

XPressEntry

XPressEntry / RS2 REST

Revision 11/22/2023

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 an **RS2 ACCESS IT** system. XPressEntry has the capability of providing access control management from a handheld device. For XPressEntry setup information, see the document: “XPressEntry Installation and Upgrade” found at <https://telaeris.com/documentation>.

Pre-requisites/Requirements

1. XPressEntry 3.4+
2. RS2 ACCESS IT version 9.0.1+
3. RS2 Web API License and API Key
 - a. Obtained from the RS2 ACCESS IT team.
4. The SSL Certificate needs to be installed on the machine where **ACCESS IT** is running and should be bound to the **RS2 Web API**.
 - a. Steps for creating self-signed SSL certificate and binding to the API port is explained in the section: Adding a self-signed certificate.
5. **RS2 ACCESS IT** and XPressEntry are **each** installed on computers or virtual machines that can talk to each other or on the same computer or virtual machine.
6. **Ports 30000, 30001** should be open for communication between the XPressEntry Server and handhelds on the machine where XPressEntry is to be installed.

Limitations

The RS2 Web API does not allow you to pull historical activities from RS2 ACCESS IT to XPressEntry; however, it is possible to get real time badge scans. In addition, you can identify the current location of users via the occupancy update.

Setting Up RS2 to Synchronize with XPressEntry

It is assumed that RS2 ACCESS IT is installed on a server.

1. XPressEntry has been tested on RS2 ACCESS IT **Version 9.0.1**. Please contact Telaeris to confirm compatibility with integrations into other versions of RS2 ACCESS IT.
2. RS2 ACCESS IT should have the **WEB API** license activated. WEB API license is provided by RS2.
3. **SSL X.509 Certificate** should be installed on the **Access It! Universal.NET** server machine. (Or add a self-signed certificate)

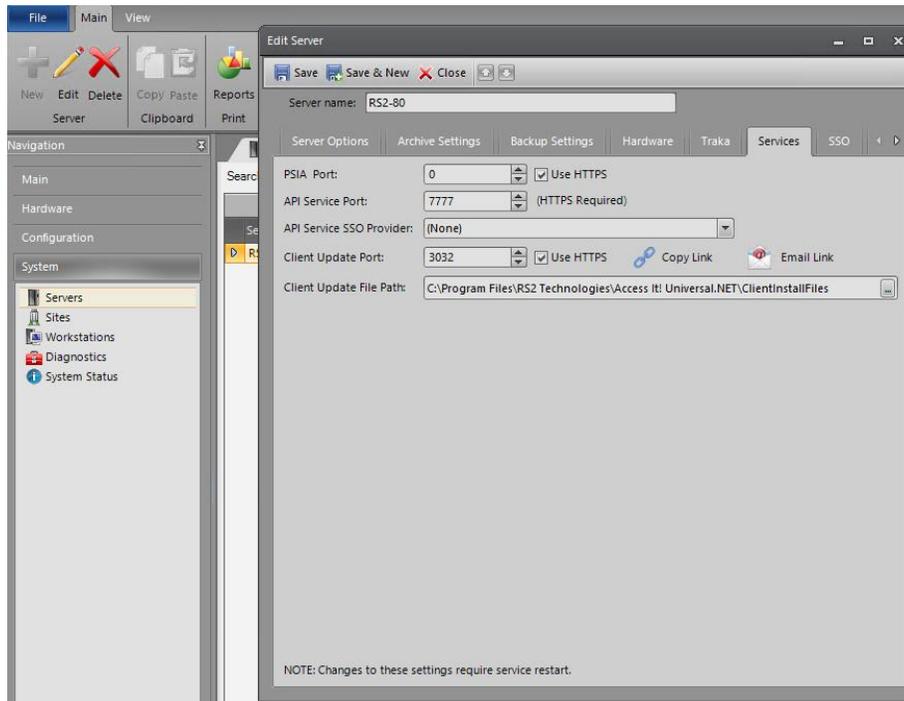
Order of Operations

1. Setup RS2 Data and Settings
2. Set Readers/Panels to Receive Events
3. Enable XPressEntry Synchronization
4. Set up XPressEntry Data
5. Set up XPressEntry Handheld Readers
6. Validate Functionality via Card Scan

Setup RS2 Data and Settings

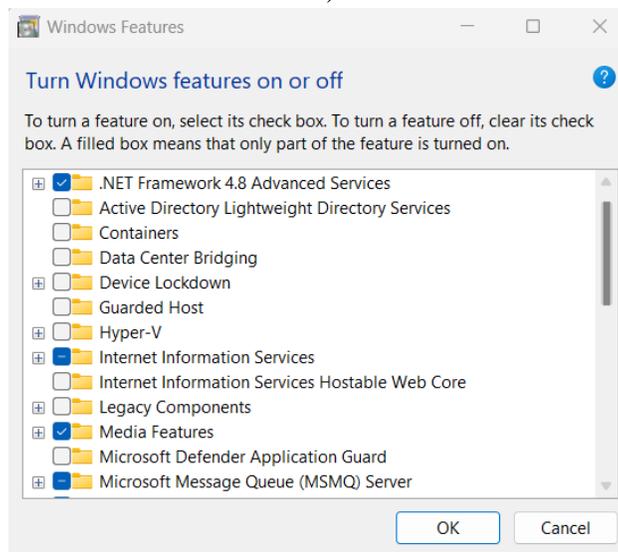
Setting Web API Port

1. Go to the **Edit Server** dialog box.
2. **55459** is the default port number assigned to the **API Service port**. The port number can be set to something different if the default port is not available.

