

# EXgarde ASSA ABLOY APERIO INTEGRATION

## User Manual

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## Foreword

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## Cautions and Notes

The following symbols are used in this guide:



**CAUTION!** This indicates an important operating instruction that should be followed to avoid any potential damage to hardware or property, loss of data, or personal injury.



**NOTE.** This indicates important information to help you make the best use of this product.

# Contents

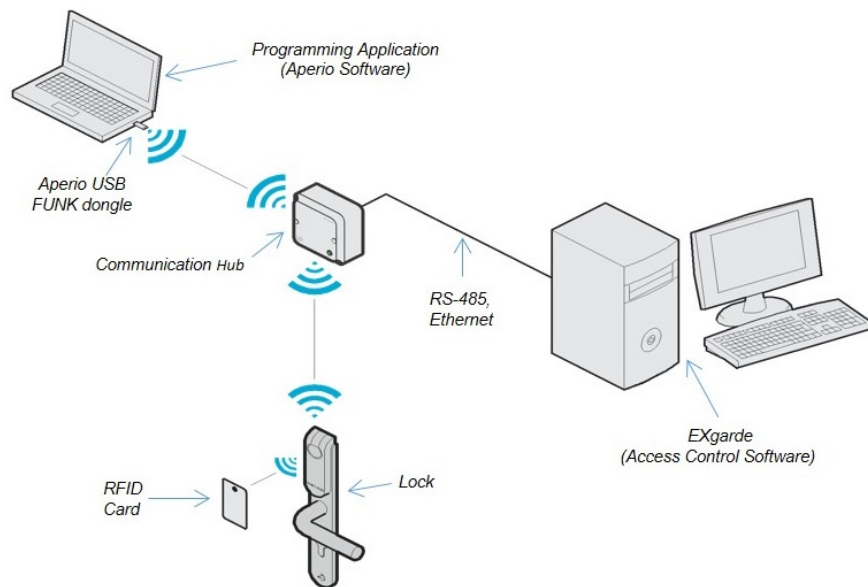
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# 1. Overview

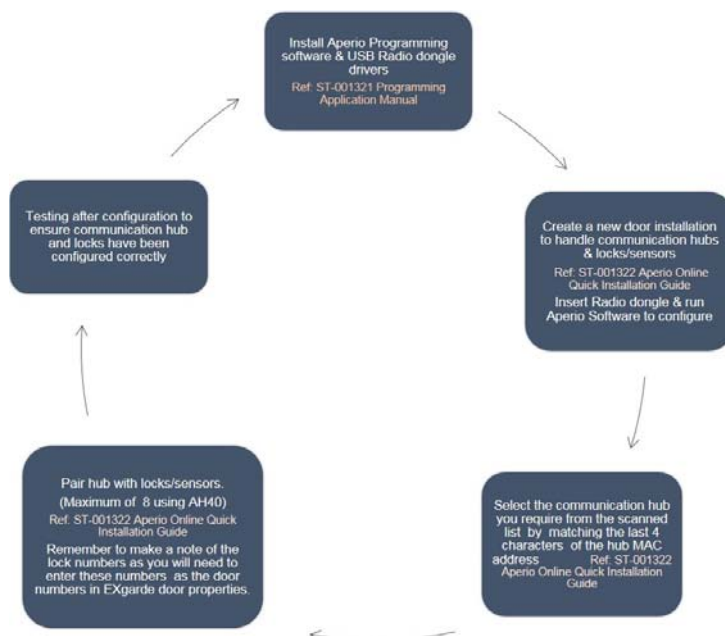
EXgarde provides the ability to integrate with the Assa Abloy Aperio IP lock system by connecting to Assa Abloy's AH40 communication hub. The EXgarde interaction includes controlling and monitoring a maximum of 8 Aperio devices per hub.

The diagram below shows a technology overview of all software and hardware needed for configuration / set up of a working system, complete with EXgarde Access Control software



## 2. Aperio IP Locks Configuration

Before the Assa Abloy IP locks can be integrated with EXgarde the following steps will need to be followed;



Detailed information on any of the above can be found in the following online documents:

- ST-001321 Aperio Online Programming Application Manual-D
- ST-001322 Aperio Online Quick Installation Guide-C
- ST-001323 Aperio Online Mechanical Installation Manual-C

The screen below shows the scanned list of Hubs and locks/sensors. The details can be seen on the right. Details include, the MAC address of the communications Hub, Firmware version, last four digits of the Hub MAC address, IP address of the Hub and EXgarde PC, ACU/Hub port number and the state of the TLS Encryption. The MAC address of the lock / door is also shown

The screenshot shows the 'Aperio Programming Application - [TDSi Install]' window. On the left, a table lists scanned devices:

Lock/sensor	Communication Hub	EAC Address	UHF Link
03B409	02D28C	0	
033F6F	02D28C	0	

Annotations on the table:

- Unique lock/Door number (this is the number that will need to be entered as the door number in EXgarde) - points to the 'Lock/sensor' column.
- Last 6 numbers of communications Hub - points to the 'Communication Hub' column.

On the right, the details for the selected 'Communication Hub [02D28C]' are shown:

- MAC Address: 00:17:7a:91:02:02:02:8c
- IP, Multiple Lock [Aperio protocol]: 1.1.1955
- Firmware Version: 1.1.1955
- Bootloader Version: 1.1.1955
- Radio protocol version: 23
- Channel: 26 (2.480 GHz)
- Radio channels: 11, 16, 26
- PAN ID: 028C
- IP Address: 10.0.2.191
- ACU Address: 10.0.8.122
- ACU port: 9999
- TLS Encryption: Disabled
- Number of paired locks and sensors: 2

Annotations on the right details:

- Hub IP Address - points to the 'IP' field.
- IP Address of PC EXgarde is running on. Also the PC the IP Locks Service is running on. - points to the 'ACU Address' field.

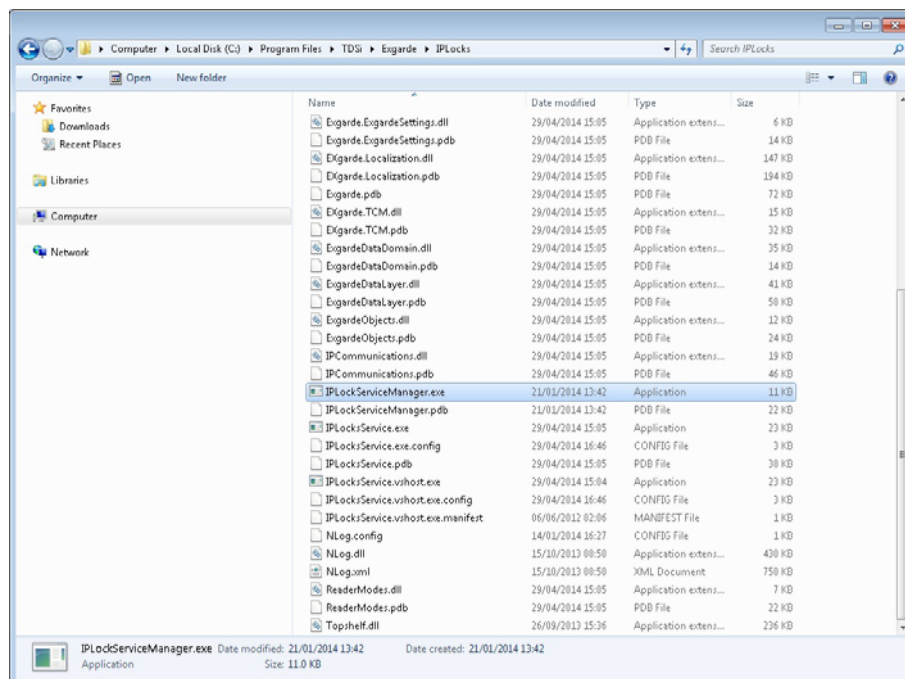
Below the table, the details for the selected 'Lock/sensor [03B409]' are shown:

- MAC Address: 00:17:7a:91:02:03:03:469
- Assigned Address: 0x10a6
- EAC Address: 0
- Radio protocol version: 23

At the bottom left, it says 'USB Radio (COM 4)' and at the bottom right, the date and time 'May 15, 2014 1:36:14 PM'.

