

ASSA ABLOY Aperio™

Configuration Guide for Brivo Onair

The integration of Aperio Wireless Technology by Assa Abloy into Brivo Onair introduces a simple and secure solution for access control. Integrating with Aperio has allowed Brivo to introduce a wide variety of quality locks by various respected Assa Abloy Brands.



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Introduction

This installation guide is written for certified Brivo and Assa Abloy Installers. There is fundamental system information that you as an installer or system programmer will need to know prior to configuring this installation. This guide will take you through the necessary steps to connect and configure the Aperio Hubs and locks with Brivo Onair, through either the ACS300-E or ACS6000-E Control Panels.

This guide assumes the proper installation and linking of Aperio Locks to Aperio Hubs. Although pointing to some best practices, this guide should not be referred to as a replacement for any Assa Abloy guides. This guide will touch on some configuration of the Aperio Hubs and Aperio Locks as it relates to the integration to Brivo Onair. For other Hub and Lock configuration needs, please refer to the Assa Abloy guide associated with the particular Hub and/or Lock that you are installing or configuring.

Supported Locks

Corbin Russwin and Sargent IN100

Constructed with ANSI/BHMA Grade 1 hardware, the IN100 lock offers high-level security with flexible access control, all at an affordable price. The IN100 lock with is available in cylindrical, mortise, and exit device configurations.

Adams Rite G100

The Adams Rite G100 wireless digital lock makes extending access control to all-glass doors easy and affordable while maintaining aesthetics. This surface-mounted digital glass door locking solution provides greater flexibility and control for interior office space areas without the need to make costly modifications.

HES K100 / KS100 Cabinet Locks

The flexible integrated solution for extending access control to secure locker drawers and doors. The HES K100 cabinet lock comes standard with locked state & tamper monitoring, optional mechanical key override and over 150 lbs of holding force.

Designed to install easily on most swing handle server cabinet doors, the HES KS100 comes standard with locked state monitoring and utilizes an SFIC (Small Format Interchangeable Core) mechanical key override. An optional extended DPS monitoring sensor can be connected to ensure that the cabinet is closed, locked and secure.

Supported Features

Privacy Mode

Privacy Mode allows the user to place the door in a “Do Not Disturb” state. If the lock supports Privacy Mode, by either pushing a button on the secure side of the door, or on some models by simply engaging the deadbolt, the lock will no longer open for Users that are not in a group with Privacy Override enabled. Privacy Mode will remain active until the door is either opened from the inside, or valid access is gained by someone who has Privacy Override Privileges. Privacy Override can also be cancelled by pushing the Privacy Override button again, or by disengaging the deadbolt. The Default setting is No. Some Assa Abloy Locks do not have Privacy Mode capabilities. Privacy Mode also will not affect the key override functionality of a lock.

Credential Caching

Assa Abloy Aperio locks have the ability to cache up to 1024 credentials (some capabilities and limits do vary). The cache expiration time limit and caching size are configurable through Brivo Onair. Caching is when the lock will remember each credential (up to the limit) that had gained valid access to the lock for the predetermined period of time. Each time that a valid user gains access to the lock, the expiration timer for that credential will reset. When a User’s access is removed from the lock, Onair will send a command to remove the cached credential from the lock. **Note:** The Hub and Lock must be online for the cache removal to take place. In the event that the Lock or Hub are not online at the time access is removed, the lock will require the credential to either be presented while the lock is online, or the cache expiration for that particular credential will have to occur.

Characteristics									Monitoring				
Make	Model	Lock Type	Purpose	Hub	# Doors (Per Panel)	Cards Support	Keypad	Remote Entry	Dead-bolt Monitor	Locked State Monitor	DPS	Privacy Mode	Low Battery
Adams Rite	G100	2*	B*	AH40	30	iClass SE	No	Yes	No	No	Yes	No	Yes
Corbin Ruswin	IN100	3*	C*	AH40	30	Multi ClassSE	No	Yes	No	No	Yes	Yes	Yes
HES	K100	4*	D*	AH40	30	Multi ClassSE	No	Yes	No	No	Yes	No	Yes
HES	KS100	5*	E*	AH40	30	Multi ClassSE	No	Yes	No	Yes	Yes	No	Yes
Sargent	IN100	6*	F*	AH40	30	Multi ClassSE	No	Yes	No	No	Yes	Yes	Yes

1 - Deadlatch, Deadlock

2 - Deadlock/Boltlock

3 - Cylindrical, Mortise, and Exit

4 - Cabinet Latch

5 - Cam Latch

6 - Cylindrical, Mortise, and Exit

A - Storefront, Narrow Stile, Deadlatch, or Deadlock

B - Single Frameless Glass Door, Deadlock

C - Std Commercial Entry and Std Stile or Flat Panel Rim Exit

D - Cabinet, Locker, and Drawer

E - Server Rack (Review Compatibility Chart)

F - Std Commercial Entry and Std Stile or Flat Panel Rim Exit

System Requirements

Aperio Hub Specifications (AH-40)	
Wireless Range	Up to 50' between Hub and Lock using internal antenna perpendicular to mounting surface. Up to 25' omnidirectional between Hub and Lock when using the optional external antenna, AA-EXT-ANT
Voltage	8-24VDC or PoE IEEE 802.3af
Max Standby Current	80mA @ 12VDC and 250mA @ 24VDC
Operating Temperature	41 to 95 degrees Fahrenheit (5 to 35 degrees Celsius)

System Specifications	
Controller Interface	IP, Connects via ACS6000/ACS300 Admin Port
Power	Brivo ACS300 12VDC @ 1.5A or PoE+ IEEE 802.3at - Brivo ACS6000 12VDC @1.5A - AH-40 Aperio Hub 8-24VDC or PoE IEEE 802.3af
PC Requirements	For APA Software and Radio Dongle: 32-bit or 64-bit versions of Windows 7, Windows 8, Windows 8.1, or Windows 10. - USB 2.0 interface required
Application Requirements	All Brivo Onair accounts have ASSA ABLOY Aperio enabled. No extra licenses required.

