product key activation will always be required for the initial activation of software keys.
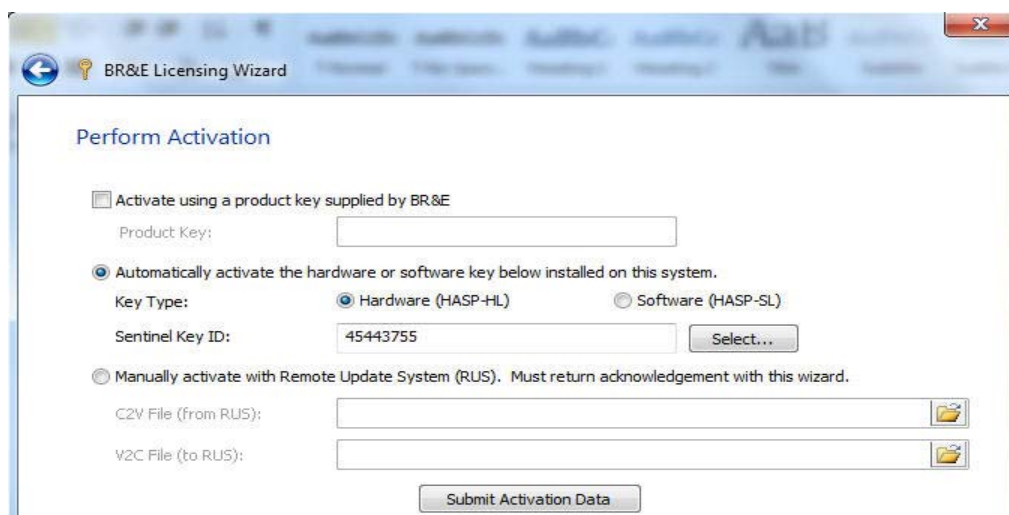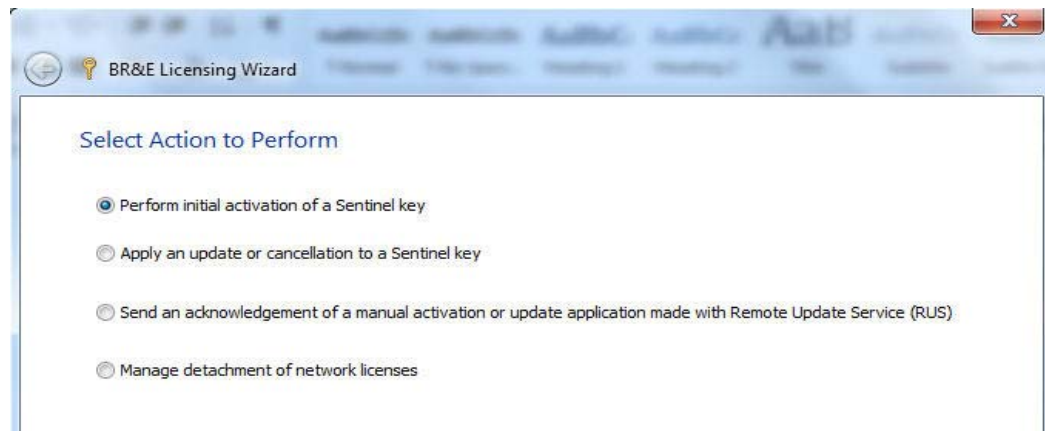

