

XPressEntry

XPressEntry / Lenel S2 NetBox

Revision 07/19/2023

For use with the
XPressEntry Mobile Access Control System

By



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Purpose

This document is intended to instruct users on how to synchronize an XPressEntry system with a NetBox system. XPressEntry has the capability of providing access control and emergency evacuation management from a handheld device. **For XPressEntry setup information, see the document, “XPressEntry Installation and Upgrade” found at <https://telaeris.com/documentation>.**

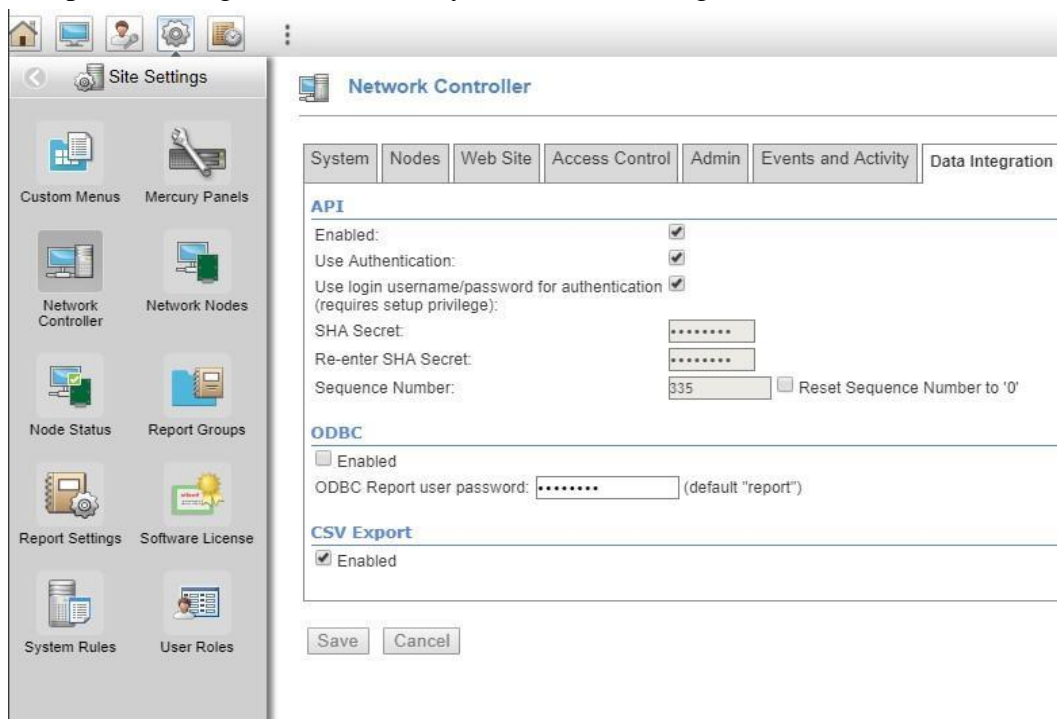
Prerequisites

1. NetBox 4.9.12+
2. XPressEntry Server 3.3+

Setting up NetBox to Synchronize with XPressEntry

Setup NetBox for Integration

The first step is to configure the NetBox system to allow integration.



The screenshot shows the NetBox configuration interface. On the left is a sidebar with icons for Site Settings, Custom Menus, Mercury Panels, Network Controller, Network Nodes, Node Status, Report Groups, Report Settings, Software License, System Rules, and User Roles. The main area is titled 'Network Controller' and has tabs for System, Nodes, Web Site, Access Control, Admin, Events and Activity, and Data Integration. The 'Data Integration' tab is selected. Under the 'API' section, 'Enabled' is checked, 'Use Authentication' is checked, and 'Use login username/password for authentication (requires setup privilege)' is checked. There are input fields for 'SHA Secret' and 'Re-enter SHA Secret', both containing asterisks. The 'Sequence Number' is set to 335, and there is a checkbox for 'Reset Sequence Number to 0'. Under the 'ODBC' section, 'Enabled' is unchecked. The 'ODBC Report user password' is set to asterisks, with '(default "report")' in parentheses. Under the 'CSV Export' section, 'Enabled' is checked. At the bottom are 'Save' and 'Cancel' buttons.

