



HASP USB KEY GUIDE

For AFT Software

(updated 09/11/2012)

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Forward

AFT copy protection installation routines provide options to install USB key drivers and setup the key. Most users will find this will successfully install and setup a USB key and is the preferred method.

This guide provides detailed information to: 1) install key drivers manually, 2) install optional utilities (such as the license usage monitor), 3) using the utilities and, 4) troubleshooting.

A stand-alone key is Green in color and is designed to be used by a single user on a single computer at a time. The network key is Red in color and will have a specific number of seats or users programmed. Each type of key may contain licenses for one or multiple AFT software products.

If more than one application is using the same USB key, the installation of the key files (driver, etc.) need only be done once. However, the control.aft file will need to be updated manually for the other applications. Also, the HaspKeyFind.exe support utility should be copied to the other application folders as well. There is no problem running the USB key setup multiple times.

Installation

Overview

A driver must be installed so that our applications can communicate with the HASP USB key. If you have a network key, even if it is used as a stand-alone key, the license manager must also be installed on the machine to which the USB key is attached. Other utilities to query and update the key, to show connected network users, and to assist in troubleshooting may also be installed.

AFT recommends that you install the USB key files using the AFT Copy Protection Setup. This can be done either from the CD or using files downloaded from our website at www.aft.com/support/usb-key-support.

This section will outline the steps to be taken to setup the device driver, license manager (if needed) and the utilities. When the key is setup using the AFT Copy Protection Setup, separate setup routines are run for the device driver, license manager, etc.

It is important that you have full administrator rights on the computer or server where the USB key files are being installed.

Using files from the CD

When installing the application from the CD the files are automatically loaded based on the copy protection type selected. Most of these files and installation routines can be found on the CD in the *CopyProtection\USB Key* folder.

Using files downloaded from the website

A link to download the AFT Copy Protection Setup can be found on the main download page at <http://www.aft.com/download>. It is recommended that this be saved in an empty, temporary folder and run from there.

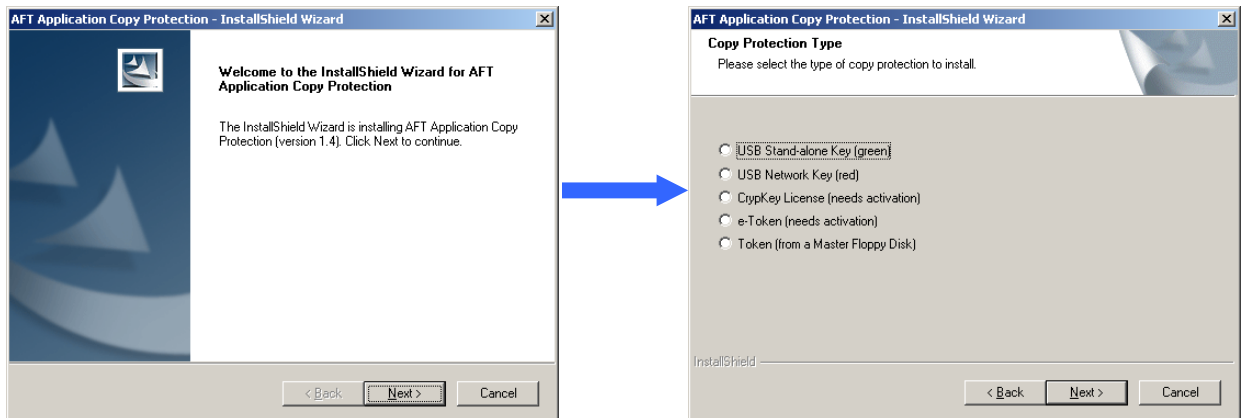
Manual Setup

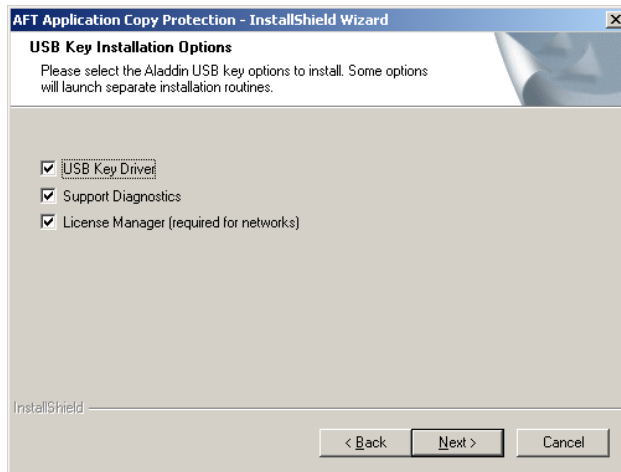
The following is a summary of the steps to manually install and use the USB key. Most of these files and installation routines can be found on the CD in the *CopyProtection\USB Key* folder or downloaded from our website at www.aft.com/support/usb-key-support.

- 1) Install the USB driver (HASPUserSetup.exe) on the machine where the key is attached
- 2) Copy hasp_com_windows.dll to the System32 folder (or SysWOW64 for 64-bit systems) and register it on the machine where the key is attached
- 3) Copy hasp_windows_68889.dll to the System32 folder (or SysWOW64 for 64-bit systems) on the machine where the key is attached
- 4) Copy HaspKeyFind.exe to the application folder
- 5) (optional) Install DiagnostiX (aksdiag32.exe)
- 6) (optional) Copy custom.dll to where DiagnostiX is installed
- 7) (optional) Copy afthasprus.exe to the application folder
- 8) (required for networks only) Install the License Manager (lmsetup.exe)
- 9) (network optional) Install the License Monitor (aksmon32.exe)
- 10) (optional) Copy this USB key guide
- 11) (optional) Modify the control.aft file with "ProtectionType = 4"

Setting up the Key Using the Copy Protection Installation

The AFT Copy Protection Setup will ask you the type of copy protection you are using. If a USB key type is selected then the option to install the driver and utilities will be presented. If a network USB key is selected the License Manager installation option will also be presented.



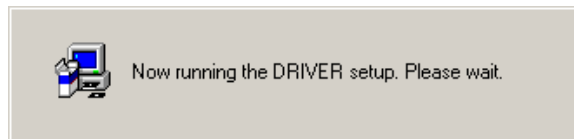
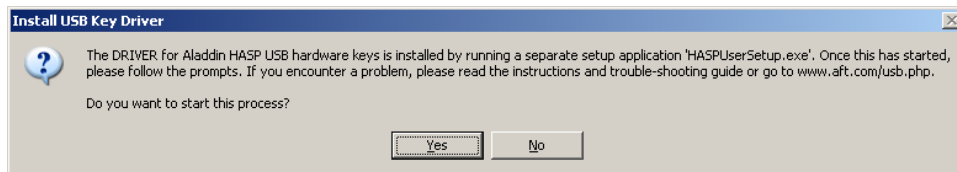


These options will launch separate installation routines. Each is described in the sections below. These installation routines can also be launched separately.

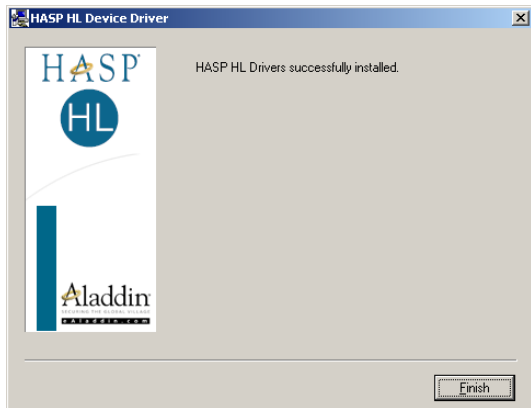
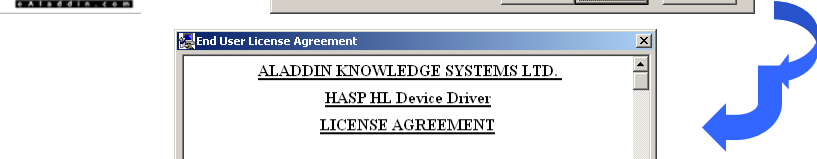
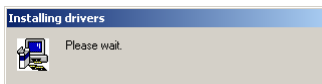
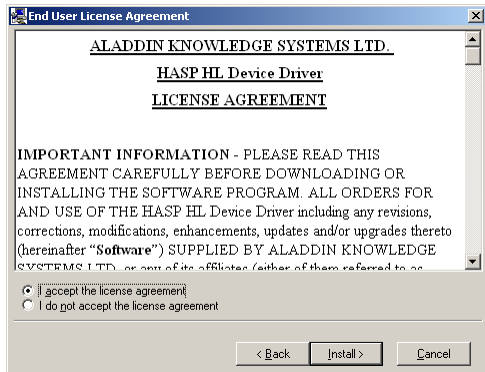
Device Driver Setup

During Installation

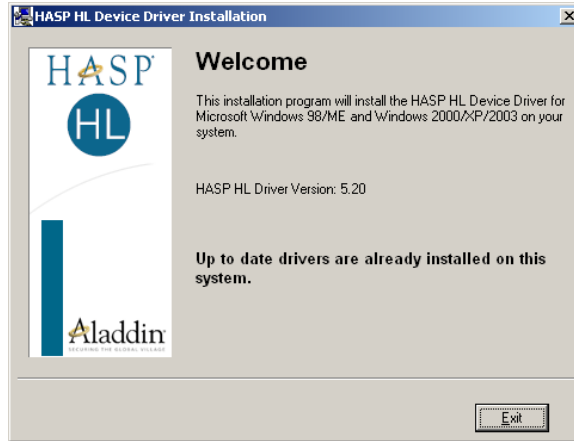
If the USB Key Driver is selected to be installed then a message will appear explaining that the driver is installed by running a separate application.