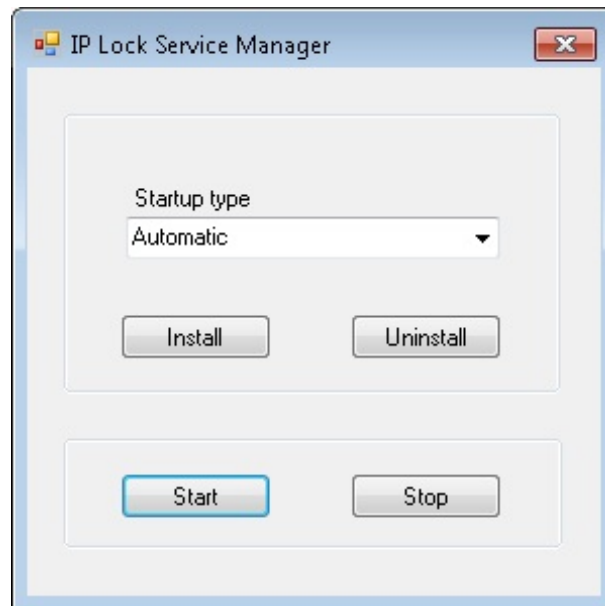
## 3. IP Lock Service Manager

To enable communications between EXgarde and the IP Locks communication hub, the IP Lock Service must be running. The Service Manager can be used to configure the IP Locks Service. This can be found in C:\Program Files\TDSi\Exgarde\IPLocks\IPLockServiceManager.exe.

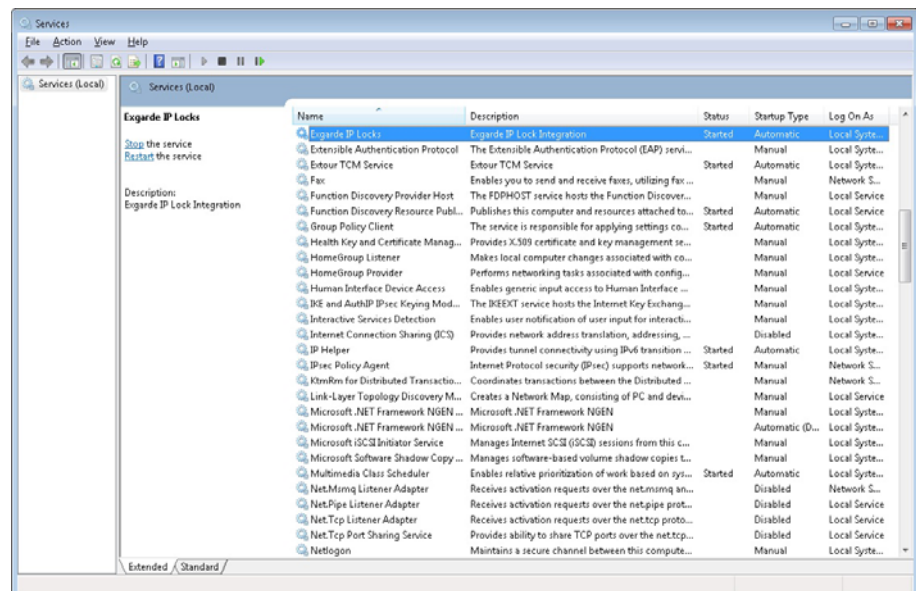


The Lock Service Manager can be used to control/configure the IP Lock Service; the start/stop buttons can be used to start or stop the service. When you first run EXgarde, the IPLocksService will be set to run in manual mode by default. This can be changed to run in Automatic mode by right clicking on the shortcut you have just created and selecting Run as administrator, click yes on the next screen to accept running as Administrator.

The IP Lock Service Manager will open and 'Start-up type' will default to Manual. To enable Automatic start-up of the service, click Stop then Uninstall, then select Automatic from the drop down list and click Install, next click on Start. From now on every time the PC running EXgarde is started the IP Service will start.



To check if the service is running and has been changed to automatic start, go to Services and the IP Locks Service Manager status and Start up Type should be the same as shown in the screenshot below. Status should be started and Startup Type should be Automatic

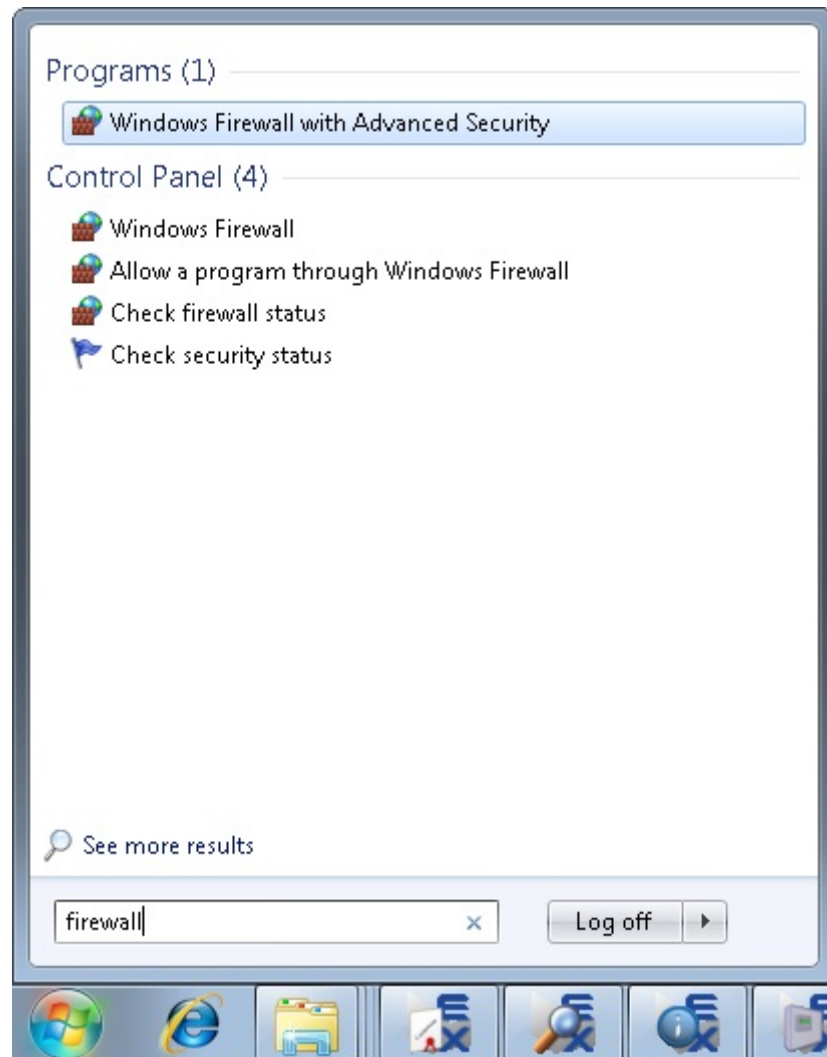




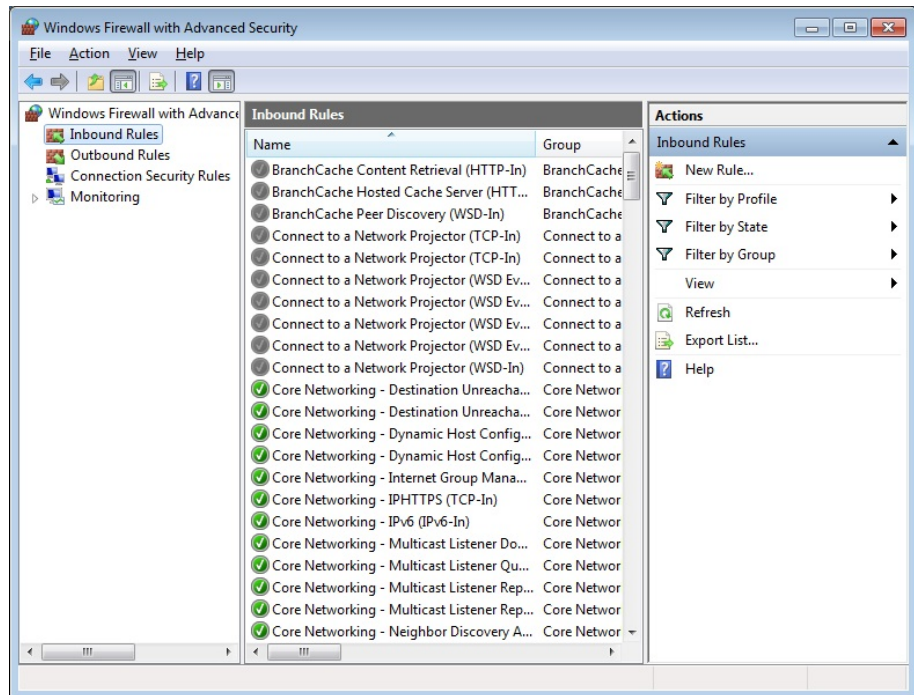
## 4. Firewall Configurations

The default IP ports on the PC EXgarde has been installed on will be blocked by Windows Firewall. The following steps need to be carried out for both inbound and outbound rules