Required Components

Assa Abloy Manuals

Aperio Programming Application Manual

Aperio Hub AH40 Installation Instructions

Aperio Online Mechanical Installation Manual

Aperio Online Quick Installation Guide

Lock Manuals

G100

K100

IN100

KS100

Aperio - Troubleshooting Radio Related Problems

Brivo Manuals

ACS300/ACS6000 Installation Guide

Brivo Onair Administrator's Manual

Brivo ACS6000-E or ACS300-E Control Panel with firmware 6.1.1 or higher

AH40 Hub

The AH40 Hub is for a connection to the Aperio supported locks via IP to the panel. Multiple AH40 hubs may be connected to a Panel

Aperio Lock(s)

G100

K100

IN100

KS100

PoE+ or 12VDC Power

Configuration

Preparation for Installation

Certified Installers Only

Only Brivo and Assa Abloy Aperio Certified Installers are permitted to install Aperio Wireless Products within Onair. If you have not been certified by both Brivo and Assa Abloy on the respective products, please contact your Brivo Regional Sales Manager for information on how to become certified.

Placement of Locks and Hubs

The AH40 Hub has an overall range of 50ft.

When using the internal antenna, the range between the Hub and the furthest lock is 50ft perpendicular from the face of the AH40 Hub.

When using the optional ANT10, the range between the Hub and the furthest lock is 25ft, omni-directional.

There are considerations for obstructions such as walls and tall office equipment when determining the correct placement for the

Using the Radio Dongle

The APA-10-USB Aperio Radio Dongle serves multiple purposes. As part of the APA-10-PC Aperio Programming Kit, the Aperio Radio Dongle is necessary for linking locks to their respective hub, configuring both the Hubs and Locks and updating firmware on the Aperio products. Before and during the installation, the Aperio Radio Dongle can be used to test the select location for both the hubs and locks. In the Aperio Programming Application software, you will also be able to receive the connection status and connection quality between each hub and its connected locks.

Panel Placement and Networking Considerations

The first consideration with respect to the panel and hub placement is distance. The network for the Aperio hubs will be an isolated private network and should not reside on a corporate network. Although some customers may have the ability to create an isolated LAN within their multi-layer network schema, it is recommended that the installer create a private network for the hubs and panels.

It is not possible for more than one panel to reside on the same network via the Admin Port, therefore there are no required considerations for the Admin Port addressing. The Admin port address will serve as the ACU address for each hub. Since up to 30 hubs can be connected to a single panel each hub will need to be addressed ensuring that no IP addresses collide on the network. Each hub will need to be addressed between 192.168.207.2 and 192.168.207.254

The Onair panel will recognize each hub by the MAC address of the hub. The IP addressing is for the purpose of the hub to be able to reach out to the panel for communication as the host for the hub.

IP Addressing

Each Onair panel will either use the default address or will be programmed as described above. The instructions for modifying the IP address on the Onair panel are outlined later in this manual.

Addressing the hub will be handled during the configuration of the hub. The instructions will also be covered later in this manual.

Use the blank table below to plan and record the IP addressing for your Onair Panels and Aperio Hubs

Panel CP	Panel IP	Aperio MAC	Aperio IP

Table A - IP Addressing

Aperio Installation

The installation of all Assa Abloy Hardware should be completed in accordance with Assa Abloy manuals, guidelines and restrictions. Brivo imposes no special instructions to installers on Aperio equipment. This guide will outline the specific settings required for optimal operation with Brivo Onair.

Note: During the installation of Aperio locks and hubs, ensure that the Aperio firmware is at the latest supported version. The proper instructions for upgrading Aperio firmware is outlined in the Aperio APA Guide.

Order of Installation

For the best outcome, the locks should be installed in the following order:

1. Install Locks on doors
2. Determine optimal location for Hubs and install Hubs
3. Pair locks and Hubs
4. Configure Locks and Hubs
5. Connect Hubs to Panels
6. Program (Add) Hubs in Onair
7. Program (Add) Locks in Onair

Installation of Locks

The locking hardware should be installed in accordance with Assa Abloy requirements and instructions. Please refer to the specific documentation pertaining to the locks being used.

Installation of Hubs

Each AH40 Hub should be installed in accordance to Assa Abloy requirements and instructions.

Refer to:

https://www.assaabloy.es/Local/UK/Products/aperio/AA_Aperio_AH40_Mounting%20instruction_English.pdf

Using the External Antenna

When using the ANT-10, you will need to understand the differences in distance.

Pairing of Locks and Hubs

Pairing the Locks

Refer to the Aperio installation guides for proper pairing procedures.

Once the locks are paired with the hub and once the hub is connected to the Brivo Control Panel in Onair, you will be able to select the lock from a list of MAC addresses.

Configuration of Locks and Hubs

Once the lock and hub pairing is complete, it will be time to configure the hub and lock settings. For certain settings that are not covered in this document, refer to each ASSA ABLOY configuration manual associated with the lock and hub that you are installing.

Saving Configurations

For each lock body type or hub, you can save the configuration file in order to apply the configuration for each additional lock or hub. This will save time and ensure that the same configuration is being applied across all locks and hubs. Please refer to the APA Software manual for instructions on saving, exporting and importing configuration files.

Configuration Matrix

For Simplicity, the required configuration settings are highlighted in the tables below. Although each lock could have some differences in the configuration screens, the basic settings are identical among all Aperio locks.

HUB and Lock Settings		
Hub Settings		
Setting Label	Value	Notes
Electronic Access Control Settings		
EAC Addressing Mode	Normal Offset	
Lock Access Decision Timeout (seconds)	2	
Remote Unlock Time to Live (minutes)	1	
Status Report Interval		
Status Reporting Interval (minutes)	5	Must Match Lock
Network Settings		
IP Address	192.168.207.xxx	Adjust in Config Menu
Network Mask	255.255.255.0	
TLS Encryption	Enabled	
ACU Address	192.168.207.1	
ACU Port	9999	
Radio		
Radio Channels	11, 16, 25	Default for US

Table B - Hub and Lock Settings (continued below)

Configuring the Hub

There are a few default settings that will need to be modified on the AH40 Hub for proper performance. Refer to Table B on the previous pages for the proper settings.

