IP-Enabled Locks: Facts for IT

The global leader in door opening solutions

ASSA ABLOY

Intelligent IP-Enabled Access Control Solutions

The information sent over a site-wide 100 lock deployment in 24 hours is the size of a standard email message

PoE and ESD

Because PoE locks may be more susceptible to electrostatic discharge (ESD), please note the following requirements:

All PoE locks: Shielded Category 5/6 cable with drain wire from the lock to building or electrical ground

Access 800 and Profile Series v.S1: Shielded cable with drain wire back to the PoE switch

What is the Impact on Your Network?

ASSA ABLOY IP-Enabled locks take advantage of Power over Ethernet (PoE) or WiFi network infrastructure to provide increased security and easier, more cost-effective installations. Like any other equipment you would consider adding to your network, you need the proper information to verify the security and other potential impacts of these devices. This document is intended to provide that information. If you have any concerns that this document does not address, please contact your local ASSA ABLOY Integrated Solutions Specialist for more information.

Bandwidth

- On average, a PoE or WiFi lock transmits a total of 5-10 kB data per day.
- Each lock has a maximum memory of 3 MB and therefore can transmit no more than 3 MB of data. 3 MB transfers are only possible during initial setup or after a sustained network outage.

IP Address

- Statically assigned
- DHCP

Networks

- WiFi: IEEE 802.11b/g/n (2.4GHz)
- Power over Ethernet: IEEE 802.3af
  - Access 700® PIP1, Passport 1000 P1, IN220: Class 1 (3.84 watts max)
  - Access 800® IP1, Profile Series v.S1: Class 2 (6.49 watts max)

Ports

- User-definable TCP port (default 2571 TCP inbound/outbound)

Applicable Products

Corbin Russwin Access 700 PWI1

Corbin Russwin IN120

Sargent IN120

Sargent Passport 1000 P2

Certificate Constraints

(applies to both radios)

All certificates must be DER encoded binaries.

Binary file extension can be .cer, .der, or other.

The Client Private Key must have its password removed.

Security

ASSA ABLOY IP-Enabled locks offer support for a wide range of standard wireless security and data encryption methods.

Data Security

ASSA ABLOY PoE and WiFi locks support an optional AES 128 bit encryption at the lock protocol level. This is in addition to any WiFi network encryption that may be used, and ensures data security, even on open networks.

WiFi Encryption & Authentication

ASSA ABLOY WiFi locks are equipped with GainSpan WiFi radios. The table below provides information on the encryption and authentication capabilities of these radios, which are used in Access 700 PIP1/PWI1, IN120/IN220, and Passport 1000 P1/P2.

	GainSpan GS1500 Radio		GainSpan GS2011 Radio
	Firmware Version 3.5.5	**Firmware Version 3.5.9/3.5.10**	**Firmware Version 5.2.3/5.5.1**
WiFi Encryption Types	• Open • WEP64 • WEP128 • WPA(2)-Personal *(AES or TKIP)*	• Open • WEP64 • WEP128 • WPA(2)-Personal *(AES or TKIP)*	• Open • WEP64 • WEP128 • WPA(2)-Personal *(AES or TKIP)*
802.1X *(Enterprise)* Encryption Types	• WPA(2) PEAP • WPA(2) EAP-TTLS • WPA(2) EAP-TLS	• WPA(2) PEAP • WPA(2) EAP-TTLS • WPA(2) EAP-TLS	• WPA(2) PEAP • WPA(2) EAP-TTLS • WPA(2) EAP-TLS
Maximum Hash Algorithm	SHA1	SHA1*	SHA2
Maximum Characters in Username and Password Fields	32	32	32
Maximum RSA Key Strength	1024 bits	1024 bits	4096 bits
Certificate File Size Limit	• < 2KB per certificate/file *(Root CA, Client, Client Private Key)* • < 4KB total	• < 2KB per certificate/file *(Root CA, Client, Client Private Key)* • < 4KB total	• < 256KB for all three certificates/files *(Root CA, Client, Client Private Key File)*

** On GainSpan GS1500 Firmware Version 3.5.9, the server certificate (the certificate initially presented to the client) can be encrypted using the SHA256 hash algorithm. However, all certificates loaded in the radio must be SHA1 or lower.*

Important Considerations

"Security" Virtual Local Area Network (VLAN)

- Although not required for a successful deployment, a common practice with IP-based security products is the creation of a "security" VLAN
- This typically consists of only the IP locks and their associated server
- When creating the VLAN, a unique SSID is created and tied to the "security" VLAN (the SSID is often hidden)
- By allowing for the VLAN to be administered separately, this helps alleviate issues related to changing wireless keys or encryption types

Operation

WiFi

- ASSA ABLOY WiFi locks are configurable to connect to the facility's WiFi network as scheduled by the user
- At each connection, the radio is powered up, and the lock associates with the WiFi network to transmit/receive 5-10kB of data to/from the server
- When it is not communicating with the server, the wireless radio is powered down, disconnecting it from the WiFi network completely
- Hard powered WiFi locks can be set to remain associated and "online" full time

PoE

- During initial power up, the ASSA ABLOY PoE lock establishes a connection and begins communication with the server
- The PoE lock transmits 5-10kB of data spaced out over the course of a 24-hour period
- The lockset remains online at all times as a standard Ethernet connected device
- This data transmission also includes typical daily management tasks

Fallback Operation

- In the event of a network outage, the locks will continue to operate using a locally-stored database from the last contact with the server
- While the network is down, updates to the lock and transmission of event records or alarm notifications are not possible
- Failure of communication will be reported to the access control system administrator based on conditions set in the access control system

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience

ASSA ABLOY

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