The driver is installed using a setup application provided by Aladdin. Below is a sample sequence of the screens you should encounter.

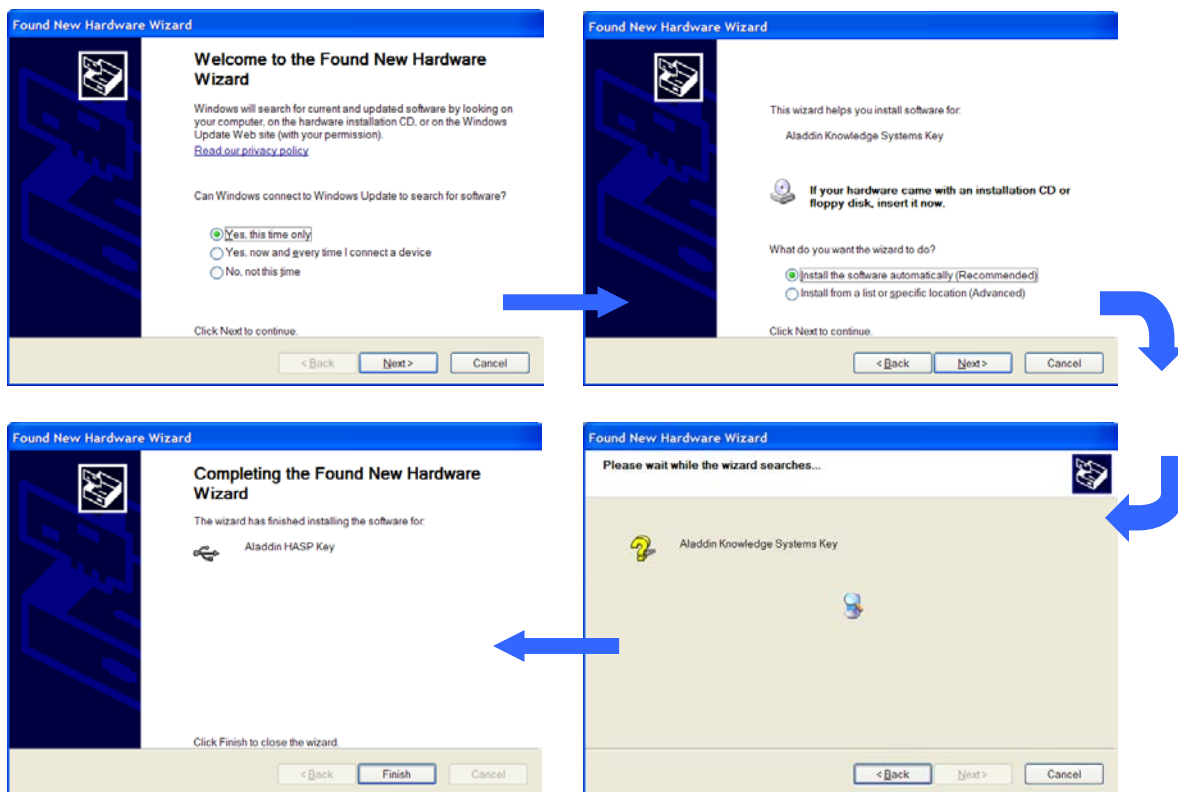


If the driver has already been installed and is up to date, then the following screen will be shown.



When the Operating System Recognizes the Key

When the key is first attached to the computer, the operating system may recognize it as a new piece of hardware and try to automatically setup the necessary files and drivers. The following is a sample sequence of screens that appear.

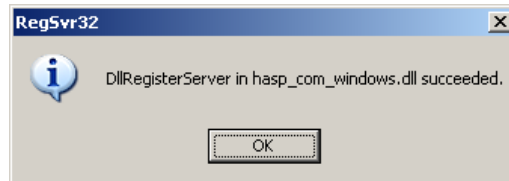


Manual Setup

If the operating system does not automatically recognize the new USB key, then the drivers can be installed by running the Device Driver setup. On the installation CD in the *CopyProtection\USB Key* folder (or downloaded from our website) is a file named

HASPUserSetup.exe. Double-click on this file. The same set of screens will appear as described in the During Installation section.

The files **hasp_com_windows.dll** and **hasp_windows_68889.dll** must be copied to the Windows\System32 folder. The file **hasp_com_windows.dll** must also be registered. To register the file select Run from the Start menu, enter 'regsvr32 hasp_com_windows.dll' (without the quotes) and click OK. You will get a confirmation screen stating that the registration was successful.



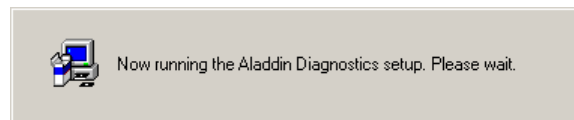
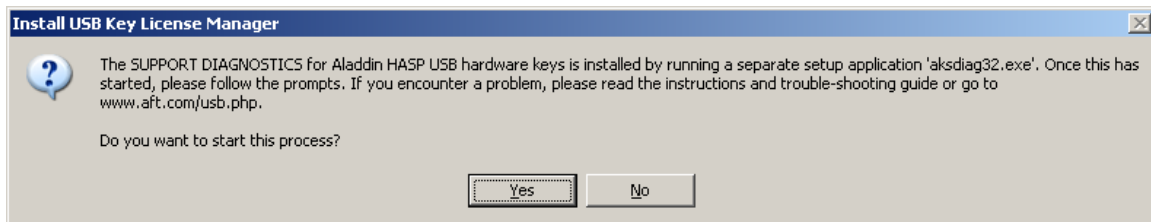
On a 64-bit operating system these files need to be put in the SysWOW64 folder. Depending on your user permissions you may need to register them using an elevated command prompt (right-click on Command Prompt and select Run as Administrator).

Support Diagnostics Setup

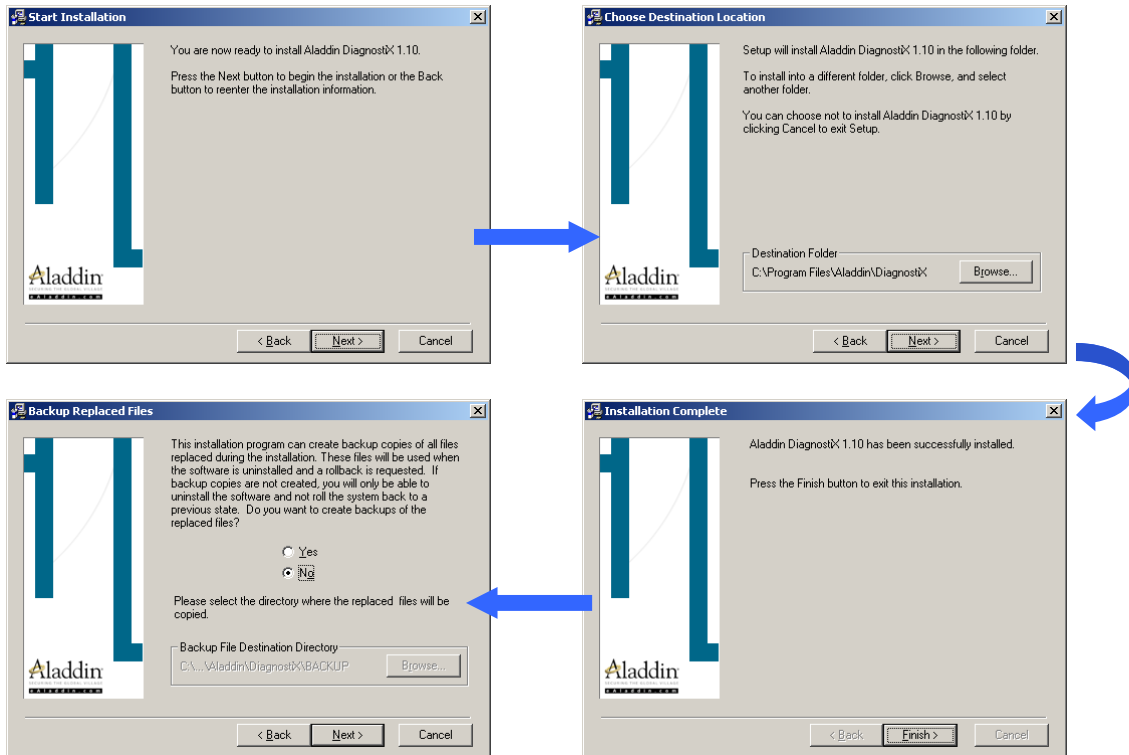
There are several support and diagnostic applications that will be installed. HASPKeyFind has been developed to gather information from the USB key and assist in updating/configuring the key with codes provided by AFT. Two other diagnostic applications are provided by Aladdin. DiagnostX can be used to help troubleshoot the key and afthaspRUS which can be used to remotely update the key. AFT recommends that HASPKeyFind be used as a first step then the others if there are continued problems.