1. On the NetBox Controller, **Navigate to Configuration > Site Settings > Network Controller.**
2. Select the **Data Integration** tab.
3. Check **Enabled** under API.
4. Check **Use Login Username/Password for Authentication** to integrate the data.
Requires username and password of a user in the system with the **System Setup** role.
5. Once this is configured, select **save** at the bottom.

Create Logical XPressEntry Handhelds in NetBox

This step is important if XPressEntry will be used for **Entry/Exit** or **verification**. One of the benefits of XPressEntry is that most configuration can be done in S2. Though it is not required, you can add logical readers that represent your handheld devices in S2. Those reader records will be pulled into XPressEntry for you to use. Additionally, you can assign these logical reader records permissions in NetBox that can be pulled in as well.

1. Create **one or more logical nodes** for all Telaeris Handhelds.
2. Create **two logical readers** on NetBox for each **location** that will use a handheld – one for Entry and one for Exit. Each logical reader should be added to an appropriate **Reader Group**, which should be assigned to the appropriate **Access Level**.

Example setup:



Readers/Keypads

Name: * ☒ Enabled
(or [add](#) [clone](#) [rename](#))

Description:

Network Node: *

Expansion Slot:

Position:

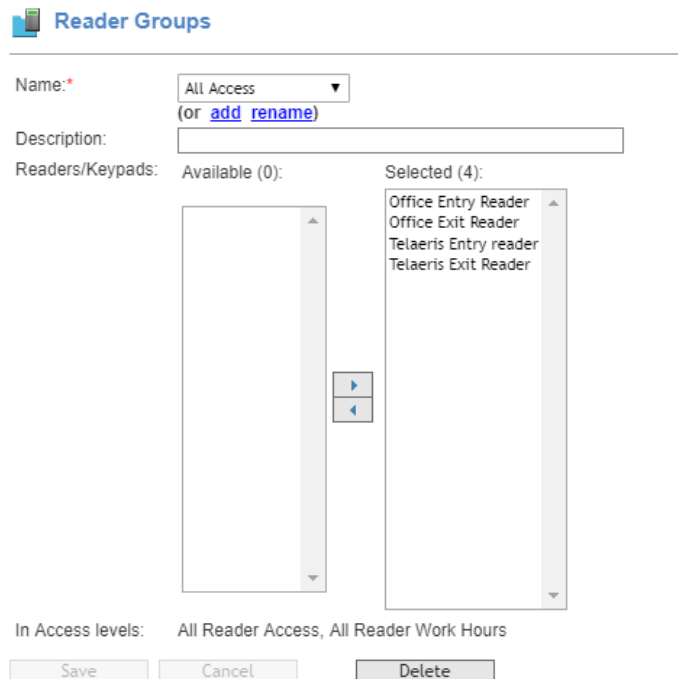
Reader/Keypad Type:

Camera:

Reader is in region:

Used By: Reader Groups: All Access, Front Door Readers
Portal: Front Door

This reader can not be deleted because it is being used.



Reader Groups


Name: *

Description:

Readers/Keypads: Available (0): Selected (4):

Office Entry Reader
Office Exit Reader
Telaeris Entry reader
Telaeris Exit Reader

In Access levels: All Reader Access, All Reader Work Hours

 **Access Levels**

Name:* All Reader Access ▼ Enabled
(or [add](#) [rename](#))

Description:

Reader(s):* ☒ Group: All Access ▼
☐ Individual: None ▼

Time Spec:* Always ▼

Floor Group: < none > ▼


Threat Level Group: < not applicable > ▼

Disarm alarm panel: < none > ▼

Escort type: < not applicable > ▼

Map XPressEntry Handheld Readers to Portal on NetBox

Once the handheld reader records are created on the NetBox, create a portal for each set of them.

