

LiftOff™

LiftOff Deployer's Guide PDF

Powered by BraXos

Ashley Mascari, braXos Security

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by Ashley Mascari

Abstract

This guide provides detailed steps on how to acquire initial access to LiftOff's management portal and subsequently how to create and manage elevator banks and beacons used by the solution to place a call with the elevator from a mobile device.

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Chapter 1. Overview

This guide documents the process by which an elevator system can be LiftOff-enabled. Two software components are used by the Elevator Mechanic to deploy LiftOff:

- LiftOff Mobile – iOS/Android mobile application
- LiftOff Commander – Browser-based administrative interface to LiftOff

The steps associated with this process are:

One-Time Steps:

- Installation of the LiftOff Mobile Application
- Request Deployer access from braXos to the site in question
- PIN creation

Per-Site Steps:

- If not the first site, request additional Deployer access
- Configuration of Elevator Banks and Beacons in LiftOff Commander
- Programming and deployment of BLE Beacons in LiftOff Commander
- Preparing the Destination Dispatch system

The following sections detail each of these tasks, which should be executed in the above order.



Chapter 2. One-Time Steps



Installation of LiftOff Mobile

Introduction

LiftOff is delivered to consumers as a mobile application that utilizes BLE (Bluetooth Low Energy) technology to validate physical presence inside a LiftOff-enabled building. In addition to consumers, elevator installers and building administrators use the LiftOff application to test LiftOff functionality and manage access to LiftOff Commander. This chapter documents the process of enrollment and configuration from the installer perspective.

OS Requirements

LiftOff mobile requires an iOS or Android device. Currently, iOS 13.0+ is required.

Installation

To install LiftOff, visit the Apple App Store (iOS) or Google Play Store (Android) with the mobile device on which the application ought to be installed. Once installed, the LiftOff icon will appear on the home screen:

Figure 2.1. LiftOff Home Icon



Tap the LiftOff icon to begin the enrollment process.

Registration

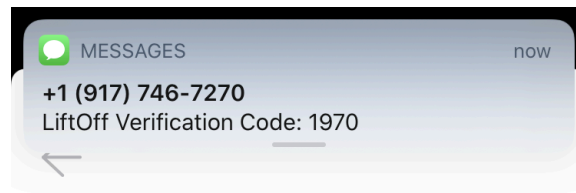
When LiftOff is first launched, the Elevator Installer will be promoted for the phone number of the device on which LiftOff will be used:



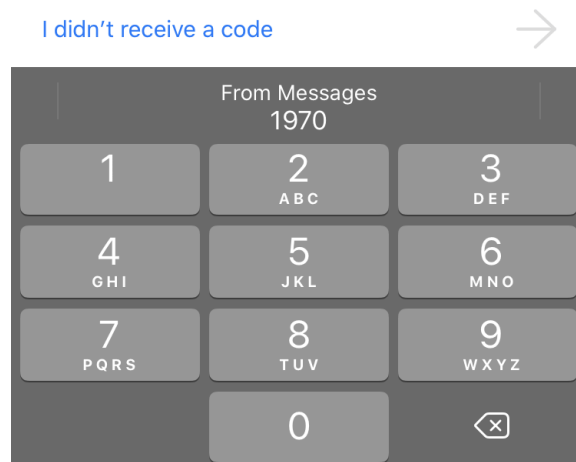
Figure 2.2. Registration

The image shows a mobile application interface for registration. At the top, a status bar displays 'Verizon', signal strength, Wi-Fi, and the time '11:19 PM'. Below the status bar is a blue header bar. The main content area has a light gray background. It starts with a gray back arrow on the left. Below it is a text input field with the placeholder text 'Enter your mobile number'. Under the input field is a country code selector showing a US flag and '+1', followed by the pre-filled number '614-555-555'. Below the number is a warning message: 'By continuing you may receive an SMS for verification. Message and data rates may apply.' with a gray right-pointing arrow. At the bottom is a numeric keypad with buttons for digits 1-9, 0, and symbols for backspace and call. Each digit button also has its corresponding letters (e.g., 'ABC' for 2).

LiftOff attempts to automatically determine the appropriate country and phone number format, but the default determination can be changed. Once the phone number is entered, an SMS verification code will be transmitted to the device:

Figure 2.3. SMS Verification

Enter the 4-digit code sent to you at (555) 555-5555. Did you enter the correct mobile number?



On iOS, tapping "From Messages" will automatically insert the SMS verification code. Once verified, LiftOff will ask for the First Name (Given Name), Last Name (Surname), and email address. LiftOff will then attempt to locate nearby LiftOff buildings and will display them.



Note

The verification code sent via SMS is valid for five minutes. Once five minutes has been exceeded, re-entry of the phone number is required.

iOS and Android will ask for application privileges:

- Location Services
- Bluetooth
- Notifications

For location services, choose "While Using the App" or, if AutoLift and QuickLift support is desired, choose "Always". (See the Administrator's Guide for details.)



Request for Administrator, Approver and Deployer Access

Before a PIN code can be assigned in LiftOff Mobile for use in accessing LiftOff Commander, the elevator mechanic should submit a request for administrator, approver, and deployer access to the building using LiftOff. After LiftOff device enrollment is completed, or whenever LiftOff is started, a list of buildings will be displayed. Tap the building in question and submit a request for access. Please include in the request:

- the name of the elevator manufacturer company
- that the request is for LiftOff deployment

Once verified, braXos Support will grant all three roles: Administrator, Approver, and Deployer access and a push notification will be sent to LiftOff Mobile indicating the request has been processed. The Administrator and Approver roles are temporary; after the deployment has completed, the elevator mechanic should transition the Administrator and Approver roles to members of the property management team during the turn-over process. The Deployer role should be retained by the elevator mechanic.