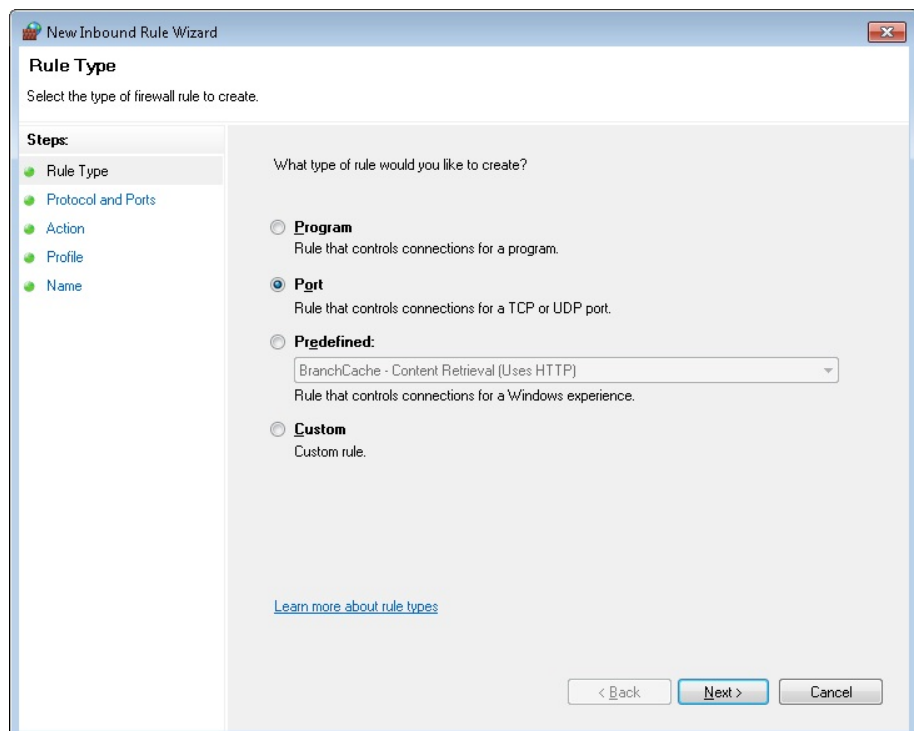
Search and open Windows Firewall with Advanced Security



Select Inbound Rules from the left window and then select New Rule in the Actions window on the right to start the wizard



When the Rule Type window opens, select Port and click next



From the Protocol and Ports window, select TCP and in Specific local port enter 9999 for Assa Abloy or specified IP port if changed from default then select next

**New Inbound Rule Wizard**

**Protocol and Ports**  
Specify the protocols and ports to which this rule applies.

**Steps:**

- Rule Type
- Protocol and Ports**
- Action
- Profile
- Name

Does this rule apply to TCP or UDP?

☐ TCP

☒ UDP

Does this rule apply to all local ports or specific local ports?

☐ All local ports

☒ Specific local ports: 9999  
Example: 80, 443, 5000-5010

[Learn more about protocol and ports](#)

< Back   Next >   Cancel

Select Allow the connection from the Actions window and click next

**New Inbound Rule Wizard**

**Action**  
Specify the action to be taken when a connection matches the conditions specified in the rule.

**Steps:**

- Rule Type
- Protocol and Ports
- Action**
- Profile
- Name

What action should be taken when a connection matches the specified conditions?

☒ **Allow the connection**  
This includes connections that are protected with IPsec as well as those that are not.

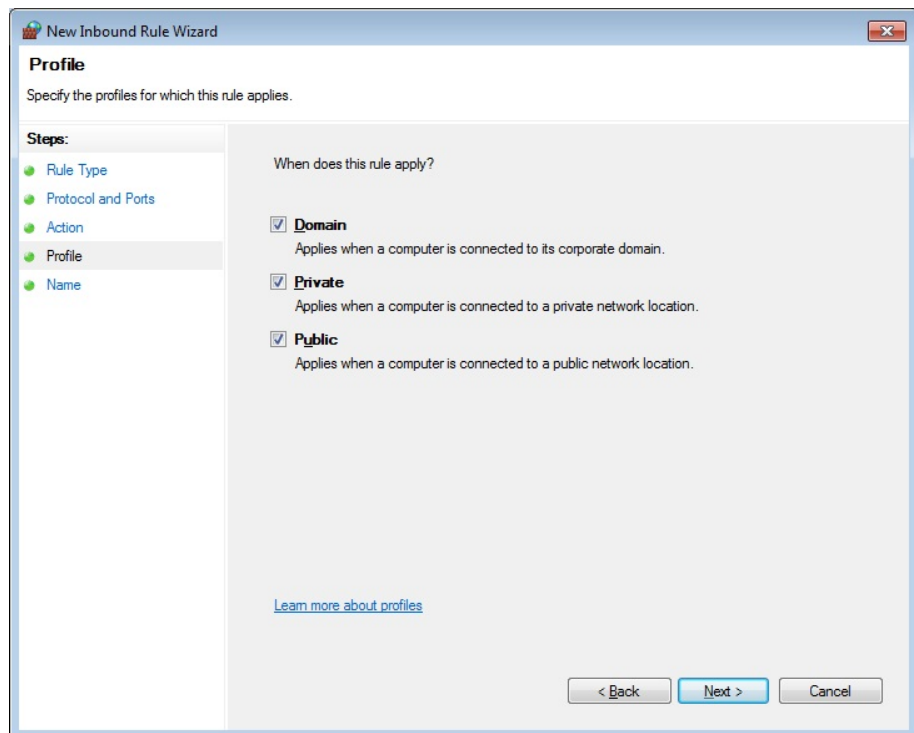
☐ **Allow the connection if it is secure**  
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.  
Customize...

☐ **Block the connection**

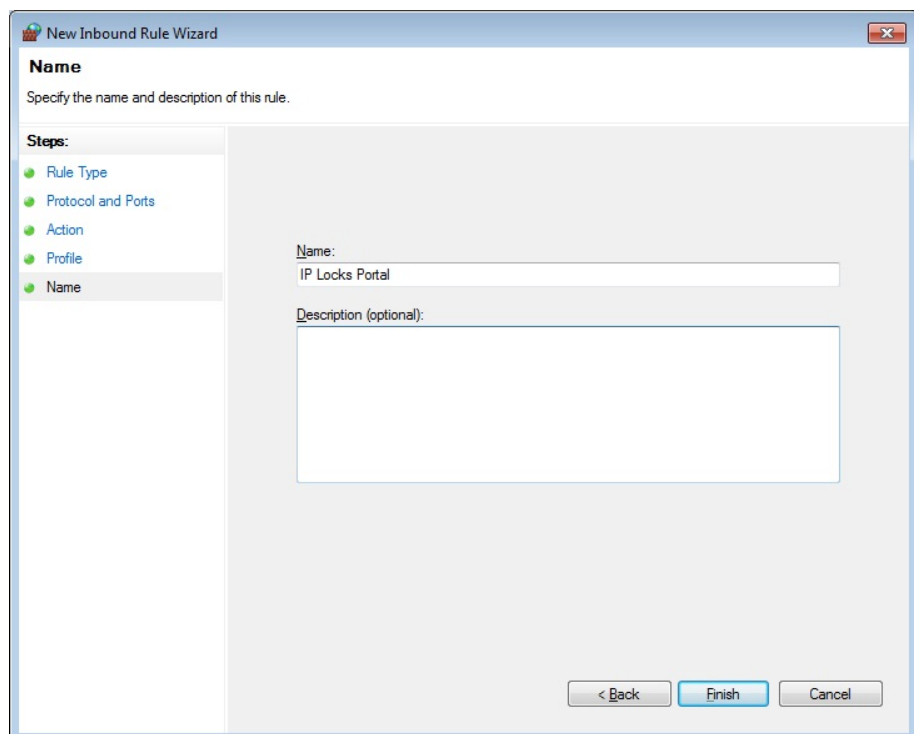
[Learn more about actions](#)

< Back   Next >   Cancel

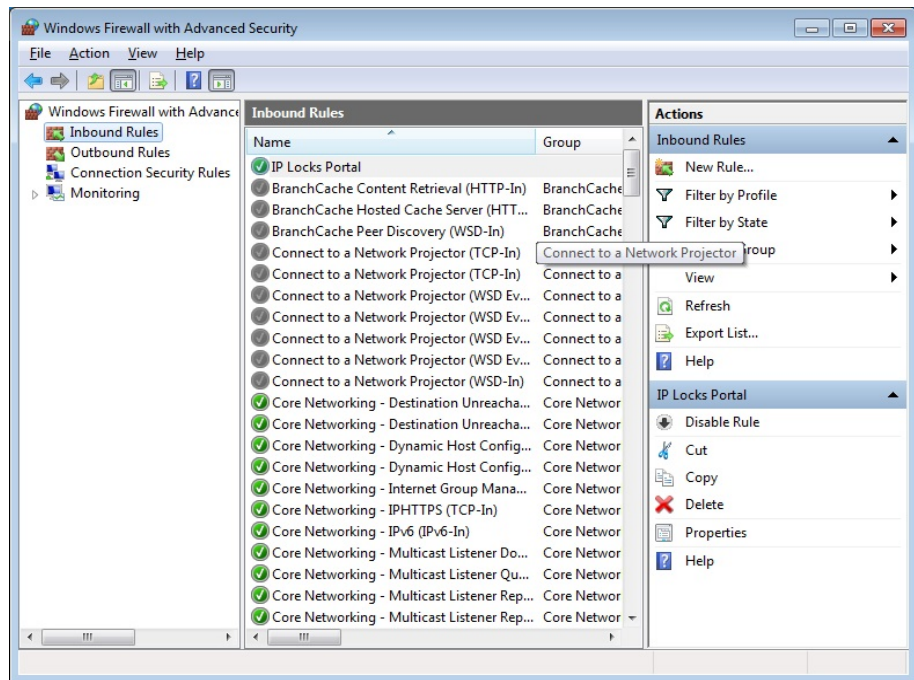
If you are unsure which of the Profiles need to be selected in the Profile window contact your IT support.