 **Portals**

Name:* Front Door ▼
(or [add](#) [rename](#))

Network Node:* Telaeris Node ▼ Location:* Outside ▼

Unlock/Request-to-Exit (REX)

Resource	Time (secs)	Extended Time (secs)	Misc.
Lock: < none > ▼	Unlock: 5 ▼	Unlock: 20 ▼	
DSM: < none > ▼	Shunt: 10 ▼	Shunt: 30 ▼	<input checked="" type="checkbox"/> Relock on open?
REX: < none > ▼		Secondary Output: < none > ▼	<input checked="" type="checkbox"/> Unlock on REX?
REX mode: <input type="radio"/> Motion <input checked="" type="radio"/> Push (manual switch)		Secondary Active Time: 0 ▼	<input type="checkbox"/> Unlock on REX when portal open?

Card Readers/Keypads

Resource	Accept Read While Open	Time Spec	Threat Level Group	Allows access to region
Reader 1: Telaeris Entry reader ▼	<input checked="" type="checkbox"/>			Inside Region ▼
Keypad 1: < none > ▼		Always ▼	< not applicable > ▼	
Reader 2: Telaeris Exit Reader ▼	<input checked="" type="checkbox"/>			Outside Region ▼
Keypad 2: < none > ▼		Always ▼	< not applicable > ▼	


The purpose of this is to associate activities with a portal when activity data is pushed from XPressEntry to the NetBox.

Time Specs and Time Spec Groups

The NetBox software allows you to assign an Access Level, a Time Spec Group, OR Time Spec to define the time a user has access to a reader.

1. XPressEntry can pull over the time zones a user has access to.
 - a. It cannot use this association if a Time Spec is associated with an Access Level.
(This is a limitation of the API and may be fixed in future releases)
 - b. Instead, a Time Spec Group must be associated.

2. Select a Time Spec Group from the Time Spec drop-down box. You may need to create a Time Spec Group for each Time Spec you would like to use.

 **Access Levels**

Name:* ☐ Enabled
(or [add](#) [rename](#))

Description:

Reader(s):* ☐ Group: ☐ Individual:

Time Spec:*

XPressEntry Setup

Once the NetBox is configured, the next order of business is to install the XPressEntry software. Please contact your XPressEntry Dealer to locate the XPressEntry installer file.

Initial Configuration

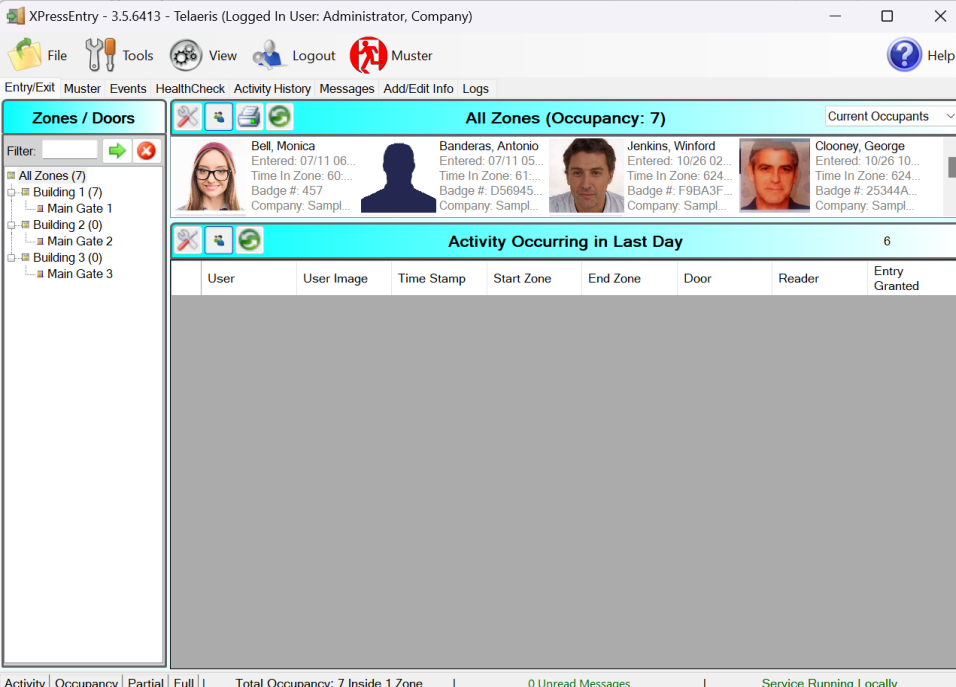
Once XPressEntry has been installed, open the software for the first time as an **Administrator**. XPressEntry will take you through an initial setup. Enter a company name and add an initial system admin. By default, the system admin's **username = admin** and **password = admin**.