PIN Creation

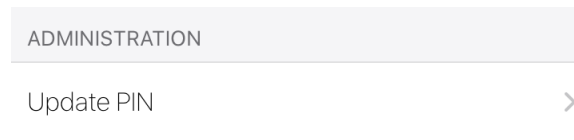
Once braXos Support has completed the request for deployer access to the project's LiftOff building, the elevator mechanic can use the LiftOff Mobile application to assign themselves a PIN code used to authenticate to LiftOff Commander. A re-start of LiftOff is necessary for this change to take effect, so once the push notification of the approval has been received, re-launch LiftOff Mobile, then tap the Settings gear:

Figure 2.4. PIN Creation



A section title, ADMINISTRATION, should be displayed. This is only displayed if the LiftOff account has been granted Deployer privileges by braXos Support to at least one building. Tap Update PIN to set the 4-digit PIN Code:

Figure 2.5. Administration



LiftOff will require TouchID access to update the PIN to ensure the PIN code has been set by the phone's owner.

Note the PIN code assigned, as it is used with two-factor authentication in LiftOff Commander.



Note

Avoid PIN codes that are easily guessed. Examples include: 1111 and 1234.

Chapter 3. Per-Site Steps



Request for Deployer Access

If this is not the first site, the elevator mechanic must request additional Deployer access to the LiftOff building in question per the details outlined in One-Time Steps



Configuration of Elevator Banks and Beacon Groups

The elevator mechanic, having registered a PIN code in LiftOff mobile, can access LiftOff Commander at: <https://liftoff.braxos.com>

Requirements

The principle BLE beacon technology supported by LiftOff is a quarter-sized battery-powered BLE beacon whose estimated lifetime is currently a little more than one year. This beacon can be programmed using a desktop or laptop running Google Chrome and LiftOff Commander. It may also be programmed using the mobile application, but the initial beacon definition must occur within Commander.



Note

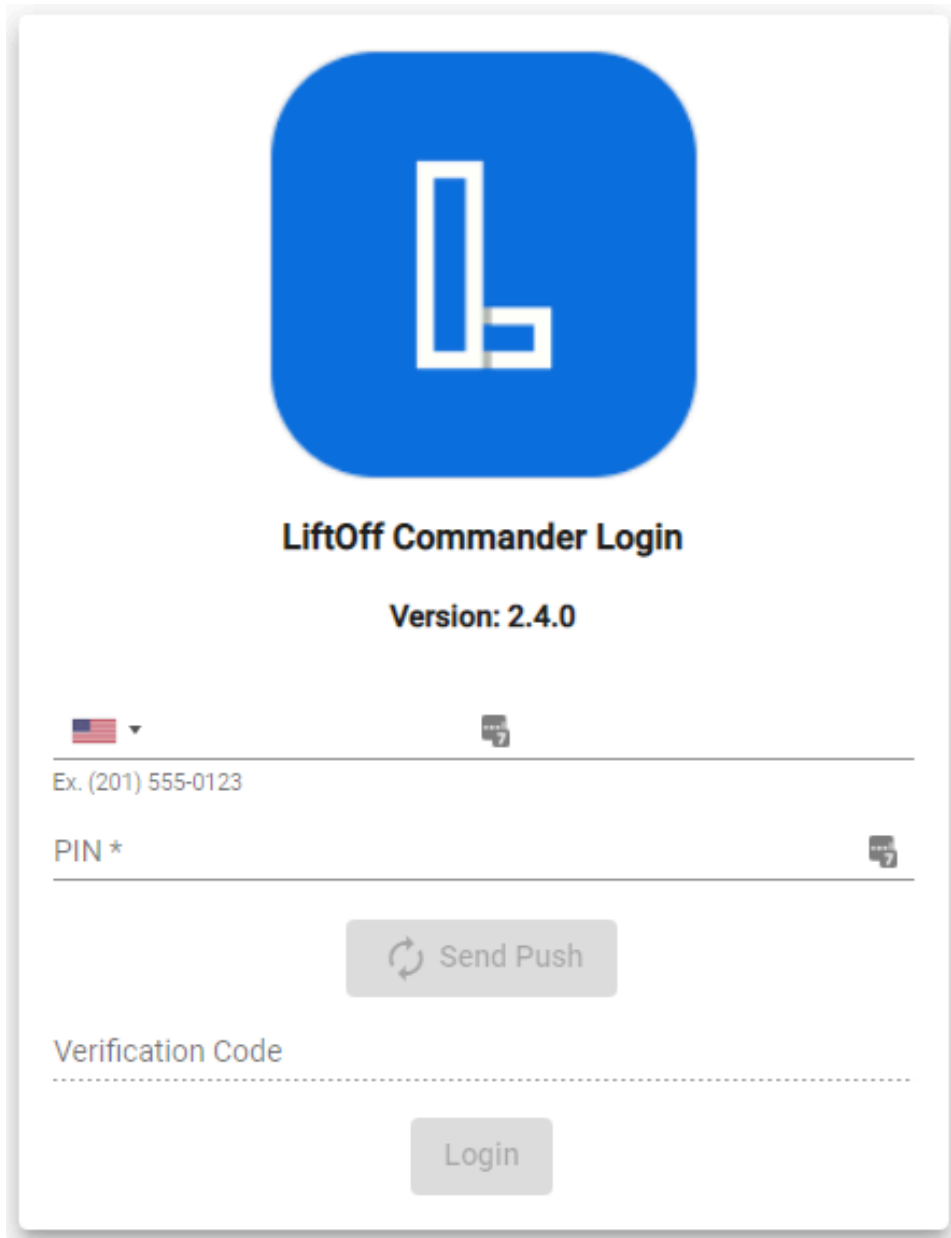
Commander must currently be used on a desktop or laptop device. Support for small-sized media (i.e.: phones, tablets) is in progress.

Login

To login into LiftOff Commander, enter the aforementioned URL. The elevator mechanic will be presented with a two-factor login screen:



Figure 3.1. Login

The image shows a mobile application login screen for 'LiftOff Commander'. At the top is a large blue rounded square icon with a white stylized 'L'. Below the icon, the text 'LiftOff Commander Login' is centered, followed by 'Version: 2.4.0'. There are two input fields: the first is for a phone number, with a US flag icon and a dropdown arrow on the left, and a 'Send Push' button to its right; the second is for a PIN, with an asterisk and a 'Send Push' button to its right. Below the PIN field is a 'Verification Code' field with a dashed line. At the bottom is a 'Login' button.