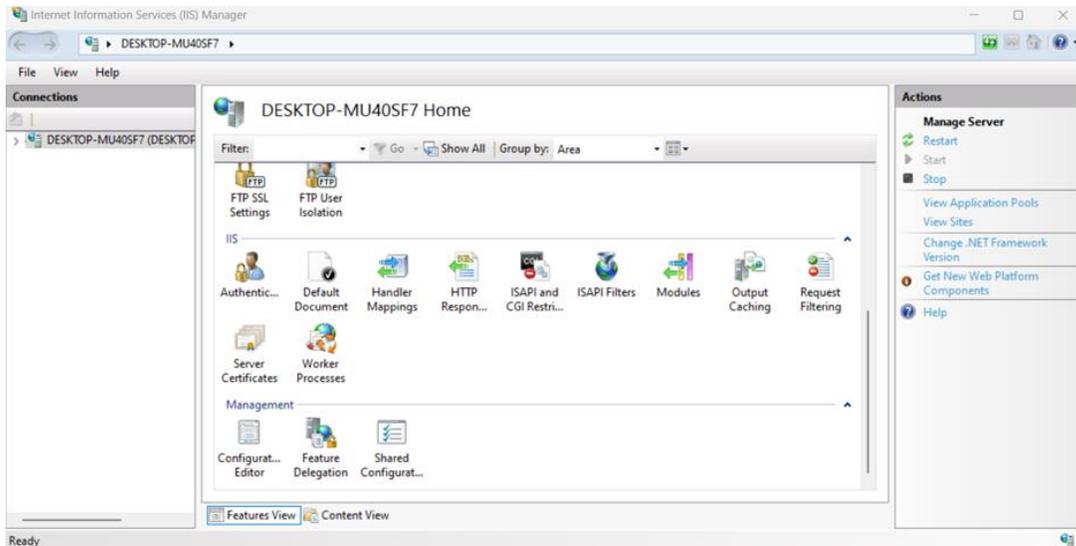


Binding Self-Signed Certificate with API Port With IIS

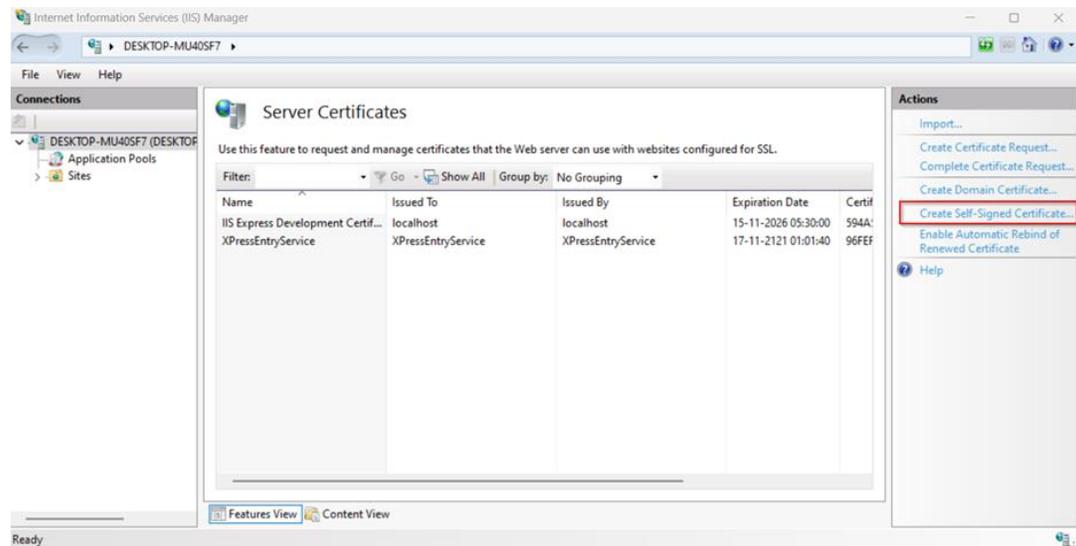
1. Enable **IIS (Internet Information Services)** from **Windows Features** dialog box.



2. Open IIS Manager from Start Menu or use **Run > inetmgr**.
3. Double click on Server Certificates.



4. Add a self-signed certificate and name it accordingly.
 - a. e.g. **RS2APIServer**



Without IIS

1. Run the below command on an elevated PowerShell. It will create a self-signed certificate with 3-year validity.


```
$todaydt = Get-Date
$3years = $todaydt.AddYears(3)
New-SelfSignedCertificate -Subject "RS2WEBAPICERT" -
CertStoreLocation "cert:\LocalMachine\My" -notafter $3years
```
2. Copy the **thumbprint** of the certificate to bind it with **Web API Port**.

```

Administrator: Windows PowerShell
PS C:\WINDOWS\system32> $todaydt = Get-Date
>> $3years = $todaydt.AddYears(3)
>> New-SelfSignedCertificate -Subject "RS2WEBAPICERT" -CertStoreLocation "cert:\LocalMachine\My" -notafter $3years
>>

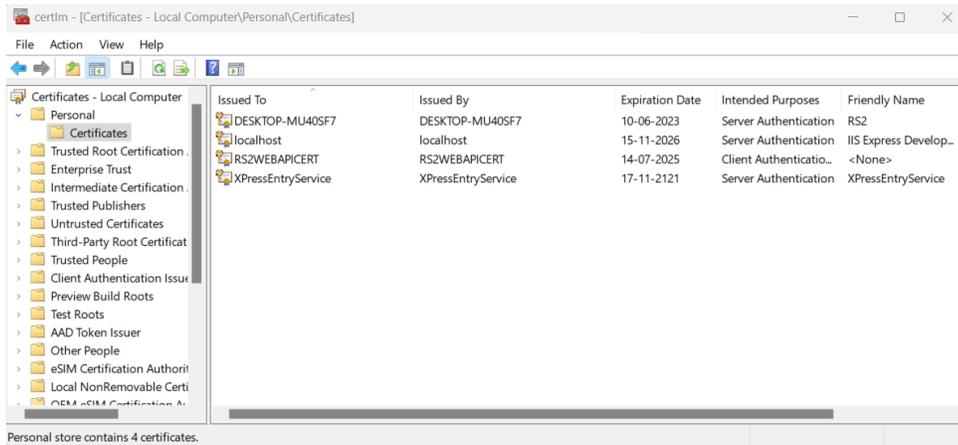
PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\My

Thumbprint                               Subject
-----
862ED269897796FDF4DB976AD4B0991EE61500A6  CN=RS2WEBAPICERT

PS C:\WINDOWS\system32>

```

- To View the certificate, open **Manage Computer Certificates (Certlm.msc)** and locate the certificate under **Personal Certificates**.



Bind Web API Port to SSL Certificate

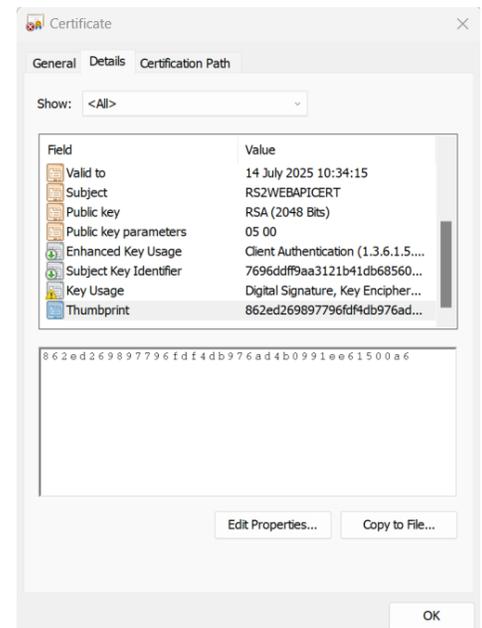
- Open **Certlm.msc** and locate the certificate under Personal Certificates.
- Copy the **thumbprint** of the certificate from Details tab.
- Run command prompt as administrator and execute the below command:


```

netsh http add sslcert
ipport=SERVERIPADDRESS:PORT
certhash=SSLTHUMBPRINT appid={00000000-0000-0000-0000-000000000000}

```

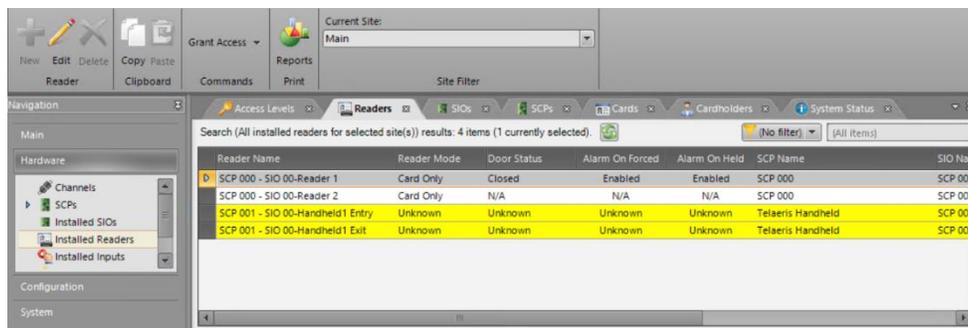
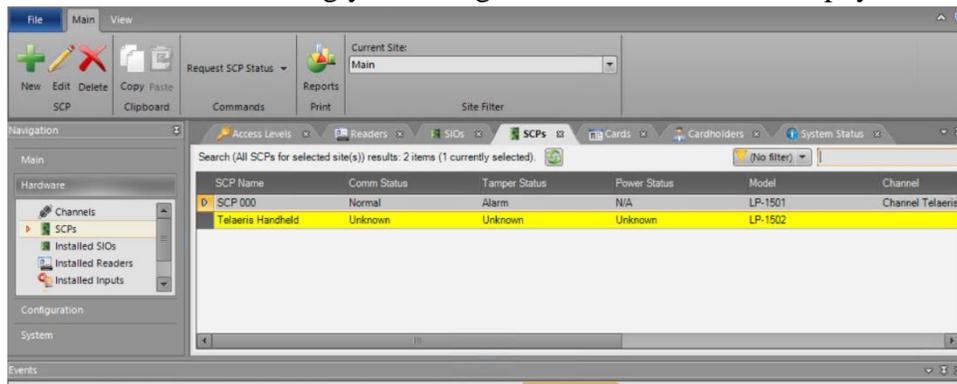
 - Replace SERVERIPADDRESS with the **IP address** of the ACCESS IT Universal.NET server.
 - Replace PORT with the **web API port** configured within ACCESS IT Universal.NET API.
 - Replace SSLTHUMBPRINT with the **SSL certificate's thumbprint**.
- Example:** (netsh http add sslcert ipport=127.0.0.1: 55459 certhash=0000000000003ed9cd0c315bbb6dc1c08da5e6 appid={00000000-0000-0000-0000-000000000000})