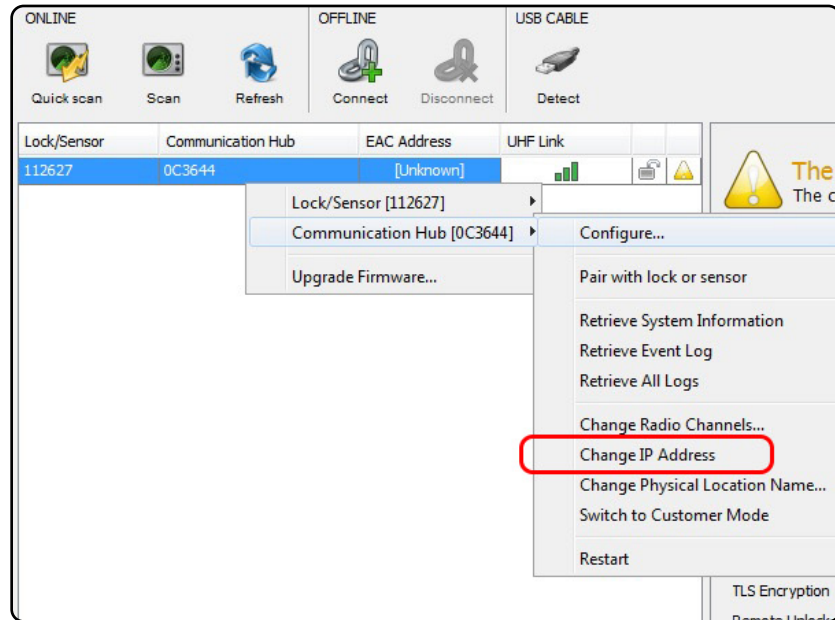
Lock Settings		
Setting Label	Value	Notes
Locking Parameters		
Try to unlock timeout (seconds)	2	
Lock open time (seconds)	5	
Lock jammed alarm timeout (seconds)	30	
Locking Parameters (cont.)		
Lock jammed retry period (seconds)	60	
Lock jammed indication mode	LED and Buzzer	
Battery		
Battery Check Interval (minutes)	10	
Reporting		
Status Report Interval (minutes)	5	Must Match Hub
Polling Interval (seconds)	5	
Sensor Events	Always Enabled	
Smart Credential Cache		
Dynamic cache	Enabled	Setting in Onair
Valid for (Days)	1-7	Setting in Onair
Number of credentials	100	Setting in Onair
Static cache	Enabled	
Cache state	Running	
Privacy Mode		
Privacy Mode	Variable - Enabled / Disabled	Must be Set in Hub and in Onair
Radio		
Radio Channels	11, 16, 25	US Standard Channels

Table B - Hub and Lock Settings Continued

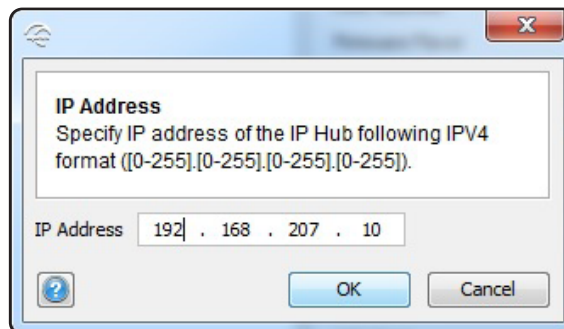
Note: In order to speed up the configuring of multiple hubs, make sure to select include for every option in the configuration screen. The option will not only be sent to the hub, but will be available to save and download the configuration. Once saved, the configuration will be available to apply to the other hubs in the system. Optionally, you may export the configuration to use for future installations.

Setting the IP Address:

In the APA Software navigate to the Hub that you wish to configure. Right-Click on the hub and select 'Change IP Address'

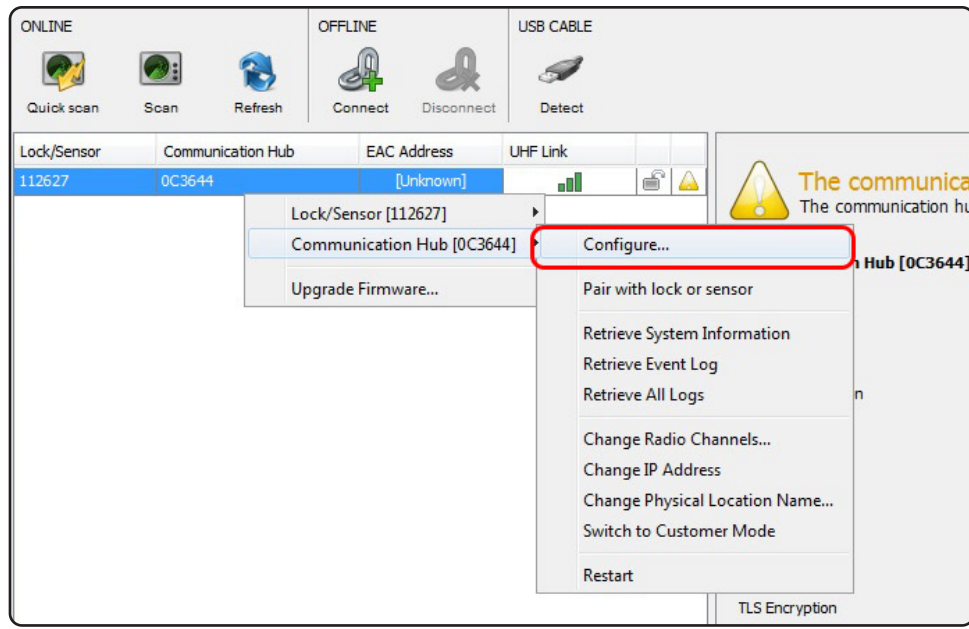


Next, enter the Static Address you wish to set the hub to. Each hub will require a unique IP address per panel network. The Panel IP is 192.168.207.1, therefore the IP range for each hub is 192.168.207.2 through 192.168.207.254. You can use the table found earlier in this guide to plan and keep track of the IP settings for each hub.