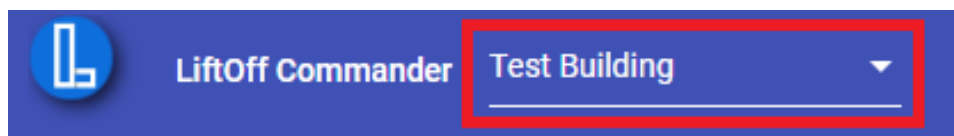
The phone number and PIN code should be the values supplied to LiftOff Mobile. Once supplied, clicking "Send Push" will result in a push notification sent to the mobile device. The verification code can then be used to authenticate to LiftOff Commander.

Building Selection

Once authenticated, the elevator mechanic can choose which building requires configuration by selecting the building from the site drop-list in the navigation bar at the top of the page. If the site desired is not in the list, please contact <support@braxos.com> for Deployer access:



Figure 3.2. Building Selection



Security Toggle

Next to the building selection control is a Security Toggle:

Figure 3.3. Security Toggle



When this toggle is enabled, the Floor Access rules are in effect, and the destinations available to a rider is limited to what that rider is authorized to travel to. When this toggle is disabled, all floors are public, and any rider may travel anywhere. It is often useful to disable this during deployment, when beacons are being deployed and tested, and enabled at the end of the testing process when the building is being turned over to the building administrator.

Currently, only those with the Deployer role or Support role see and can manipulate the security toggle setting.

LGA Connection Status

Adjacent to the user profile avatar is the LGA Connection Status icon. This indicates whether or not the gateway appliance is successfully communicating with the cloud. If the appliance is communicating successfully, a connected cloud is rendered:

Figure 3.4. Appliance Connected



Hovering over the icon will display the date and time the connectivity was established. If the appliance is not communicating with the cloud, a broken cloud icon is displayed:

Figure 3.5. Appliance Disconnected



If the appliance is in the disconnected state, LiftOff calls will fail and users will receive a notification that their request to dispatch an elevator has given up after twenty seconds. Possible reasons for why the appliance may not be able to communicate with the cloud include:

- Poor cellular coverage, if cellular connectivity is used



- The appliance has been powered off
- The appliance is in a suspended state
- The appliance is configured to communicate with the cloud using the building network, and the building network has lost internet connectivity
- The appliance is configured to communicate with the cloud using the building network, and new firewall rules prohibit the appliance from communicating with braxos.com



Note

Users may still receive timeouts waiting for a car assignment even though there is no issue with appliance connectivity to the cloud for several reasons:

- Misconfigured elevator controller software
- Incorrect kiosk IDs specified in Commander
- Expired elevator controller license keys
- Physical cabling issues between the appliance and the elevator controller
- Firewalled communications blocking appliance / elevator controller communications

If the cloud icon shows a connected state, the problem lies between the appliance and the elevator controller.

Elevator Banks

Before beacons can be enabled for car calling or kiosk unlocking, the elevator mechanic must define to LiftOff the Elevator Banks (a.k.a Car Groups) that will be participating in the LiftOff deployment. The exercise of defining the Elevator Banks is to:

- Give each bank a human-identifiable name (e.g.: "A" or "1" or "East"). Optionally, a display label that will be displayed to the LiftOff user when a car is called can also be supplied.
- Define the floors in the bank. This includes the virtual kiosk ID (also known as a "DEC" or "display panel" or "reader ID") that LiftOff should use when placing a call at that floor, as well as the security value and direction to use as the destination for users wishing to ride to the associated floor.
- Additionally, the elevator mechanic must indicate in LiftOff Commander what special privileges or features have been enabled in the group, such as VIP, so that LiftOff can allow the building to manage who may place a car call with those special privileges enabled.

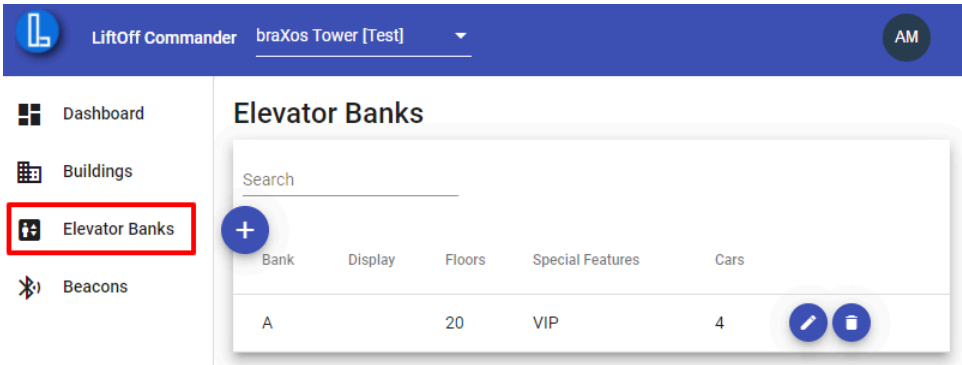
Elevator Bank Configuration

To add or edit Elevator Banks, choose the Elevator Banks menu item from the side navigation. A table of elevator banks will be displayed. Each elevator bank that will