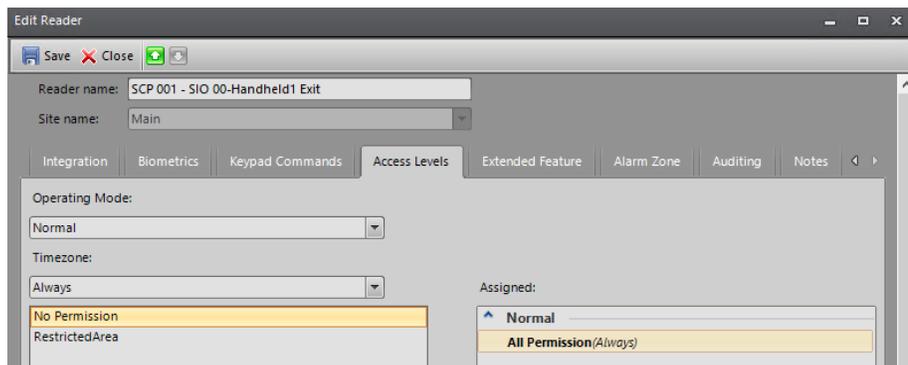
RS2 Panel + Reader Configuration

XPressEntry pulls all readers, users, pictures, badges, and access permissions from RS2 ACCESS IT. RS2 requires placeholder readers for XPressEntry. These are used to receive the activities from handheld devices.

1. In ACCESS IT, create a placeholder **SCP** to represent Telaeris Handhelds. This will automatically create an **SIO** and **2 readers**.
 - a. 2 readers are required per handheld for entry/exit.
 - b. 1 reader is required per handheld for mustering.
2. Rename the readers accordingly to distinguish them from the actual physical readers.

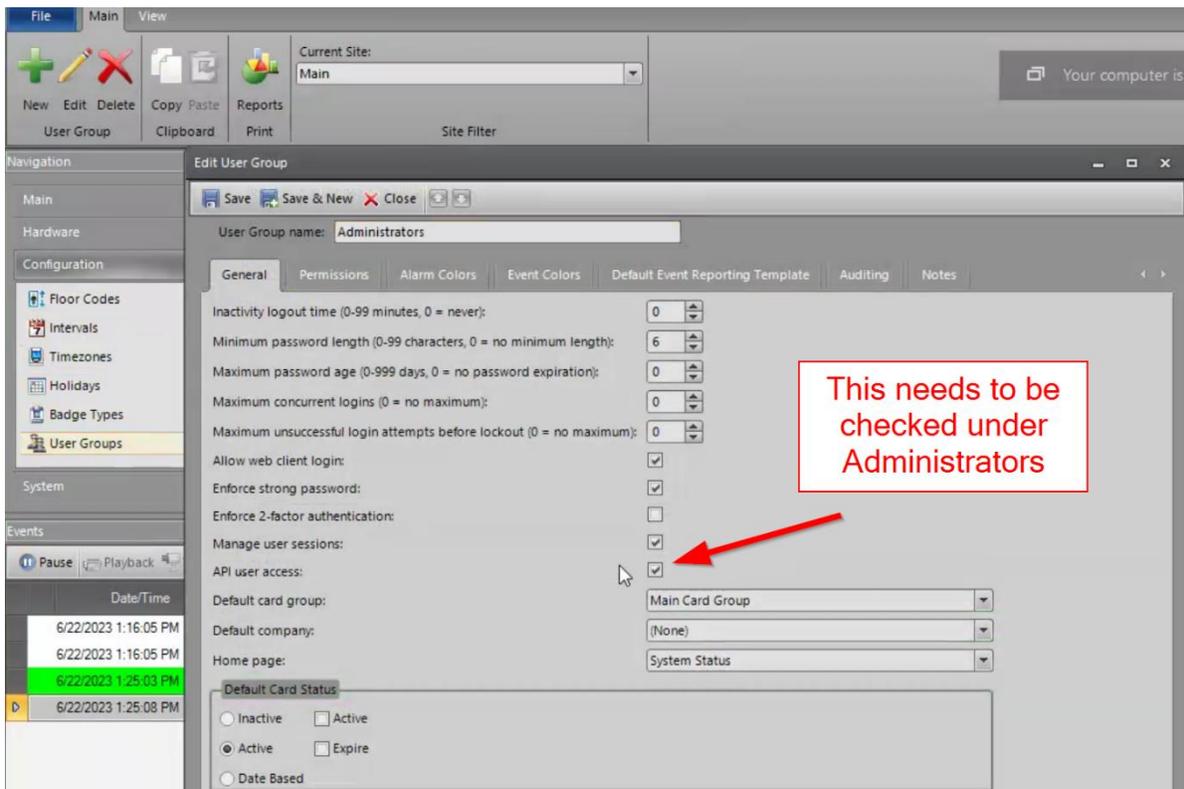
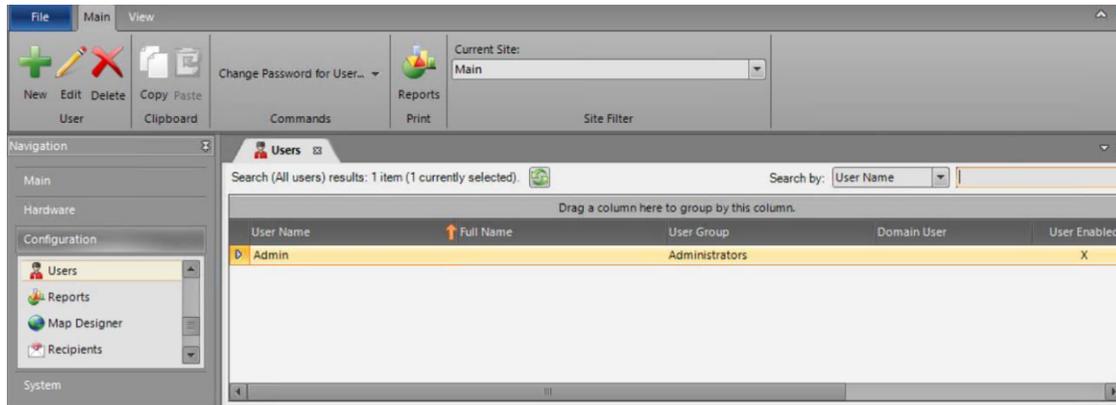


3. Via **Edit > Readers**, assign proper access levels to the readers to permit scanning users.



Setup Admin User

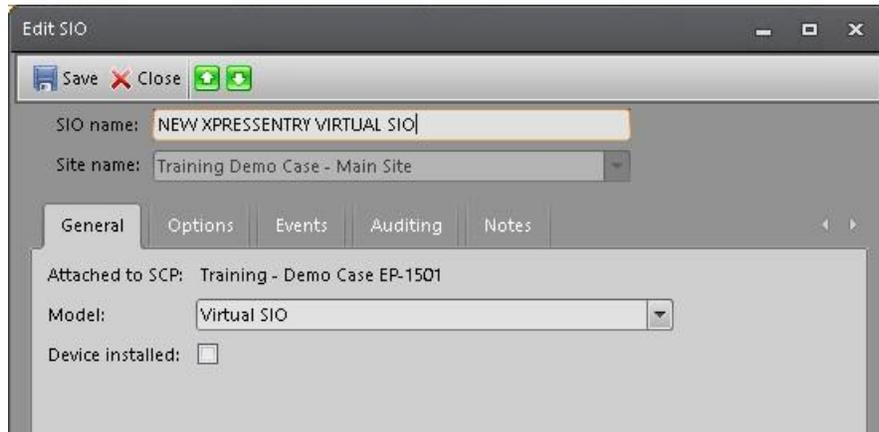
Ensure there is an administrator user assigned to the Administrators User Group in RS2. This is required to connect from XPressEntry. The **API User Access** option needs to be enabled under the **Administrators User Group** to be able to use the API.