For more information on how to setup and configure XPressEntry, outside the scope of the integration setup, please see the XPressEntry manual.

Enable Synchronization in XPressEntry

General Tab

XPressEntry uses a module called **Data Manager** to synchronize all data with NetBox. From the main page of XPressEntry, go to XPressEntry > Settings (**ALT+S** or **Tools > Settings**).



XPressEntry - 3.5.6413 - Telaeris (Logged In User: Administrator, Company)

File Tools View Logout Muster Help

Entry/Exit Muster Events HealthCheck Activity History Messages Add/Edit Info Logs





Zones / Doors

Filter:

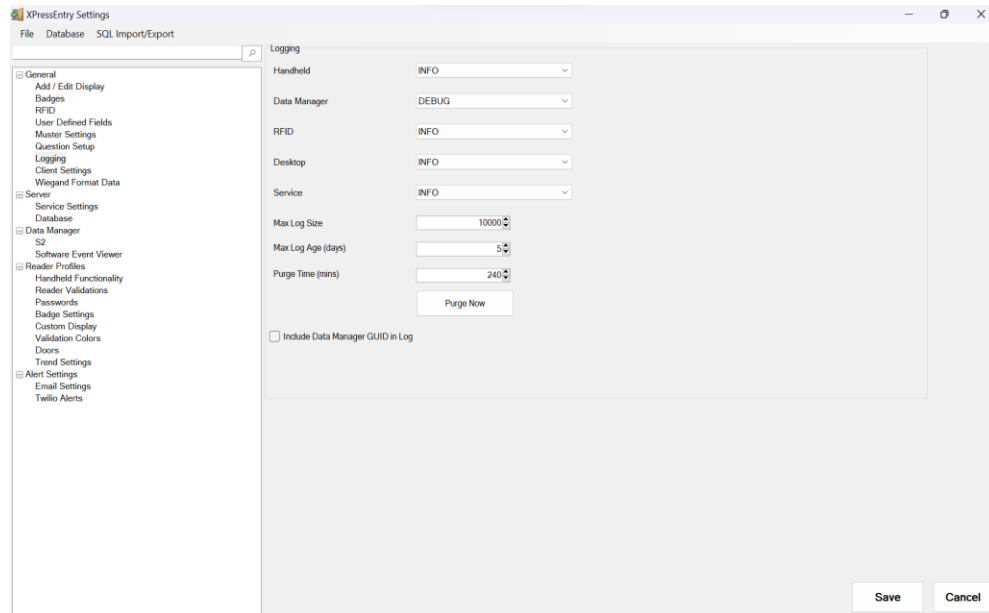
All Zones (7)

- Building 1 (7)
 - Main Gate 1
- Building 2 (0)
 - Main Gate 2
- Building 3 (0)
 - Main Gate 3

Activity Occurring in Last Day 6

User	User Image	Time Stamp	Start Zone	End Zone	Door	Reader	Entry Granted
Bell, Monica		Entered: 07/11 06...					
Banderas, Antonio		Entered: 07/11 05...					
Jenkins, Winford		Entered: 10/26 02...					
Clooney, George		Entered: 10/26 10...					

Activity | Occupancy | Partial | Full | Total Occupancy: 7 Inside 1 Zone | 0 Unread Messages | Service Running Locally



1. From the Settings page, go to **General > Logging**.
2. Set the **Log Level** to **Debug** – this will allow you to view log entries during the sync process.
 - a. **Max log size** – 5000 or higher
 - b. **Max log age** – 1 Day or higher
3. Once the integration is complete, set the log level to **Critical** so only error messages will be tracked.