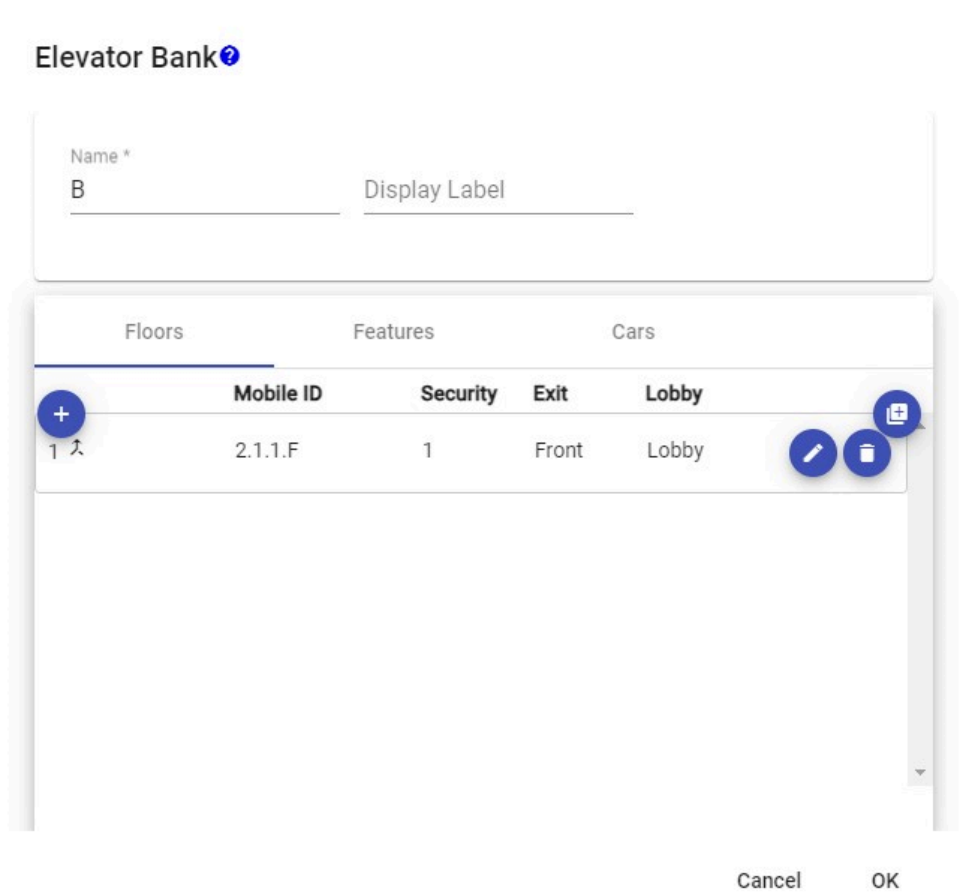
be LiftOff-enabled must be defined in the system. To add an elevator bank, click the “+” button. To edit an existing elevator bank, click the pencil icon on its row:

Figure 3.6. Elevator Bank Configuration



When the “+” (to add) or pencil (to edit) buttons have been clicked, LiftOff Commander displays the Elevator Bank dialog:

Figure 3.7. Elevator Bank Dialog



Name. The Name field is required to define the bank to LiftOff. The name is displayed to the building staff when defining floor access rules and calling privileges.



Display Label. The Display Label is an optional field, that, when supplied, is displayed to the LiftOff user when a call is placed.

Elevator Bank: Floors

In addition to the Name, the set of floors and features must be defined. To add a floor, click the "+" button at the top of the table. To edit a floor definition, click the pencil on its associated table row:

Figure 3.8. Elevator Bank Floors

Floor?

Marking *

L

Security Value *

1

Exit Direction *

Front

Kiosk ID *

192.168.3.101

Virtual DEC IP Address

☐ Lobby Floor

Paired Floor: [Low Rise L]

Cancel OK

After clicking the "+" or pencil button, the Floor dialog appears. The following fields are used to define the floor to LiftOff:

- Marking - this is what is displayed to the LiftOff rider, as well as to the LiftOff Commander building staff. This value should be the same as it is on the elevator kiosks / DEC's / display panels.
- Security Value - this value indicates to LiftOff what it should send when requesting a car to take a rider TO this floor. The security value is often the landing number, but can differ based upon how the elevator controller is configured and whether or not there are missing floors.



- Exit Direction - this value indicates to LiftOff what it should send to the elevator controller as a destination direction for this floor. If a floor has both a front exit and a rear exit, two different floors should be defined (e.g.: 2 Front, 2 Rear).
- Kiosk ID - this value indicates the Kiosk ID that LiftOff should use as the source floor panel identifier when issuing the car call. This Kiosk ID must be defined to the elevator controller so that the controller knows where to dispatch the car for pick-up. In some platforms, this value may require the elevator mechanic to create a "virtual" display panel in the system software. If an actual, in-use Kiosk ID is supplied, LiftOff will interoperate with that kiosk, and the display panel will show the LiftOff car allocation. This behavior is not desirable, as non-LiftOff users will be confused at the kiosk's behavior, but could be configured temporarily for debugging deployment issues.
- Lobby Floor - this value indicates whether or not the floor is a "Lobby" floor. A lobby floor is a floor which is always accessible, per code, and is displayed in LiftOff as the top option for QuickLift elevator calls.
- Paired Floor - this optional value allows the elevator mechanic to indicate that, when the user is within proximity of beacons associated with either this floor or its pair, LiftOff should present destinations from *both* elevator banks simultaneously to the user. To pair a floor, expand the Paired Floor panel, and choose the elevator bank and floor which ought to be paired. Once the dialog is dismissed, a paired icon is displayed next to the floor:

Figure 3.9. Paired Floor



To remove a pairing, click the Trashcan icon in the expanded Paired Floors panel.

Instead of adding each floor definition independently, multiple floors can be added at once. By clicking the double-plus button ("++") at the top of the table, a dialog will be displayed which gives options that allow for multiple floors to be created at once:

Figure 3.10. Multiple Floor Creation**Add Floors to Bank: High Rise**

Car Group ID *	Number of Floors *
3	20
Security Value Start *	Mobile Kiosk ID Start *
1	192.168.3.101
	Virtual DEC IP Address
Direction(s) *	
Front	

Cancel OK

You will be prompted for the following values:

- Car Group ID - this field identifies which car group the set of floors ought to be added to. It is important that this value matches the car group that is currently being edited.
- Number of Floors - this value indicates the number of floors to create. If a floor already exists with the same security value, it will be preserved. Valid values are between one and 127, inclusive.
- Security Value Start - this value indicates the starting security value for the floor. This value is the value sent to the controller when a destination is selected. For each floor created, this value is incremented by one. The batch creation process will also default the floor marking to the same value as the security value.
- Mobile Kiosk ID Start - this value should indicate the first mobile kiosk ID that should be used on the first floor created. The system will increment this value appropriately for each floor created in-batch.
- Direction - this value indicates whether the floor has a front-of-car entrance or a rear-of-car entrance or both. If **Both** is selected, then two floors will be created for each Number of Floors specified. For example, if Number of Floors is three, and the Direction is **Both** with a Security Value Start of 1 then the following floors would be created: 1, 1R, 2, 2R, 3, 3R.