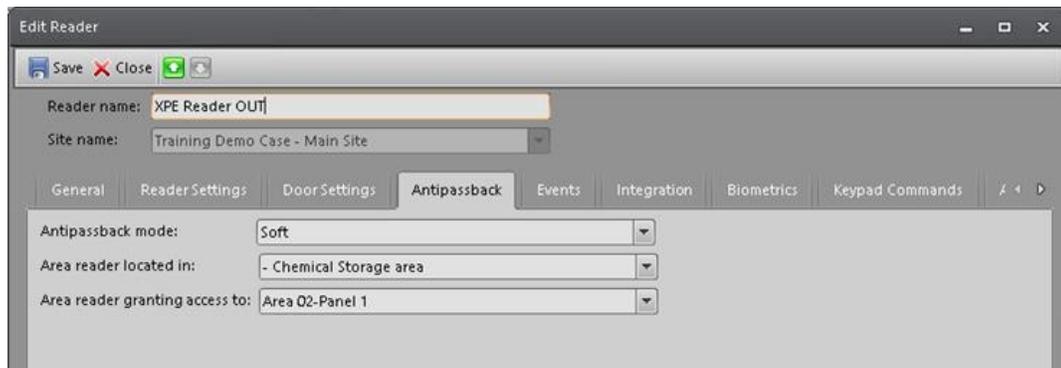
If this is an **Entry/Exit** system, you'll need **two** RS2 readers (Entry/Exit) for **each** handheld device. If this is a **Mustering** system, you'll want **one** RS2 Reader for **each** handheld device.

1. Create a new SIO in RS2. The Model should be a **Virtual SIO**.

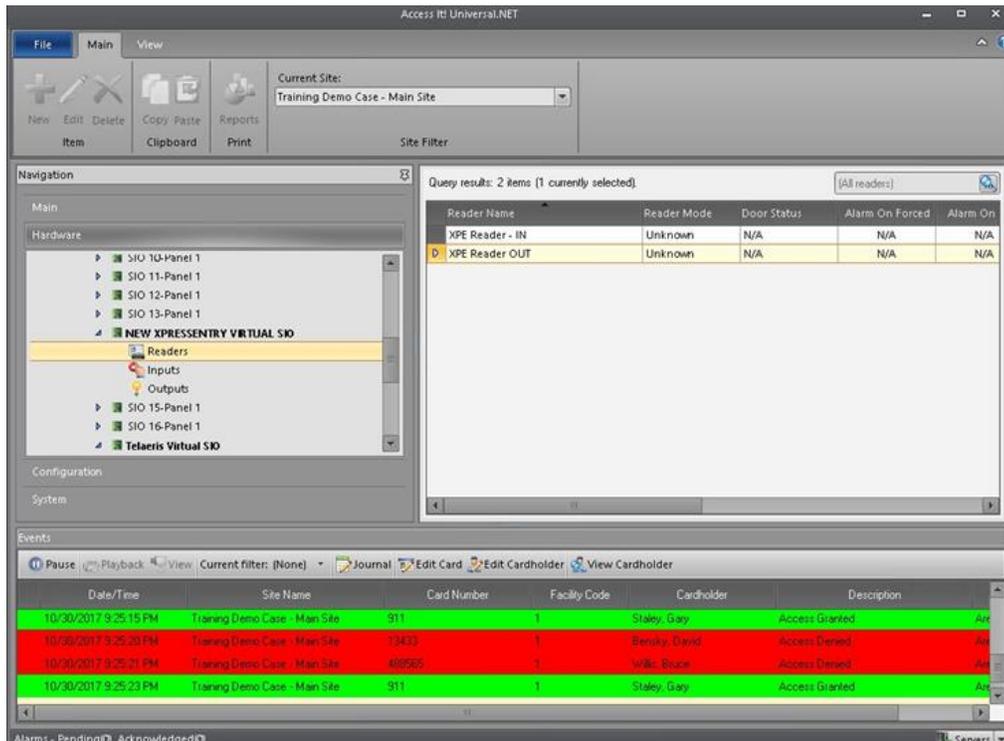
2. **Device Installed** must be checked for the readers to be available.



3. Create an **Entry (IN)** and an **Exit (OUT)** reader and set up the appropriate AntiPassback settings for your configuration.



4. Add those readers to the appropriate Access Levels within RS2.



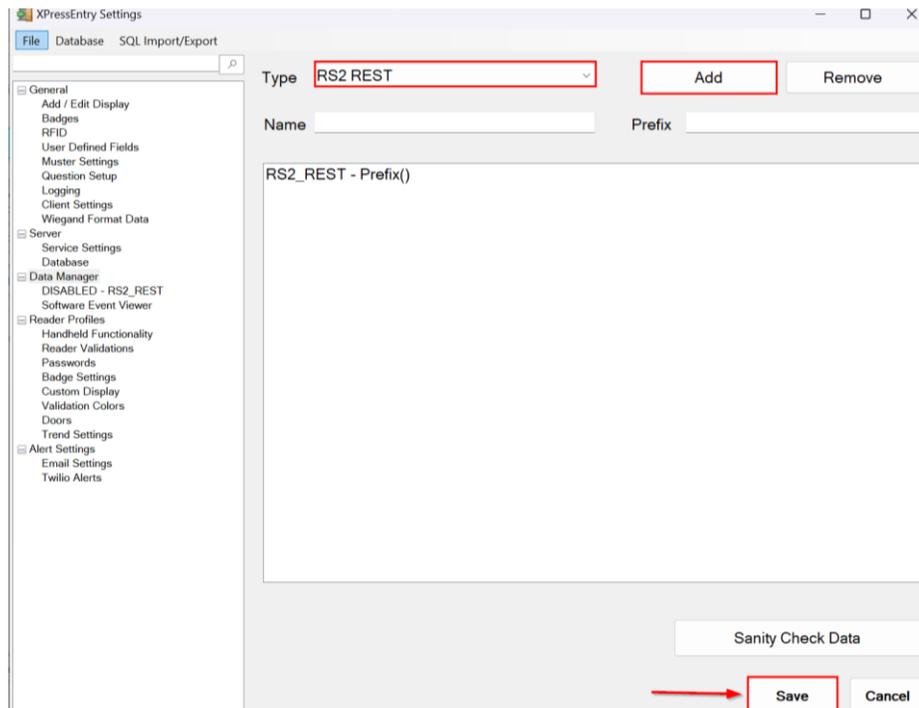
Enable XPressEntry Synchronization

Set up Data Manager

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



From the Settings page select the Data Manager Tab.



1. **Type** – This is the integration type. Select **RS2 REST** > **Add** > **Save**.

2. Go to **Data Manager > RS2_REST** in sidebar menu.
3. **Setup Data Manager** – This sends you to the setup form for RS2’s data manager.