Reader Profile Tab

The **Reader Profile Tab** is where you configure the handhelds. Make sure the **Door Readers** is the only mode that is checked under **Reader Validations > Validations**. Select **Save** at the bottom right when finished.

The screenshot shows the XPRESSentry Settings application window. The left sidebar contains a tree view with categories: General, Server, Data Manager, Reader Profiles, and Alert Settings. The 'Reader Profiles' category is expanded, showing sub-items: Handheld Functionality, Reader Validations, Passwords, Badge Settings, Custom Display, Validation Colors, Doors, Trend Settings, Readers, and Reader Questionnaires. The 'Reader Validations' sub-item is selected. The main panel displays the 'Validations' section for the 'Default' profile. It includes checkboxes for 'Zones', 'Readers', 'Timezones', 'Events', 'Specific Facility Codes', 'Fingerprints', 'Iris', and 'PIN'. The 'Door Readers' checkbox is checked. There are also checkboxes for 'Holidays', 'Enable Anti-Passback', 'Ignore Anti-Passback On Exit', 'Enable Soft Anti-Passback', and 'Scanned Badge Must Match User's Facility Code'. A 'Validating' section at the bottom states: 'User Group has Access to Reader Group that is Attached to Door.' At the bottom right, there are 'Save' and 'Cancel' buttons.

Data Manager Tab

From the Settings page select the **Data Manager Tab**.

The screenshot shows the XPRESSentry Settings application window, now with the 'Data Manager' tab selected in the left sidebar. The main panel displays the 'Data Manager' configuration. It includes a 'Type' dropdown menu set to 'S2', an 'Add' button, and a 'Remove' button. Below this, there is a 'Name' field containing 'S2' and a 'Prefix' field. A large text area below these fields contains the text 'S2 - Prefix(S2)'. At the bottom right, there are 'Save' and 'Cancel' buttons.

1. **Type** – This is the integration type. Select **S2** > **Add** > **Save**.

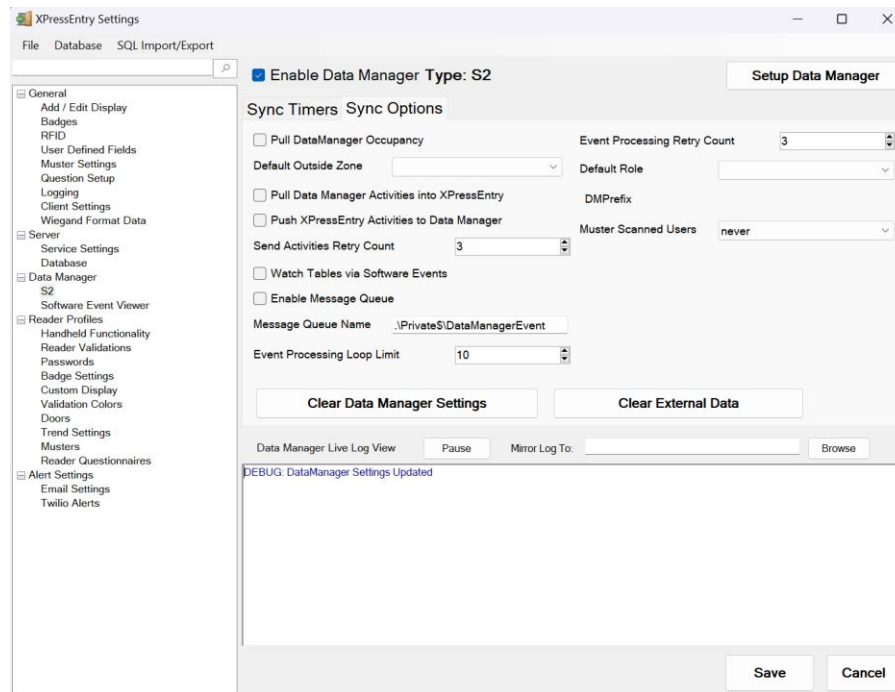
2. Go to **Data Manager > S2** in sidebar menu.
3. **Setup Data Manager** – This sends you to the setup form for S2's data manager.