Finally, enter the name for the new rule and description if you desire and click Finish to complete the wizard.

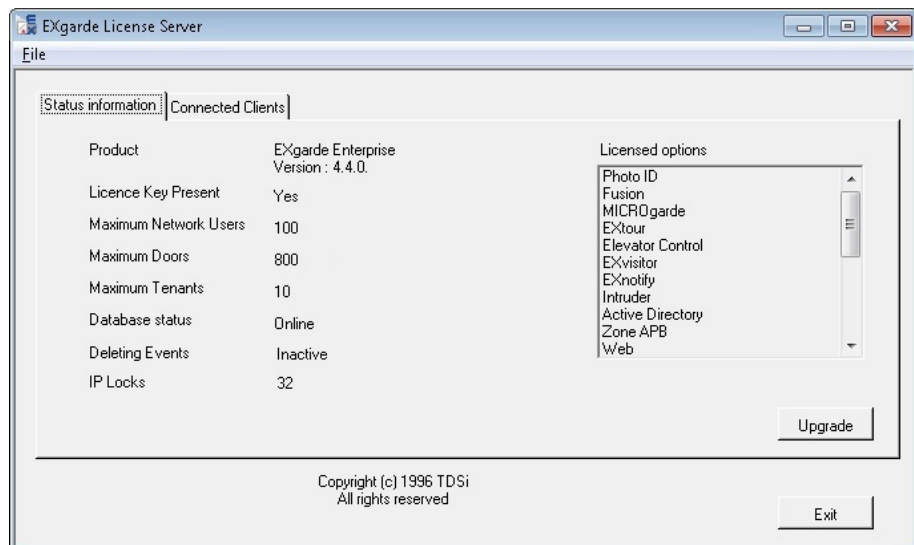


You can check the new Inbound rule by re-opening the Windows Firewall and Advanced Security window.



## 5. Configuring EXgarde

To enable the integration of IP Locks with EXgarde a license upgrade will need to be purchased from TDSi. Each Assa Abloy AH40 hub is capable of supporting up to 8 locks/sensors. Therefore if you were for example to purchase a license for 32 locks, this would give you the capability of running up to 32 locks spread over as many hubs as required for radio coverage. Doors that are not being used on a hub can be disabled and used to create another hub, up to the number of IP locks purchased

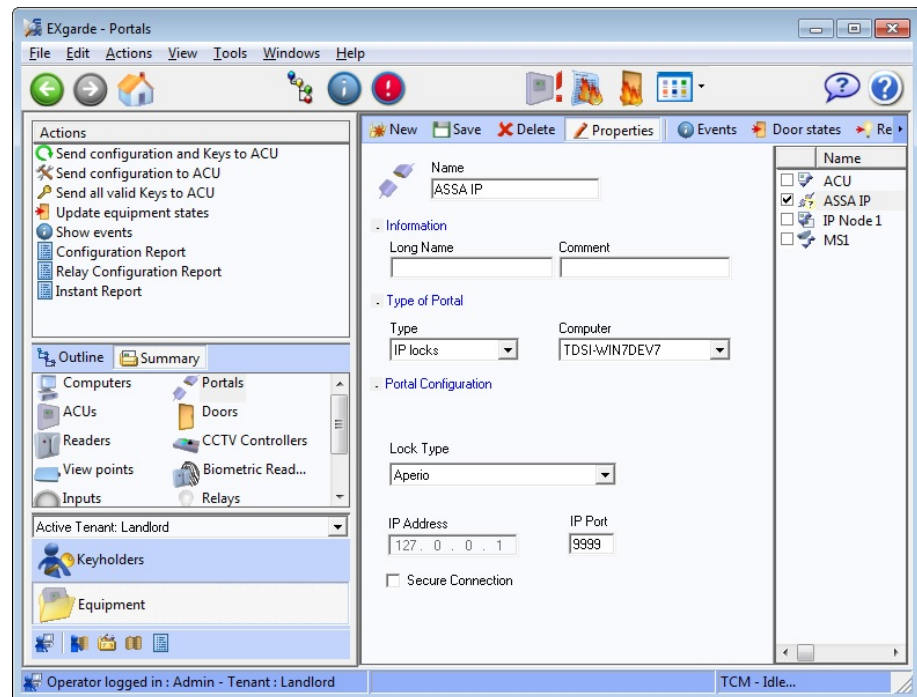


Start EXgarde Explorer, Operator is Admin, password is tdsi by default. The password can be changed in operator rights if required.

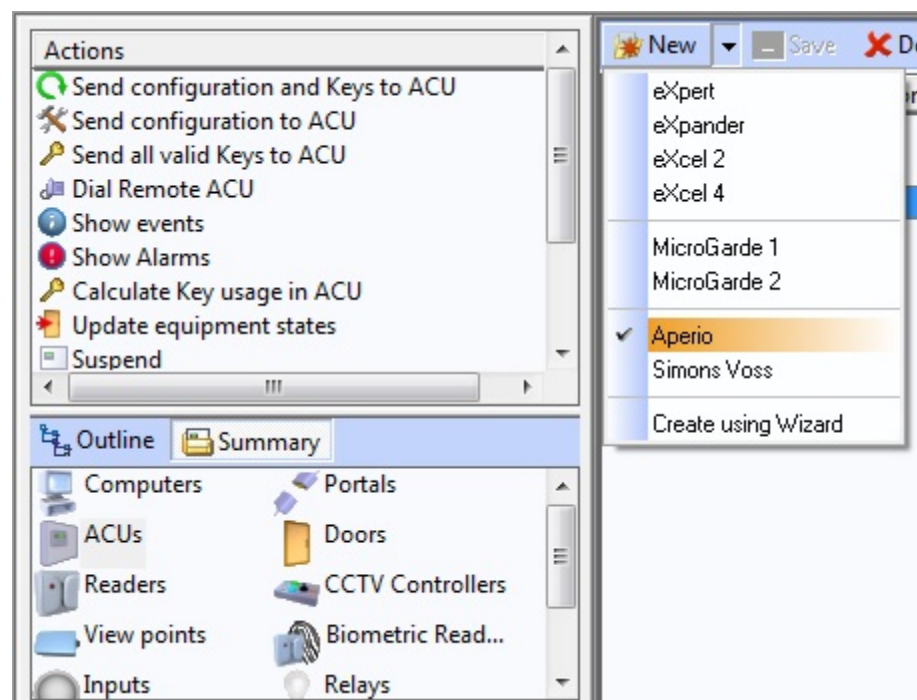
Create a new portal for the IP locks

- ✓ Type will be IP Locks
- ✓ Lock type will be Aperio
- ✓ IP port will default to 9999.

If required other port numbers can be added to EXgarde to allow better communications speed over large installations running several Hubs.  
(Contact the on-site IT department for advice)

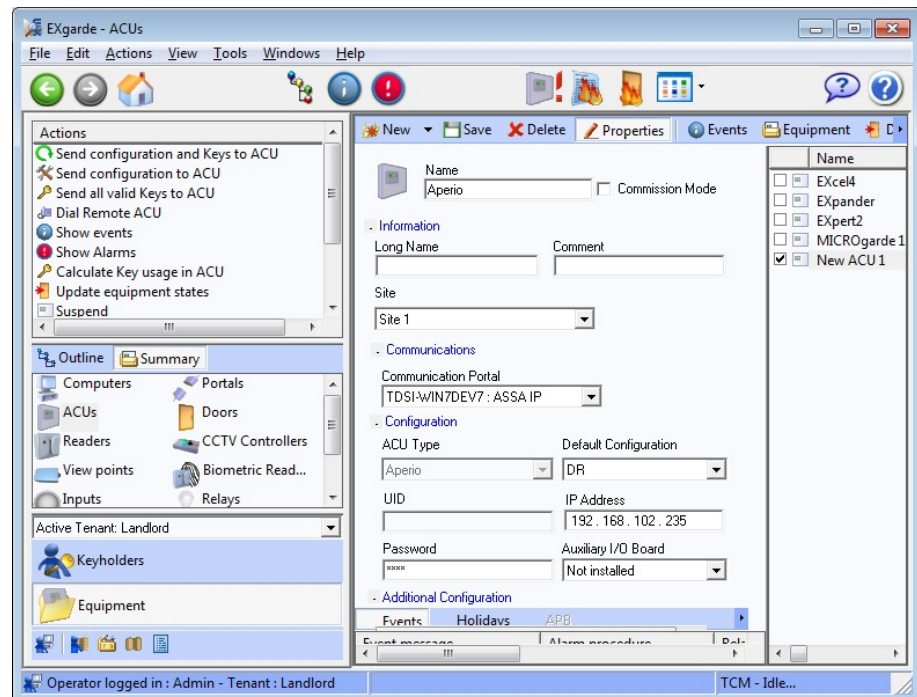


Next you will need to create the ACU which represents the Hub, in Summary view click on **ACU** then click the drop down list on the **New** tab and choose **Aperio**