After tapping OK, the floors will be merged with any existing floors already defined for the elevator bank. Until OK is tapped on the elevator bank's dialog, changes will not be saved.

The order in which the floors are displayed in the Elevator Bank table mirror how they are displayed in LiftOff. The order can be changed by dragging and dropping a floor:

Figure 3.11. Floor Order

	Floors	Features	Cars
	KioskID	Security	Exit
1	1.1.1.F	1	Front
2	1.2.1.F	2	Front
3	1.3.1.F	3	Front
4	1.4.1.F	4	Front

Elevator Bank: Features

In addition to floors, special features must be defined to LiftOff. Special features, if desired by the customer, must first be defined in the elevator controller configuration. Then, the feature can be made available for the building to manage access to through the Features tab of the elevator bank dialog:

Figure 3.12. Elevator Bank Features

Floors	Features	Cars
ADA	<input type="checkbox"/>	
CodeBlue	<input type="checkbox"/>	
Service	<input type="checkbox"/>	
VIP	<input checked="" type="checkbox"/>	







Once the configuration of the Elevator Bank is complete, click the OK button to save the changes.

To make a Feature which has been configured in the elevator controller available to LiftOff, click the checkbox associated with it. Once ticked, the feature becomes available for the building to manage via the Call Groups membership mechanism. The building will be able to define groups and schedules whereby members of those groups can have the option of placing a car call with special privileges, such as VIP.

Elevator Banks: Cars

By default, LiftOff will display the Physical Car No. (e.g.: 1, 2, 3, etc.) returned by the elevator controller to the rider. If something other than the Physical Car No. ought to be displayed, the elevator mechanic must supply a mapping between the Physical Car No. and the Car Display Label:

Figure 3.13. Elevator Bank Cars

Physical Car No.	Display Label	
8	B3	 
9	B4	 
1	C1	 

In this example, when Car 1 is allocated, the rider will see “Proceed to Car C1”.

Beacons

Beacons act to identify a LiftOff user as being physically present at a particular elevator bank on a particular floor, and, if used in conjunction with kiosk unlocking, at a particular kiosk.



Note

It is recommended that two beacons be programmed per landing, per group and placed around eight feet above the floor where the hall call buttons are using double-sided tape. The beacons should be out-of-reach of passengers.

Every beacon is programmed with a Secret Key. The Secret Key is used by LiftOff to uniquely identify the beacon around the world. The Secret Key is never transmitted by the beacon. Instead, a time-based hash using the secret key is transmitted, which is then validated by LiftOff.

In addition to the Secret Key, the following additional properties must be configured by the elevator mechanic:

- Elevator Bank - the bank with which the beacon group is associated
- Floor Marking - the floor on which the beacons have been placed
- Car Calling - whether this is a beacon used for calling a car, and, if so, how close must the rider be to the beacon before being able to do so
- Kiosk Unlocking - whether this beacon is used for unlocking a kiosk, and, if so, what is the ID of the kiosk that ought to be unlocked when the rider is within one meter of the beacon. E.g.: the DEC (e.g.: 192.168.1.10), display panel (e.g.: 0.0.F), or kiosk ID (e.g.: 1.2.1.F) ID. The value is contingent upon the elevator manufacturer.



Beacon Configuration

To add or edit beacons, click the Beacons menu item in the left-side navigation:

Figure 3.14. Beacon Configuration

Beacons

Elevator Banks
A, B

+

+

Elevator Bank	Floor	Description	Battery	Beacon Type	Call Range	Kiosk ID	Secret
A	1	1st Floor	2.6V		10m	n/a	
B	1	B-1-1	3.0V		10m	n/a	
B	2	B-2-1	3.0V		10m	n/a	
B	3	B-3-1	3.0V		10m	n/a	

+

A table of beacons will be displayed (if any). The table displays the battery health, whether car calling is enabled, kiosk unlocking is enabled, and, if so, the ID of the kiosk that will be unlocked when a LiftOff enabled mobile device enters into range.

The "+" button is used for adding a new beacon to the site. The "++" button is used to add multiple beacons to a site with a single click. Once clicked, the "++" button will display the Add Beacons dialog box:



Figure 3.15. Adding Beacons in Batch

Add Beacons

Elevator Bank(s) *
A

Beacons per Floor *
2

1st Beacon Prefix: A 1st Beacon Suffix: -[Floor Marking]- 1

2nd Beacon Prefix: A 2nd Beacon Suffix: -[Floor Marking]- 2

Cancel OK

After choosing the elevator bank, the deployer may then choose the number of beacons for the system to generate per floor and the naming pattern that LiftOff will use in naming the beacon. The default naming mechanism is to prefix the beacon name with the first three letters of the elevator group, automatically upper-cased, followed by the floor marking, followed by a sequence number contingent upon the number of beacons to be autogenerated. The elevator mechanic can substitute more relevant information. For example, the elevator mechanic may want to indicate "North" and "South" as the beacon suffixes, or "A/C" and "B/D" to indicate the cars between which the beacons will be placed. If no prefix is supplied, the beacon name will be the floor marking followed by the suffix.

Unlike the single beacon creation process, the batch process assumes that all beacons will be Car Calling beacons.



Note

The process will not generate new beacons in excess on floors where beacons already exist. For example, if zero beacons exist on Floor 1, one beacon exists on Floor 2, and two beacons exist on Floor 3, the adding of beacons in batch would add two beacons to Floor 1, one beacon to Floor 2, and no beacons to Floor 3.