Sync Timers

XPressEntry uses Timers to pull S2 Data into XPressEntry.

1. **Download Activity Frequency** – Pulls reader scan records into XPressEntry and stores them in XPressEntry's activity table. This function also updates the zone occupancy.
2. **Occupancy Sync Frequency** – Updates the zone occupancy without storing the activity records.
3. **Partial Sync Frequency** – Updates all tables BUT only updates **user**, **card**, and **group** data changes that have occurred since the last partial sync.
4. **Full Sync Update Frequency** – Updates all tables by pulling all necessary records from NetBox. This function may take some time.
 - a. It is recommended to run a full sync **once per day** in the middle of the night when the system is not busy.

5. **Custom Sync Frequency** – Updates a set of tables that the user configures.



Sync Options

1. **Pull Data Manager Occupancy** – Enables use of the Occupancy Sync.
2. **Pull Data Manager Activities into XPressEntry** – Enables use of the Activity Sync.
3. **Push XPressEntry Activities to Data Manager** – Enables XPressEntry to push Scan data to NetBox.
4. **Send Activities Retry Count** – Number of times XPressEntry will attempt to resend an activity if it fails.
5. **Default Role** – The default XPressEntry Role that will be assigned to users if the integration does not otherwise assign a role. Entrants are recommended but not required.
6. **Muster Scanned Users** – Enables sync to convert scans from specific readers to be converted into Muster Scans which mark users as safe. Muster readers must be configured in the reader data. Please see *Mustering Documentation* for more details.
7. **Setup DataManager Button** – Opens NetBox specific settings.
8. **Clear DataManager Settings** – Resets all settings on the two above tabs, as well as the NetBox specific settings.
9. **Clear External Data** – Deletes all data synced from NetBox from the XPressEntry Database.

Configuring S2 Specific Settings

Connection Settings

1. Go to **Data Manager > S2** and check **Enable Data Manager**, then save.
2. Click the **Setup Data Manager** button and the S2 Data Manager window should appear.
3. In that window, enter the **Server URL** of the NetBox, including the scheme (http:// or https://).
4. If pictures larger than **64kb** are stored in S2, select **Large Picture Pull**.

5. If the system will be used for **Mustering** only, select **Mustering Only**.
6. If using **freedom** boards to send activities to S2 NetBox, select **Use Freedom Mode to Send Activities**.

The screenshot shows a window titled "S2 Data Manager" with three tabs: "Connection", "Data Pull", and "Custom Mapping". The "Data Pull" tab is active. It contains the following fields and controls:

- Server URL:** A text box containing "http://10.10.1.135".
- UserName:** A text box containing "telaeris".
- Password:** A text box containing "*****".
- TestConnect:** A button.
- OK:** A button.
- Large Picture Pull:** A checkbox, currently unchecked.
- Mustering Only:** A checkbox, currently unchecked.
- Use Freedom Mode to Send Activities:** A checkbox, currently unchecked.

Below these fields is a large, empty rectangular area.

Data Pull Tab

1. **User Partitions and System Partitions** - By default, XPressEntry will only pull from **partition id 1**. If multiple Partitions are required, select the partitions that XPressEntry should pull data from.
 - a. You can configure different user partitions than system partitions in the event that you will be using the handhelds at a few sites but may require the user list from more sites than the few system sites.
 - i. For example, the handhelds are deployed at a single site called Los Angeles, but users from all sites visit this site. In the **site partitions** section, **only Los Angeles** is selected. In the **User Partitions** section, **All partitions** are selected.

2. **Card Format Facility Codes** - For each card format that is used, enter the **Facility Code** and **Bit Count**.