6. Select the automatic activation option and the type of key to activate (Hardware or Software). Hardware keys must be physically attached to the system. Software keys will be created and stored on the system. If you have multiple BR&E keys attached to the system, you will have to use the Select button to select the key to activate. The ID of the key being activated will show in the Sentinel Key ID field. This is the internal ID of the device, not the number engraved into the case for hardware keys. The internal ID's of attached keys are available in the Admin Control Center (ACC) at http://localhost:1947 in the Sentinel Keys table on systems with the RTE installed.
7. Submit the activation data to BR&E by pressing the Submit Activation Data button.
8. Sign the acknowledgement indicating receipt of the key and software, and agreement to the terms posted in the wizard. This will serve as acknowledgement of receipt of the software and associated key. (You must scroll down and read the Acknowledgement to be able to complete the signature).
9. Click the Activate button. The system should indicate activation was successful.
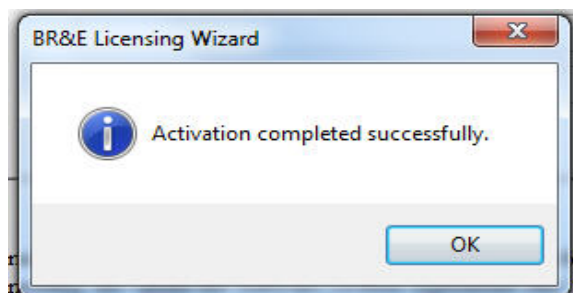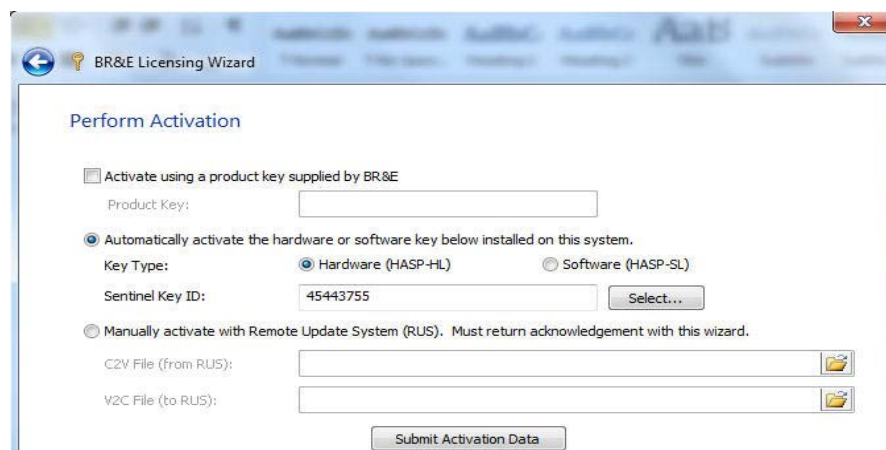
To use automatic activation of a key on a system that *does not have ProMax installed*, use the following steps:

1. Unless you are attempting to activate a hardware based standalone driverless configuration key, install the Sentinel LDK RTE on the system that will be used for activation. The bre.haspdinst.exe installer will be required if software keys are used so that the BR&E vendor libraries are installed.
2. Copy the Licensing Wizard from the ProMax DVD to any folder on the system that will activate the key. Use of a temporary folder for this purpose is probably the best choice. The entire contents of the folder on the DVD should be copied to the system.
3. If not already present, install the prerequisite software for the Licensing Wizard.
4. Start the Licensing Wizard by double clicking the Licensing Wizard application or through other appropriate means.
5. Select "Perform initial activation of a Sentinel key" and click Next.

6. Provide user information on the next page of the wizard and click Next.
7. Provide the physical address (or press "Use Previous" if appropriate) of the key, or of the system hosting the software key and click Next.
8. If BR&E has supplied you a product key to use in activation, select the checkbox next to "Activate using a product key supplied by BR&E" and enter the product key. Product

key activation will always be required for the initial activation of software keys.

9. Select the automatic activation option and the type of key to activate (Hardware or Software). Hardware keys must be physically attached to the system. Software keys will be created and stored on the system. If you have multiple BR&E keys attached to the system, you will have to use the Select button to select the key to activate. The ID of the key being activated will show in the Sentinel Key ID field. This is the internal ID of the device, not the number engraved into the case for hardware keys. The internal ID's of attached keys are available in the Admin Control Center (ACC) at http://localhost:1947 in the Sentinel Keys table on systems with the RTE installed.

10. Submit the activation data to BR&E by pressing the Submit Activation Data button.

11. Sign the acknowledgement indicating receipt of the key and software, and agreement to the terms posted in the wizard. This will serve as acknowledgement of receipt of the software and associated key. (You must scroll down and read the Acknowledgement to be able to complete the signature).

12. Click the Activate button. The system should indicate activation was successful. The Licensing Wizard may be safely erased from the system when complete.
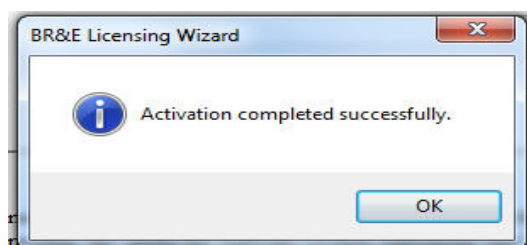
Manual Activation - Manual mode can be used for any activation scenario, but is most beneficial to activation of remote keys as those users may not wish to install the Licensing Wizard prerequisite software on the system that hosts the key. This is more common for software keys as hardware keys can be temporarily moved to systems that have ProMax, and consequently, the Licensing Wizard already installed. Manual operation also does not require the system hosting the key to have http Internet access. Manual mode involves the following steps:

1. Unless you are attempting to activate a hardware based standalone driverless configuration key, install the Sentinel LDK RTE on the system that will host the key. If software keys are used, the bre.haspdinst.exe installer is required so that the BR&E vendor libraries are installed.