In addition to the "+" and "++" command buttons, the following buttons allow further information and modification of beacon configuration:





Secret Key – used to view the secret key that has/will be written to beacons in the group, and generate a new key, if desired. This can be useful in using an iPhone to simulate a beacon.



Download LiftOff – used to program a beacon.



Edit – used to edit the properties of the beacon, including its car calling and kiosk features.

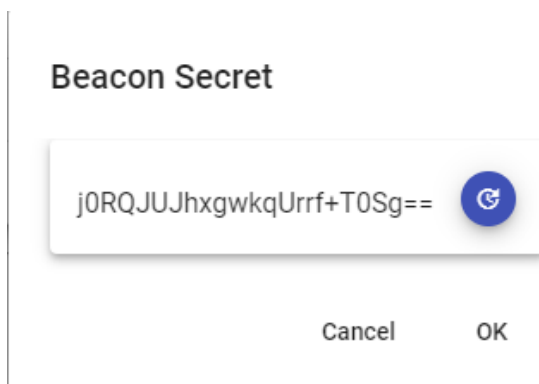


Delete – used to delete a beacon

The details of each command are:

Secret Key. When a beacon group is added, a Secret Key is automatically generated. Viewing the secret key is rarely required. However, if the Secret Key command button is clicked, the following dialog is displayed:

Figure 3.16. Secret Key



Note

The Secret Key can be used with LiftOff Mobile beacon simulation diagnostics to test LiftOff without an actual beacon. The Generate command can be used to generate a new Secret Key for the beacon. If a new secret is generated, the beacon **MUST** be re-programmed for the beacon to function.

Download LiftOff. By clicking the Download LiftOff command button, the elevator mechanic can program each beacon with the beacon's Secret Key. See the next section for programming and deploying the physical beacons.

Edit. Clicking the "+" command button or the beacon group edit pencil command launches the Beacon Dialog:



Figure 3.17. Edit Beacon

Beacon ?

Description
Lobby Call

Elevator Bank(s) * Floor *
A 1

Car Calling Kiosk Unlocking

Proximity in Meters
10

Cancel OK

Delete. The Delete command will, after confirmation, remove the beacon from the site.

Programming and Deployment of BLE Beacons

Once a beacon has been defined for each interaction point with LiftOff users, the beacons can then be programmed. To “program” a beacon is to record in its RAM the Secret Key used by LiftOff to confirm the physical location of the LiftOff user. If the Secret Key is changed for a given beacon, a re-programming of the beacon is required.



Note

While it is possible to program beacons after they are placed on the wall using LiftOff, it is recommended to initially program all the beacons with Google Chrome on a laptop at a desk.

To program a beacon, click the Download LiftOff command button, which will launch the Beacon Programmer stepper:



Figure 3.18. Beacon Programming - Begin

Beacon Programmer

Bank: A, Floor: 1 Lobby Call

1

2

3

4 Done

Beacon Reset

Before programming, the beacon must be reset. Reset the beacon by performing the following:

- Remove the battery
- Wait five seconds
- Restore the battery

Next

Dismiss

The first step of programming the beacon requires that the beacon be reset, by removing and restoring the battery. Once complete, advance to the next step by clicking the Next button.

Figure 3.19. Beacon Programming - Pairing**Beacon Programmer**

Bank: A, Floor: 1 Lobby Call

1


2

3

4 Done

Pair the Beacon

Pair the beacon to be programmed by clicking the *LED Light* button below and selecting the device from the scanned BLE devices. Confirm that the correct beacon is paired by verifying that the red LED on the beacon is on. Then, toggle the *LED Light* off to continue.



Next

The second step requires that the beacon is Paired to the BLE-enabled, Google Chrome device used to program the beacon. Once paired, click the LED Light command button to turn on the red LED. In the presence of multiple beacons, this allows the elevator mechanic to physically confirm the beacon that is about to be programmed. Clicking the LED Light command button again turns off the red LED and enables the Next button, allowing the mechanic to proceed to the next step.

Figure 3.20. Beacon Programming - Download**Beacon Programmer**

Bank: A, Floor: 1 Lobby Call


3

4 Done

Download LiftOff

Program the beacon by selecting its power level and clicking the *Download* button below.

Transmission Range (meters)
60



Next

Click the Download command button to download LiftOff code to the beacon. The command button will turn red until programming completes. If the beacon is a Car Call beacon, the transmission range can be selected. Once complete, the Next command button becomes available to proceed to the next step.

Figure 3.21. Beacon Programming - Complete**Beacon Programmer**

Bank: A, Floor: 1 Lobby Call

4 Done

Programming complete. After clicking **Dismiss**, the beacon will become unpaired. Use LiftOff to verify that the correct elevator bank and floor have been identified.

Dismiss

Click the Dismiss button on the dialog to complete the process.





Note

Until the Dismiss button is clicked, Google Chrome will be paired with the beacon, and the beacon cannot be used with LiftOff. This pairing can be verified by the presence of the Bluetooth logo in the LiftOff Commander tab of Google Chrome.

Once complete, the beacon's programming can be verified by launching LiftOff Mobile in proximity of the newly programmed beacon to see what it reports as the LiftOff user location.

Beacon Factory Reset

If a beacon does not function after programming, or if it cannot be Paired during Step 2, it may have to be reset to its factory defaults. To reset the beacon to its factory defaults:

1. Remove the battery
2. Wait five seconds
3. Holding down the single, small, black button on the beacon, restore the battery
4. Continue holding down the button while the blue and green LED flash
5. Continue holding down the button until the red LED flashes five times
6. Release the button



Note

Removal of the battery from the beacon causes the beacon to cease functioning. After a battery is restored, the beacon will need re-programmed in order to acquire the time-of-day.