The screenshot shows the 'S2 Data Manager' window with the 'Custom Mapping' tab selected. It features two sections for 'User Partitions' and 'System Partitions', each with 'Check All' and 'Uncheck All' buttons and a list of checkboxes for 'Master', '2nd Partition', and '3rd Partition'. Below these is a section for 'Card Format Facility Codes' with a text input field containing '26 bit Wiegand::1::1|S2 36 Bit::1::1|STRAC 128 bit::1'. At the bottom is a table with the following data:

	Card Format	Facility Code	Bit Count
▶	26 bit Wiegand	1	-1
	My Format	1	-1
	My Format 183	1	26
	Corporate 1000 35 bit	1	-1
	Casi Rusco 40 bit	1	-1

Custom Mapping

The screenshot shows the 'S2 Data Manager' window with the 'Custom Mapping' tab selected. It features two dropdown menus for 'Source Columns' (set to 'UDF18') and 'Destination Columns' (set to 'telephone_cell'). Below these is a table with the following data:

	Source Field	XPressEntry Field
▶	UDF2	email
	UDF3	telephone
	UDF18	telephone_cell
*		

To custom map a User field from S2's database to XPressEntry's database, type the column name in the **Source** column (UDF1-UDF20) and select a column name in the **Destination** column. Any field name in the source field column must exist within the **Users View**.

S2 Sync Check

The purpose of this section is to help the operator understand exactly what data XPressEntry is pulling. The mapping of each table pulled from XPressEntry is shown below.

1. S2 > XPressEntry
2. Readers > Readers
3. Access Levels > Groups
4. Reader Groups > Groups Readers
5. Person > User
6. Picture > Picture
7. Credential > Badges
8. TimeZones > TimeZones
9. Access Level > Groups Users

Configuring XPressEntry using S2 Data

Now that XPressEntry has NetBox's database, it needs to be configured to use this information. The tabs that need to be configured are the Doors, Readers, and Zones. This way, XPressEntry can properly interpret S2 transactions and assign people to the correct zones.

Doors

Entry/Exit permissions in XPressEntry are set by doors. Doors contain **two readers** – an exit and an entry reader.

The screenshot shows the XPressEntry 3.5.6413 web interface. The title bar indicates the user is logged in as Administrator. The main menu includes File, Tools, View, Logout, Entry/Exit, and Muster. The 'Entry/Exit' tab is active, showing a list of doors on the left and a configuration form on the right. The list on the left includes 'Main Gate 1', 'Main Gate 2', and 'Main Gate 3'. The configuration form for 'Main Gate 1' includes fields for Door Name, Start Zone (Outside), End Zone (Building 1), Door RFID Tag#, External Entry Reader (Main Gate Entry), and External Exit Reader (Main Gate Exit). At the bottom, there are buttons for 'Add New', 'Delete', 'Save', and 'Cancel'. The status bar at the bottom shows 'Activity | Occupancy | Partial | Full |', 'Total Occupancy: 7 Inside 1 Zone', '0 Unread Messages', and 'Service Running Locally'.

Door access is determined by the User's access to the door's reader. For **entry**, permission is based on the user's access to the door's **external entry reader**. For **exit**, permission is based on the user's access to the door's **external exit reader**. Doors should be set by the user for each Handheld Reader in XPressEntry.

A **door** should be created in XPressEntry for each **Portal** that was created on the NetBox. More specifically, a Door should be created for each place a person can enter or exit by scanning at a reader.

1. **Zones** – For each door, set the start zone and end zone. This will enter a user in the specified zone when they enter or exit (or scan at S2 readers).
2. **External Readers** – Attach the logical entry and exit readers that you created in NetBox to a door.

XPressEntry requires that you manually set up the doors in the system. There should be a door in XPressEntry for each physical station that an employee will have a handheld.

1. To create a door, select **Add New** at the bottom of the form. Enter a name that clearly describes what this door represents.
2. Select **Outside** for Start Zone and **Building** for End Zone.
3. **External Entry Reader** is one of the Entry readers you created in NetBox. **External Exit Reader** is one of the Exit readers you created in NetBox.

Doors can also be added for each of the physical door readers. If XPressEntry is set up to pull activities, it will move people in the system based on the **reader** they were scanned at, and the **zones** attached to the door.

Readers

A handheld unit can logically represent **any reader** in the building. When the handheld is issued to an employee at a specific door, the employee must first **set the door** on the handheld. The XPressEntry Reader that the handheld represents is based on whether the handheld is in **entry mode or exit mode**.