During Installation

If the Support Diagnostics option is selected to be installed then a message will appear explaining that some support applications are installed by running a separate application.



The diagnostics are installed using a setup application provided by Aladdin. Below is a sample sequence of the screens you should encounter. By default it is located in C:\Program Files\Aladdin\DiagnostX



Manual Setup

HASPKeyFind.exe can be copied directly from the *CopyProtection\USB Key* folder of the AFT CD or downloaded from our website at www.aft.com/support/usb-key-support.

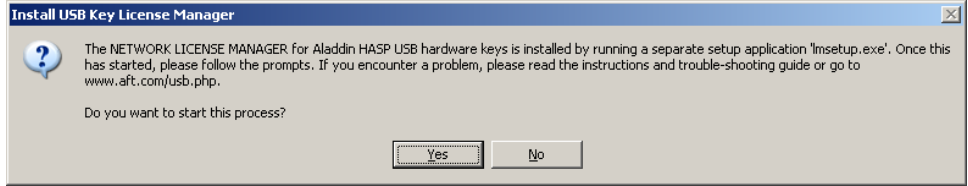
The Aladdin support files can be installed by running the setup manually or copying a file to the hard disk. On the installation CD in the *CopyProtection\USB Key* folder (or downloaded from our website) is a file named **aksdiag32.exe**. Double-click it to launch the installation if the DiagnostX application. The same set of screens will appear as described in the During Installation section. The file **custom.dll** should be copied from the CD. The file **afthasprus.exe** can also be copied from the CD.

Network License Manager Setup

If you are accessing the key over a network then a network license manager must be installed. AFT highly recommends that this be set up as a service. If it is setup as an application, it should be included in the startup folder so that it is automatically running each time the server is restarted. If it is setup as a service, it should always be started.

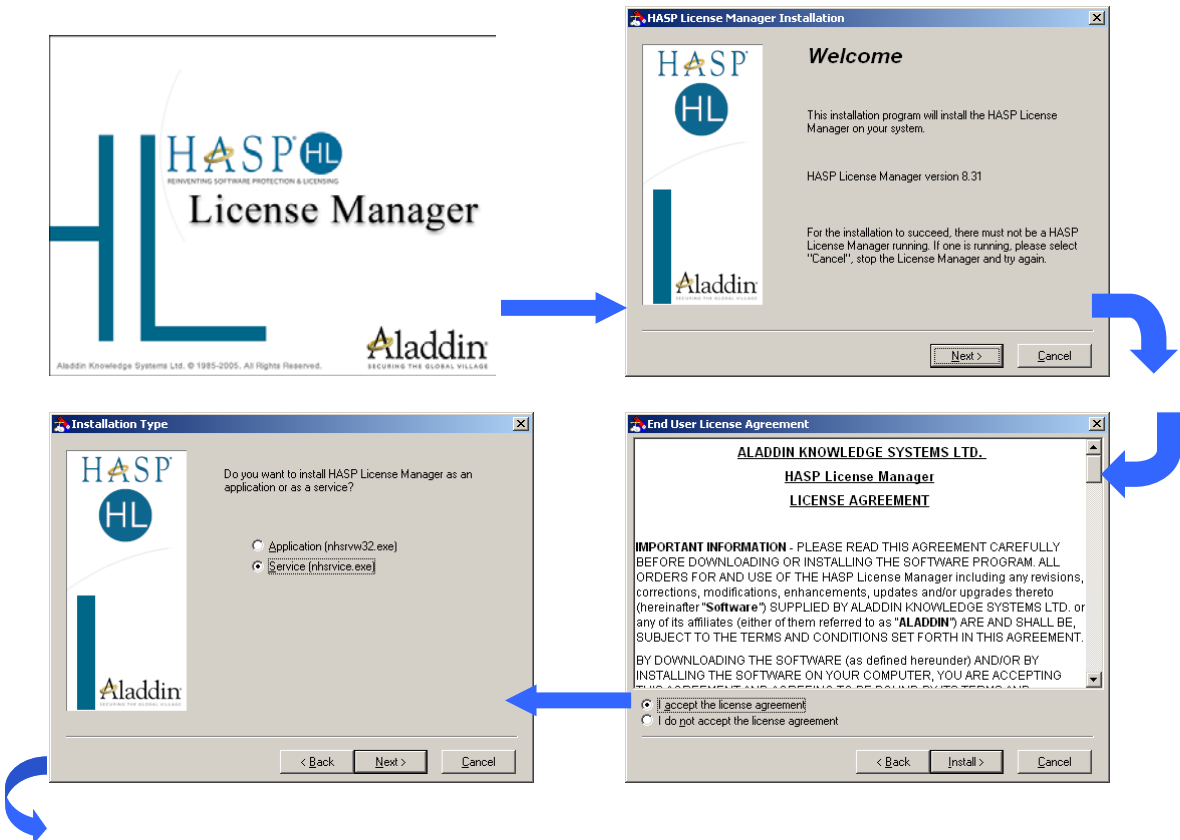
During Installation

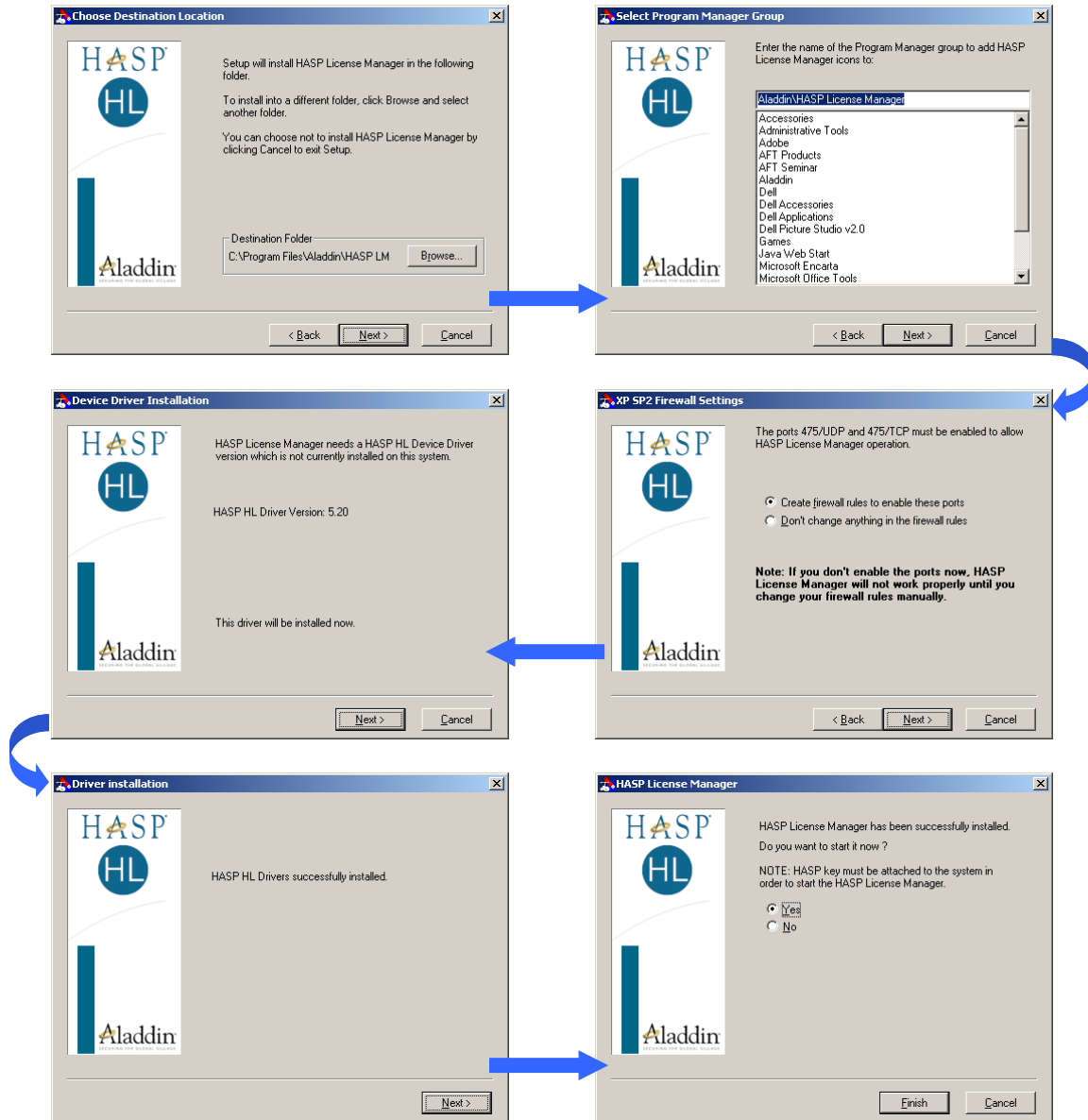
If a network USB key (red) is being used and the Network License Manager option is selected to be installed then a message will appear explaining that the network license manager is installed by running a separate application.



The license manager is installed using a setup application provided by Aladdin. Below is a sample sequence of the screens you should encounter. It is important to change the firewall settings to allow the HASP license manager to access certain ports. If the license manager is installed as an application, it should be added to the Startup Folder.