Access Control Options

A building licensed for *Access Control* will have the ability to enroll users with physical credentials (i.e.: cards, fobs, mobile credentials, etc.). These credentials, when presented to access control readers, will result in the user having the ability to call a car to an authorized destination in the same way that LiftOff Mobile provides the capability. The access control reader technology may be provided by the elevator manufacturer or by a 3rd party access control system. Regardless, braXos Steward can coordinate the process of authorizing access to destinations once Commander has been used by the deployer to provide required configuration information:

- Elevator Banks and Floors

Elevator banks and floors are used by the integration to understand floor markings and security values. These values are used by the communications protocol between braXos Steward and the elevator controller.

- Displays

Displays identify to the system the unique identifier by which braXos Steward can send floor authorization messages, and, potentially, from whom braXos Steward might receive credential authorization request messages. See below for details.

Beacon configuration is not required if LiftOff Mobile is not going to be used at the property.

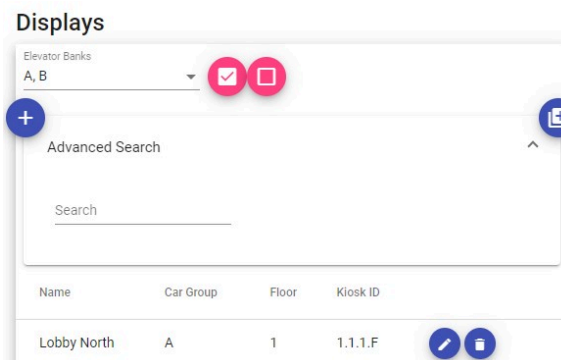
Displays



If the building is licensed for Concert™ or Ascent™, a Displays menu will be provided to the Deployer to specify the characteristics of all the display panels in the building. This allows a braXos Steward instance, running on premise, to interact with the elevator controller and display panels. When a credential is presented at the display panel, the elevator controller, either directly or indirectly via the display, sends a message to braXos Steward. braXos Steward can then authorize the set of destinations accessible to the rider by understanding what floor the rider is on via the Display entries programmed.

When tapped, the Displays interface shows the currently configured set of display panels:

Figure 3.22. Display Panels



Clicking the + button or tapping the pencil icon associated with an existing display will prompt the deployer to define the display panel (kiosk) to the system via the Display dialog box:

Figure 3.23. Display Dialog

Display

Name *
Lobby-1

Kiosk ID *
1.1.1.F
<Group ID>.<Floor ID>.<Kiosk ID>.<FJR>

Bank
A

Floor
2

Notes

☒ 3rd Party Reader

Reader Name

Reader ID

Cancel OK

The following attributes are required:

- Name

The name is used to allow the deployer to quickly identify the display entry and should be meaningful to the deployer and the property. It has no bearing on how the elevator integration operates.

- Kiosk ID

The Kiosk ID is used to identify the display to the elevator controller software interface. This uses the same notation as the virtual kiosk IDs used by LiftOff when placing mobile calls. When a credential is presented, the Kiosk ID is used by the system to identify the source floor, so that the system can respond with the appropriate set of authorized destinations. It is therefore critical that the Kiosk



ID supplied in the display configuration matches what the elevator control sends when emitting a credential message.

- Bank and Floor

The Bank and Floor controls are collectively used to identify the location of the display. This will ultimately determine the set of authorized destinations accessible to the user.

- Notes

A Notes field is provided to allow the deployer to provide any additional commentary regarding the behavior of the display. It does not impact how the elevator integration operates.

In addition to the aforementioned fields, if 3rd party readers are used, and the 3rd Party Reader toggle is enabled, the display can be associated with one or more 3rd party readers. A 3rd party reader, for example, could be supplied by an access control system manufacturer. In this case, the value of the Reader ID would be the ID as indicated in the access control system. Alternatively, the 3rd party reader could be provided by braXos via a Wiegand / IP gateway, in which case the Reader ID would contain the IP address of the device. When the integration encounters a credential event message referencing the Reader ID identified, the integration can then both identify the source floor for floor authorization determination as well as identify the display which ought to be referenced when sending the floor authorization message.

To remove a configured display, tap the trashcan icon. Once deletion is confirmed, the elevator security integration will be immediately impacted by the removal of the display.

Instead of adding each display definition independently, multiple displays can be added at once. By clicking the double-plus button ("++") at the top of the table, a dialog will be displayed which gives options that allow for multiple displays to be created at once:



Figure 3.24. Multiple Displays Creation**Add Displays**

Elevator Bank(s) *

A

Starting Floor *

1

Ending Floor *

5

Displays per Floor *

2

Kiosk ID Start *

1.1.1

<Group ID>.<Floor ID>.<Kiosk ID>

Direction(s) *

Front

Cancel OK

You will be prompted for the following values:

- Elevator Bank - the elevator bank with which the displays will be associated.
- Starting Floor - the first floor where the display definitions will be created.
- Ending Floor - the last floor where the display definitions will be created.
- Displays per Floor - the number of displays to create per floor. The default is 2
- Kiosk ID Start - the first Kiosk ID for the first display on the Starting Floor. The process will increment the Kiosk ID, both from a display per floor perspective and from a floor perspective as it generates the displays between the starting and ending floors, inclusive.
- Direction - the direction of elevator car entry at the display. If the display is mounted at the front entrance of the car, select **Front**, else select **Rear**.

After tapping OK, the displays will be merged with any existing displays already defined for the associated floors.



Appliance Deployment

OnLogic LiftOff Gateway Appliance

The LiftOff Gateway Appliance (LGA) is an industrial strength, fanless PC capable of running the LiftOff software that integrates the cloud with the elevator controller. The machine has the following characteristics:

- 4GB RAM
- Two 2.4Ghz Processors(4 total cores)
- 128GB SSD Drive
- Two 4G LTE Cellular Modems
- Two Gigabit NICs
- Windows 10 IoT Enterprise 2019 LTSC Value

Figure 3.25. LiftOff Gateway Appliance (OnLogic)



The OnLogic LGA has been preinstalled and preconfigured to be deployed out-of-the-box. The cellular interface has been pre-enabled. All that is required of the elevator mechanic is that the machine be cabled to the elevator controller, provided cloud connectivity, and powered on. There are three possible configurations for cloud connectivity:

- Verizon Embedded Cellular
- External DIGI Cellular Gateway using the inside NIC
- Building-supplied Internet using the inside NIC

Depending upon the option selected, the network preparation entails cabling the elevator controller to the *Outside* network interface with the supplied Cat 6 ethernet cable, and then either simply powering on the machine if using the embedded cellular, or cabling in the *Inside* network interface to the cellular gateway, firewall, or building-supplied internet drop.