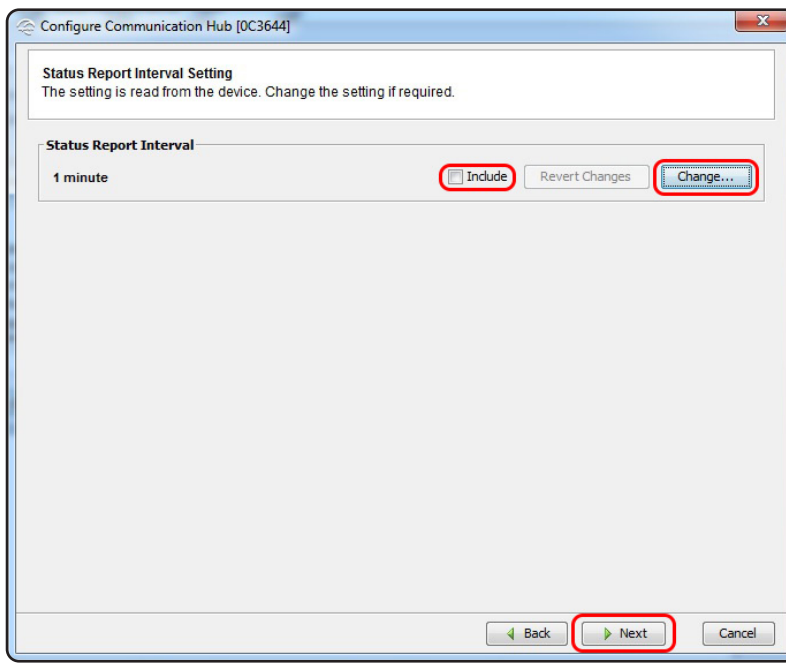
Modifying the Configuration:

From the Hub Details Screen, right-click on the hub you wish to configure. Navigate to **Communications Hub** [EXAMPLE]. Select **Configure** from the dropdown menu that appears.

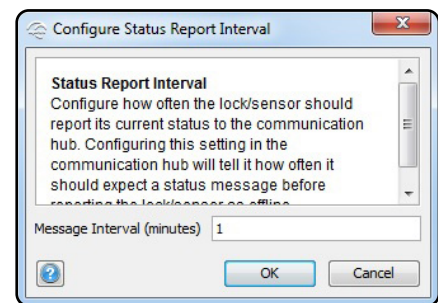


Hub Action Menu - Select Configure

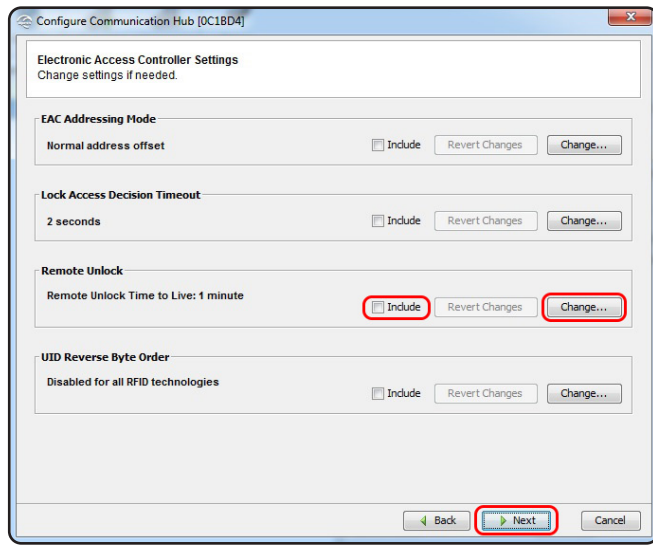
Using **Table B - Required Settings** from earlier in this guide, work through the configuration and make changes where the settings do not match. You will use **'Change'** to change a setting or group of settings. **'Include'** will automatically be selected for each setting you modify. Select **'Next'** to advance to the next screen. The series of reference images below demonstrate the sequence of changing the settings.



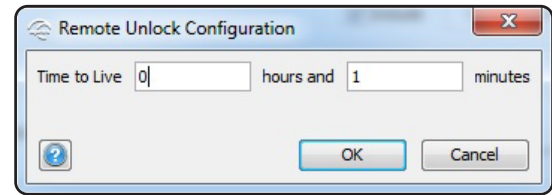
Sample Hub Configuration Screen



Sample Configuration Setting



Sample Hub Configuration Screen

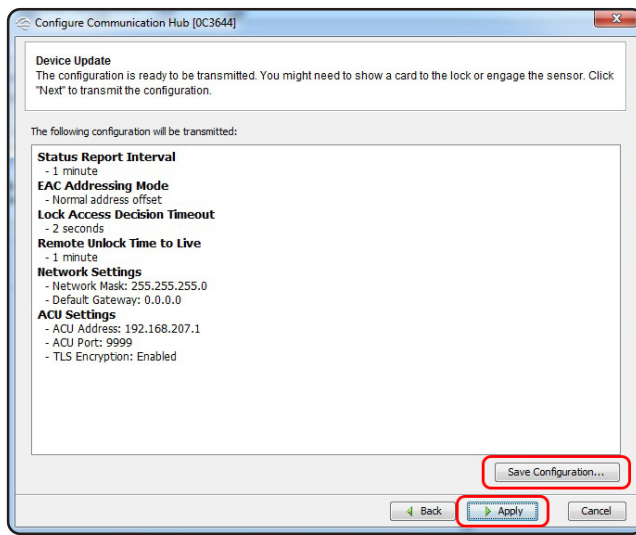


Sample Configuration Setting

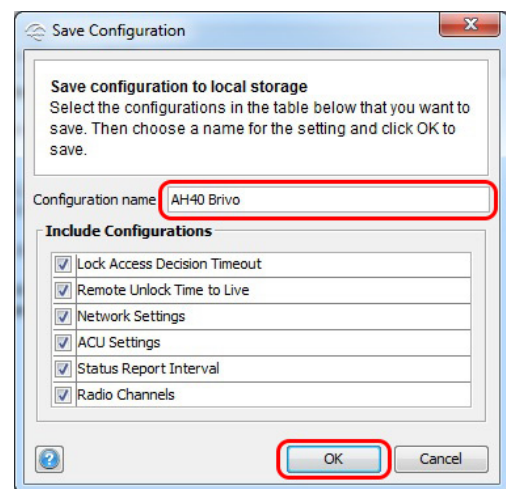
Saving and Sending the Configuration

Once you have cycled through all of the configuration screens, you will end up on the Device Update screen. You will see a list of settings that will be sent to the hub.

