XPressEntry / Apollo APACS Synchronization

Revision 08/18/2021

For use with the
XPressEntry Mobile Access Control System

By

TELAERIS, Inc.

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Purpose

This document is intended to instruct users on how to synchronize an XPressEntry system with Apollo APACS system.

Setting Up Apollo APACS to Synchronize with XPressEntry

It is assumed Apollo APACS is installed on a server. Please contact your Apollo dealer to receive the installer.
XPressEntry communicates with Apollo APACS by using web services that provide access to APACS configuration.

Requirements for Apollo APACS

- OS: Windows 7/8/8.1/10 or Server type equivalent.
- Minimum APACS: 3.7, DB version 146 (APACS: 3.9.4, DB version 163 for API rev.17 support)
- APACS license with support for web sessions.

Order of Operations

1) Applying the API Certificate
2) Start APACS API Service
3) Configuring APACS

Applying the API Certificate

- By default, APACSAPIService.exe is configured to listen on all IP addresses available in the PC.
- Default listening port is TCP 8081 (i.e. https://localhost:8081/api)
- Default settings are set to use HTTPS protocol and require you to generate certificates before the API can be accessed.

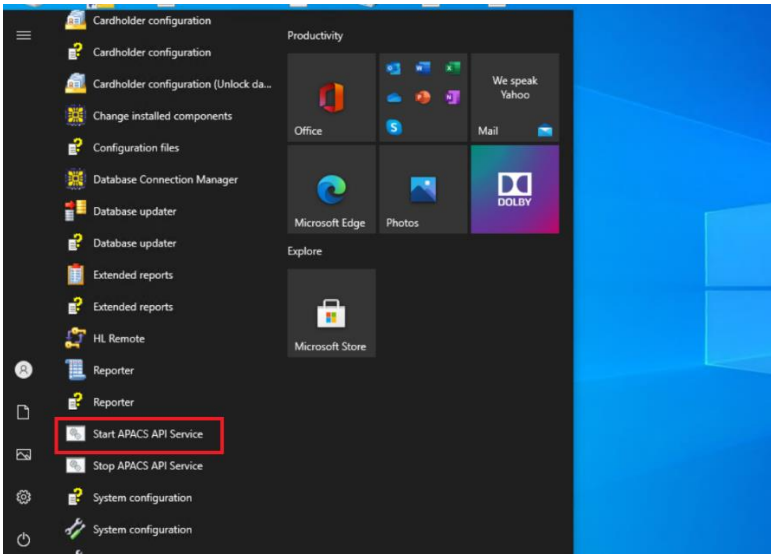
These settings can be changed in “APACSAPIService.exe.config” file. Changing the protocol to HTTP will allow you to use the API without having any certificates, but we recommend to use certificates in production environments.

Start API Service

To start the APACSAPIService Click Start Menu and open Apollo folder and then click

“Start APACS API Service”

Figure 1 – Start APACS API Service

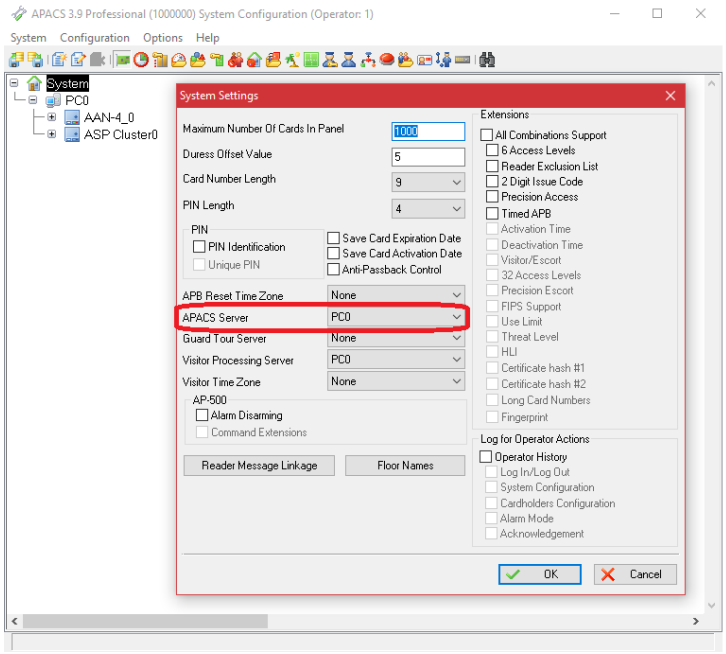


Configuring APACS System

You need to add at least one PC hardware device and assign it as the "APACS Server" in main system settings (check below image): To open the system setting Double click the System tab.

You will need to be logged in with the Installer permissions in order to do this.

Figure 2 – Configure APACS System



Setup APACS Data and Settings

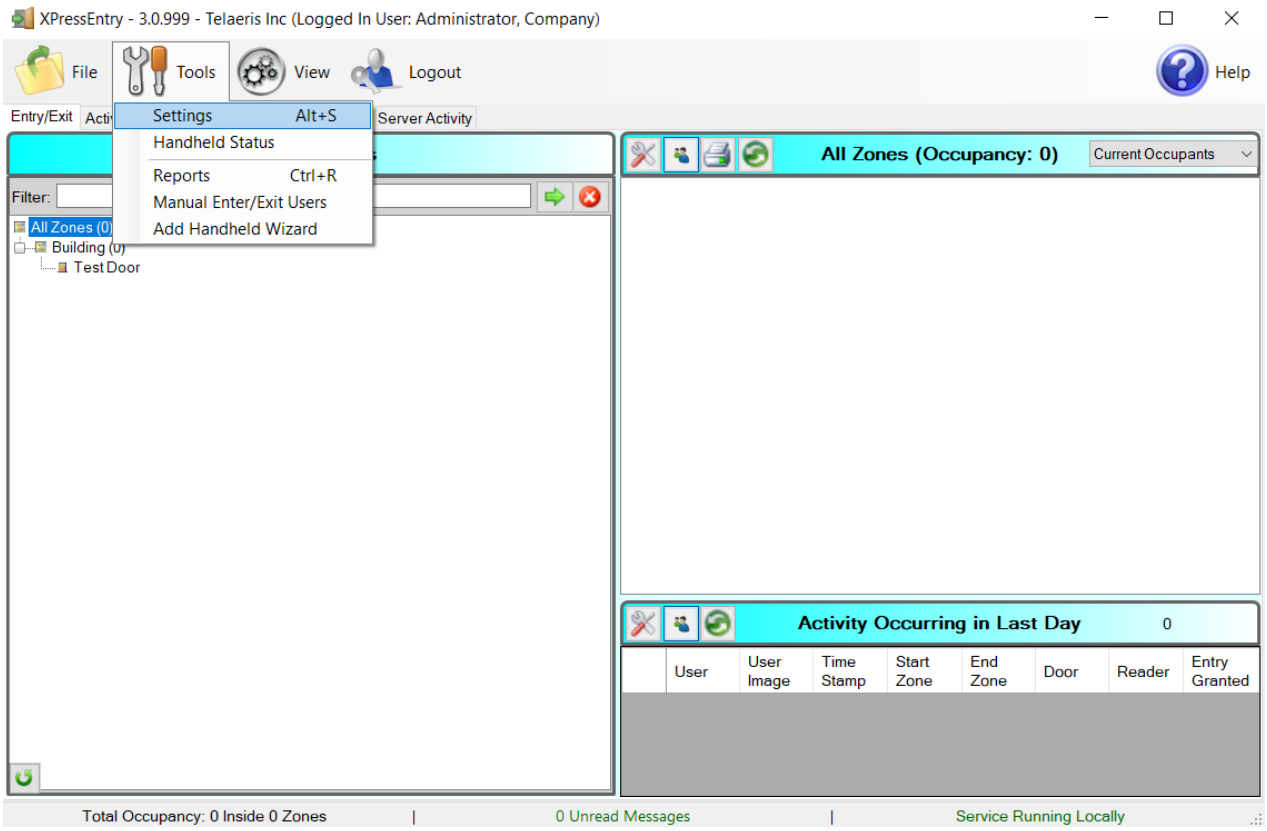
Handhelds

For every physical XPressEntry handheld reader, you should have two logical readers in the APACS System. They should be distinguished with the words “Entry/Exit” or “IN/OUT” at the end of them. These readers are only theoretical and represent the location in which an XPressEntry Mobile Reader will be used.

Enable Synchronization

XPressEntry uses a module called “Data Manager” to synchronize all data with APACS.
From the main page of XPressEntry, Go to XPressEntry / Settings (ALT+S or Tools>Settings)