This will also install the current drivers, if needed.





Manual Setup

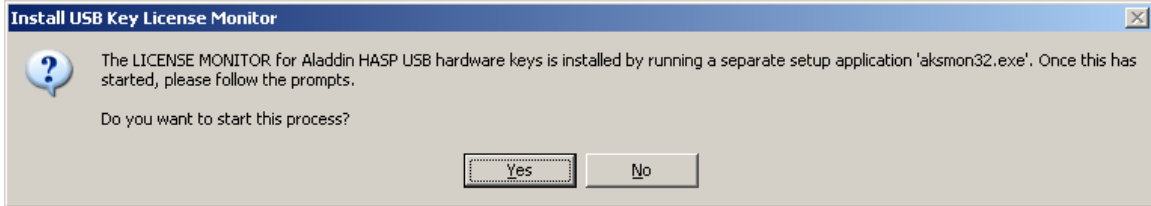
On the installation CD in the *CopyProtection\USB Key* folder (or downloaded from our website) is a file named **Imsetup.exe**. Double-click this file and the same set of screens will appear as described in the During Installation section.

Network Monitor Setup

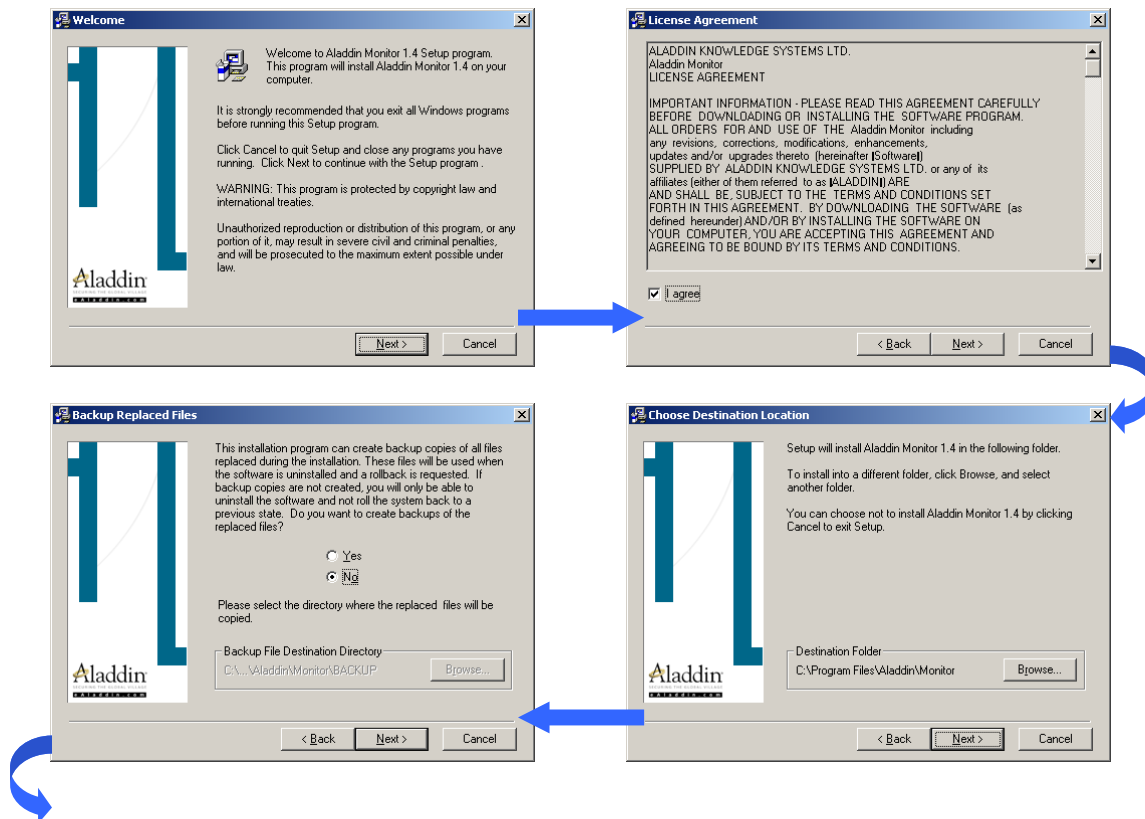
The Network Monitor allows a system administrator to determine which computer and user are accessing the applications protected by the USB key. This is optional and only applicable when using a network (red) USB key.

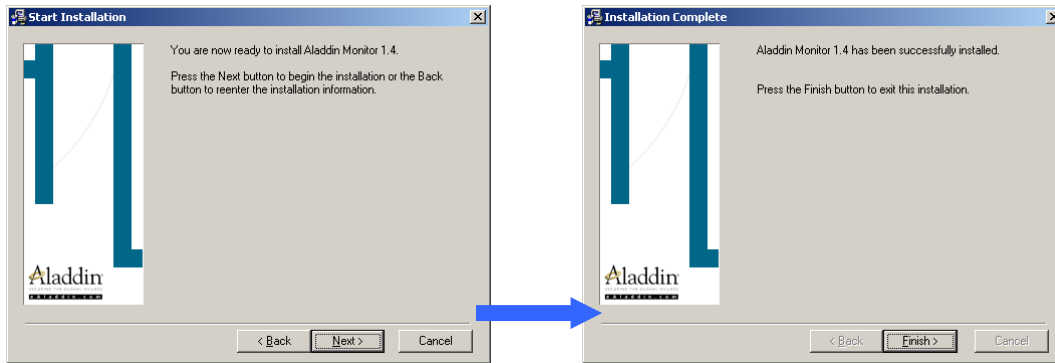
During Installation

If a network USB key (red) is being used and the Network License Manager option is selected to be installed then a message will appear explaining that the network monitor is installed by running a separate application



The network monitor is installed using a setup application provided by Aladdin. Below is a sample sequence of the screens you should encounter.





Manual Setup

On the installation CD in the *CopyProtection\USB Key* folder (or downloaded from our website) is a file named **aksmon32.exe**. Double-click on this file and the same set of screens will appear as described in the During Installation section.

Additional Information

Since there are several types of copy protection available for AFT applications the time required to search for a valid license can be reduced by directing the application to look for a specific type first. This is done by adding a key word the control.aft file located in the folder of each of the main applications. Open the control.aft file using Notepad or equivalent text editor and add `ProtectionType = 4` to the [CONTROL FLAGS] section. This indicates that a USB key is used for the copy protection and will be looked for first.

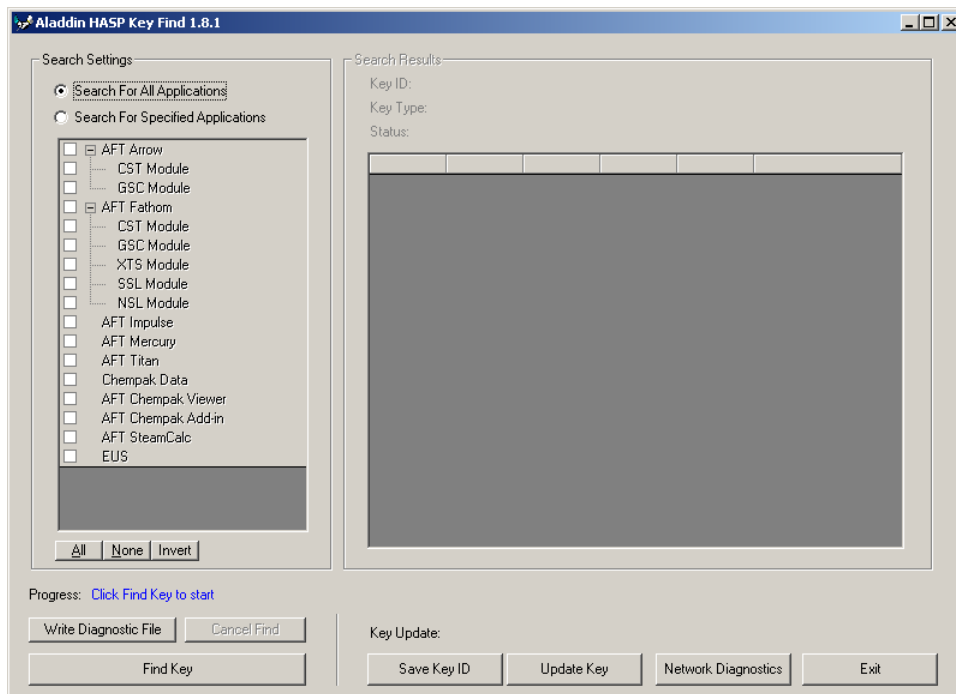
To run a command in Windows Vista click on the Windows Start orb and type the command in the search field then press Enter. Use `ipconfig` to get the IP address of a computer. To open the services type `services.msc`.

Using the Utilities

Looking at a Key

To determine what has been programmed on a key you can use the HASPKeyFind utility. It is typically installed in the AFT Products folder during the setup. It is also on the installation CD in the *CopyProtection\USB Key* folder or can be downloaded from our website. HASPKeyFind must be installed before it can be used. It is installed using the AFT Copy Protection Setup from the installation CD or downloaded from our website at www.aft.com/support/usb-key-support. You will also need the key attached to the computer. See the Troubleshooting section if problems are encountered.