Verify the listed settings against the **Required Settings** table.



Hub Device Update Screen

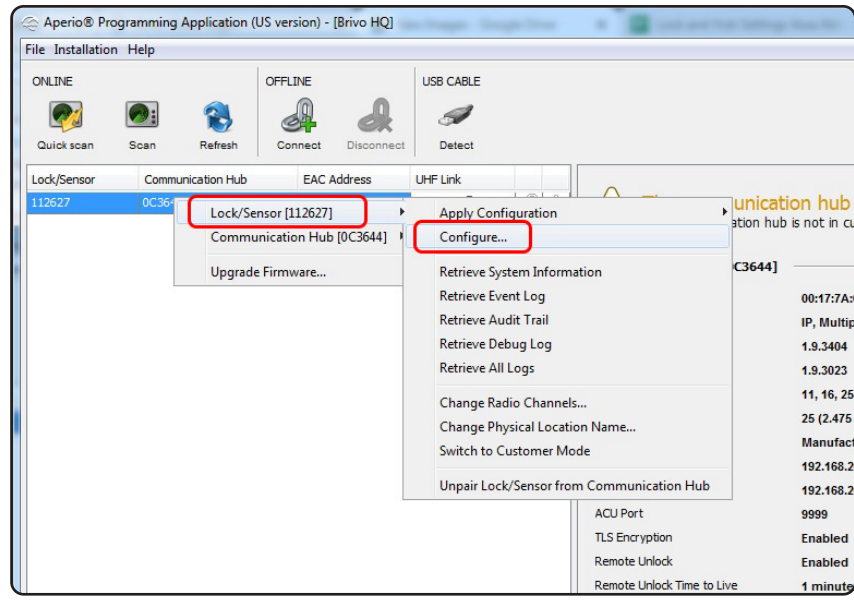


Name and Save Configuration

Select **'Apply'** to send the configuration to the hub. You also have the option at this point to save the configuration file. Saving the configuration file will allow you to push the same configuration to other hubs you are installing, or to download for future installations. To save the configuration, select Save Configuration. At this point you will be given the option to name the configuration file. Give the configuration a name that you will easily recognize. You will also want to review the configurations that will be added to the saved configuration. Select **'OK'** to commit the save. The configuration will be saved and can be retrieved through the hub's action menu.

Configuring the Lock

Although each lock may have slight differences in the configuration, the required settings are the same throughout the Apero integrated product line. From the Hub Details Screen, right-click on the Lock you wish to configure.

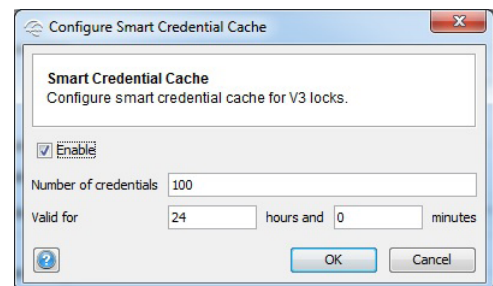
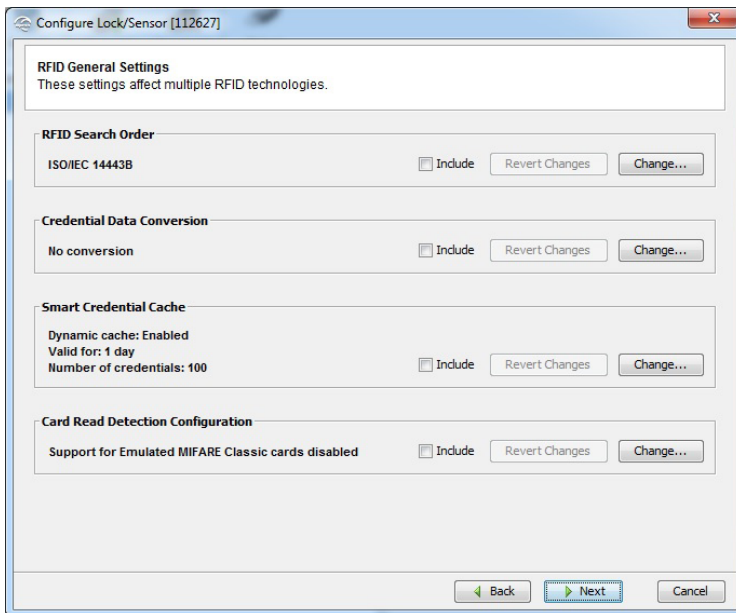


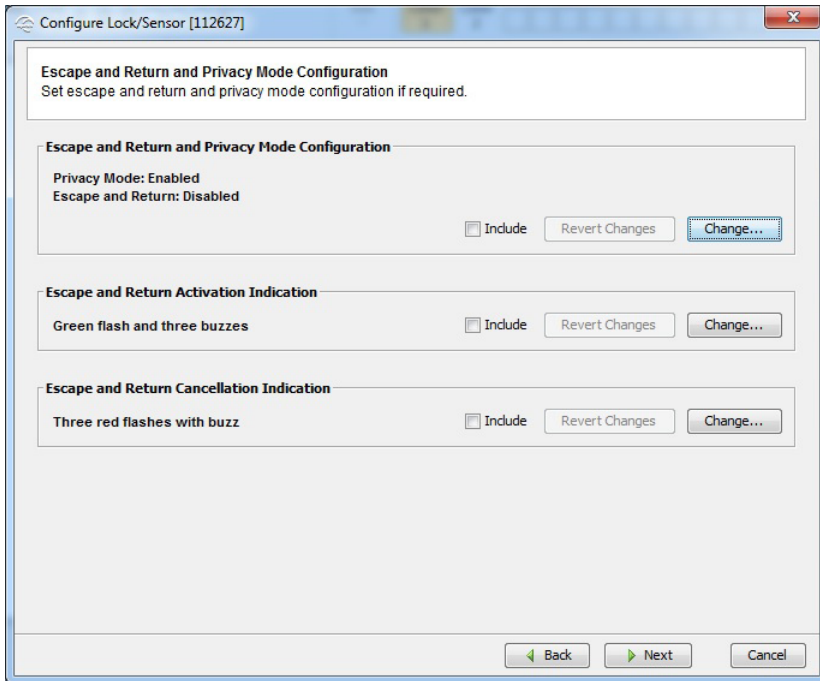
Lock/Sensor Action Menu

Navigate to **Lock/Sensor [EXAMPLE]**

Select **Configure** from the dropdown menu that appears.