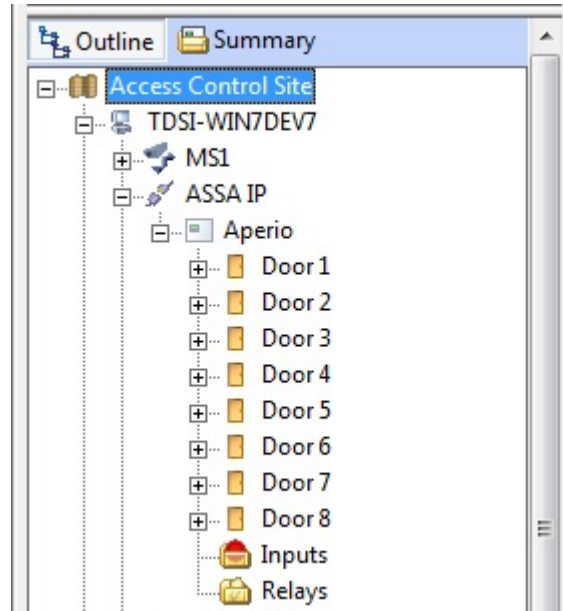
Name the ACU/Hub something familiar such as Assa Abloy Aperio, default configuration will be DR and the IP address you will enter will be the IP address of the Hub as shown in the Aperio software. ACU Type will be greyed out and show as Aperio. Click save when you have finished.





## 6. Configuring Doors

In summary view the 8 doors belonging to the Hub will be shown directly below the Hub you have created.



If you click on any of the doors, the door list will appear in the general display area in the right hand screen.

	Name	Long Name	Comment	Door Number	ACU
<input type="checkbox"/>	Car Park			1	MICROgarde 1
<input checked="" type="checkbox"/>	Door 1			1	Aperio
<input type="checkbox"/>	Door 2			2	Aperio
<input type="checkbox"/>	Door 3			3	Aperio
<input type="checkbox"/>	Door 4			4	Aperio
<input type="checkbox"/>	Door 5			5	Aperio
<input type="checkbox"/>	Door 6			6	Aperio
<input type="checkbox"/>	Door 7			7	Aperio
<input type="checkbox"/>	Door 8			8	Aperio
<input type="checkbox"/>	EXpan 1			1	Expander
<input type="checkbox"/>	EXPan 2			2	Expander
<input type="checkbox"/>	EXper 1			1	Expert2
<input type="checkbox"/>	EXper 2			2	Expert2
<input type="checkbox"/>	Front Door			1	EXcel4
<input type="checkbox"/>	Office			4	EXcel4
<input type="checkbox"/>	Office to Sales			2	EXcel4
<input type="checkbox"/>	Sales main			3	EXcel4

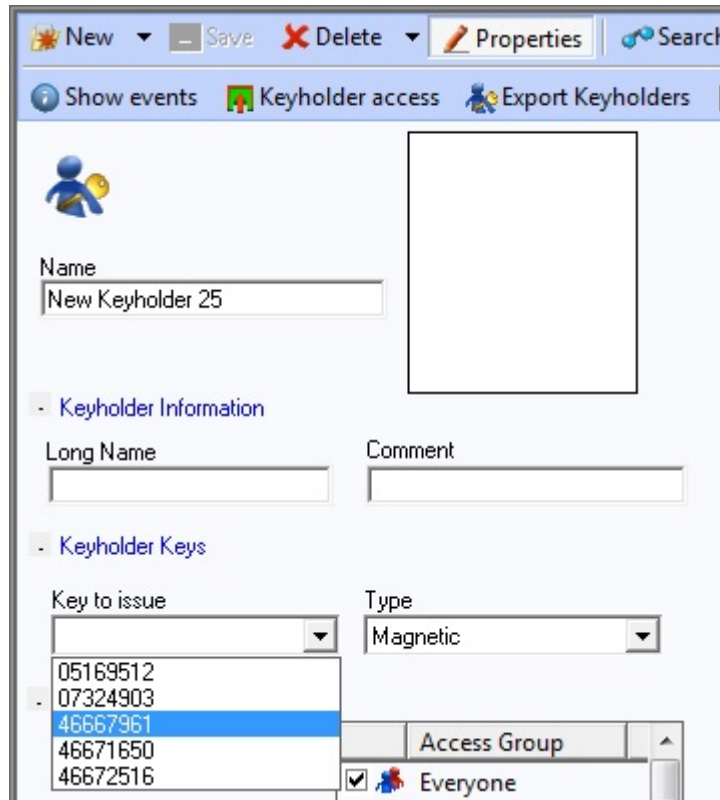
Click on the Properties button to access the door details. The relevant door lock/sensor hexadecimal numbers that were found when scanning with the Aperio Programming Application will need to be entered into the Door Number text box. (Refer the Aperio Software for Door Number details.)

The screenshot shows the 'Properties' window for 'Door 1'. The 'Name' field contains 'Door 1' and the 'Door Number' field contains '033F6F'. The 'Information' section has empty 'Long Name' and 'Comment' fields. The 'Options' section has 'Enabled' checked, 'Fire Door' unchecked, and 'Display as' set to 'Door'. The 'Access Areas' section has both 'Outer Area' and 'Inner Area' set to 'Public'. The 'Additional' section has 'Reader 1' selected and 'Located' set to 'Outside'. The right-hand list shows a hierarchy of areas, with 'Door 1' currently selected.

Left click on the relevant door in the list and select Properties; here you can set the Outer & Inner area. The Outer area being the area you are going from and the Inner Area being the area you are entering into to. Any unused doors can be disabled by un-ticking the Enabled option in the Properties window.

## 7. Adding Keyholders

To add a keyholder click on all Keyholders in the summary view, and then click the New button, enter a name for the keyholder and click the Key to issue drop down box. Click on the key you want the keyholder to have then select key type. (The key type should always match the reader type)



The screenshot shows a web application window for managing keyholders. The top toolbar includes buttons for 'New', 'Save', 'Delete', 'Properties', and 'Search'. Below the toolbar is a navigation bar with 'Show events', 'Keyholder access', and 'Export Keyholders'. The main content area has a sidebar with a user icon and a 'Name' field containing 'New Keyholder 25'. To the right of the name field is a large empty box. Below the name field are two expandable sections: 'Keyholder Information' and 'Keyholder Keys'. The 'Keyholder Information' section contains 'Long Name' and 'Comment' fields. The 'Keyholder Keys' section contains a 'Key to issue' dropdown menu with a list of key IDs (05169512, 07324903, 46667961, 46671650, 46672516) and a 'Type' dropdown menu set to 'Magnetic'. At the bottom right, there is an 'Access Group' section with a checkbox and the text 'Everyone'.

The reader Type can be set in the reader properties. Key holder access to the IP Locks follows the same functionality as normal readers in EXgarde, so if a KeyHolder is allowed access to an area the IP Lock is associated with the KeyHolder with the correct key technology can gain access.

Next you can choose which Access Groups you want the keyholder to be a member of, Keyholder long name and comment can be entered at this point as well as a Keyholder photograph, click save when you have finished.