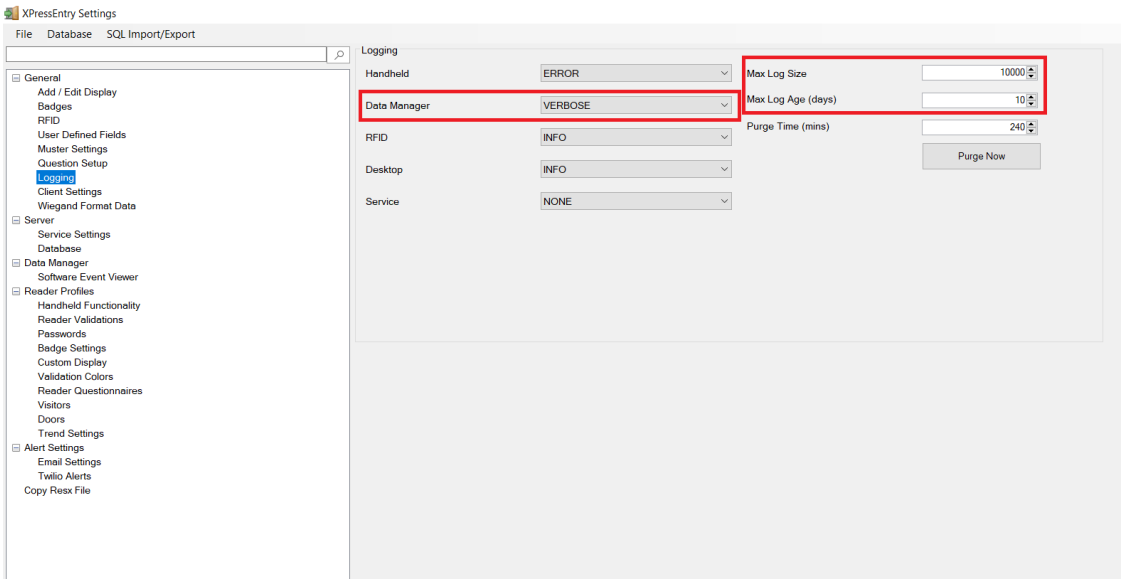
Figure 3 - XPressEntry



General tab

From the Settings page, select the General Tab, Select Logging

Figure 4 - Logging Settings



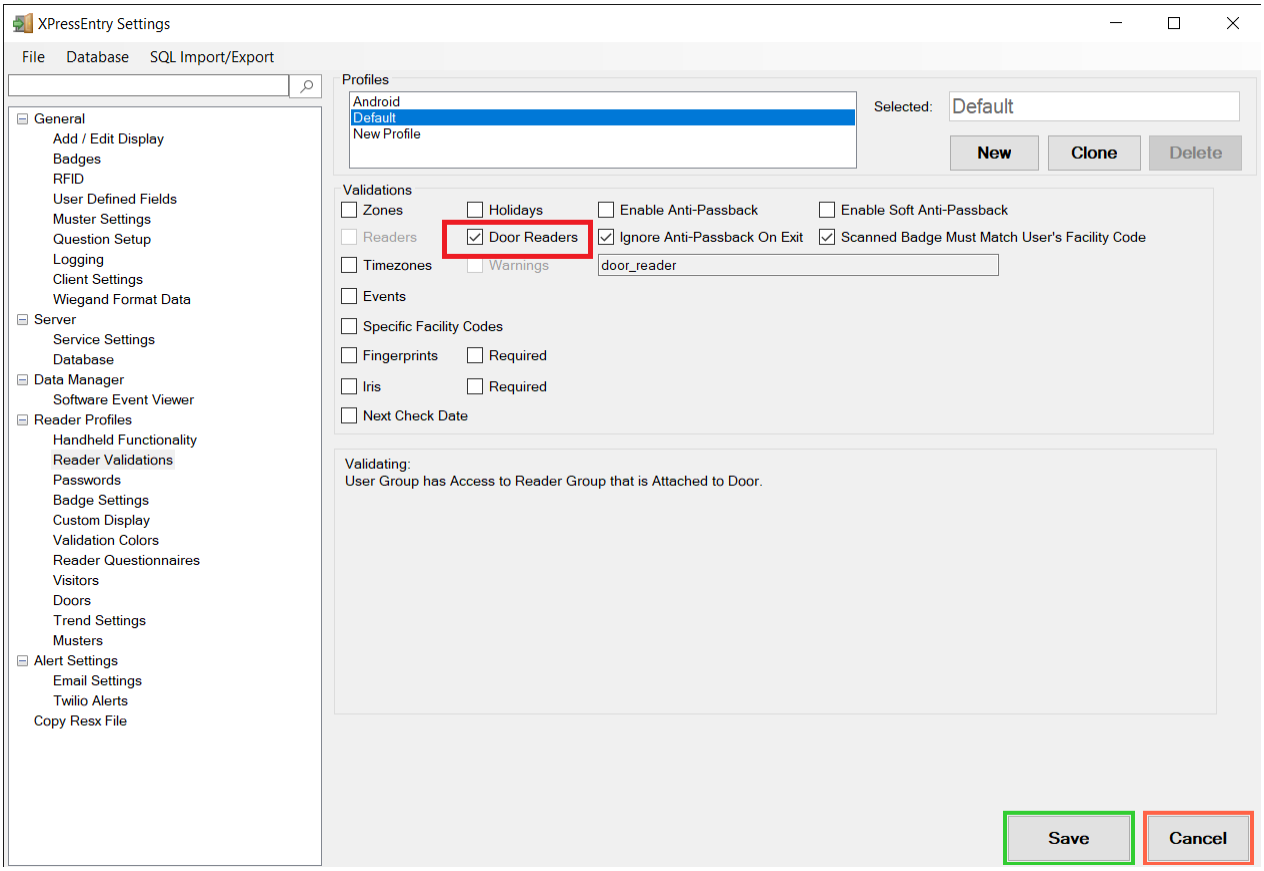
Set the Data Manager Log level to DEBUG or VERBOSE - this will allow you to view log entries during the sync process
Max log size- 5000 or higher
Max log Age- 1 Day or higher

Once the integration is complete, set the log level to ERROR, so only error messages will be tracked.

Reader Profile Tab

In the Reader Profile Tab is where you configure the handhelds click the Reader Validation Tab

Figure 5 - Reader Validations



The only important change to make on this tab is to make sure “Door Readers” is the only mode that is checked under “Validations”. Select “Save” at the bottom right when finished.

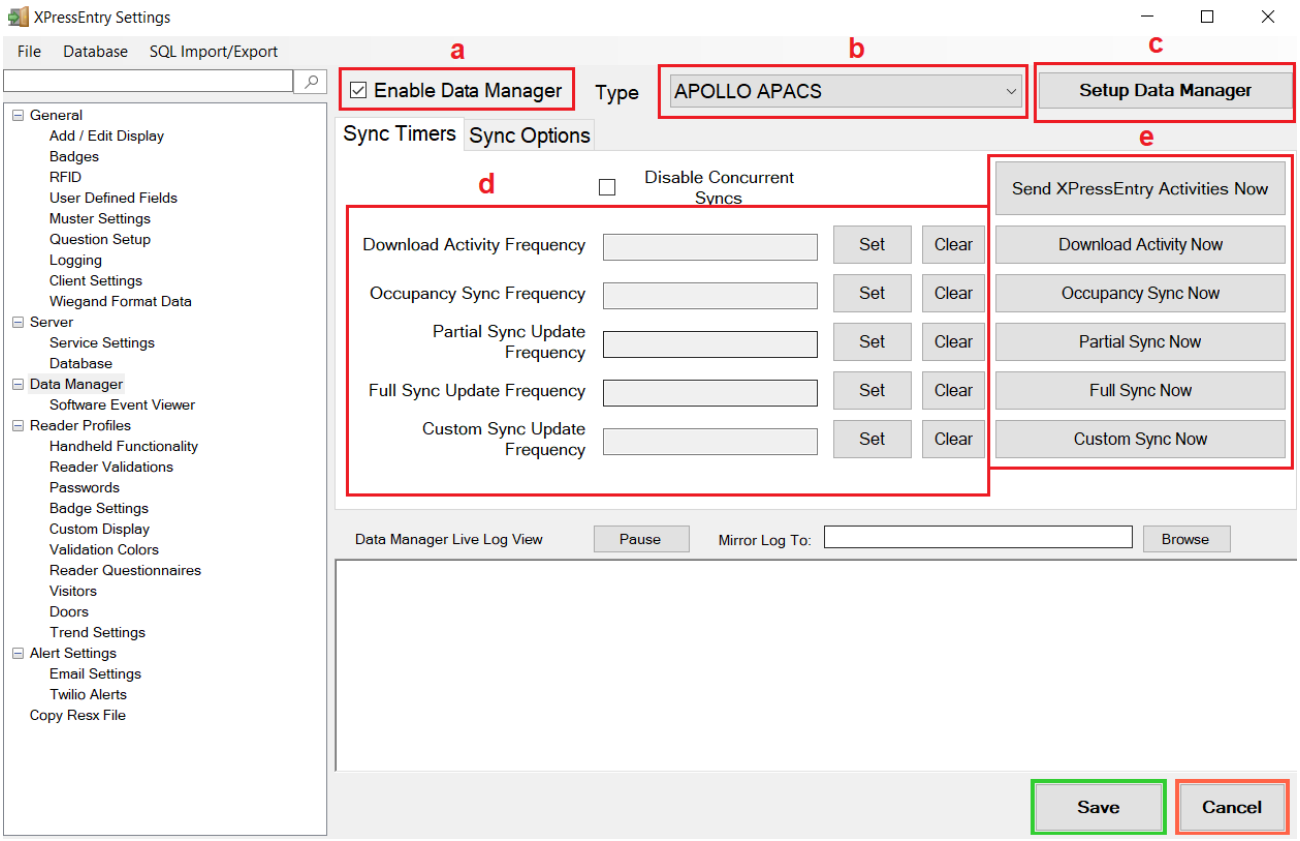
Data Manager Tab

From the Settings page select the Data Manager Tab.

The data Manager Tab has 2 Tabs.