2. Use the BRE.RUS.exe (RUS-Remote Update System) program on the installation DVD to generate a C2V (customer-to-vendor) file from the system that hosts the key. The BRE.RUS.exe program can be copied from the ProMax DVD to the system or it can be executed directly from the DVD. RUS requires no prerequisite software (except the RTE on systems that require it). For hardware keys, attach the key to the system and select

the option "Update of existing protection key". For software key activation, select "Installation of new protection key". Click the "Collect Information" button to create the C2V file. You should see a message stating that the information has been saved in the C2V file selected by you.
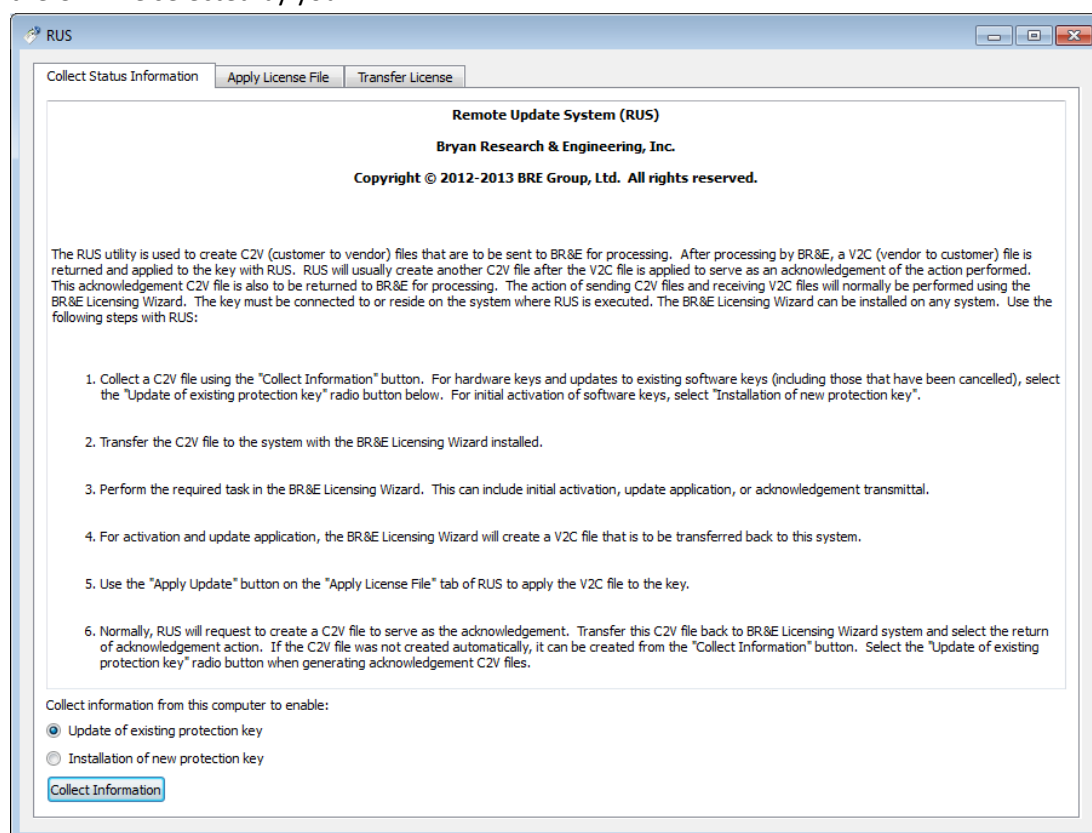
3. Transfer the C2V file to a system with ProMax installed using a flash drive or any other convenient means. Alternatively, the Licensing Wizard can be copied from the ProMax DVD to any available system to activate the key provided the prerequisite software and an http Internet connection are present. If the latter approach is used, copy all Licensing Wizard files from the DVD.