Using **Table B - Required Settings** from earlier in this guide, work through the configuration and make changes where the settings do not match. You will use **'Change'** to change a setting or group of settings. **'Include'** will automatically be selected for each setting you modify. Select **'Next'** to advance to the next screen. The series of reference images below demonstrate the sequence of changing the settings.





Configure Lock/Sensor [112627]

Escape and Return and Privacy Mode Configuration
Set escape and return and privacy mode configuration if required.

Escape and Return and Privacy Mode Configuration
Privacy Mode: Enabled
Escape and Return: Disabled

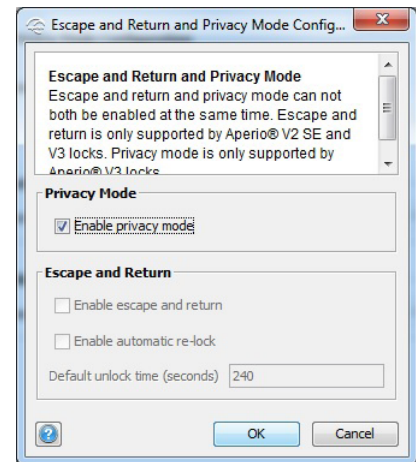
☐ Include

Escape and Return Activation Indication
Green flash and three buzzes

☐ Include

Escape and Return Cancellation Indication
Three red flashes with buzz

☐ Include

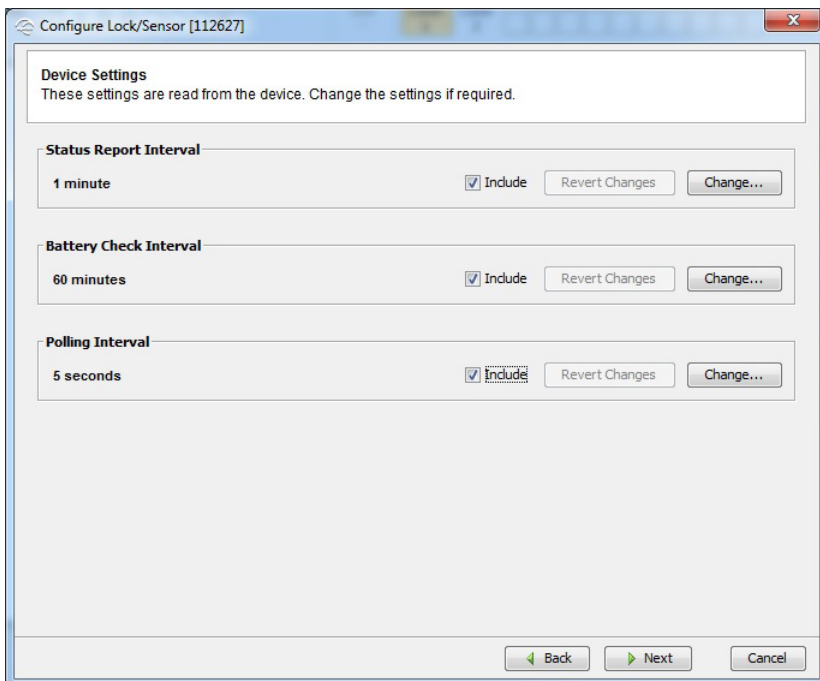


Escape and Return and Privacy Mode Configuration

Escape and return and privacy mode can not both be enabled at the same time. Escape and return is only supported by Apero® V2 SE and V3 locks. Privacy mode is only supported by Apero® V3 locks.

Privacy Mode
☒ Enable privacy mode

Escape and Return
☐ Enable escape and return
☐ Enable automatic re-lock
Default unlock time (seconds) 240



Configure Lock/Sensor [112627]

Device Settings
These settings are read from the device. Change the settings if required.

Status Report Interval
1 minute

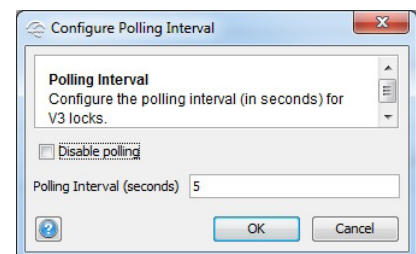
☒ Include

Battery Check Interval
60 minutes

☒ Include

Polling Interval
5 seconds

☒ Include



Configure Polling Interval

Polling Interval
Configure the polling interval (in seconds) for V3 locks.

☐ Disable polling

Polling Interval (seconds) 5

Note: The Status Reporting Interval must match on the hub and the lock.

Note: Both Credential Caching and Privacy Mode need to be enabled on the Lock Configuration and in Brivo Onair for proper operation. If Privacy Mode is enabled on the Lock Configuration and not in Onair, the lock will behave as if it is entering Privacy Mode, but users will still gain normal access.