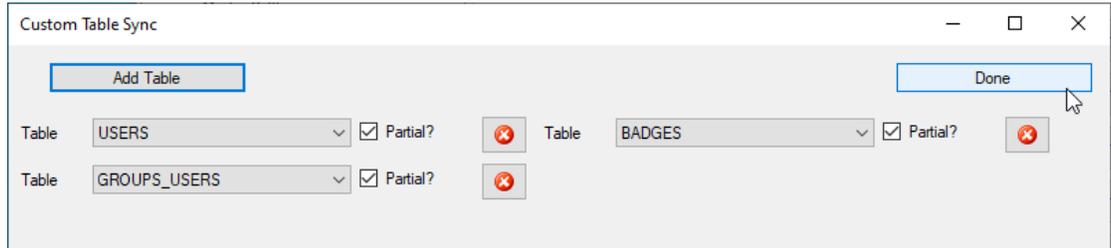
Sync Timers

XPressEntry uses Timers to pull RS2 Data into XPressEntry.

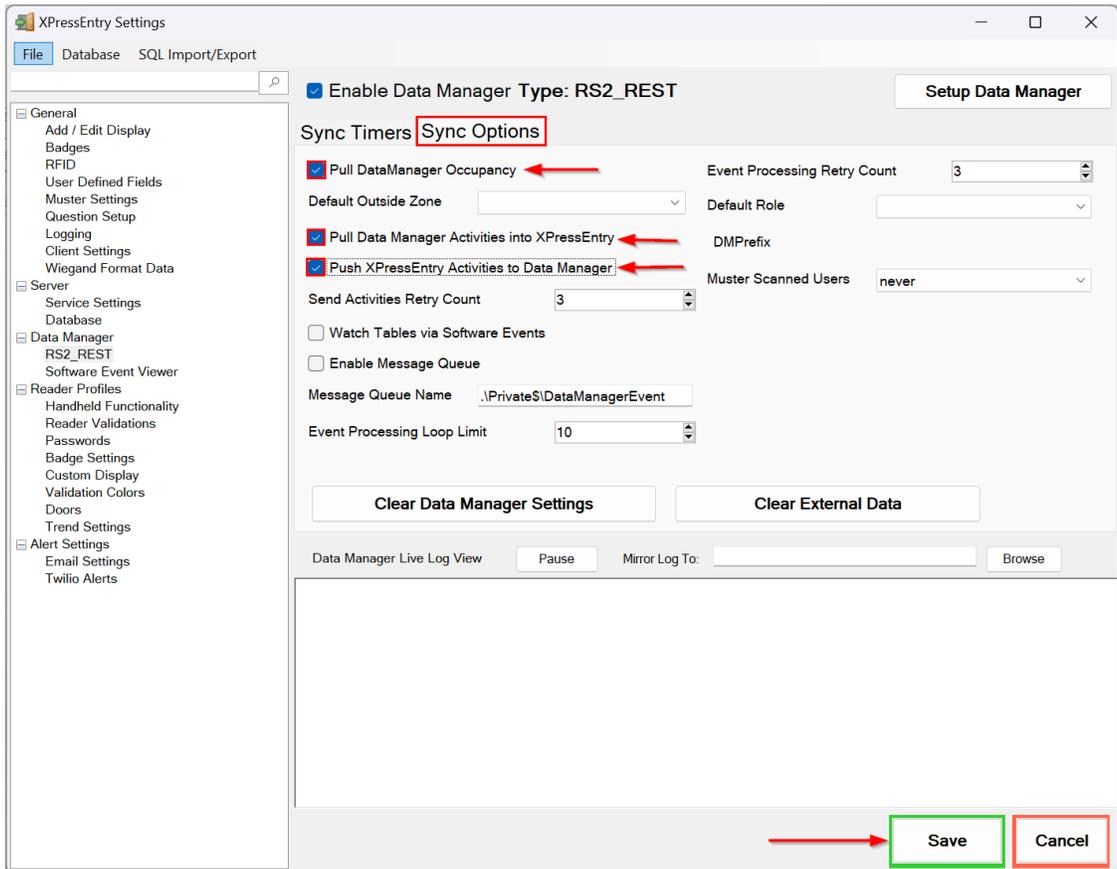
The screenshot shows the 'XPressEntry Settings' window with the 'Data Manager' section expanded to 'RS2_REST'. The 'Sync Timers' tab is selected. The 'Enable Data Manager Type: RS2_REST' checkbox is checked. A 'Setup Data Manager' button is in the top right. Below, there are sections for 'Sync Options' (including 'Disable Concurrent Syncs') and a table of sync frequencies. Each frequency has 'Set' and 'Clear' buttons, and a corresponding 'Sync Now' button. At the bottom, there are 'Data Manager Live Log View', 'Pause', 'Mirror Log To', and 'Browse' buttons, and a 'Save' button highlighted with a red arrow.

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** – Pulls all data excluding cardholder data, including readers, areas, access levels.
4. **Full Sync Update Frequency** – Updates all tables by pulling all necessary records from eFusion. 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.

- a. To configure, right click **Custom Sync Now** and select **Edit Custom Sync**.



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 RS2.
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 RS2_REST specific settings.
8. **Clear DataManager Settings** – Resets all settings on the two above tabs, as well as the RS2_REST specific settings.
9. **Clear External Data** – Deletes all data synced from RS2_REST from the XPressEntry Database.

RS2 Data Manager Setup Page

Press the **Setup Data Manager** button to get the RS2 REST specific setup screen. In the new window, ensure the following areas are completed:

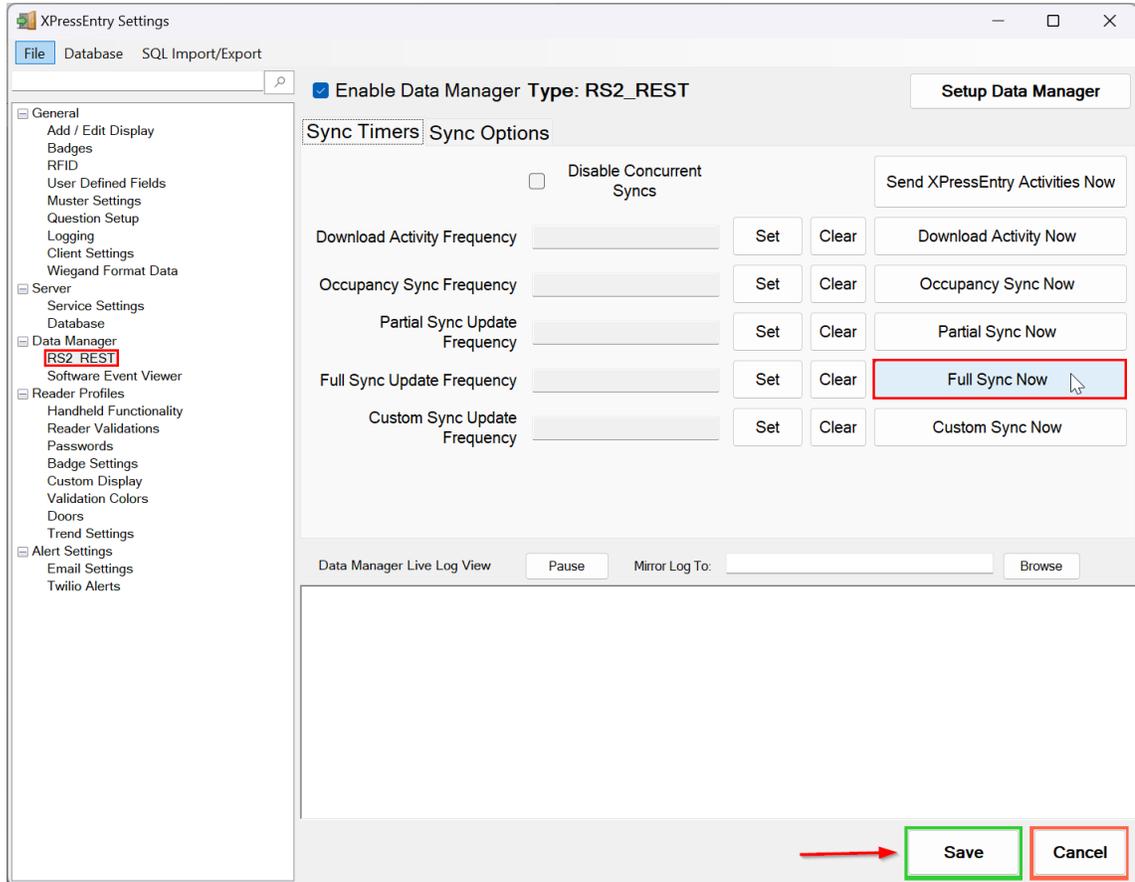
1. **Server IP** – IP address of the system where RS2 ACCESS IT server is hosted.
2. **Server Timezone** – Timezone of the server. Default value is Pacific Standard Time.
3. **Port** – API Port for RS2 ACCESS IT Server.
4. **UserName** – RS2 ACCESS IT DBUser username.
5. **Password** – RS2 ACCESS IT DBUser password.
6. **API Token** – API token provided by RS2 ACCESS IT that needs to be used with each API request.
7. **Enable Data Protect** – XPressEntry will store and display passwords as Base64 encoded strings if this is checked.
8. **Page Size** – Page size to fetch the records. Default is 100.