1. Sync Timers

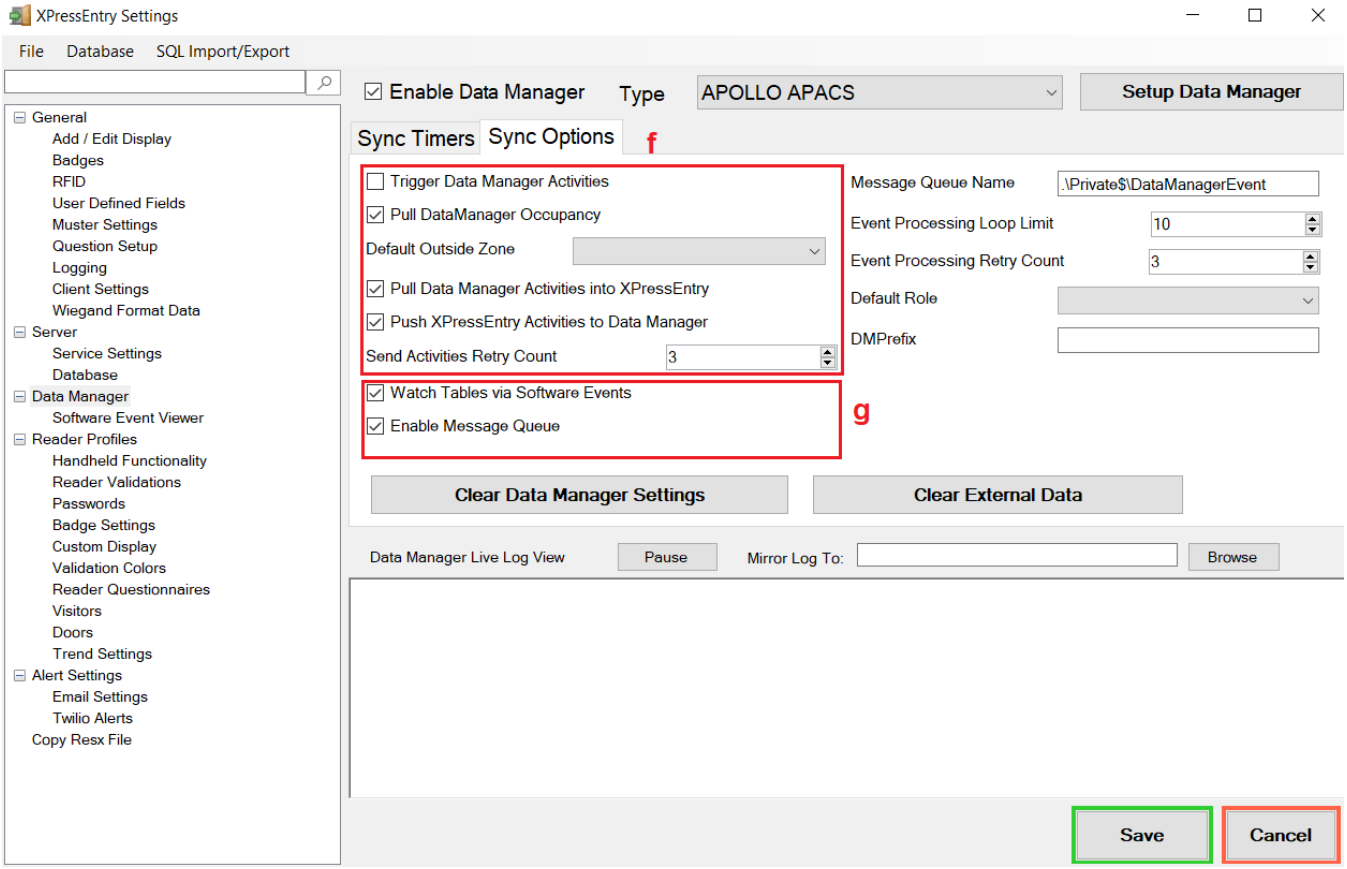
Figure 6 - Data Manager Sync Timers



a. **Enable Data Manager** – To Enable the Data Manger operations
b. **Type** - This is the integration type. Select APOLLO APACS.
c. **Setup Data Manager**- Sends you to the setup form for APOLLO data manager.
d. **Update Frequency options** - Sets and clears the intervals in which the data manager updates XPressEntry.
e. **Immediate sync functions** - Runs an immediate update.

2. Sync Options

Figure 7 - Data Manager Sync Options


XPressEntry Settings
File
Database
SQL Import/Export
General
Add / Edit Display
Badges
RFID
User Defined Fields
Muster Settings
Question Setup
Logging
Client Settings
Wiegand Format Data
Server
Service Settings
Database
Data Manager
Software Event Viewer
Reader Profiles
Handheld Functionality
Reader Validations
Passwords
Badge Settings
Custom Display
Validation Colors
Reader Questionnaires
Visitors
Doors
Trend Settings
Alert Settings
Email Settings
Twilio Alerts
Copy Resx File
Enable Data Manager
Type
APOLLO APACS
Setup Data Manager
Sync Timers
Sync Options
f
Trigger Data Manager Activities
Pull DataManager Occupancy
Default Outside Zone
Pull Data Manager Activities into XPressEntry
Push XPressEntry Activities to Data Manager
Send Activities Retry Count
3
Watch Tables via Software Events
Enable Message Queue
g
Message Queue Name
.\Private$\DataManagerEvent
Event Processing Loop Limit
10
Event Processing Retry Count
3
Default Role
DMPrefix
Clear Data Manager Settings
Clear External Data
Data Manager Live Log View
Pause
Mirror Log To:
Browse
Save
Cancel

f. **Activity Synchronization options** - Used to send XPressEntry handheld activities to Apollo APACS.
g. **Live Event Settings** - To Enable message queue and watch live events.

Set the Update Frequency to as often as you want the system to update. Note that only one update can run at a time and if this value is very low the system will constantly try to update (this is not always a problem).

1. Full Sync Update- This sync will grab all relevant records from APACS and update them in XPressEntry. If there are many users in APACS, this sync option can take some time.

2. Partial Sync Update- This sync will grab records from all tables but will limit the number of Users that are retrieved from APACS. It will only grab the last x number of users that were added to the system. This is valuable when you do not want to wait for a long sync but want to add a new user into the XPressEntry system.

    a. Do use this sync to quickly update any table in XPressEntry.
    b. Do use this sync to quickly add a new user into XPressEntry from APACS.
    c. Do NOT use this sync to delete a user from XPressEntry who was deleted in APACS.
    d. Do NOT use this sync to update a user from XPressEntry who was changed in APACS.

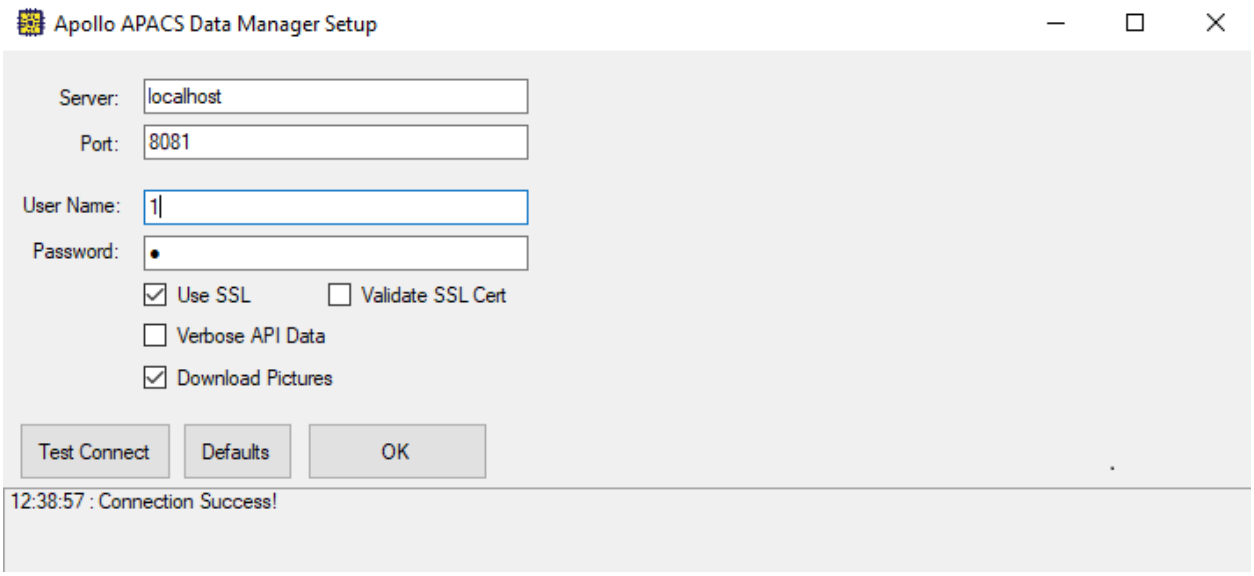
3. Activity Sync Update- Use this sync to send XPressEntry Events to APACS. These events will show up as APACS Alarms. The "Activity Synchronizing" section contains two options.
    a. Pull Data Manager Activities into XPressEntry – This option allows you to pull activities from APACS. This will change the location of the user within XPressEntry
    b. Push XPressEntry Activities to Data Manager – Will push XPressEntry handheld activities to APACS.

All of these options can be changed at any time. Changing any option will immediately take effect. When all settings are done Click **Save** button to save all settings from the Syn Timers Sync options Tab.

Apollo APACS Setup Page

Press the “Setup Data Manager” button to get the APACS specific setup screen.

Figure 8 - APACS Setup



- Server – The server IP address where the Apollo APACS is installed.
- Port – Port Number for the connection. Default listening port is TCP 8081.
- User Name and Password – APACS Login details (User name and password must match to ones that is defined in APACS database as operators).
- Use SSL – Tick this if using a secure connection (HTTPS)
- Download Pictures – Enabling this will download user images from Apollo APACS.(Enabled by default)
- Validate SSL Cert – For validating certification for secure connection.

Click “Test Connect” after entering all the data correctly, this will connect to the Apollo APACS using the given user's name and password and the result will display “Connection Success!” is connected to apollo successfully. 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 tab of the Settings form, select “Save and Apply Settings”. It is now time to begin syncing data.

Select “Full Sync Now” to pull all data from APACS. Once the sync has finished, all relevant APACS records should now display in XPressEntry.

APACS Sync Check

The purpose of this section is to help the operator understand exactly what data XPressEntry is pulling from Apollo APACS. For a quick setup, please navigate to the next section, “Configuring XPressEntry using APACS Data”.

The mapping of each Data pulled from Apollo is shown below.

Table 1 – Mapping Data

Apollo APACS	XPressEntry
AAN Reader	Reader
AAN4 Reader	Reader
ASP Reader	Reader
Card Holder	Users
Cards	Badges
Access Level	Groups
APB Zones	Zones
Global APB Zones	Zones
Time Zones	Time Zones
Holidays	Holidays