4. Start the Licensing Wizard. If ProMax is installed, it will be available on the Start menu or Metro screen depending on Windows version.

5. Select "Perform initial activation of a Sentinel key" and click Next.

6. Provide user information on the next page of the wizard and click Next.

7. Provide the physical address (or press "Use Previous" if appropriate) of the key, or of the system hosting the software key and click Next.

8. If BR&E has supplied you a product key to use in activation, select the checkbox next to "Activate using a product key supplied by BR&E" and enter the product key. Product key activation will always be required for the initial activation of software keys.

9. Select the manual activation option and browse for the location of the C2V file. Specify the name of a V2C (vendor-to-customer) file in the wizard. The V2C file will be created by the activation process.
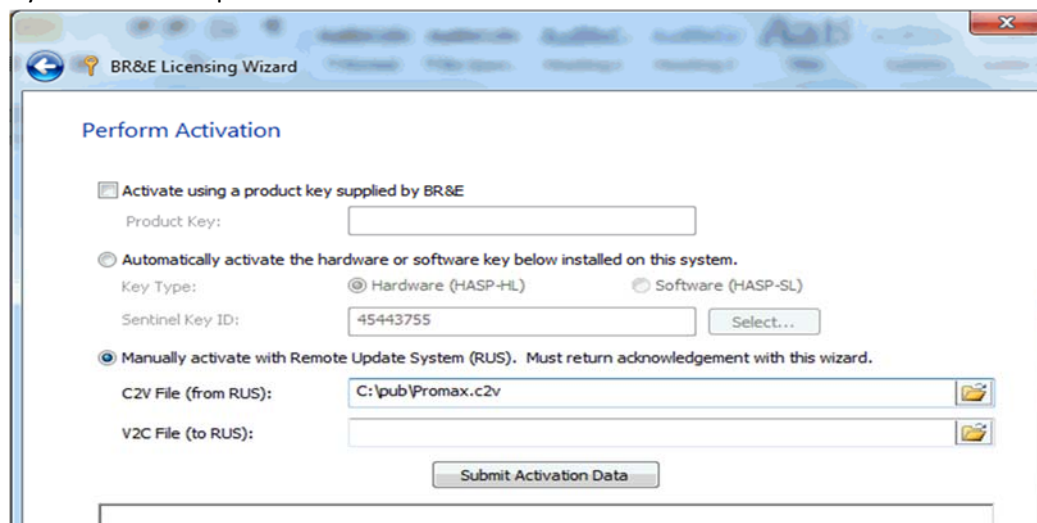
10. Submit the activation data to BR&E by pressing the Submit Activation Data button.
11. Sign the acknowledgement indicating receipt of the key and software, and agreement to the terms posted in the wizard. This will serve as acknowledgement of receipt of the software and associated key. (You must scroll down and read the Acknowledgement to be able to complete the signature).
12. Click the Activate button. The system should indicate activation was successful and create the V2C file.
13. Transfer the V2C file back to the system hosting the key.
14. Using the BRE.RUS.exe application, apply the V2C file to the system. This is done by clicking the "Apply Update" button on the "Apply License File" tab. After successful application, the system will request an acknowledgement of the licensing process be returned to BR&E in the form of a C2V file. Save this C2V file to complete the acknowledgement process. Failure to complete the acknowledgement process may result in failure to apply updates to the key in the future.
15. Using the C2V file, perform the returning acknowledgment process listed in #3 "Returning Acknowledgements to BR&E of Manually Applied Licensing Terms" below.

2. **Updates and Cancellations of Keys**

Updates include changes to keys that are currently deployed and have been previously activated using the initial activation procedure. Among the variety of possibilities, these changes include extending the expiration date and changing the number of concurrent licenses for concurrent licensees. This process is also used to apply cancellations to existing keys. Unless the software key undergoes a rehosting process, software keys must be properly cancelled if the license is transferred to another system.

Failure to apply cancellations to keys as directed by BR&E may result in continued charges for these keys. Further, excessive transfers of software keys to other systems may incur charges.

Automatic and manual updating are available just as with activation. The reasons for using each are essentially the same as with activation. Automatic updating is normally used for local hardware and software keys by running the Licensing Wizard on the system with the key installed. To use automatic updating of remote keys, ProMax or the Licensing Wizard must be installed on the hosting system. Alternatively, hardware keys can be moved to a system with ProMax installed for automatic updating. Manual mode is typically used when ProMax or the Licensing Wizard (or its prerequisites) is not installed on the system with the key.