Click **Test Connect** after entering all the data correctly. This will connect to the RS2 REST API using the given **UserName** and **Password** and the result will display **Connection Success!**. Is any error in the connection it will show in the same result window.

The **Defaults** button is to clear all the entered data and set to defaults value.

Exit out of this form. On the **Data Manager > RS2_REST** tab of the Settings form, select **Save**. It is now time to begin syncing data.

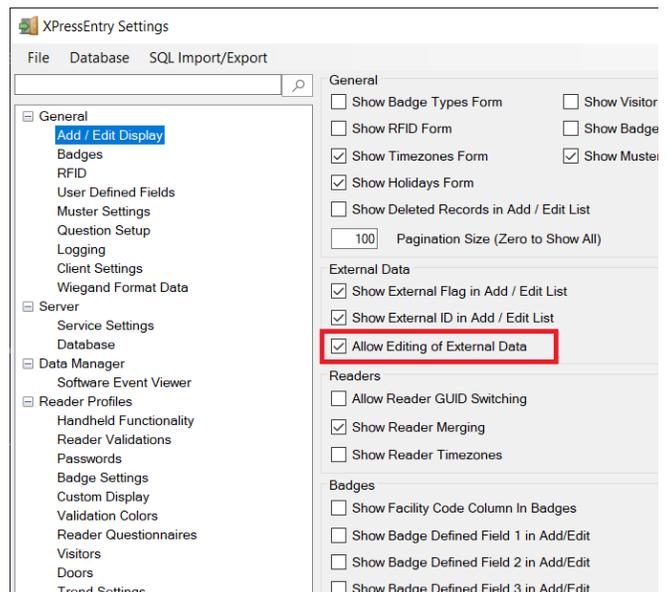
Select **Full Sync Now** to pull all data from RS2 ACCESS IT. Once the sync has finished, all relevant RS2 ACCESS IT records should now display in XPressEntry.



Configuring XPressEntry Using RS2 Access It Data

Now that XPressEntry has RS2 ACCESS IT data, it needs to be configured to use this information. The tabs that need to be configured are the Doors, Readers, and Zones.

In the XPressEntry system editing of any external data is disabled by default. To enable the settings, you need to go to the **Settings > General Tab > Add/Edit Display** then check the option **Allow Editing of External Data** in the External Data Section.



Users

To the right is a sample of a properly synchronized user.

All External Records (From RS2 ACCESS IT) will display in red as an **External Record** at the top of the form. This label will not display for any records that were created from within XPressEntry.

XPressEntry will pull the user's **image** and **badge number** from RS2 ACCESS IT. The badge number can be seen at the bottom of the screen.

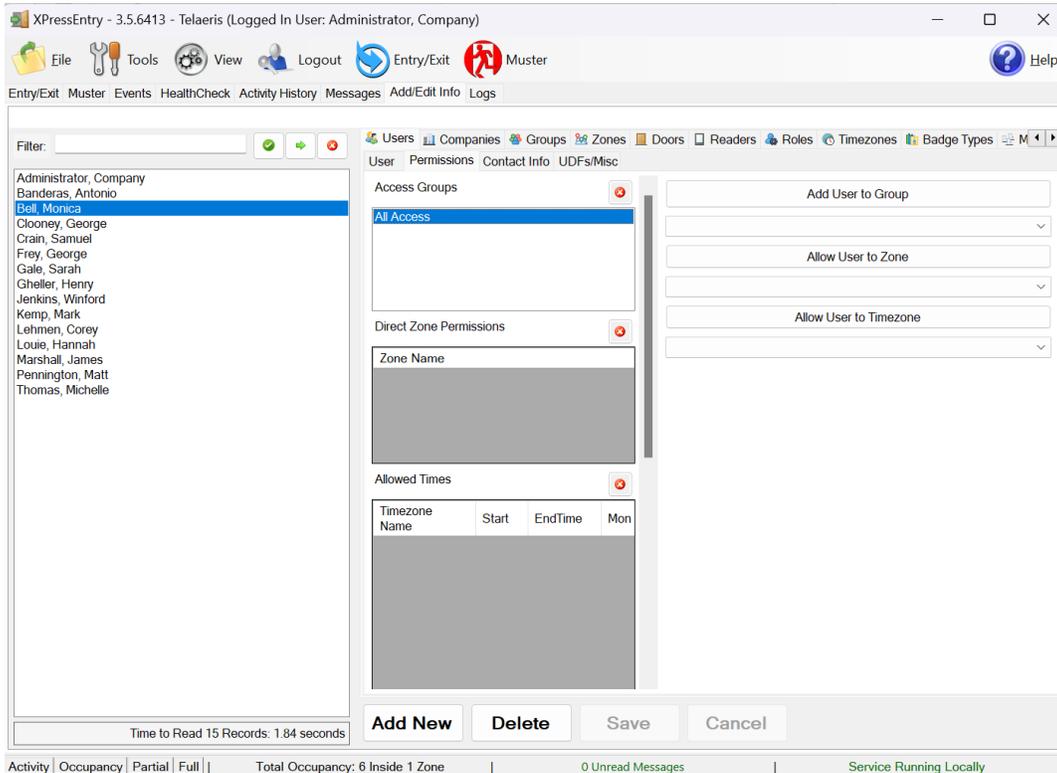
The screenshot shows the XPressEntry application window. The title bar reads "XPressEntry - 3.5.6413 - Telaeris (Logged In User: Administrator, Company)". The menu bar includes File, Tools, View, Logout, Entry/Exit, and Muster. The main interface is divided into several sections:

- User List:** A list of users is shown on the left, with "Bell, Monica" selected. Other users listed include Administrator, Company; Banderas, Antonio; Clooney, George; Crain, Samuel; Frey, George; Gale, Sarah; Gheller, Henry; Jenkins, Winford; Kemp, Mark; Lehmen, Corey; Louie, Hannah; Marshall, James; Pennington, Matt; and Thomas, Michelle.
- User Profile:** The right side shows the profile for Monica Bell. Fields include First Name (Monica), Last Name (Bell), MI (), Company (Sample Company), Emp ID (), Zone (Building 1), and Role (Entrant). There are checkboxes for Visitor and Host. A photo of Monica Bell is displayed with "Change", "Crop", and "Delete" buttons.
- Badges:** A table at the bottom shows badge information. The table has columns for Badge, BDF1, Activated Date, Expired Date, Invalid, and Badge Type. One badge is listed with ID 457, activated on 5/27/2020, and expired on 5/29/2020.
- Buttons:** "Add New", "Delete", "Save", and "Cancel" buttons are located at the bottom of the user profile section.