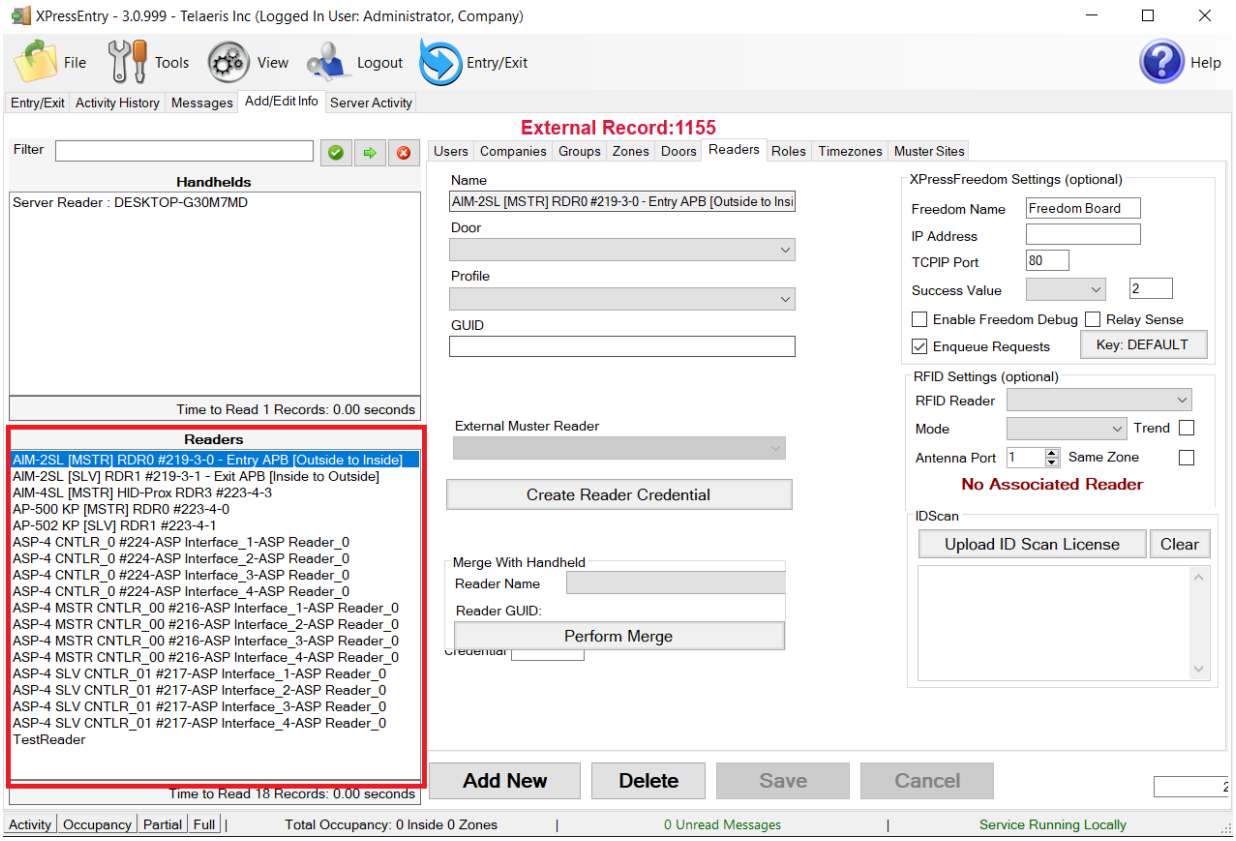
All External Records (From Apollo APACS) will display in red as an “External Record” at the top of the form. This label will not display for any records that were created from within XPressEntry.

Below are the Mapping details of each Data pulled from Apollo

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:

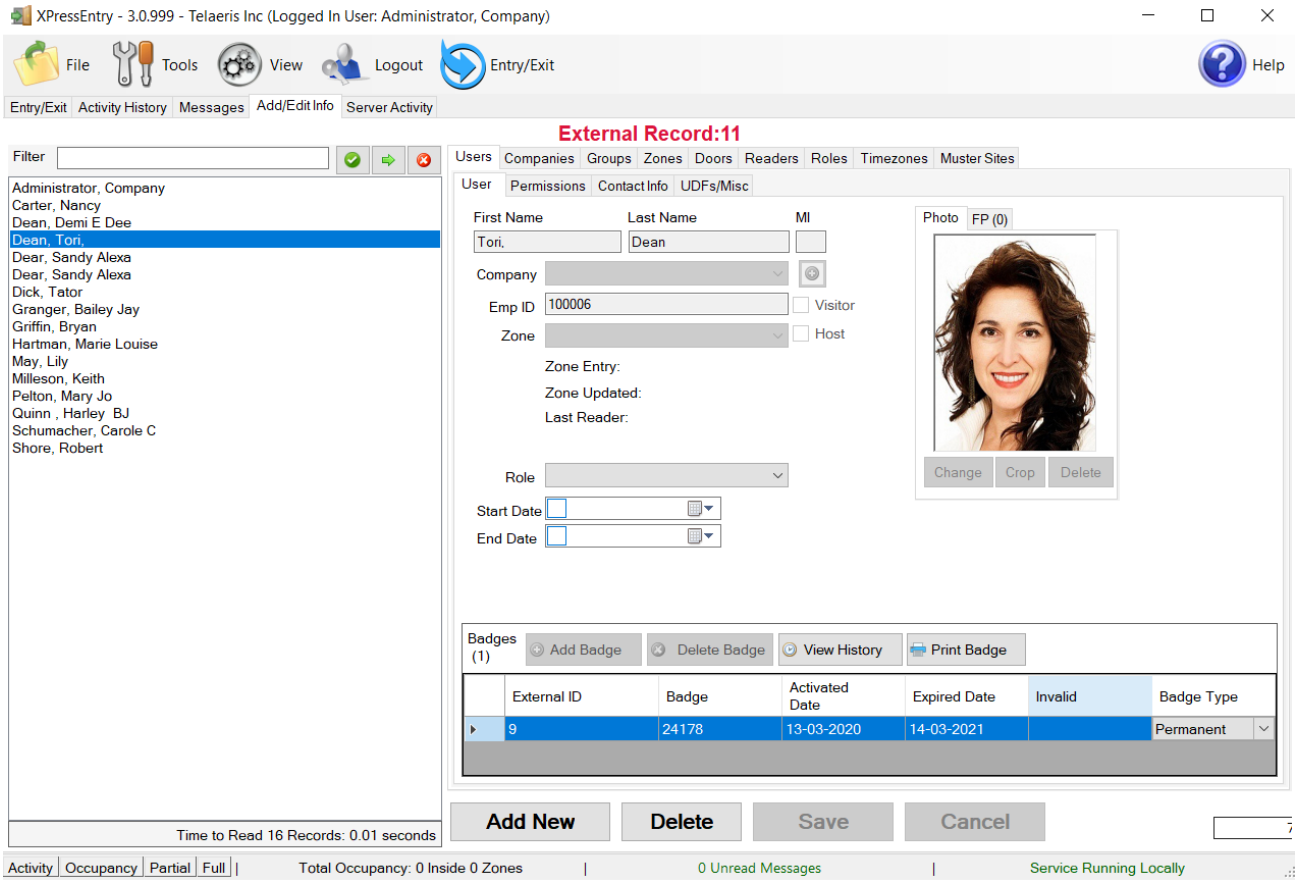
Figure 9 – Readers



Users

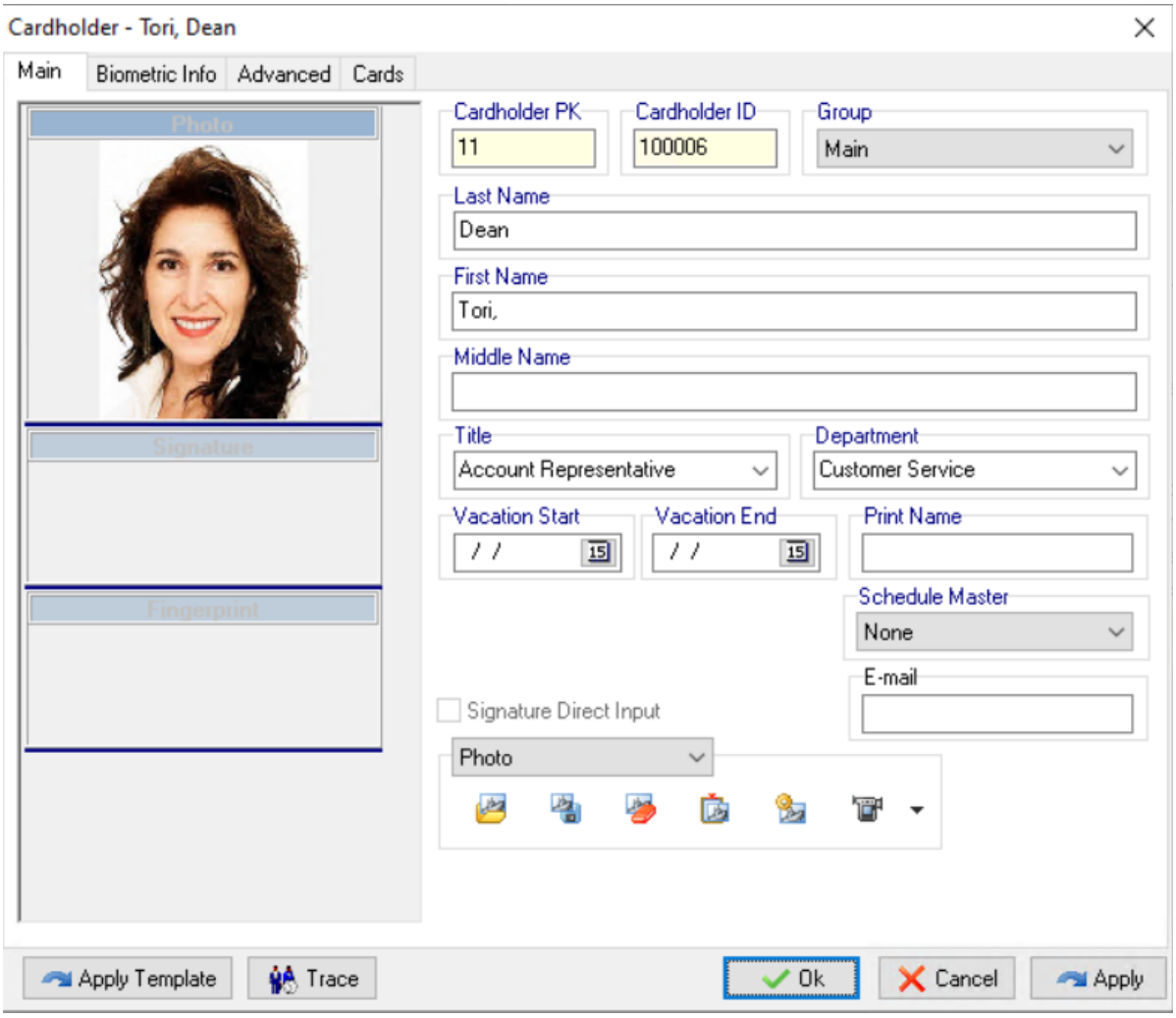
Here is a sample of a properly synchronized user:

Figure 10 – Users


XPressEntry - 3.0.999 - Telaeris Inc (Logged In User: Administrator, Company)
File
Tools
View
Logout
Entry/Exit
Help
Entry/Exit
Activity History
Messages
Add/Edit Info
Server Activity
External Record:11
Filter
Administrator, Company
Carter, Nancy
Dean, Demi E Dee
Dean, Tori,
Dear, Sandy Alexa
Dear, Sandy Alexa
Dick, Tator
Granger, Bailey Jay
Griffin, Bryan
Hartman, Marie Louise
May, Lily
Milleson, Keith
Pelton, Mary Jo
Quinn , Harley BJ
Schumacher, Carole C
Shore, Robert
Time to Read 16 Records: 0.01 seconds
Users
Companies
Groups
Zones
Doors
Readers
Roles
Timezones
Muster Sites
User
Permissions
Contact Info
UDFs/Misc
First Name
Last Name
MI
Tori,
Dean
Company
Emp ID
100006
Visitor
Zone
Host
Zone Entry:
Zone Updated:
Last Reader:
Role
Start Date
End Date
Photo
FP (0)
Change
Crop
Delete
Badges (1)
Add Badge
Delete Badge
View History
Print Badge
External ID
Badge
Activated Date
Expired Date
Invalid
Badge Type
9
24178
13-03-2020
14-03-2021
Permanent
Add New
Delete
Save
Cancel
Activity
Occupancy
Partial
Full
Total Occupancy: 0 Inside 0 Zones
0 Unread Messages
Service Running Locally

XPressEntry will pull the user's image and badge number from Apollo APACS. The badge number can be seen at the bottom of the screen.