> **Automatic Update** - To perform automatic updating of a key with ProMax installed, use the following steps:
> 1. Start the Licensing Wizard using the Start menu or Windows Metro screen as appropriate for your operating system version.
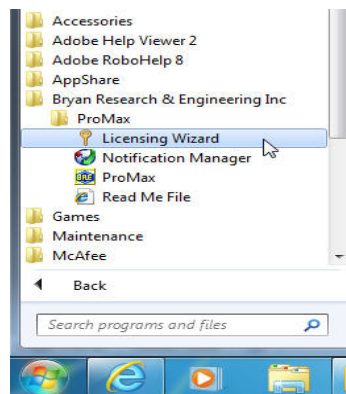

> 2. Select "Apply an Update or Cancellation" to a Sentinel key and click Next.
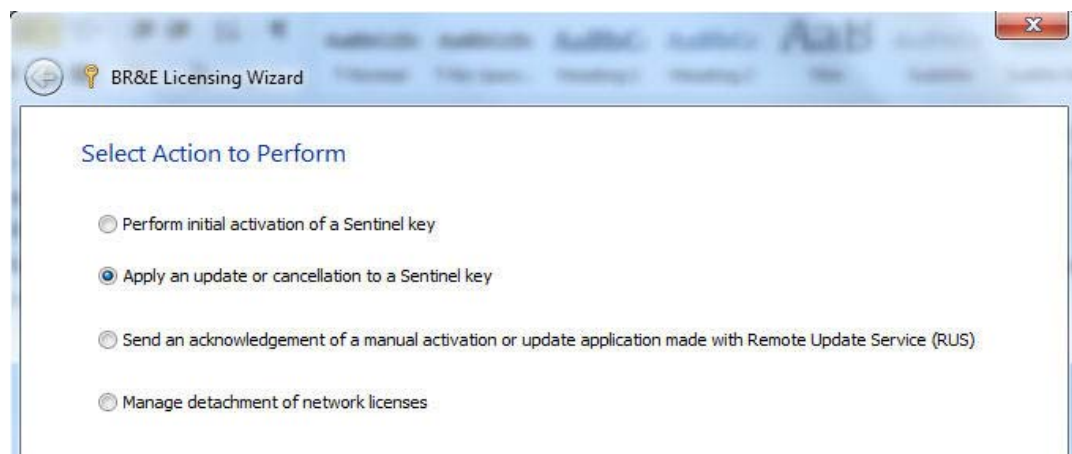
3. Select the automatic update option and the type of key to update (Hardware or Software). If you have multiple BR&E keys attached to the system, you will have to use the Select button to select the key to update. The ID of the key being activated will show in the Sentinel Key ID field. This is the internal ID of the device, not the number engraved into the case for hardware keys. The internal ID's of attached keys are available in the Admin Control Center (ACC) at http://localhost:1947 in the Sentinel Keys table on systems with the RTE installed.
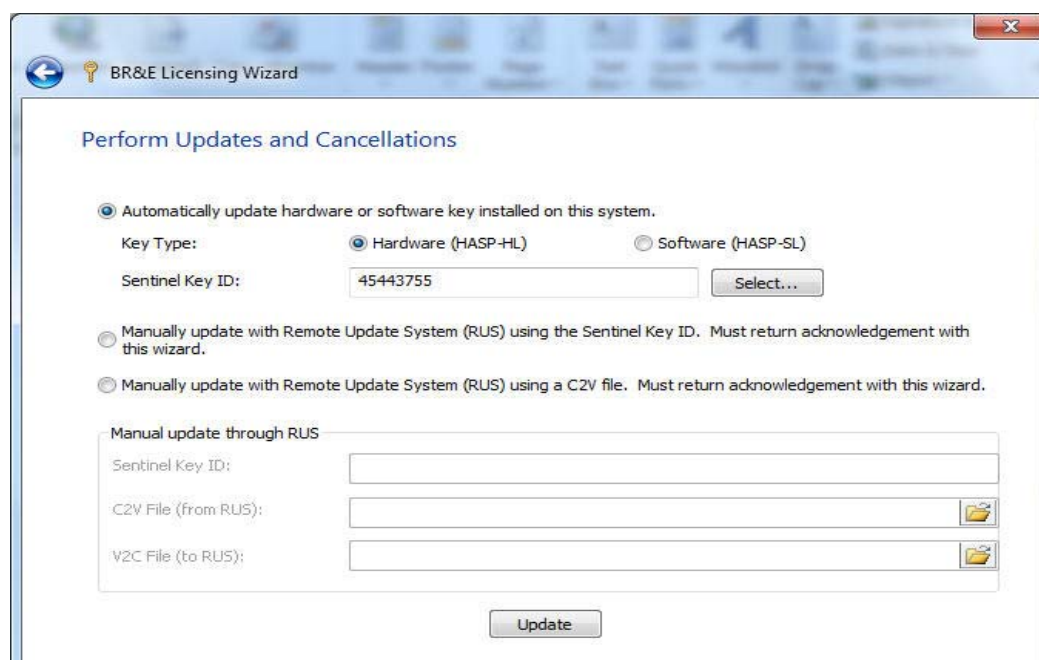
4. Click the Update button to update the key. The system should indicate activation was successful.
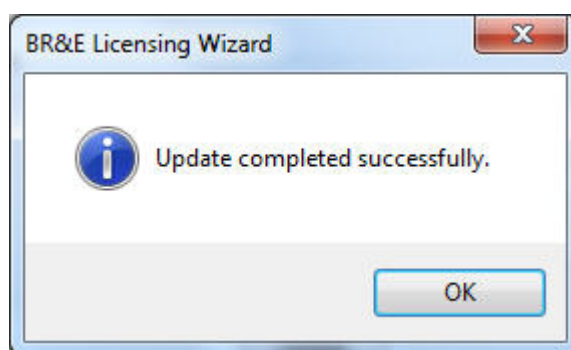
If ProMax is not installed, automatic updating can be used provided the Licensing Wizard and its associated files are copied from the DVD to the system with the key. For hardware keys, the key can be moved to any system to perform the update. The prerequisites for the Licensing Wizard