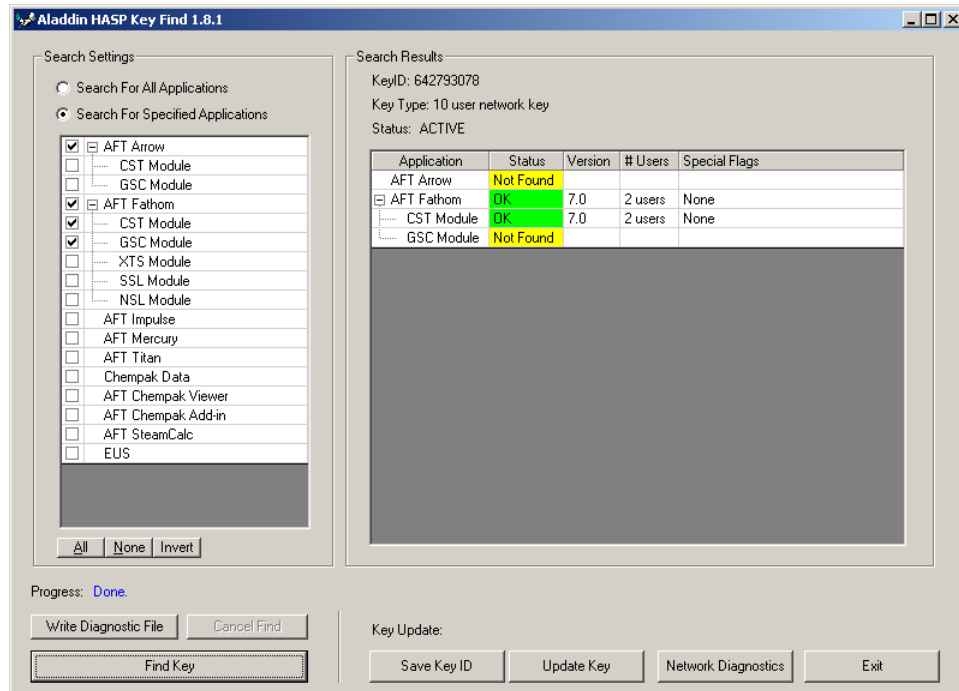
You have an option to either look for all AFT applications or just specific ones. Looking for all applications is more comprehensive but is also much more time consuming. To search for specific applications, click the 'Search For Specified Applications' option and check the applications desired, as shown below. Then click Find Key. There is a progress status line showing what HASPKeyFind is processing.



The table on the right will list the applications being searched. When an application is found, it will show OK in the status, the version and any special flags associated with the application. If it is a network key, the number of users will also be shown. The status area will also show if an application is not found, there is an error or the key data has been corrupted.

Other key information is also shown above the table. The Key ID and Key Type are important identifiers of your key. The overall status of the key is either Active or Inactive. If the key is Inactive, it will be programmed for the applications but must be

activated before the AFT software will run. See the discussion on activating a key in the Updating a Key section below.



If requested by AFT support, you can create a file of the key data by clicking Write Diagnostic File. The file will be created in the same folder as HASPKeyFind and will be named **AFT_USBInfo.txt**.

Updating a Key

At times a key may need to be updated. This could include adding a new licensed application, increasing the number of network users, upgrading to a new version of an application or activating the key.

To update a key you can use the HASPKeyFind utility. See Looking at a Key above for information about installing and running the the HASPKeyFind utility. You will also need the key attached to the computer.

Updating a key is a three step process:

- 1) Save the key information to a file by clicking Save Key ID
- 2) Send the file to AFT
- 3) Update the key using the file returned to you from AFT by clicking Update Key.

To create a key information file, start HASPKeyFind and click Save Key ID. You will be prompted for a file name and location. The file will have an extension of **.aki**. Remember where you save it, then send this file to AFT support.

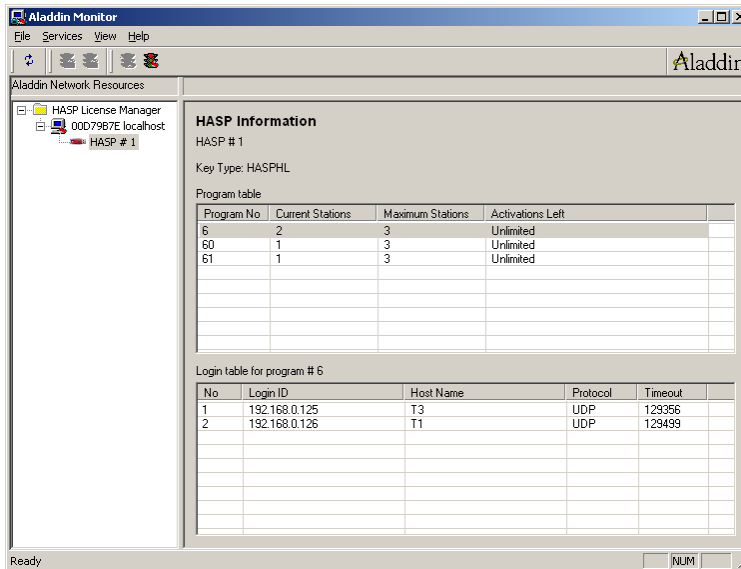
You will receive back from AFT the update file which will have the extension **.aku**. Once you have received it, start HASPKeyFind again and click Update Key. You will be

prompted to browse to the update file you received from AFT. After the file has been selected, you will see the update progress displayed in the progress area.

Once the key has been updated, you can verify the changes by clicking Find Key. The results will be displayed on the right hand side. See 'Looking at a Key' above for additional information.

Monitoring Network Usage

If you have a network key and have installed the key monitor you can determine the users (IP address and computer name) that are accessing the key by running the Aladdin Monitor (aksmon.exe). This is typically installed in the Program Files\Aladdin\Monitor folder and can be accessed using the shortcut on the Start menu. Click on a key in the list on the left to display the applications available on the key, the number of users currently using it and the maximum number of seats (users) available.



The following is a table of Program Numbers, referenced in the License Monitor, for AFT applications.

Product/Module Name	Program Number	Product Name	Program Number
Arrow	6	Impulse	9
Arrow CST	60	Mercury	11
Arrow GSC	61	Titan	16
Fathom	1	Chempak Data	10
Fathom CST	50	Chempak Viewer	12
Fathom GSC	51	Chempak Add-in	13
Fathom XTS	52		
Fathom SSL	53	EUS	7
		SteamCalc	8

Troubleshooting

There are several steps that can be taken to determine the trouble when using a USB key. Using the key over a network may require Administrator access permissions. Described below are some steps that may be helpful in the troubleshooting process.

Quick and Simple

The most obvious thing is to verify that the USB key is attached and powered. When a key is properly attached, there will be an internal red light illuminated.

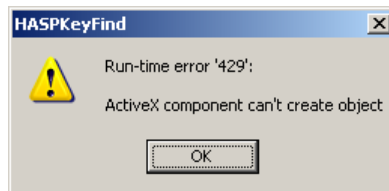
The HASPKeyFind utility shows what is programmed on the key. This will confirm that the key has a license for the AFT software you are trying to run. Please see the discussion 'Looking at a Key' in the 'Using the Utilities' section.

Multiple USB keys may be attached to the same computer or license server as long as they are protecting different AFT applications. If multiple keys are used that protect the same application, only the first one that is found will be queried and the others will not be recognized.

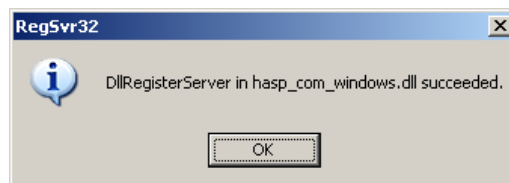
Some detailed, step-by-step information can be obtained by setting the keyword "DebugTokens = TRUE" in the control.aft file, located in the application folder. When you then attempt to start the AFT software, this will generate a file named 'Token.dbg' in the application folder which can be viewed using Notepad or sent to AFT for analysis.

Runtime Errors

If you experience a runtime error #429 when HASPKeyFind is launched it is most likely caused by not having the file `hasp_com_windows.dll` located in the `Windows\System32` folder (or `SysWOW64` for 64-bit systems) and registered.



Copy the file **hasp_com_windows.dll** (version 3.50.1.7758, dated 01/22/2010) from the CD in the *CopyProtection\USB Key* folder (or downloaded from our website) to the `Windows\System32` folder (or `SysWOW64` for 64-bit systems) of the computer where the USB key is attached. Register the file by selecting Run from the Start menu, entering 'regsvr32 hasp_com_windows.dll' (without the quotes) and clicking OK. You will get a confirmation screen stating that the registration was successful.



Depending on your user permissions you may need to register them using an elevated command prompt (right-click on Command Prompt and select Run as Administrator).

The **hasp_windows_68889.dll** (version 3.10.1.6747, dated 01/22/2010) must also be located in the same folder as the **hasp_com_windows.dll**. This can be copied from the CD in the *CopyProtection\USB Key* folder or downloaded from our website.