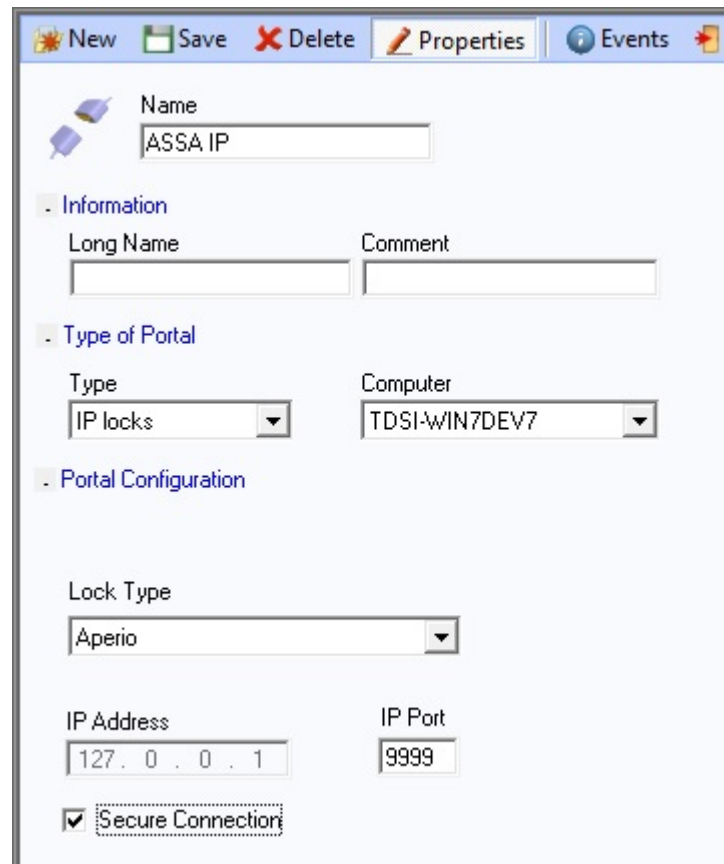
The screenshot shows a 'Properties' dialog box for a 'Keyholder'. The interface includes a toolbar at the top with 'New', 'Save', 'Delete', 'Properties', and 'Search' buttons. Below the toolbar is a tabbed interface with 'Show events', 'Keyholder access', and 'Export Keyholders' tabs. The 'Keyholder access' tab is active, displaying a keyholder icon and a large empty box for a photograph. The 'Name' field contains 'New Keyholder 25'. Below this are expandable sections: 'Keyholder Information' with 'Long Name' and 'Comment' fields; 'Keyholder Keys' with 'Key to issue' (07324903) and 'Type' (Magnetic) dropdowns; and 'Keyholder Security Options' with radio buttons for 'Keyholder' (selected) and 'Trustee', and checkboxes for 'Trackable', 'Extended Lock Time', 'Notification', and 'Ignore APB'. An 'Access Group' list is open, showing a table with columns for selection and group name. The groups listed are 'All', 'Development' (highlighted), 'Everyone', 'Management Gr...', and 'Reception'. 'All' and 'Everyone' are checked.

	Access Group
<input checked="" type="checkbox"/>	All
<input type="checkbox"/>	Development
<input checked="" type="checkbox"/>	Everyone
<input type="checkbox"/>	Management Gr...
<input type="checkbox"/>	Reception

## 8. Secure Connection Config

When setting up the portal there was the option to enable a secure connection in the portal properties, selecting the secure connection will enable the use of TLS Encryption for communications between the Hub and EXgarde Software. TLS encryption will also need to be enabled in the Aperio Programming Application.

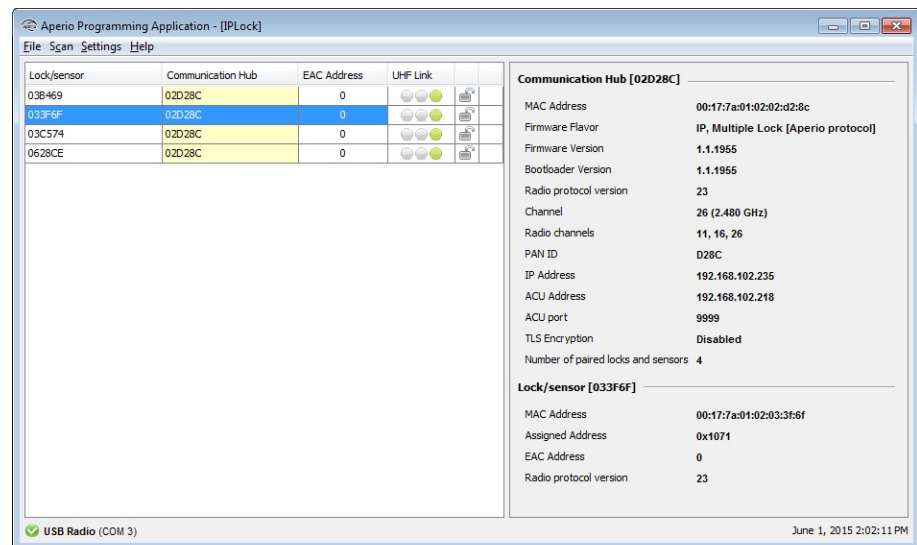
To begin with click on the Secure connection tick box in the Assa Abloy portal created in EXgarde.



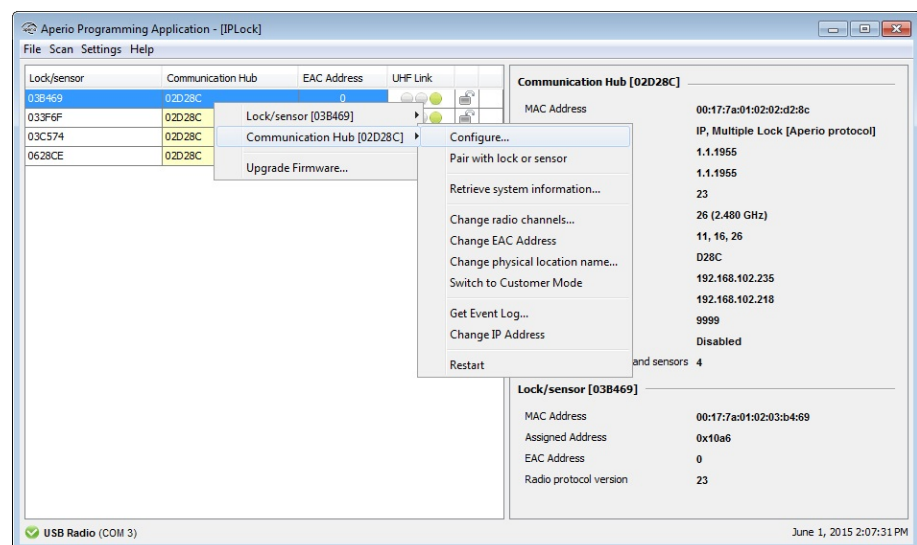
The screenshot shows a software window with a menu bar containing 'New', 'Save', 'Delete', 'Properties', 'Events', and a help icon. The main area is divided into sections:

- Name:** A text box containing 'ASSA IP'.
- Information:** Contains 'Long Name' and 'Comment' text boxes.
- Type of Portal:** Contains a 'Type' dropdown menu set to 'IP locks' and a 'Computer' dropdown menu set to 'TDSI-WIN7DEV7'.
- Portal Configuration:** Contains a 'Lock Type' dropdown menu set to 'Aperio', an 'IP Address' text box with '127.0.0.1', and an 'IP Port' text box with '9999'.
- Secure Connection:** A checkbox that is checked.

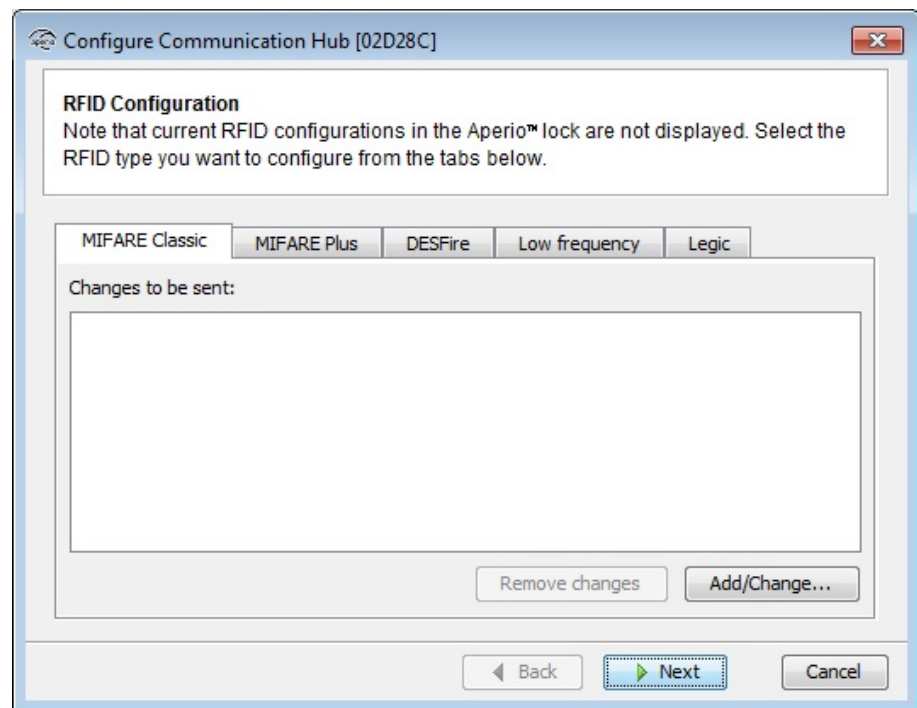
You will then need to run the Assa Abloy Apero software tool and enter open the Hub configuration options. To do this open the Apero software and ensure a connection to the locks is achieved.