will also need to be installed. Additionally, the Sentinel LDK RTE will be required if not already present unless the update is being applied to a driverless configuration hardware key for standalone licenses. Once the software is in place, the same steps as used above can be used to update the key except that the wizard will normally be started by double clicking the application.

Manual Update - For systems where automatic activation is not appropriate due to inability to install prerequisite software or other limiting circumstances, manual updating is available as with activation. To manually update a key, perform the following steps.

1. Obtain either the C2V (customer-to-vendor) file or the ID of the key to update. The ID is available in the Admin Control Center (ACC) at http://localhost:1947 in the Sentinel Keys table on the system hosting the key provided the RTE is installed (this is not the number engraved into the case of hardware keys). To obtain a C2V file, use the BRE.RUS.exe (RUS-Remote Update System) program on the installation DVD to generate the C2V file from the system that hosts the key. The BRE.RUS.exe program can be copied from the ProMax DVD to the system or it can be executed directly from the DVD. RUS requires no prerequisite software (except the RTE). For hardware keys, the key must be physically attached to the system to use RUS. Use the "Update of existing protection key" radio button on the "Collect Status Information" tab of RUS.
2. If the C2V file is used, transfer the C2V file to a system with ProMax installed using a flash drive or any other convenient means. Alternatively, the Licensing Wizard can be copied in its entirety from the ProMax DVD to any available system to update the key provided the prerequisite software and an http Internet connection are present.
3. Start the Licensing Wizard. If ProMax is installed, it will be available on the Start menu or the Windows Metro screen.
4. Select "Apply an update or cancellation to a Sentinel key" and click Next.
5. Select the appropriate manual update option and either supply the Sentinel Key ID or browse for the location of the C2V file. Specify the name of a V2C (vendor-to-customer) file in the Licensing Wizard. The V2C file will be created by the update process.
6. Click the Update button to generate the V2C file for the update.
7. Transfer the V2C file back to the system hosting the key.
8. Using the BRE.RUS.exe application, apply the V2C file to the system. After successful application, the system will request an acknowledgement of the licensing process be returned to BR&E in the form of a C2V file. Save this C2V file to complete the acknowledgement process. Failure to complete the acknowledgement process may result in failure to apply updates to the key in the future, or continued charges for updates involving cancellation.
9. Using the C2V file, perform the returning acknowledgment process listed below.