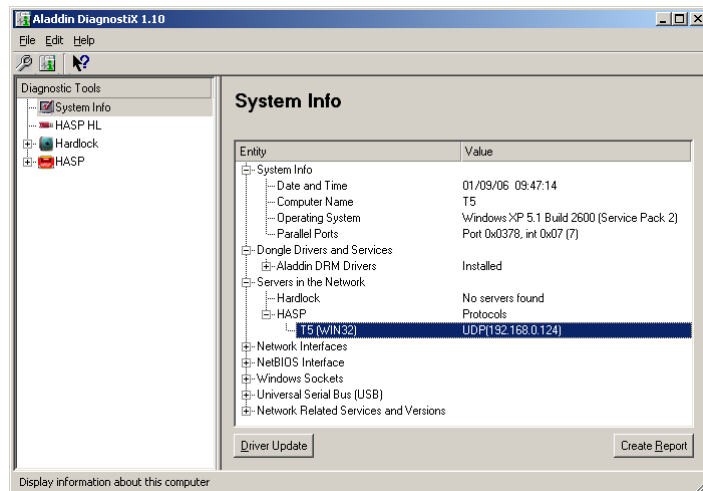
If HASPKeyFind is run from a client then the Network Client Setup for the application (not the AFT Copy Protection Setup) must first be run on the client.

Other problems finding/using an OCX file are solved by installing the USB Key drivers and files. Additionally, if the application is installed correctly, many of these file problems will be resolved. Please see the Installation section above for more details.

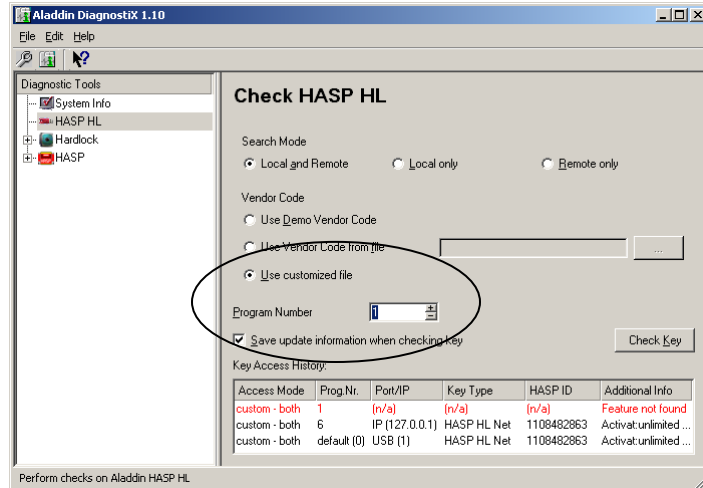
Using Aladdin DiagnostiX

The Aladdin DiagnostiX application (**diagnostix.exe**) gives a detailed overview of the system and key information. This is typically located on the server or stand-alone computer in the Program Files\Aladdin\DiagnostiX folder. Run the **askdiag32.exe** to manually install this. A file (**custom.dll**), customized with AFT-specific key information, is placed in this folder or the application folder. To allow users access to this DiagnosticX application across a network, a shortcut can be setup on the client computer.

Information about the operating system, license managers and drivers is obtained by choosing System Info from the left-hand list. Of particular importance to troubleshooting a network installation is the presence of a HASP server in the network.

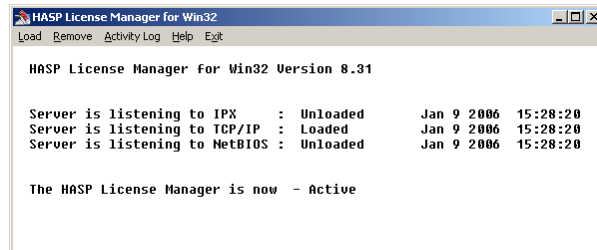


Specific applications can also be checked. Make sure that 'Use Customized File' is chosen in the Vender Code area. By selecting the Default (0) Program Number the actual presence of the key can be verified. Other program numbers correspond to specific AFT application. For example, 1 is Fathom, 6 is Arrow, etc. See the Program Number table listed in the Monitoring Network Usage section above for a complete list of AFT application numbers.



Verifying Network License Manager

If a Network Key (red) is being used, the License Manager must be running on the server or computer to which it is attached. It can be either a service or an application which is started each time during startup. AFT strongly recommends that it be installed as a service. The License Manager icon is also placed in the System Tray. Double-click on this to bring up the following screen. The version, protocols and status can be verified using this.

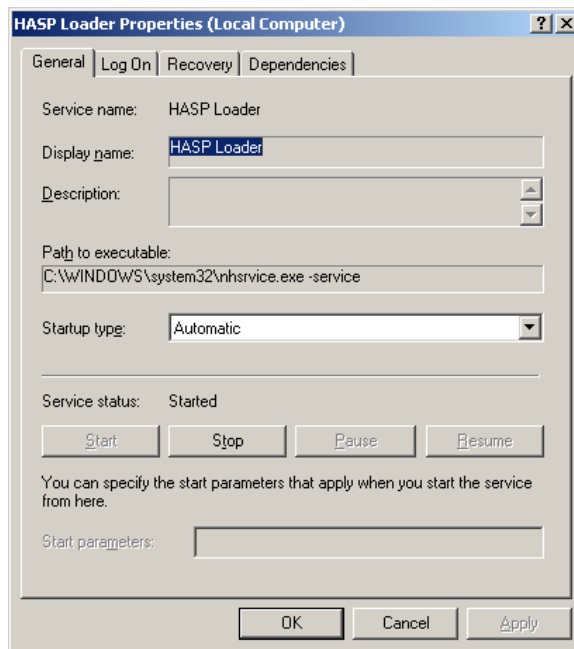
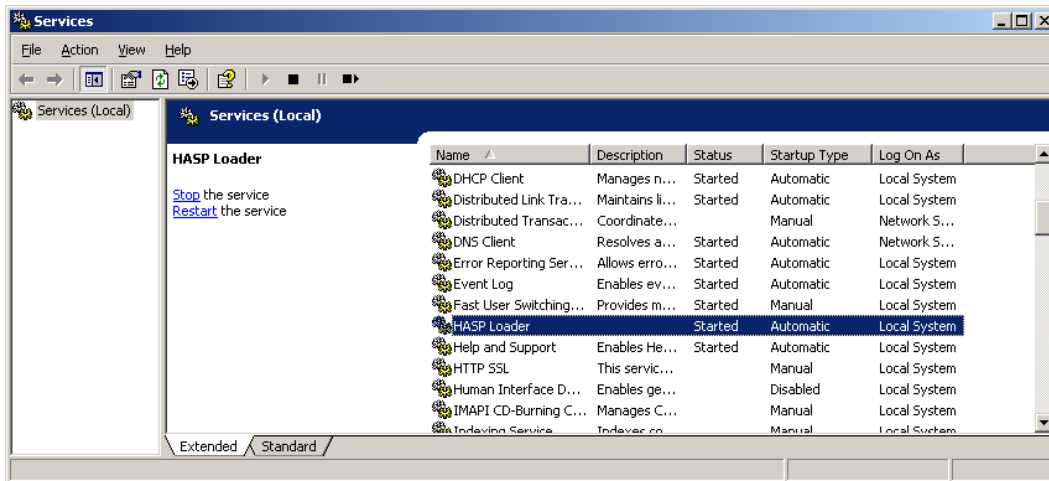
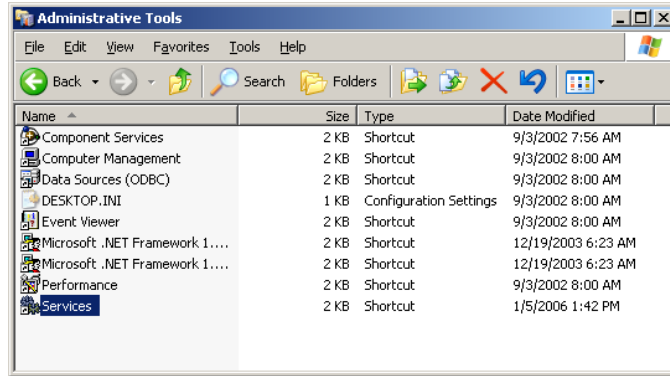


If the License Manager is not running the application will not be able to access the key. HASPKeyFind will return “In Use?” when looking for the application.

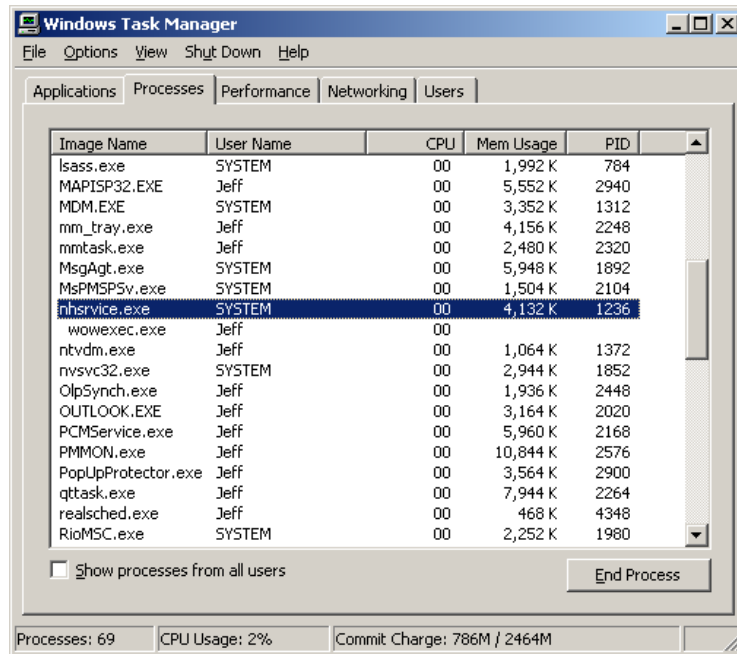
License Manager as a Service

A service can be checked by clicking Start --> Run and entering ‘services.msc’ and clicking OK. It can also be accessed by choosing Services from the Administrative Tools located on the Settings/Control Panel menu.