The *Outside* network interface has been pre-configured with the IP address of the 3rd party security system and with all appropriate network routes defined. If this address needs to be changed, please reach out to <support@braxos.com>. The

Inside network interface has been pre-configured for *DHCP*, which can also be changed by braXos Support.

Dell OptiPlex 3080

An alternative to the OnLogic LGA, the LiftOff Gateway Appliance (LGA) can also be a Dell OptiPlex 3080. The Dell OptiPlex is also an industrial strength, fanless PC capable of running the LiftOff software that integrates the cloud with the elevator controller. The machine has the following characteristics:

- 8GB RAM
- 3.2Ghz Processors(6 total cores)
- 256GB SSD Drive
- One Gigabit NIC
- Windows 10 Pro English, French, Spanish

Figure 3.26. LiftOff Gateway Appliance (Dell)



The Dell LGA has been preinstalled and preconfigured to be deployed out-of-the-box. The Dell also ships with:

- USB Ethernet Adapter
- Preconfigured InHand Cellular Gateway

The cellular gateway's data plan has been pre-enabled. All that is required of the elevator mechanic is that the machine's *built-in* NIC is cabled to the elevator controller and the USB Ethernet adapter is used to cable the cellular gateway. If desired, building-supplied internet can be used instead of the cellular gateway for a more robust cloud connection. In either case, the USB Ethernet adapter is preconfigured to behave as a DHCP client.

If network addressing needs changed, please reach out to braXos Support at <support@braxos.com>.



Additional Consideration

Each LGA comes preconfigured with TeamViewer™, which is used by braXos Support to provide remote support of the device. If, after the device is powered-on, cabled to the elevator controller, and a call is placed, LiftOff fails with a "Gave up" message, please contact <support@braxos.com>. This is usually indicative of the device not having adequate cellular coverage, or the cellular modem (internal to the OnLogic, external to the Dell) not going "on-line." Unfortunately, at the moment, a monitor and keyboard may be required to resolve the issue.

In order to secure the device, three sets of credentials are issued for each LGA, the passwords of which are universally unique and managed by braXos in a cloud based, master-key system using AES-256 encryption with PBKDF2 SHA-256 and salted hashes. The credentials assigned to each LGA are the TeamViewer™, Windows OS, and braXos Steward passwords. To gain access to the operating system, please coordinate with braXos support by emailing <support@braxos.com>.



LiftOff Turnover

Property On-Boarding Check-List

Once testing of LiftOff is complete, the product should then be "turned-over" to the property management team. This entails a number of check-list tasks that should occur before leaving the property:

- Administrator/Approver Enrollment
- Reduction in Privileges
- Sharing of Content
- Educating the Property on User Enrollment

Administrator/Approver Enrollment

The first task of the turnover process is to ensure that members of the property management staff have been enrolled in the building with *at least one staff member having been granted the Administrator role and at least one staff member (possibly the same one) having been granted the Approver role*. This is important, so that the property can now own the role delegation process to other staff members, manage user enrollment, and own the activity of approving requests for access. Without this activity having been performed, new users making requests for access at the building may find their requests going unprocessed, creating a negative impression on their first use of LiftOff.

Reduction in Privileges

The second task of the turnover process is the reduction in Elevator Mechanic privileges. In order to facilitate the testing and demonstration of LiftOff to the property management team, Administrator and Approver roles will have been granted to the lead Elevator Mechanic at the property. It is *very important* that, following the Administrator/Approver Enrollment activity, either the new property Administrator or the Elevator Mechanic removes any non-Deployer role granted to the Elevator Mechanic. This serves two purposes:

- Ensures property staff has exclusive ownership in modifying user membership and access
- Ensures privacy compliance

Sharing of Content

A number of artifacts should be shared by the Elevator Mechanic with the property management team:

- LiftOff documentation
- Link to the Administrator's Guide via the Commander Portal Profile Avatar
- If an ACS synchronization is apart of the solution, the ACS to LiftOff Sync guide

Putting the property management team in a position to reference these items allows the team to answer their own questions, and plan the rollout of LiftOff successfully.



Educating the Property on User Enrollment

After the installation and configuration of LiftOff, the first question from property management is almost always around how users will become enrolled at the building. The Elevator Mechanic should demonstrate the Request for Access process with the property management staff when enrolling the first Administrator and first Approver. Following that enrollment, the Elevator Mechanic should educate the property on additional options:

- Enrolling Users via the Add User
- Importing Users via the CSV Upload
- Access Control Synchronization

While braXos is solely responsible for facilitating the Access Control System synchronization process, the Elevator Mechanic can put the property in a good position to understand what is required to enable an ACS sync, both from the access control system side of the synchronization as well as from the Commander side of the synchronization. The key items requiring discussion are:

- ACS Data Requirements: Email address
- Commander Requirements: Floor Access Groups

As noted in the document shared with the property, ACS to LiftOff Sync, the key data element required in the access control system to allow for a synchronization is the *email address* of the user being synchronized. This value is used to send the user an `Email Code`, which the user will enter into the LiftOff. Once entered, the ACS profile will be "linked" to their user profile, and membership both in the building generally, and in floor access groups will be managed by the synchronization.

While the source system requires an email address, the destination of the synchronization, Commander, needs the property management staff to create the Floor Access Groups into which the synchronization would automatically manage membership. This task should be owned by the property management staff, as the destinations accessible to each group will change over time, and the Deployer role does not grant the Elevator Mechanic the authority to add, edit, or delete Floor Access Group definitions. Floor access groups can be created via the CSV upload mechanism, or by utilizing the many tools within Commander to create groups from ACS data.