3. Returning Acknowledgements to BR&E of Manually Applied Licensing Terms

Manual activation and updates require an acknowledgement of the license application process in the form of a C2V (customer-to-vendor) file be returned to BR&E for verification. If the update is in the form of a cancellation, this acknowledgement serves as proof that the key was cancelled. Failure to return this acknowledgment may result in continued charges for software no longer in use. Further, failure to return acknowledgements may cause future key update attempts to fail.

To return the acknowledgement to BR&E, simply copy the C2V file created by RUS during application of the activation or update V2C file to a system with the Licensing Wizard installed. Start the Licensing Wizard and select the "Send an acknowledgement of a manual activation or update application made with Remote Update Service (RUS)" option to send acknowledgements generated by RUS.
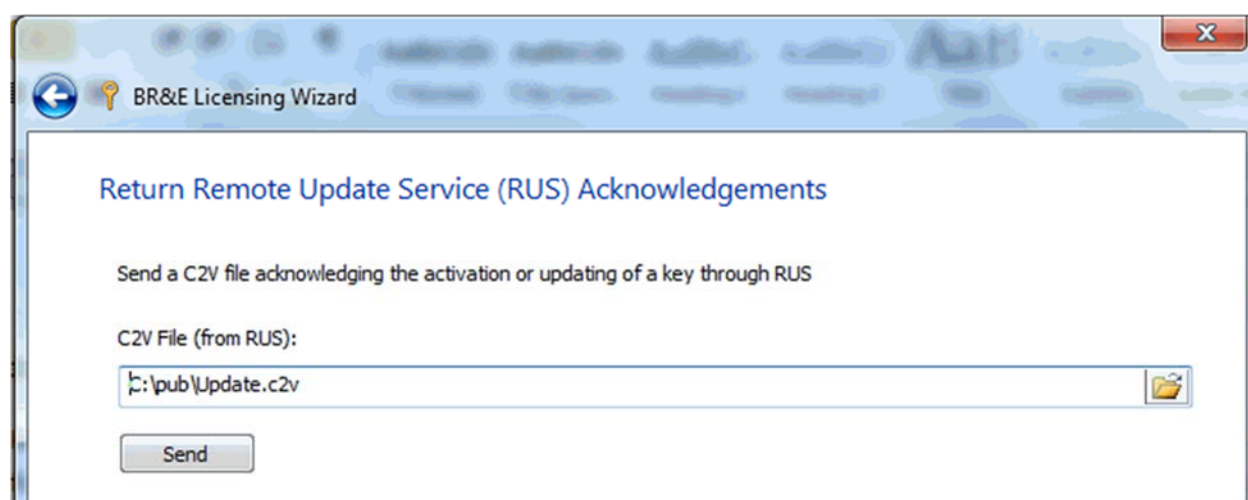
Specify the location of the C2V File and click the Send button. You should receive a message stating that the acknowledgement was successfully processed.
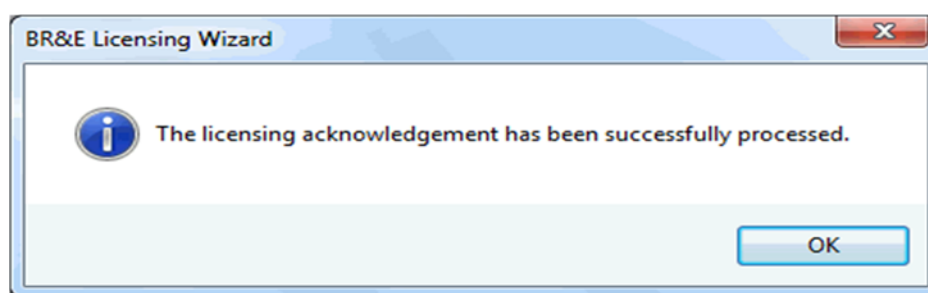

4. License Detachment from Network License Environments Where Available

For licensees that have access to detachable licenses, the Licensing Wizard is used by client systems to detach licenses from the concurrent license manager and attach them to client systems for users that will not have network access to the remote license manager for a period of time.