The service is named HASP Loader. Verify that it is started. Other details can be seen by selecting the service and Properties.



The license manager is also shown in the Windows Task Manager as nhsrvice.exe listed in the processes table. Depending on the installation it may also be listed as nhsrvw32.exe.

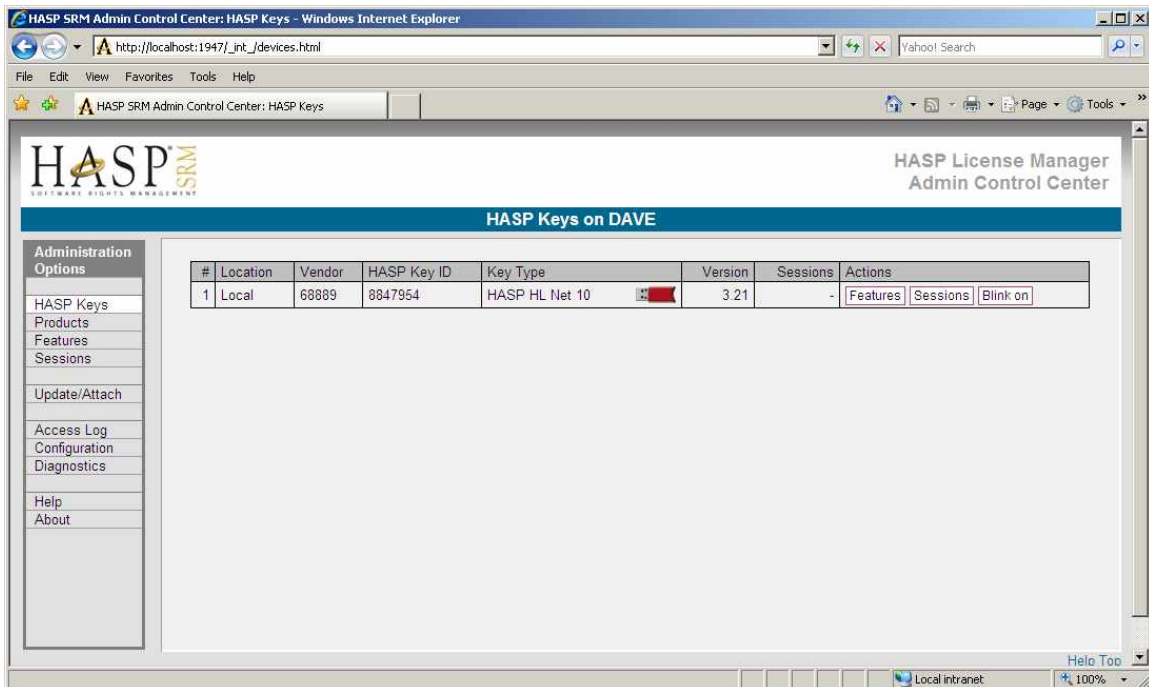


Finding a Key ID on the Server

For network USB keys (red) there are additional diagnostics that can be generated using Aladdin's HASP Admin Control Center (ACC). This can be launched in a browser by clicking on the Network Diagnostics button in the HASPKeyFind utility while at the server. Alternatively you can type <http://localhost:1947/devices.html> in the address bar of a web browser.

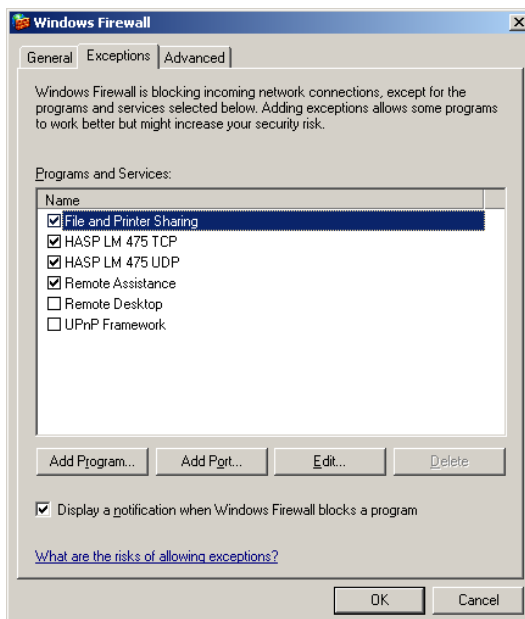
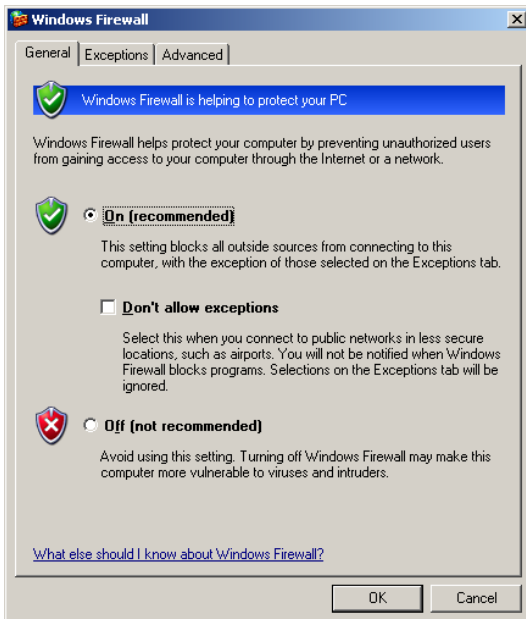
Using the Admin Control Center you can verify which keys are attached to the server and the Key IDs and vendor IDs for each of the keys (AFT's vendor ID is 68889). Clicking Blink On will start the red light on the USB key to flash allowing it to be identified.

Other diagnostic and driver information can be found by clicking Diagnostics on the left-hand menu.



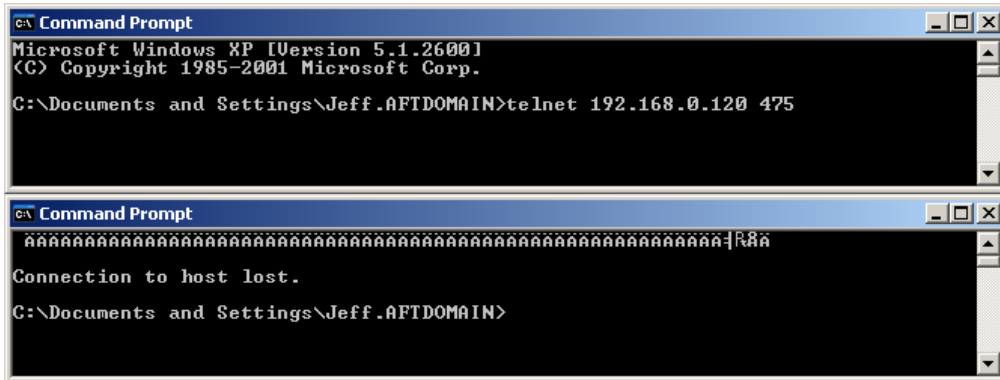
Configuring a Firewall

The firewall on the server must be configured to allow the License Manager to broadcast license information. To verify the firewall settings, choose Windows Firewall from the Settings/Control Panel. If the firewall is ON then make sure that the proper settings on the Exceptions tab are set. These are automatically set during the License Manager installation. This is only needed on the server or computer where the License Manager is running and the USB key is attached.



Port 475 needs to be available to available and not blocked by a firewall. The following steps can be taken to test if port 475 is open. Note that the XX.XX.XX.XX must be replaced by the actual IP address of the server (192.168.0.120 in this example).

- 1) Open a command prompt
- 2) Enter 'telnet XX.XX.XX.XX 475' (without quotes)
- 3) Press any letter key and a stream of characters should be returned, it will end with a message "Connection to host lost."



Using Nethasp.ini

If a client cannot find the HASP key server the location can be specified in a file named NETHASP.INI. This can occur for several reasons, most commonly because the client is on a different IP subnet than that of the server. This file needs to be located on the server in the application folder and on the client in the Windows\System32 folder (or SysWOW64 for 64-bit systems). If the application is installed locally on the client and the USB key is on the server, this file must be in the local application folder. For the Chempak Excel Add-in and the SteamCalc Excel Add-in, this file also needs to be in the Excel folder on the client.

A template file can be found on the CD in the *CopyProtection\USB Key* folder or downloaded from our website at www.aft.com/support/usb-key-support. Depending on the installation type it may also be in the AFT Products folder on the server.

AFT recommends that the server's IP address be used instead of the server name. To enter the server's IP address find the [NH_TCPIP] section, uncomment the NH_SERVER_ADDR line by removing the leading semi-colons and then enter the server's IP address (note: remove the < > brackets). If there is continued trouble accessing a key you can try uncommenting NH_USE_BROADCAST and setting it to Disabled.