1. Ex – You have handheld A stationed at **Door A**.
2. Door A has two readers associated with it – Reader **A-Entry** and Reader **A-Exit**.
3. The employee holding the handheld sets the handheld's door to Reader A. When the employee sees a cardholder walking towards the building, he sets the handheld to **Entry** mode and scans the cardholder's badge. The handheld in entry mode identifies itself as reader **A-Entry** and sends an activity to the server.
4. Later, there is heavy volume exiting **Door B**.
5. Door B has two readers associated with it: Reader **B-Entry** and Reader **B-Exit**. The employee from Door A is called to help and brings **Handheld A**. He sets the door on his handheld to **Door B** and the mode to **Exit**. When he begins scanning people walking out of the door, the handheld identifies itself as Reader **B-Exit** and sends each scan as an

activity to the server.

For more information about the functionality of XPressEntry, please look at the XPressEntry manual.

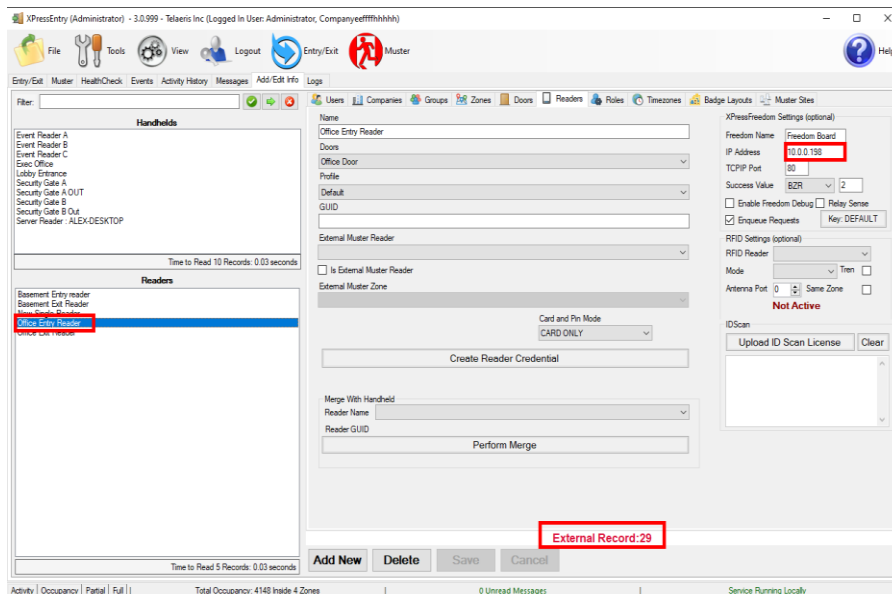
Activities

XPressEntry will synchronize activities to NetBox if that option has been set by the Data Manager.

Push Activities

If XPressEntry is configured to **push** activities, there are two methods of pushing.

1. **Send event over the API** – This is the default method of sending activities to S2. Access Granted/Denied Events will appear in the S2 Log when a user is scanned on the handheld.
2. **Send event over freedom** – This mode requires one or more freedom boards. XPressEntry Server will push scans to the Freedom board when activities are created by the handheld. To configure, the freedom boards need to be associated with the S2 reader records. On the main form, navigate to **Add/Edit Info > Readers**.



Enter the IP address of the Freedom Board. Set the Success value and relay sense according to the freedom documentation and freedom board setup.

Pulling Activities

If XPressEntry is configured to **pull** activities, the **occupancy** of the system will change each time a person scans at a reader that is mapped to a door in XPressEntry.

You may want to pull activities if:

1. You want to use XPressEntry to manage Emergency Evacuations.
 - a. XPressEntry uses NetBox activities to determine who is on and who is off

campus.

- b. In the case of a mustering event, XPressEntry will have an up-to-date list of who is on site on this day.
 - c. Using this list, XPressEntry can be utilized to **muster** or mark people as safe to create a list of people who are still on site.
2. You want to use XPressEntry's features to determine who is on site, and what areas people are in.