Figure 11 – Apollo APACS Cardholders



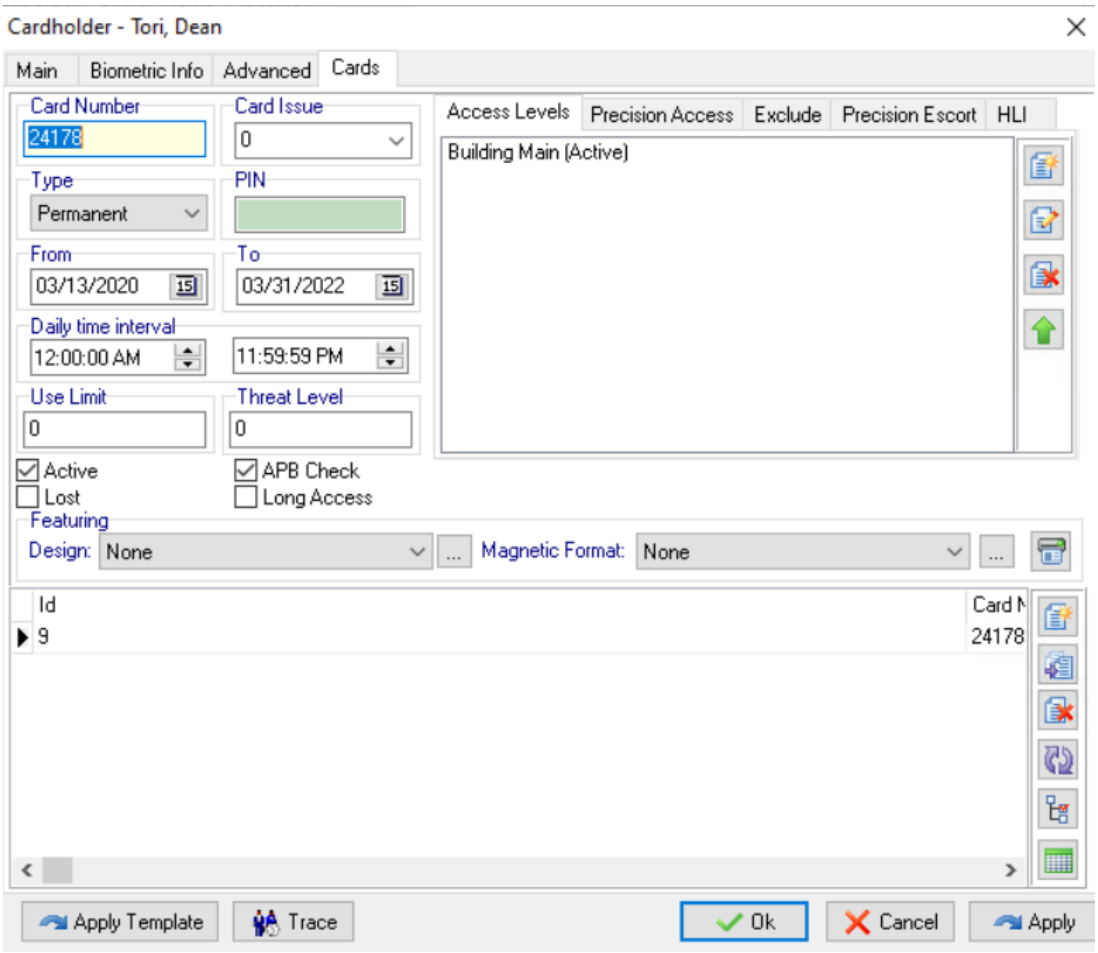
These users are seen in the Cardholder Configuration software in the APACS.

User Permissions

Users in XPressEntry have the same permissions to each reader as they do in APACS.
This is regardless of whether the user is assigned an Access Code, Reader Group, or direct access to a Reader. However, the way in which the data is displayed is a little different.

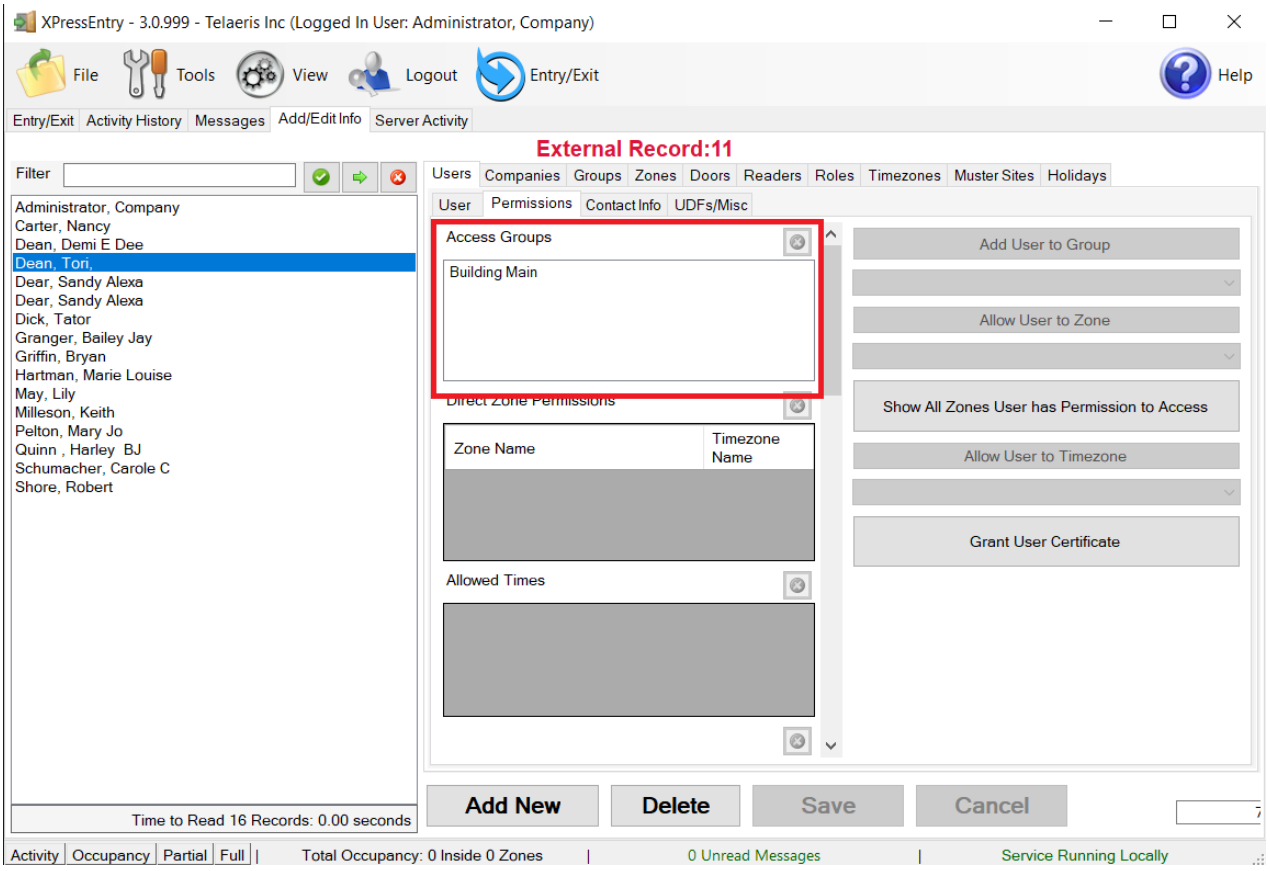
The following is an example of the permissions a user has in APACS vs. how the data is displayed in XPressEntry.

Figure 12 - Apollo APACS Permissions



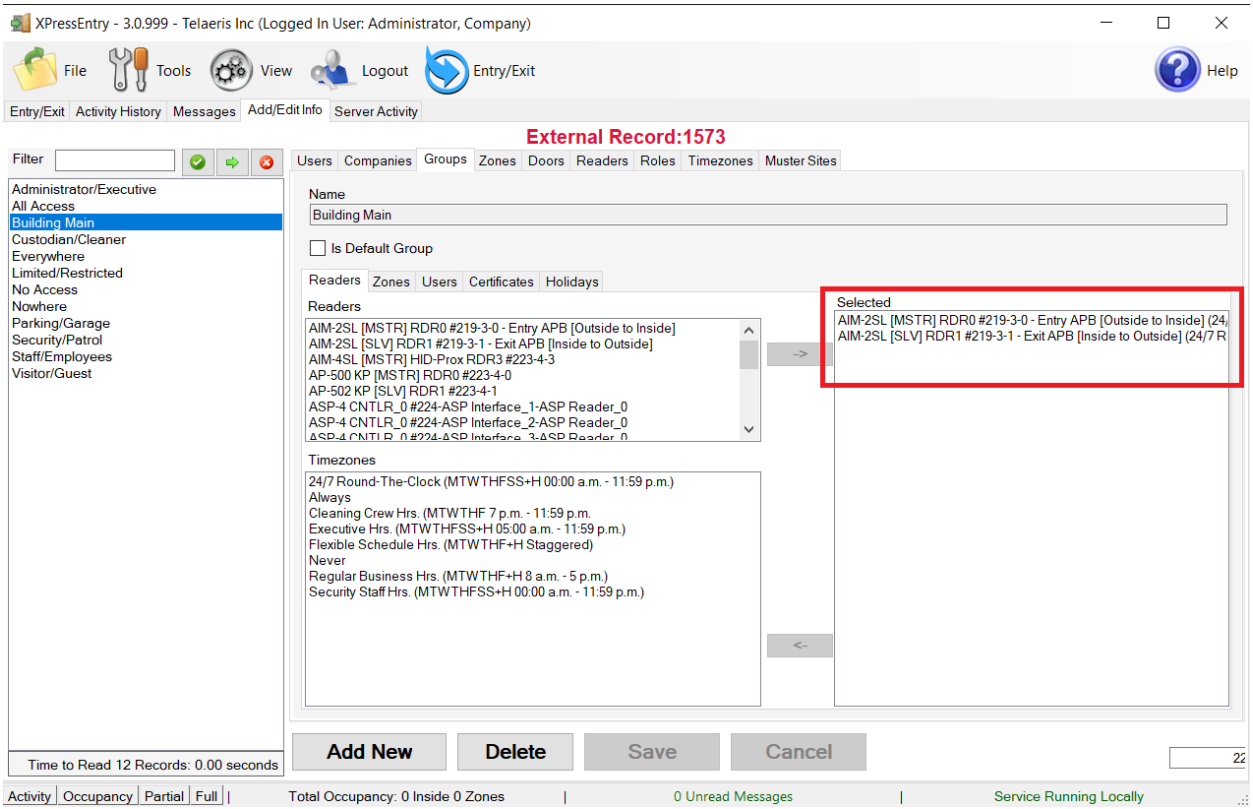
The “Building Main” has to readers assigned in the Access Level settings in the APACS System Configuration as seen in the below image.