Below is a snippet from a nethasp.ini file with the server's IP address entered.

```
[NH_TCPIP]

; NetHASP does not support TCP/IP under DOS.
;
;
; Section-specific Keywords for the TCP/IP protocol.
;

NH_SERVER_ADDR = 105.4.21.120 ; IP addresses of all the NetHASP
                               ; License Managers you want to search.
                               ; Unlimited addresses and multiple
                               ; lines are possible.
                               ;
                               ; Possible address format examples:
                               ; IP address:      192.114.176.65
                               ; Local Hostname:  ftp.aladdin.co.il

;;NH_PORT_NUMBER = <Num>      ; Set the TCP/IP port number. This is
                               ; optional. The default number is 475.

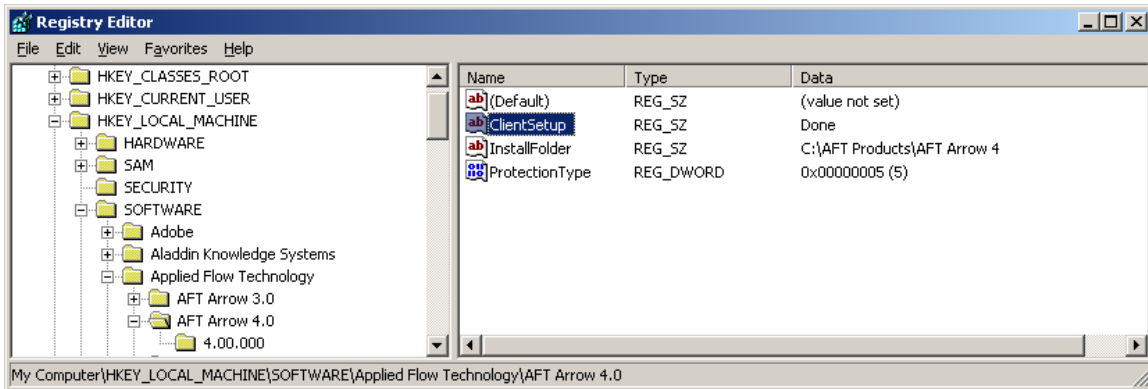
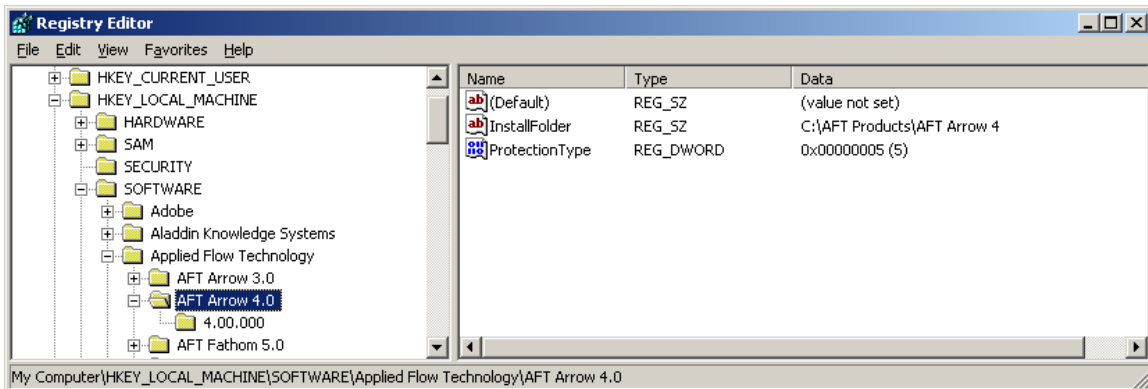
;;NH_TCPIP_METHOD = TCP or UDP ; Send a TCP packet or UDP packet
                               ; Default: UDP
;;NH_USE_BROADCAST = Enabled or Disabled; Use TCPI/IP Broadcast mechanism.
                               ; Default: Enabled

;;NH_SERVER_NAME = <Name1>, <Name2> ; Communicate with the NetHASP
                               ; Server with the specified name.
                               ; Maximum: 6 names, up to 7
                               ; case-insensitive characters each.
```


Registry Settings

The installation will add several keys to the registry in the HKEY_LOCAL_MACHINE\SOFTWARE\Applied Flow Technology\Application area. The InstallFolder key stores where the application has been installed. The ProtectionType key stores the copy protection method used. This value is set during the installation of the application.

There is an additional key added when the Client Setup is run for a network/client installation. The key ClientSetup is set to 'Done' when the Client Setup is performed for on a client computer. When the application is launched, it will look for this key and a warning is given if the Client Setup is not done.



Error Finding the Key ID

Rarely the application doesn't start because the USB key cannot get the key ID. The key can usually be found and other computers can run OK but a one or more cannot determine the key ID. This usually can be resolved by registering the following DLLs located in the Windows\System32 folder using regsvr32: msxml.dll, msxml2.dll, msxml3.dll, msxml4.dll. We only need msxml.dll but for some reason this problem is resolved when all these DLLs are registered.

Using Multiple USB Keys

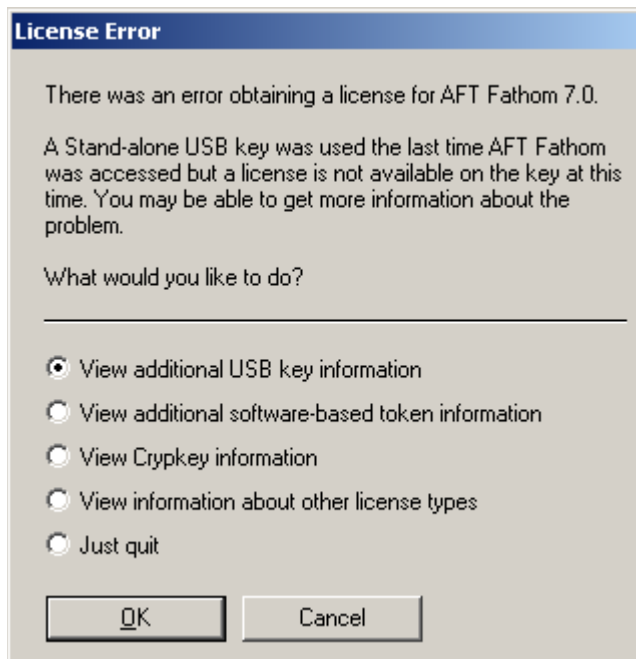
Two AFT network USB keys cannot be used on the same server. They must be attached to different servers with separate License Managers running. Furthermore, any module or Chempak Data licenses must be on the same network key as the main application.

A network (red) key can be used in conjunction with a stand-alone (green) key in some circumstances. If the application is on both then only the stand-alone will be accessed. If the application is on one and a module or Chempak Data is on the other they will both be found.

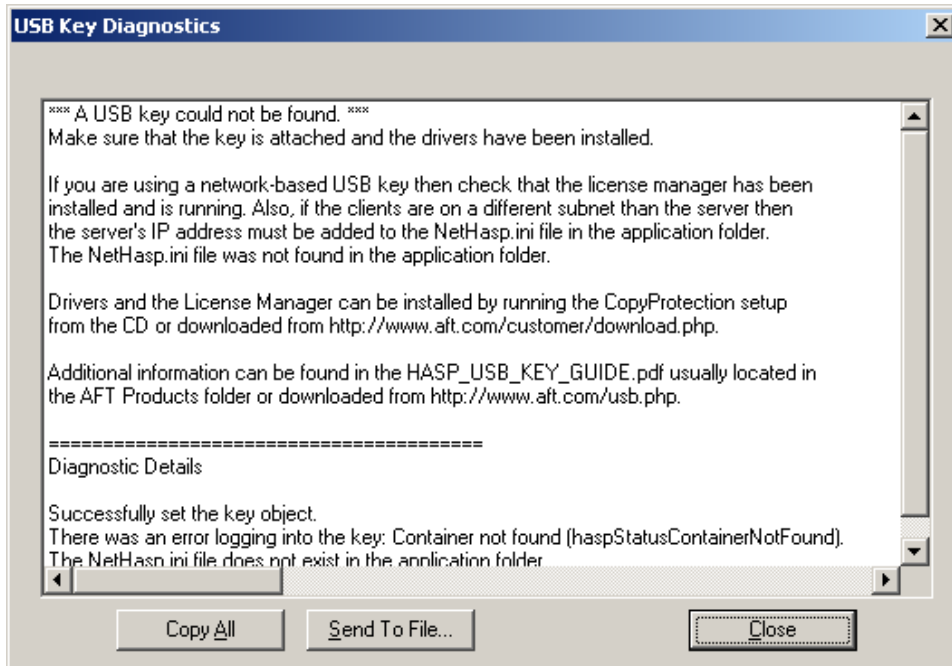
Two stand-alone (green) keys on the same computer can be used if they contain different applications or modules.

Application Diagnostics

When there is an error obtaining a license when starting an application you will be given the choice to view additional diagnostic information. Choose ‘View additional USB key information’ and click OK.



A screen with additional information and suggestions will be displayed. This can be copied or saved as a file and may be requested by AFT support.



If all the licenses on a network key are being used the key will return an error when the application attempts to login. However, this error is the same as that when there is no license at all so the application cannot tell the difference. This is why the application and HASPKeyFind can only report that the key may be in use and to try again later.