Saving and Sending the Configuration

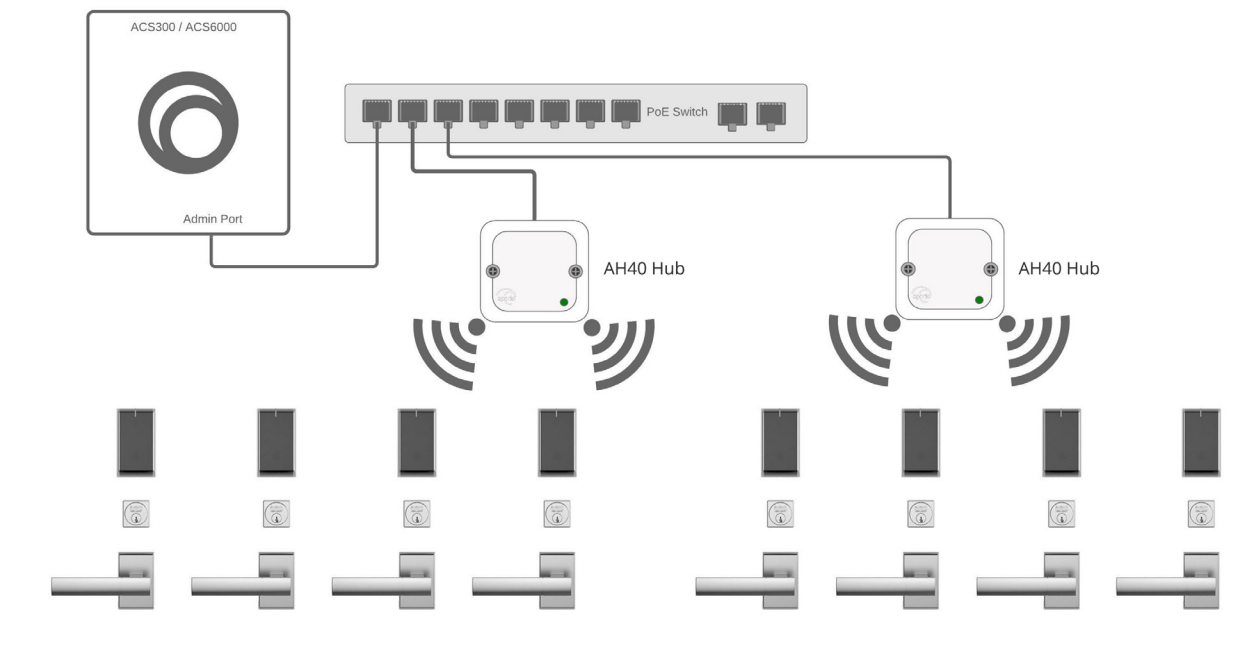
Once you have cycled through all of the configuration screens, you will end up on the Device Update screen. You will see a list of settings that will be sent to the lock.

Verify the listed settings against the **Required Settings** table. Select **'Apply'** to send the configuration to the lock. You also have the option at this point to save the configuration file. Saving the configuration file will allow you to push the same configuration to other locks of the same model you are installing, or to download for future installations. To save the configuration, select **'Save Configuration'**. At this point you will be given the option to name the configuration file. Give the configuration a name that you will easily recognize. You will also want to review the configurations that will be added to the saved configuration. Select **'OK'** to commit the save. The configuration will be saved and can be retrieved through the hub's action menu.

Connecting Hubs to the ACS300/ACS6000 Control Panels

Networking the Hub(s)

Each Hub connected to the Brivo Onair panel will need to be connected via a simple isolated network. The Recommended configuration includes a PoE switch to also power the hub(s). The ACS300-E/ACS6000-E will connect to the same switch via the Admin Port on the panel. The Admin Port and the LAN Port cannot exist on the same network. In addition, two panels cannot exist on the same physical hub network. Other networking considerations may require the consultation of Brivo Technical Support or a Brivo Regional Technical Manager.



Associating Aperio Locks with Brivo Onair

Programming (Adding) Hubs in Brivo Onair

Adding a Hub in Brivo Onair

From the **Setup** tab, select **Sites/Doors** and then **Control Panels**.

Select the control panel you wish to view. The **View Control Panel** page will display.

Under the **More Operations** drop down, select **Add Wireless Gateway/Router**.

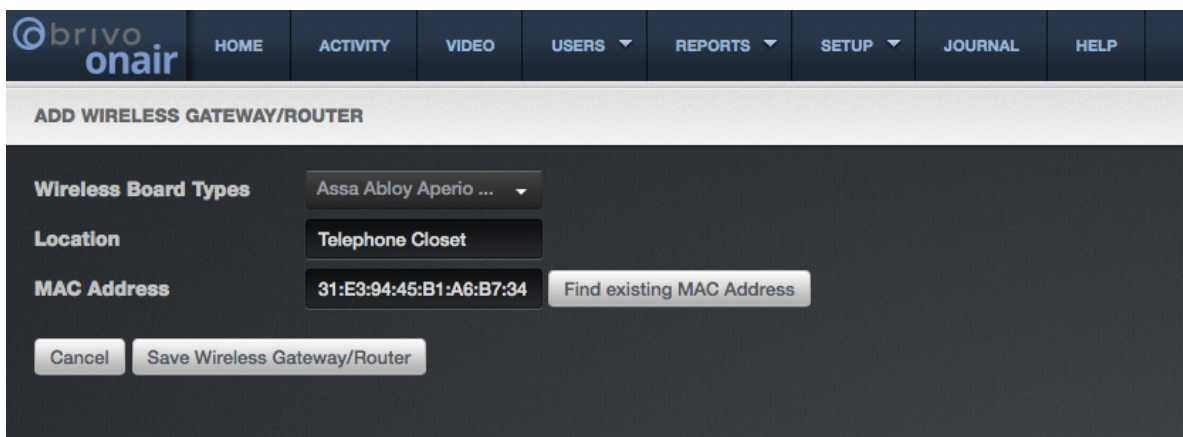


The **Add Wireless Gateway/Router** page displays.

Select **Assa Abloy Aperio Hub** from the **Wireless Board Types**. Enter the **Location**.

For the **MAC address** field, Brivo Onair will automatically identify any Hubs that are connected to the panel. If the Hub is connected to the panel and is online, you will be able to select the MAC address associated with the Hub from the dropdown list. If the Hub is not connected or online or in the case of pre-programming the account, you may enter the MAC address into the MAC Address field. Be sure to enter the address with colon ":" separating each octet.

When finished, click **Save Wireless Gateway/Router**.