- Detachable licenses require the use of software keys on the remote license manager. Software keys are limited to non-virtual hosts and clients.
- Detachable licenses require the RTE to be installed on the system receiving the detachable license. If detachable licenses are not used, the RTE is not required for clients of concurrent license managers unless you desire to monitor the license usage through the ACC.
- A license is termed "detached" from the perspective of the license manager and "attached" from the perspective of the client system.
- If detachable keys are to be made available, the administrator of the license manager system must enable detachment and configure the maximum number of days a license can be detached. This is done in the Admin Control Center (ACC) (http://localhost:1947) on the license manager system. A reasonable limit should be set for the maximum period of detachment. Once a license is detached, it can only be recovered by cancelling the detachment or allowing the time period selected during detachment to expire. License administrators cannot reverse the detachment.
- Detachable licenses subtract from the available pool of concurrent licenses. The license administrator can configure the number or percentage of licenses to remain as unavailable for detachment.
- Once detachment is enabled in the ACC of the license manager system, the Licensing Wizard can be used to perform detachment and cancellation. Simply select the "Manage detachment of network licenses" option in the Licensing Wizard for detachment and click Next.
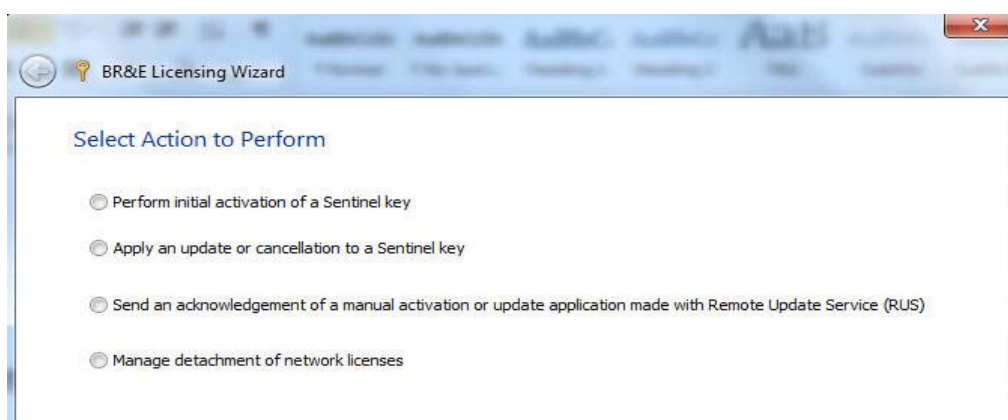
- Select the Detach option, set the number of days for detachment, and click the apply button. If a license is currently detached, performing the detachment process will extend the current detachment by the specified number of days (up to the maximum allowed by the administrator). After detaching the license from the license manager, the license will appear as an attached license

in the ACC of the client system.

- To cancel a detachment before the time period expires, start the Licensing Wizard and again use the "Manage detachment of network licenses" feature. Select the "Cancel a current license detachment" option and click the Apply button. Cancellation of a detached license returns the license to the license pool for use by others.
- Licenses may also be manually detached if the user inadvertently omitted the detachment process before leaving a location with access to the remote license manager. However, manual detachment will still require e-mail communication or some other mechanism for transferring text files. To perform manual detachment, perform the following steps:
    1. Contact the administrator of the license manager system and request they detach a license for you using the Admin Control Center (ACC) (http://localhost:1947). License detachment is available by selecting "Products" from the Options of the ACC. You will have to provide the administrator the name of your system. This process will create an H2R (host-to-recipient) file.
    2. Request that the license administrator e-mail (or otherwise deliver) you this H2R file. The H2R file is a text file that can be safely attached to an e-mail message. Save the H2R file to some folder on the system.
    3. On the system used to run ProMax, open the ACC at http://localhost:1947.
    4. Navigate to "Update/Attach" under Options. Browse for the H2R file saved above and click the Apply File button. The license should now be attached to your system and ProMax can be used.
- The above procedure can also be used to extend the detachment period (up to the maximum limit) if required. This is especially useful when network access to the remote license manager is unavailable.
- To cancel a license detachment before the expiration time, the Licensing Wizard can be used once you obtain access to the license manager system. Alternatively, the license may be manually detached and returned to the available license pool before expiration if it is not possible to obtain access to the license manager host. To perform this manual cancellation, perform the following steps:
    1. On the system with the license attached that is used to run ProMax, start the ACC at http://localhost:1947.

2. Navigate to "Products" under Options and select the cancellation of ProMax. The cancellation process will generate a R2H (recipient-to-host) file that should be returned to your license administrator either as an e-mail attachment or other appropriate means. The R2H file is a text file that can safely be attached to e-mail messages.

3. Have the license administrator apply the R2H file to the license manager system using the ACC at http://localhost:1947. This option will be available in the Update/Attach section of the ACC.

- Once returned, the license will be available in the pool for general use.