Figure 13 - XPressEntry Permissions


XPressEntry - 3.0.999 - Telaeris Inc (Logged In User: Administrator, Company)
File
Tools
View
Logout
Entry/Exit
Help
Entry/Exit
Activity History
Messages
Add/Edit Info
Server Activity
External Record:11
Filter
Administrator, Company
Carter, Nancy
Dean, Demi E Dee
Dean, Tori,
Dear, Sandy Alexa
Dear, Sandy Alexa
Dick, Tator
Granger, Bailey Jay
Griffin, Bryan
Hartman, Marie Louise
May, Lily
Milleson, Keith
Pelton, Mary Jo
Quinn , Harley BJ
Schumacher, Carole C
Shore, Robert
Time to Read 16 Records: 0.00 seconds
Users
Companies
Groups
Zones
Doors
Readers
Roles
Timezones
Muster Sites
Holidays
User
Permissions
Contact Info
UDFs/Misc
Access Groups
Building Main
Direct Zone Permissions
Zone Name
Timezone Name
Allowed Times
Add User to Group
Allow User to Zone
Show All Zones User has Permission to Access
Allow User to Timezone
Grant User Certificate
Add New
Delete
Save
Cancel
Activity
Occupancy
Partial
Full
Total Occupancy: 0 Inside 0 Zones
0 Unread Messages
Service Running Locally

In order to see the readers user “Dean Tori” has access to, navigate to the “Groups” tab. Select “Building Main” from the list on the left.

Figure 14 - XPressEntry Permissions Readers



Each user with assigned permissions in Apollo APACS will have the same permissions in XPressEntry.

Groups

Apollo APACS Access Level are mapped to Groups in XPressEntry.

Figure 15 - Apollo APACS Access levels

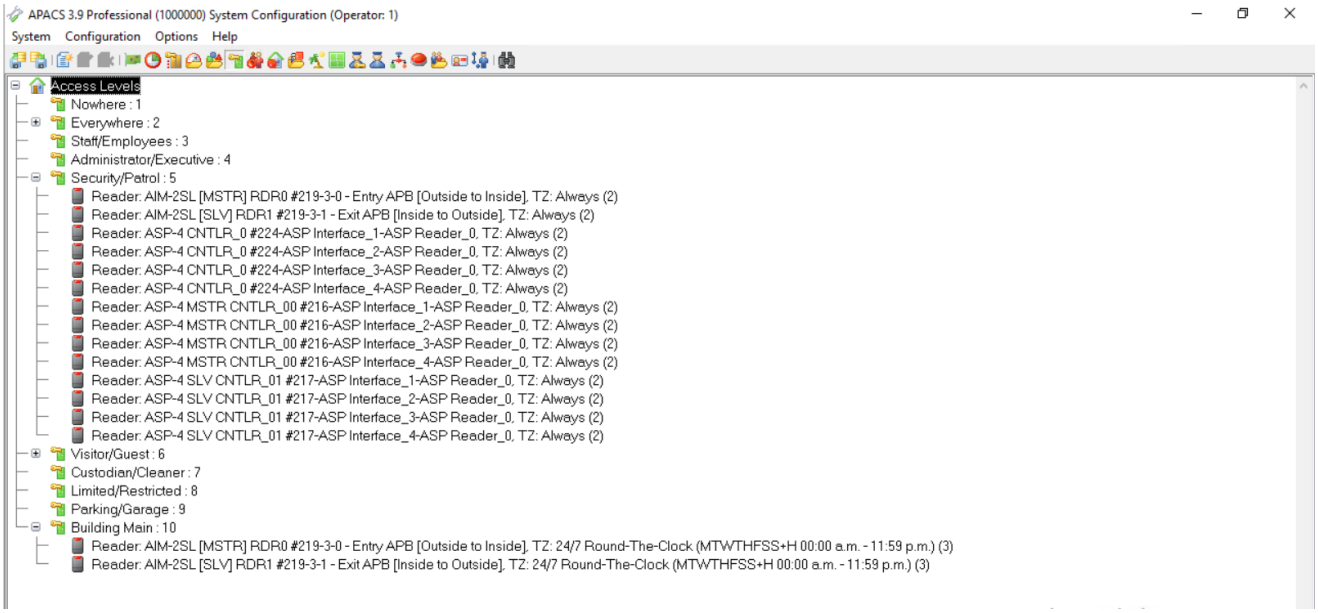
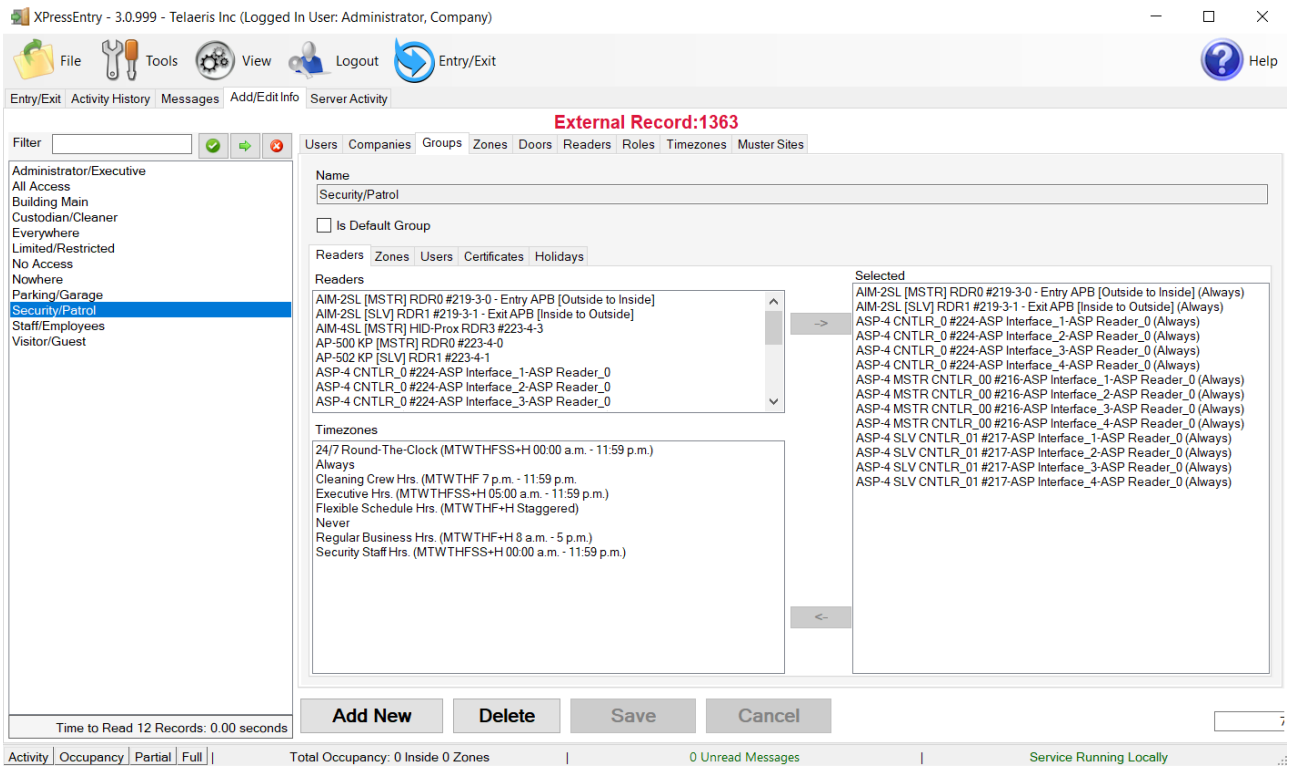

APACS 3.9 Professional (1000000) System Configuration (Operator: 1)
System Configuration Options Help
Access Levels
Nowhere : 1
Everywhere : 2
Staff/Employees : 3
Administrator/Executive : 4
Security/Patrol : 5
Reader: AIM-2SL [MSTR] RDR0 #219-3-0 - Entry APB [Outside to Inside], TZ: Always (2)
Reader: AIM-2SL [SLV] RDR1 #219-3-1 - Exit APB [Inside to Outside], TZ: Always (2)
Reader: ASP-4 CNTLR_0 #224-ASP Interface_1-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 CNTLR_0 #224-ASP Interface_2-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 CNTLR_0 #224-ASP Interface_3-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 CNTLR_0 #224-ASP Interface_4-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 MSTR CNTLR_00 #216-ASP Interface_1-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 MSTR CNTLR_00 #216-ASP Interface_2-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 MSTR CNTLR_00 #216-ASP Interface_3-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 MSTR CNTLR_00 #216-ASP Interface_4-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 SLV CNTLR_01 #217-ASP Interface_1-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 SLV CNTLR_01 #217-ASP Interface_2-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 SLV CNTLR_01 #217-ASP Interface_3-ASP Reader_0, TZ: Always (2)
Reader: ASP-4 SLV CNTLR_01 #217-ASP Interface_4-ASP Reader_0, TZ: Always (2)
Visitor/Guest : 6
Custodian/Cleaner : 7
Limited/Restricted : 8
Parking/Garage : 9
Building Main : 10
Reader: AIM-2SL [MSTR] RDR0 #219-3-0 - Entry APB [Outside to Inside], TZ: 24/7 Round-The-Clock (MTWTHFSS+H 00:00 a.m. - 11:59 p.m.) (3)
Reader: AIM-2SL [SLV] RDR1 #219-3-1 - Exit APB [Inside to Outside], TZ: 24/7 Round-The-Clock (MTWTHFSS+H 00:00 a.m. - 11:59 p.m.) (3)