At the bottom of the window, a status bar shows "Activity | Occupancy | Partial | Full | Total Occupancy: 6 Inside 1 Zone | 0 Unread Messages | Service Running Locally".

User Permissions

Users in XPressEntry have the **same permissions** to each reader as they do in **RS2 ACCESS IT**. This is regardless of whether the user is assigned an Access Code, Reader Group, or direct access to a Reader.

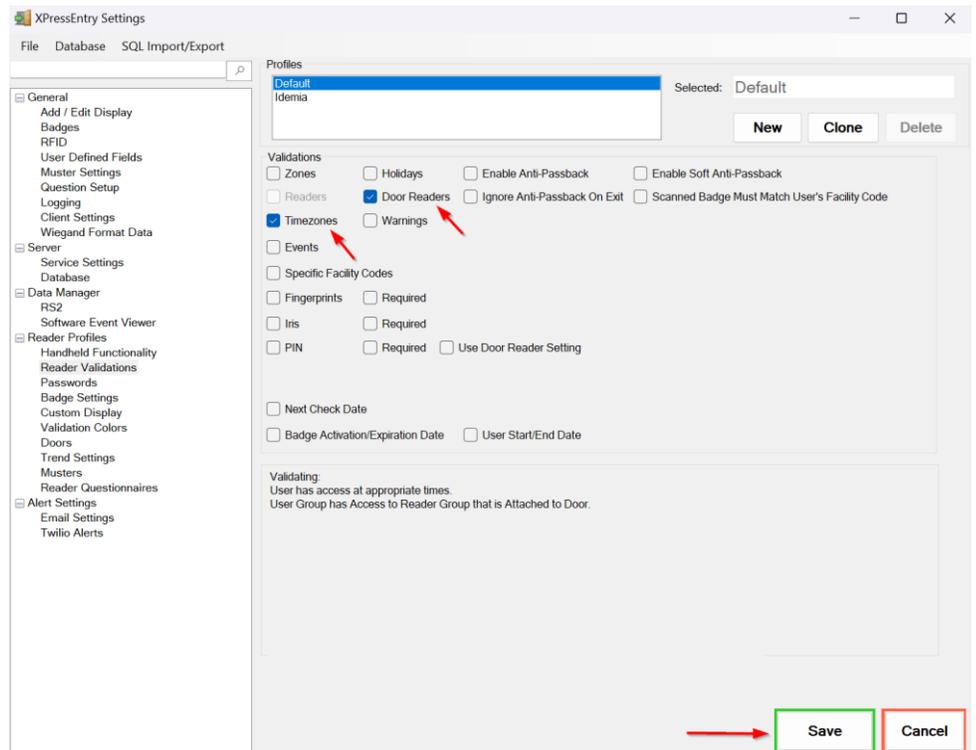


Readers

For each **Handheld**, you'll want to set up a Reader in XPressEntry. The **Reader Profile Tab** is where you configure the handhelds. Make sure the **Door Readers** and **Time Zones** are the only modes that are checked under **Reader Validations**. Select **Save** at the bottom right when finished.

XPressEntry Readers

All Readers should be available to view in the **Readers** tab under **Add/Edit Info**.



Here is a sample of a properly synchronized readers:

The screenshot shows a software interface for configuring handheld readers. The interface is divided into several sections:

- Top Bar:** Contains icons for File, Tools, View, Logout, Entry/Exit, and Help.
- Navigation:** Includes tabs for Entry/Exit, Activity History, Messages, Add/Edit Info, and Server Activity.
- Filter:** A search bar with a green checkmark and a red X icon.
- Handhelds:** A list of handhelds, with "Handheld 1" selected. Below the list, it shows "Server Reader : DESKTOP-MU40SF7" and "Time to Read 2 Records: 0.01 seconds".
- Readers:** A list of readers, including "SCP 000 - SIO 00-Reader 1", "SCP 000 - SIO 00-Reader 2", "SCP 001 - SIO 00-Handheld1 Entry", and "SCP 001 - SIO 00-Handheld1 Exit". Below the list, it shows "Time to Read 4 Records: 0.01 seconds".
- Configuration Form:**
 - Name:** Handheld 1
 - Door:** (Dropdown menu)
 - Profile:** Default
 - GUID:** ddc7ff9cdd90d466
 - External Master Reader:** (Dropdown menu)
 - Buttons:** Clear Reader Credential, Show Reader Setup QR
 - XPressFreedom Settings (optional):**
 - Freedom Name: Freedom Board
 - IP Address: (Text field)
 - TCPIP Port: 80
 - Success Value: (Dropdown menu)
 - Success Value: 2
 - Enable Freedom Debug:
 - Relay Sense:
 - Enqueue Requests:
 - Key: DEFAULT
 - RFID Settings (optional):**
 - RFID Reader: (Dropdown menu)
 - Mode: (Dropdown menu)
 - Trend:
 - Antenna Port: 1
 - Same Zone:
 - No Associated Reader** (Red text)
 - IDScan:**
 - Upload ID Scan License
 - Clear
- Bottom Bar:** Contains buttons for Add New, Delete, Save, and Cancel. It also shows "Activity | Occupancy | Partial | Full | Total Occupancy: 3 Inside 1 Zone | 0 Unread Messages | Service Running Locally".

RS2 Access It Readers

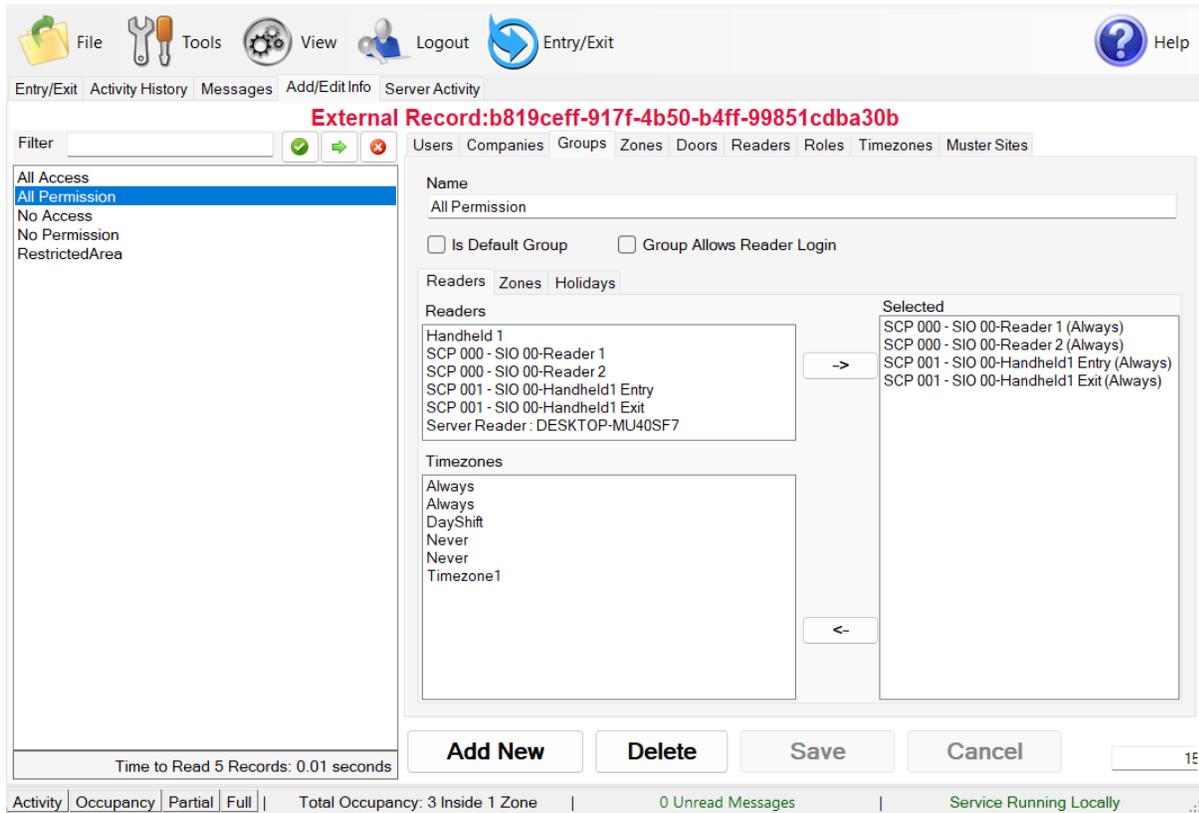
The screenshot shows the RS2 Access It software interface. The interface is divided into several sections:

- Top Bar:** Contains icons for File, Main, View, and a dropdown menu for Current Site (Main).
- Navigation:** Includes tabs for Readers, Cards, Card Groups, Badge Types, Users, Access Levels, and User Groups.
- Search:** A search bar with the text "Search (All installed readers for selected site(s)) results: 4 items (1 currently selected)".
- Table:** A table with the following columns: Reader Name, Reader Mode, Door Status, Alarm On Forced, Alarm On Held, and SCP Name. The selected reader is "SCP 001 - SIO 00-Handheld1 Entry".
- Bottom Bar:** Contains "Alarms - Pending(0), Acknowledged(0)" and "Servers".

Reader Name	Reader Mode	Door Status	Alarm On Forced	Alarm On Held	SCP Name
SCP 000 - SIO 00-Reader 1	Card Only	Closed	Enabled	Enabled	SCP 000
SCP 000 - SIO 00-Reader 2	Card Only	N/A	N/A	N/A	SCP 000
SCP 001 - SIO 00-Handheld1 Entry	Unknown	Unknown	Unknown	Unknown	Telaeris Handheld
SCP 001 - SIO 00-Handheld1 Exit	Unknown	Unknown	Unknown	Unknown	Telaeris Handheld

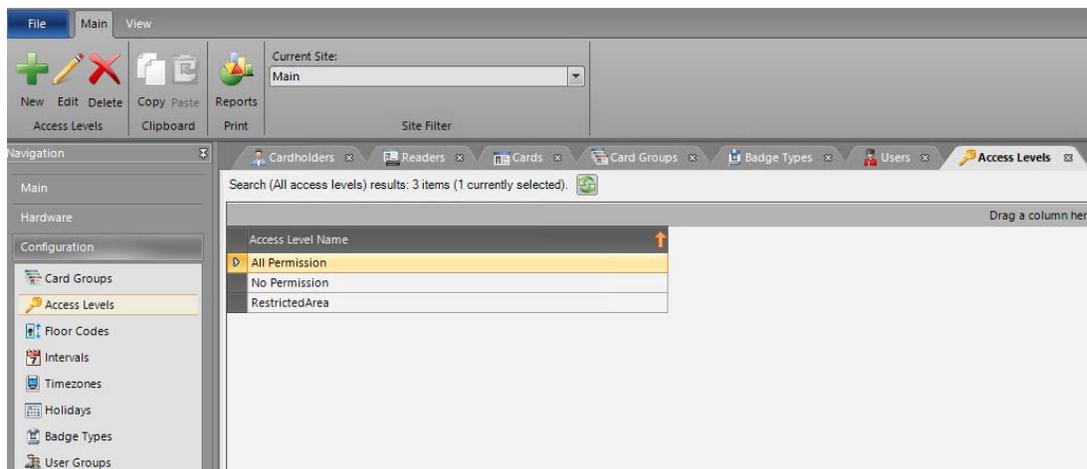
Doors can also be added for each of the physical readers. If XPressEntry is set up to pull activities, it will move people in the system based on the reader they were scanned, and the zones attached to the door.

Groups XPressEntry Groups



Access Levels are mapped to Groups and readers are included in each group according to the reader's access level.

RS2 ACCESS IT Access Levels



Activities

XPressEntry will synchronize activities to RS2 ACCESS IT if that option has been set by the Data Manager. Entry/Exit activities will be sent to RS2 ACCESS IT and display the results in the Transaction logs.

If XPressEntry is configured to **push** activities, those activities will appear in the RS2 ACCESS IT software.

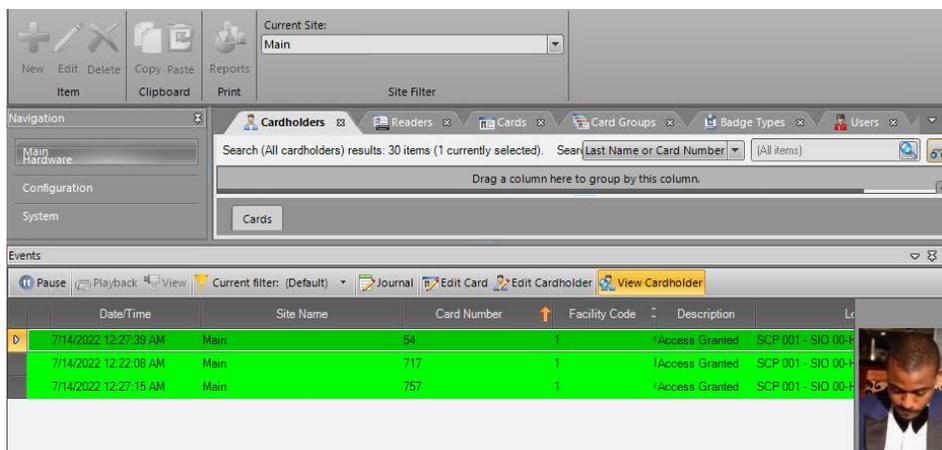
If XPressEntry is configured to **pull** activities, the occupancy of the system will change each time a person scans at a reader that is mapped to a door in XPressEntry.

You may want to pull activities if:

1. You want to use XPressEntry to manage Emergency Evacuations.
 - a. XPressEntry uses RS2 ACCESS IT 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.

Note: We cannot pull historical activities with RS2 ACCESS IT API. It only allows to pull activities that have happened within a minute.

Activity Occurring in Last 7 Days								0
User	User Image	Time Stamp	Start Zone	End Zone	Door	Reader	Entry Granted	
I, Clement J		07/14 12:5...	Outside	Building	dr_SCP 00...	Handheld 1	True	
Columbus, ...		07/14 12:5...	Outside	Building	dr_SCP 00...	Handheld 1	True	
Carta, Dave		07/14 12:5...	Outside	Building	dr_SCP 00...	Handheld 1	True	



The screenshot displays the RS2 ACCESS IT software interface. At the top, there are navigation icons (New, Edit, Delete, Copy, Paste, Reports) and a 'Current Site' dropdown menu set to 'Main'. Below this is a 'Navigation' pane with options for Main Hardware, Configuration, and System. The main area shows a search for cardholders with 30 results (1 selected). Below the search is a table of events with columns for Date/Time, Site Name, Card Number, Facility Code, and Description. The events table shows three entries for 'Access Granted' at 'SCP 001 - SIO 00-H' on 7/14/2022 at 12:27:39 AM, 12:22:08 AM, and 12:27:15 AM, with card numbers 54, 717, and 757 respectively. A small user image is visible in the bottom right corner of the interface.