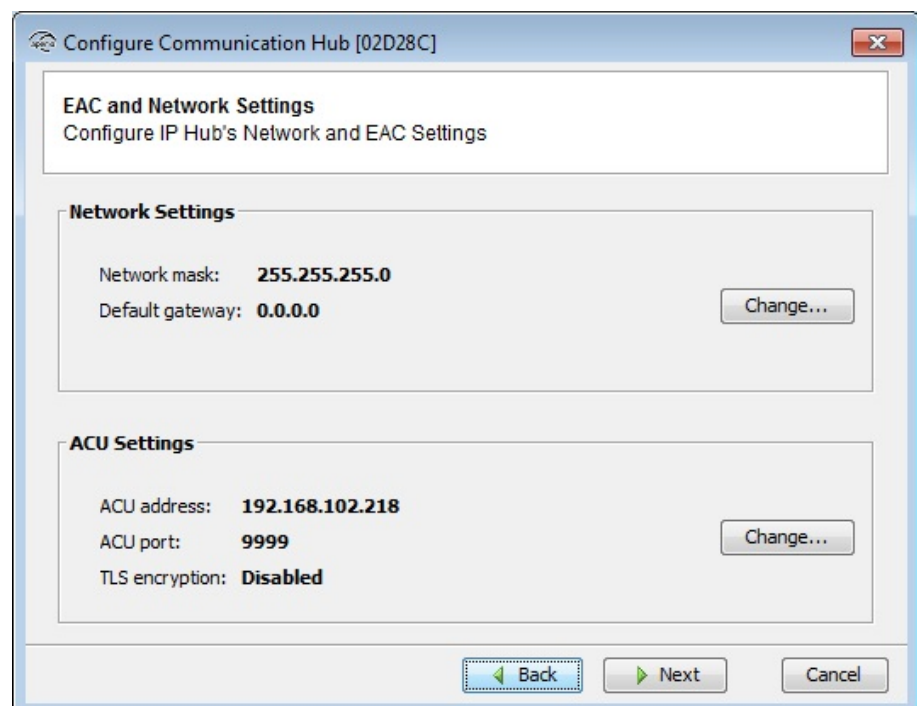
Right click on the Communication hub you wish to configure and select configure.



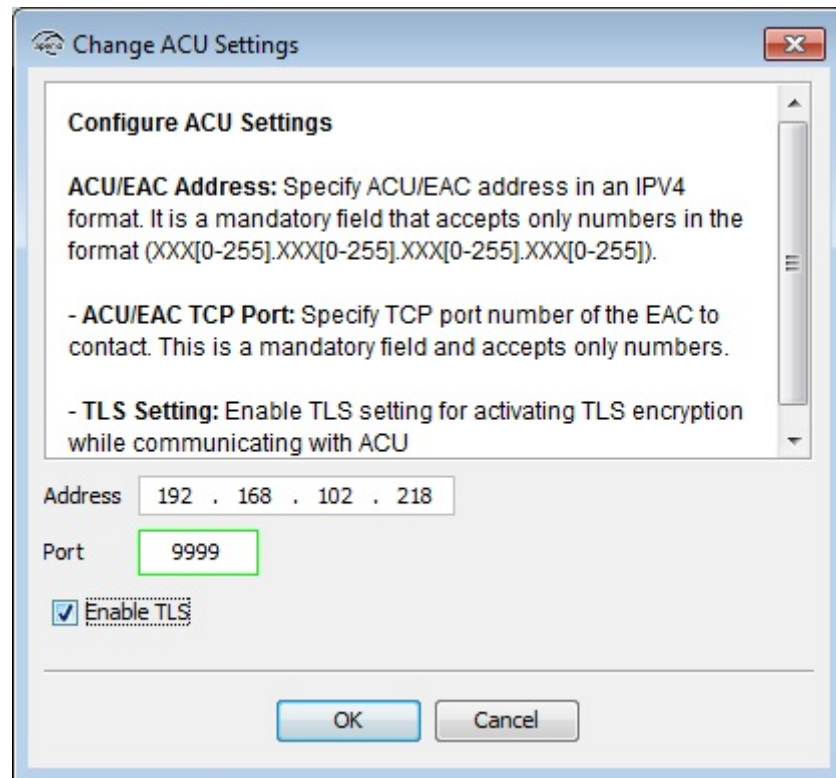
Below is the first window to appear in the configuration tool.



You will need to click on the Next button until you reach the EAC and Network Settings window.



In the ACU settings area of the window, click on the Change button to open the Change ACU Settings window.



**Change ACU Settings**

**Configure ACU Settings**

**ACU/EAC Address:** Specify ACU/EAC address in an IPV4 format. It is a mandatory field that accepts only numbers in the format (XXX[0-255].XXX[0-255].XXX[0-255].XXX[0-255]).

- **ACU/EAC TCP Port:** Specify TCP port number of the EAC to contact. This is a mandatory field and accepts only numbers.

- **TLS Setting:** Enable TLS setting for activating TLS encryption while communicating with ACU

Address: 192 . 168 . 102 . 218

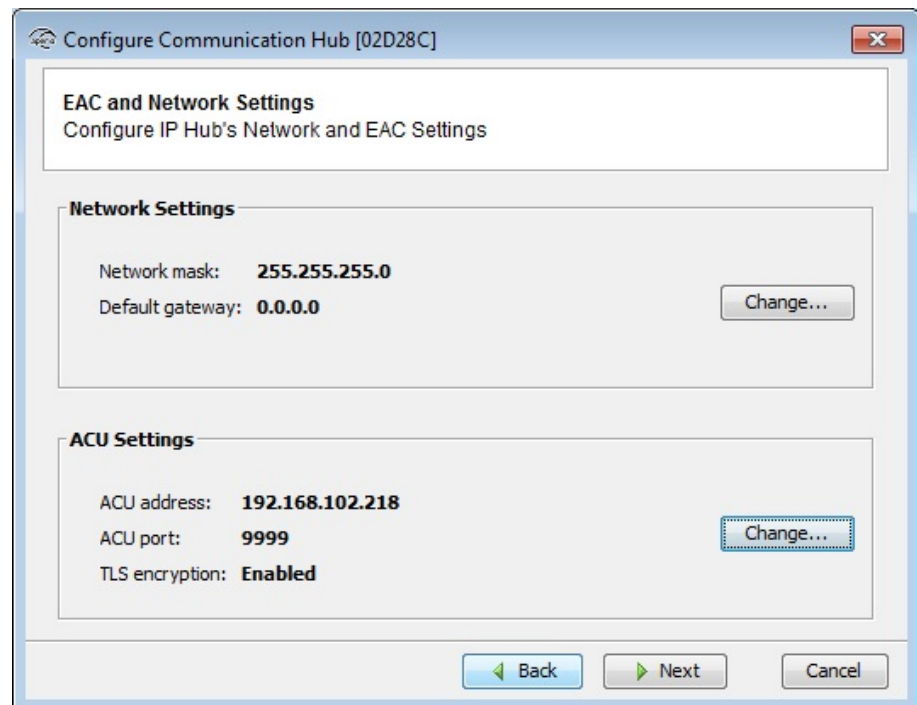
Port: 9999

☒ Enable TLS

OK Cancel

Here you will be able to click on the Enable TLS check box and click OK to return to the previous window.

You will notice the TLS encryption now reads as **Enabled**



**Configure Communication Hub [02D28C]**

**EAC and Network Settings**  
Configure IP Hub's Network and EAC Settings

**Network Settings**

Network mask: 255.255.255.0

Default gateway: 0.0.0.0

Change...

**ACU Settings**

ACU address: 192.168.102.218

ACU port: 9999

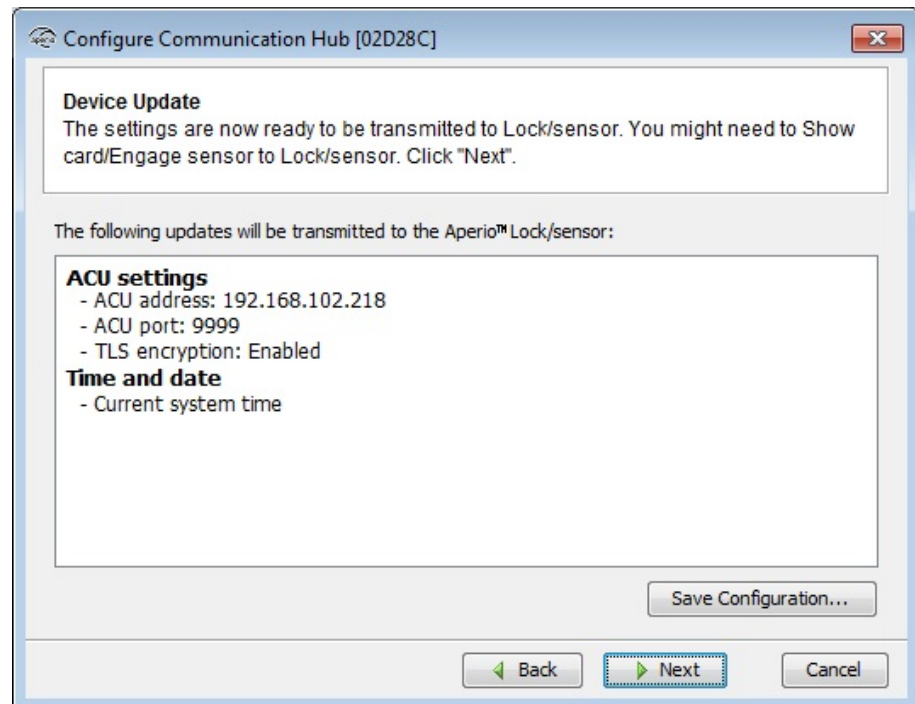
TLS encryption: **Enabled**

Change...