Figure 16 - XPressEntry Groups

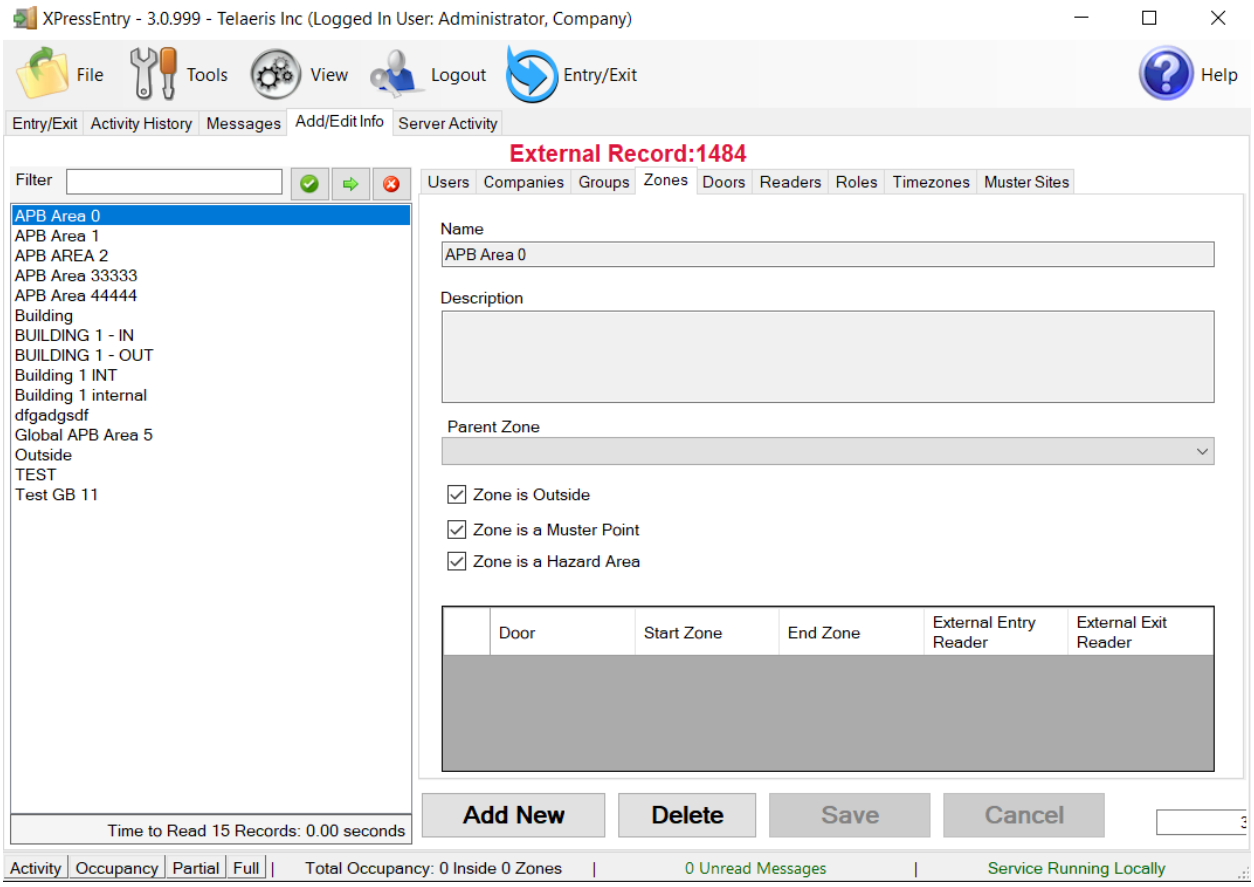


Zones

The APB Zones and Global APB Zones in Apollo APACS should be available to view in the "Zone" tab under Add/Edit Info.

Here is a sample of a properly synchronized Zones:

Figure 17 – XPressEntry Zones


XPressEntry - 3.0.999 - Telaeris Inc (Logged In User: Administrator, Company)
File
Tools
View
Logout
Entry/Exit
Help
Entry/Exit
Activity History
Messages
Add/Edit Info
Server Activity
External Record:1484
Filter
Users
Companies
Groups
Zones
Doors
Readers
Roles
Timezones
Muster Sites
APB Area 0
APB Area 1
APB AREA 2
APB Area 33333
APB Area 44444
Building
BUILDING 1 - IN
BUILDING 1 - OUT
Building 1 INT
Building 1 internal
dfgadgsdf
Global APB Area 5
Outside
TEST
Test GB 11
Time to Read 15 Records: 0.00 seconds
Name
APB Area 0
Description
Parent Zone
Zone is Outside
Zone is a Muster Point
Zone is a Hazard Area
Door
Start Zone
End Zone
External Entry Reader
External Exit Reader
Add New
Delete
Save
Cancel
Activity
Occupancy
Partial
Full
Total Occupancy: 0 Inside 0 Zones
0 Unread Messages
Service Running Locally

Timezones

Timezones are pulled from Apollo APACS Time zone Intervals in XPressEntry. Timezones should be available to view in the “TimeZones” tab under Add/Edit Info. If a single Time Zone has multiple standard time ranges for different days of the week, XPressEntry will create additional intervals to support this. Also, XPressEntry will ignore the time zone intervals with same start and end time.

Figure 18 - XPressEntry Timezones

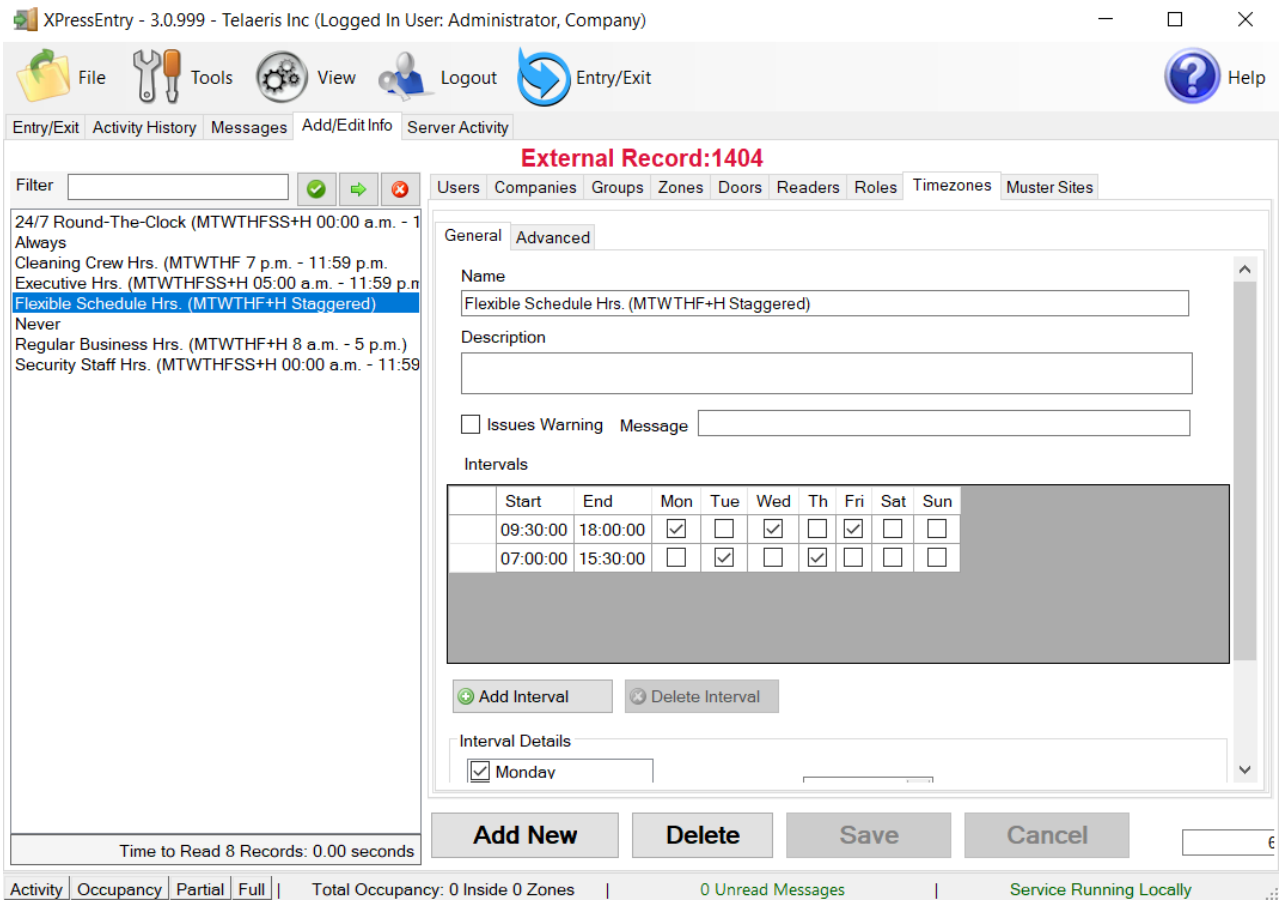
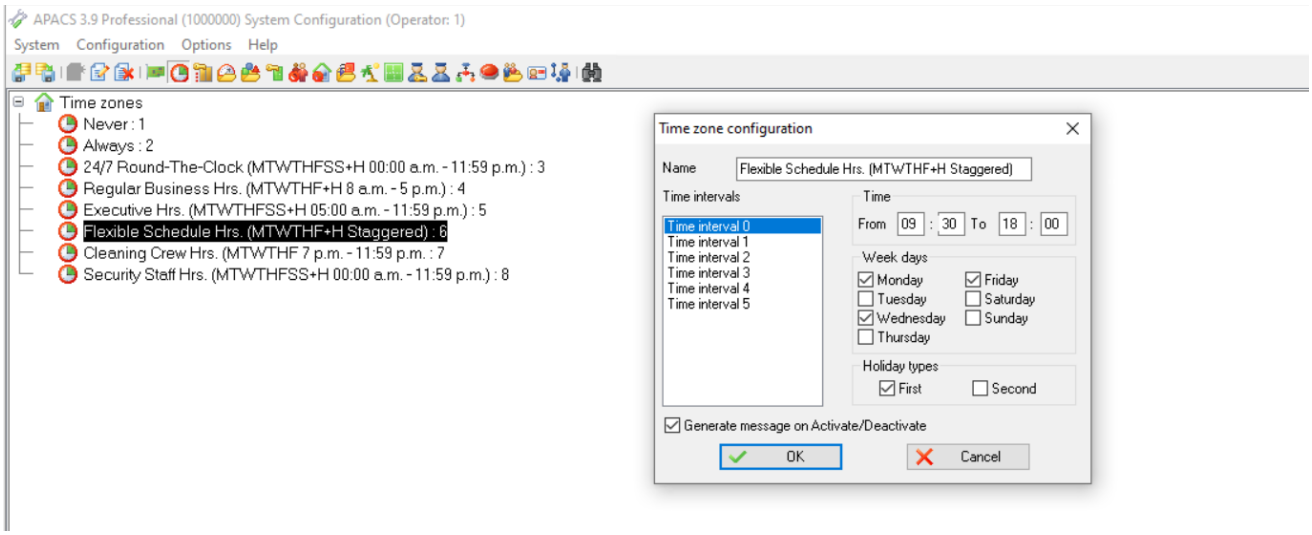