Programming (Adding) Locks in Brivo Onair

Adding a Lock in Brivo Onair

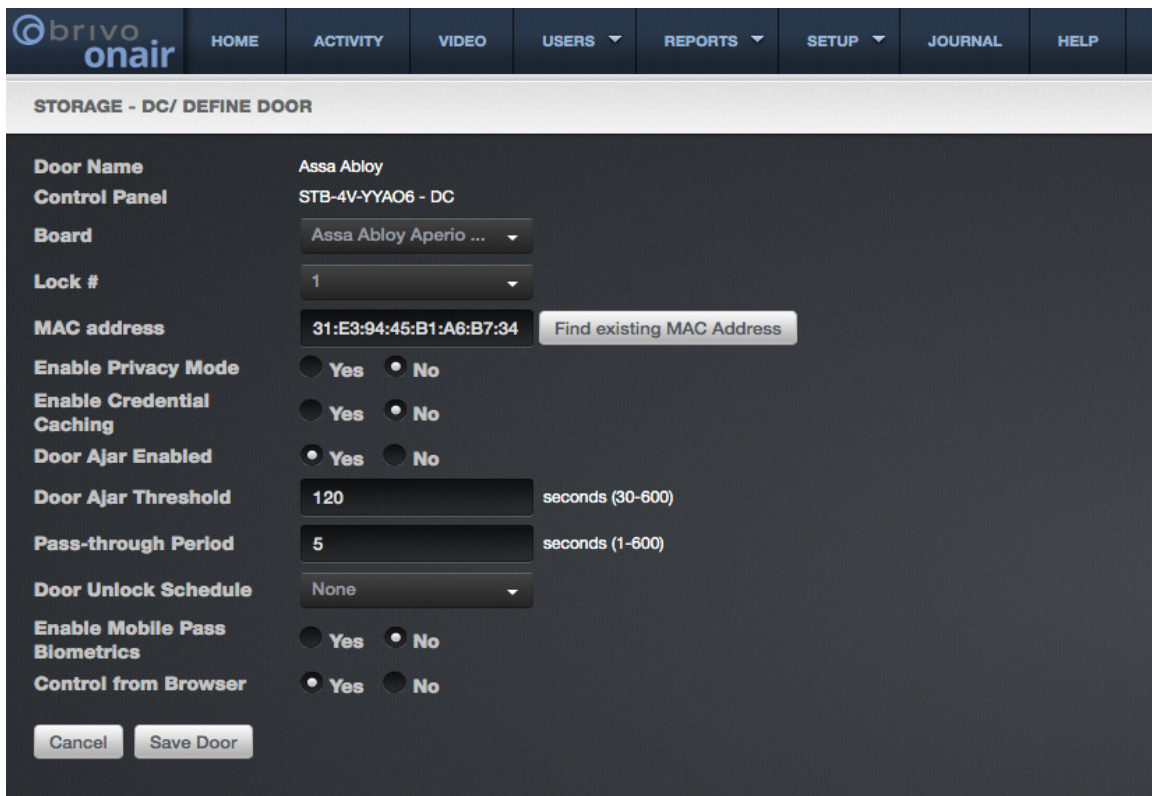
From the **Setup** tab, select **Sites/Doors** and then **Sites**. The Site List page displays.

Click on the **Site** to which you wish to add the lock. The **View Site** page displays.

Under the **More Operations** dropdown, select **Add Door**.

Enter a unique **Door** name and then select the appropriate control panel from the dropdown list.

Click **Next** and then select the Hub from the **Board** dropdown list. Next, select the **Lock #** from the dropdown list. The lock number is a number you will select and assign between 1 and 16. The lock number itself does not correlate to any value in Aperio.



The screenshot shows the 'STORAGE - DC/ DEFINE DOOR' configuration page in Brivo Onair. The page has a dark theme with a navigation bar at the top containing links: HOME, ACTIVITY, VIDEO, USERS, REPORTS, SETUP, JOURNAL, and HELP. The main content area is titled 'STORAGE - DC/ DEFINE DOOR' and contains the following fields and options:

- Door Name:** Assa Abloy
- Control Panel:** STB-4V-YYA06 - DC
- Board:** Assa Abloy Aperio ... (dropdown)
- Lock #:** 1 (dropdown)
- MAC address:** 31:E3:94:45:B1:A6:B7:34. A button labeled 'Find existing MAC Address' is next to the field.
- Enable Privacy Mode:** Radio buttons for Yes and No (No is selected).
- Enable Credential Caching:** Radio buttons for Yes and No (No is selected).
- Door Ajar Enabled:** Radio buttons for Yes and No (Yes is selected).
- Door Ajar Threshold:** 120 seconds (30-600)
- Pass-through Period:** 5 seconds (1-600)
- Door Unlock Schedule:** None (dropdown)
- Enable Mobile Pass Biometrics:** Radio buttons for Yes and No (No is selected).
- Control from Browser:** Radio buttons for Yes and No (Yes is selected).

At the bottom of the form are two buttons: 'Cancel' and 'Save Door'.

For the **MAC address** field, Brivo Onair will automatically identify any Locks that are paired with the selected Hub. If the Lock is connected to the Hub and the Hub is also online during this step, you will be able to select the MAC address associated with the Lock from the dropdown list. If the Hub is not online or in the case of pre-programming the account, you may enter the MAC address into the MAC address field. Be sure to enter the address with a colon ":" separating each octet.

Setting **Enable Privacy Mode** button to Yes allows the user to place the door in a "Do Not Disturb" state. If the lock supports Privacy Mode, by either pushing a button on the secure side of the door, or on some models by simply engaging the deadbolt, the lock will no longer open for Users that are not in a group with Privacy Override enabled. Privacy Mode will remain active until the door is either opened from the inside, or valid access is gained by someone who has Privacy Override Privileges. Privacy Override can also be canceled by pushing the Privacy Override button again, or by disengaging the deadbolt.

The Default setting is No. Some Assa Abloy Locks do not have Privacy Mode capabilities. Select the radio button for Yes or No to enable or disable Privacy Mode.

You may also set Offline Cache. Select Yes for Enable Credential Caching to enable the Cache. Additional option will appear. Set the number of days you wish the lock to cache credentials and also set the number of credentials you wish the lock to cache.

Revision List

Date	Version	Description
November 25, 2019	1.0	Initial version
May 5, 2020	1.1	Updated Lock Configuration instructions