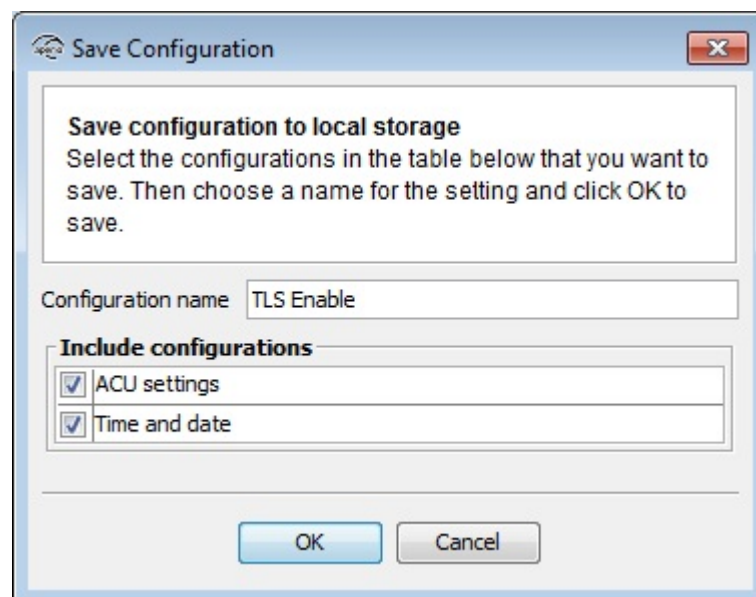
Back Next Cancel



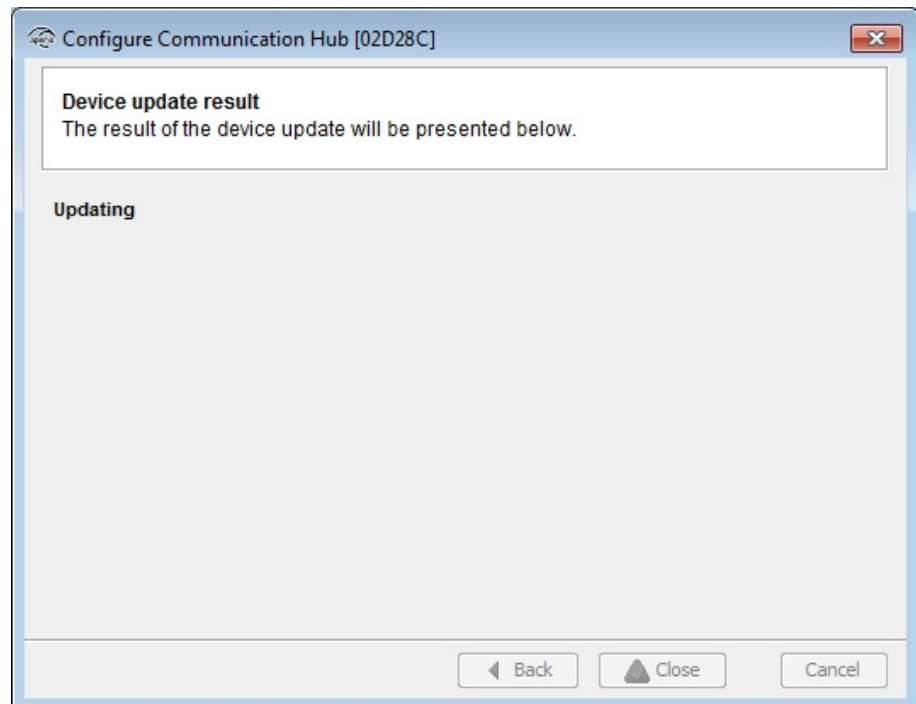
Click the Next button until you reach the Device Update window and click on the Save Configuration button.



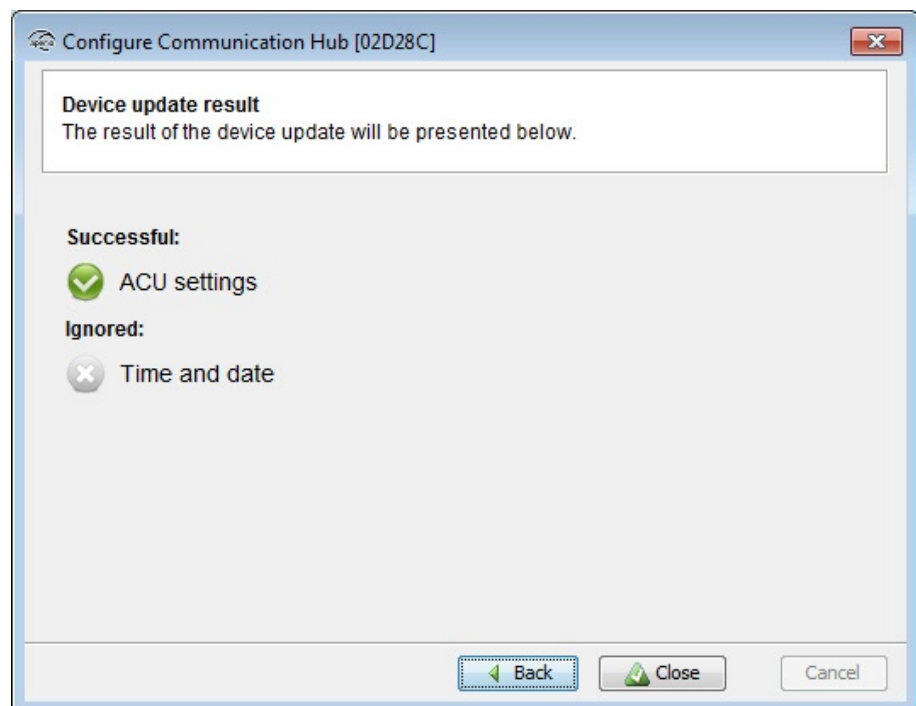
The Save Configuration window will pop up and a Configuration name will need to be entered before clicking OK to close the window.



Click the Next button once again to update the device. The window below will notify you of the status of the update.

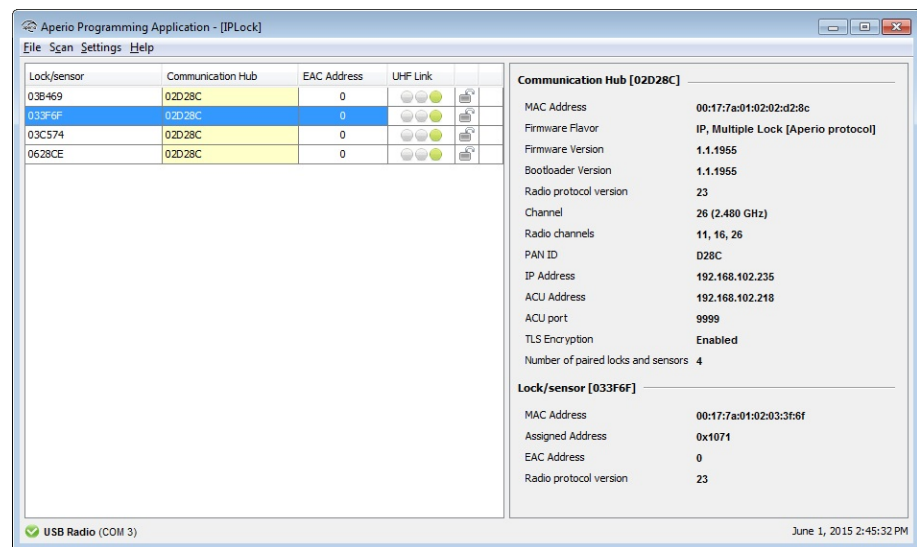


Once the update is complete the following window will appear.



Click on the Close button to complete the process and return to the Aperio home screen.

You will notice that the home screen now displays TLS Encryption Enabled.



Secure connection will only work on Windows 7 or Windows 2008 R2. You can check in Internet explorer by going to Internet Options > Advanced, scroll to the end of the list and look for 'Use TLS 1.2'. If it's not shown then secure connection is not supported. Please reference the manuals below for help with Apero Programming software / Assa Abloy Locks;

- ST-001321 Apero Online Programming Application Manual-D
- ST-001322 Apero Online Quick Installation Guide-C.

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