Figure 19 - Apollo APACS Timezones


APACS 3.9 Professional (1000000) System Configuration (Operator: 1)
System
Configuration
Options
Help
Time zones
Never : 1
Always : 2
24/7 Round-The-Clock (MTWTHFSS+H 00:00 a.m. - 11:59 p.m.) : 3
Regular Business Hrs. (MTWTHF+H 8 a.m. - 5 p.m.) : 4
Executive Hrs. (MTWTHFSS+H 05:00 a.m. - 11:59 p.m.) : 5
Flexible Schedule Hrs. (MTWTHF+H Staggered) : 6
Cleaning Crew Hrs. (MTWTHF 7 p.m. - 11:59 p.m. : 7
Security Staff Hrs. (MTWTHFSS+H 00:00 a.m. - 11:59 p.m.) : 8
Time zone configuration
Name
Flexible Schedule Hrs. (MTWTHF+H Staggered)
Time intervals
Time interval 0
Time interval 1
Time interval 2
Time interval 3
Time interval 4
Time interval 5
Time
From 09 : 30 To 18 : 00
Week days
Monday
Friday
Tuesday
Saturday
Wednesday
Sunday
Thursday
Holiday types
First
Second
Generate message on Activate/Deactivate
OK
Cancel

Holidays

Holidays are the simplest tables to pull from Apollo APACS. All the “Holidays” should be available to view in the “Holidays” tab.

Figure 20 - XPressEntry Holidays

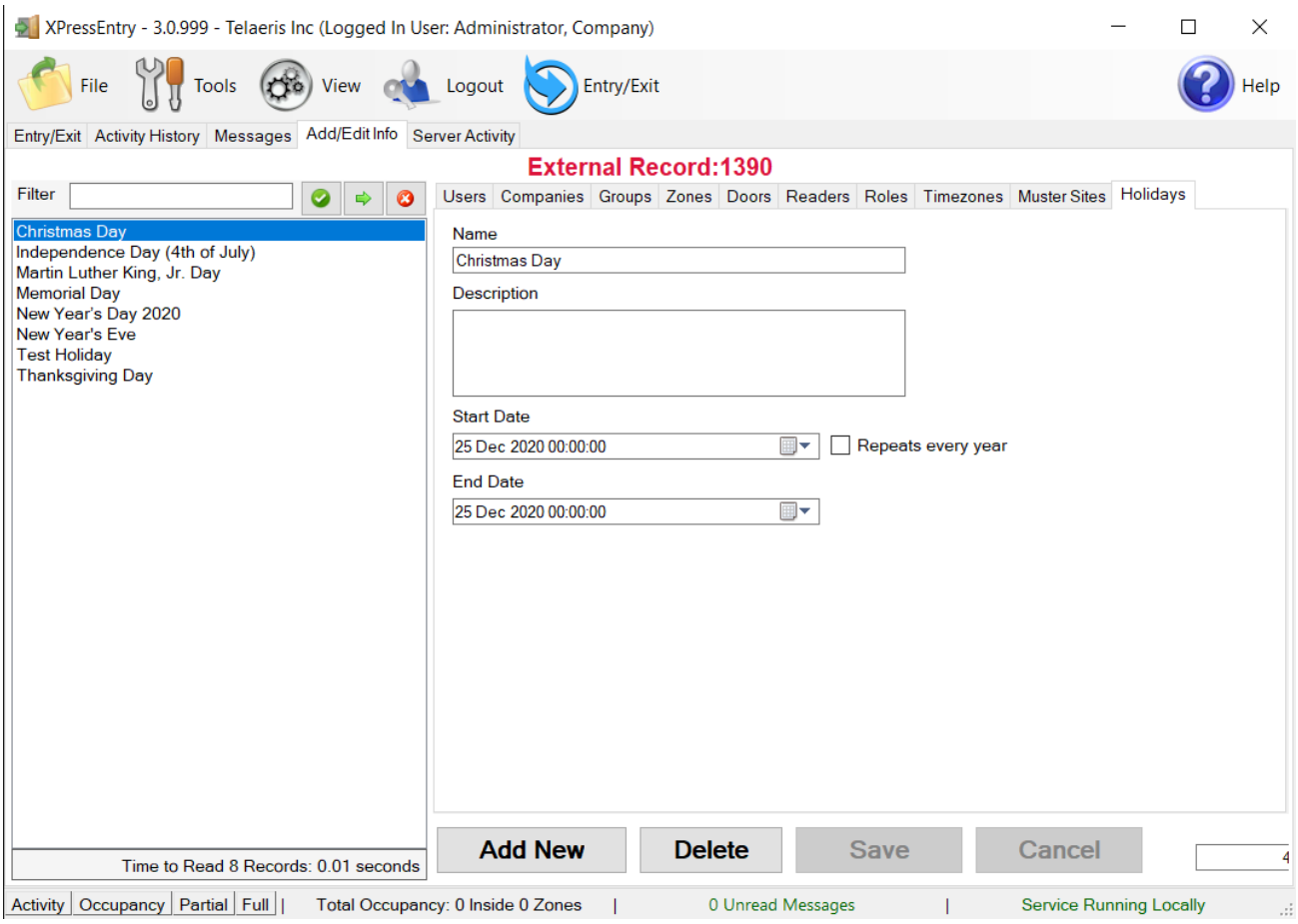
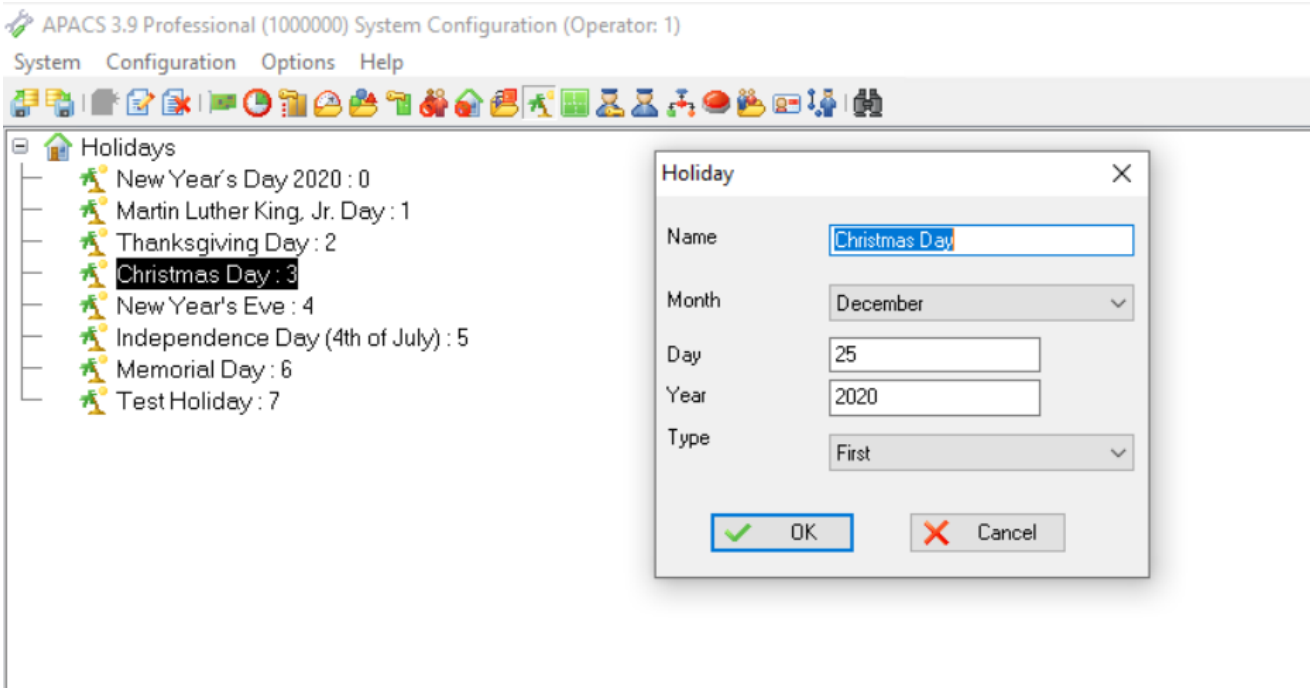


Figure 21 - Apollo APACS Holidays


APACS 3.9 Professional (1000000) System Configuration (Operator: 1)
System
Configuration
Options
Help
Holidays
New Year's Day 2020 : 0
Martin Luther King, Jr. Day : 1
Thanksgiving Day : 2
Christmas Day : 3
New Year's Eve : 4
Independence Day (4th of July) : 5
Memorial Day : 6
Test Holiday : 7
Holiday
Name
Christmas Day
Month
December
Day
25
Year
2020
Type
First
OK
Cancel

Configuring XPressEntry Using Apollo Data

Now that XPressEntry has Apollo database, it needs to be configured to use this information. The tabs that need to be configured are the Doors, Readers, and Zones.

Doors

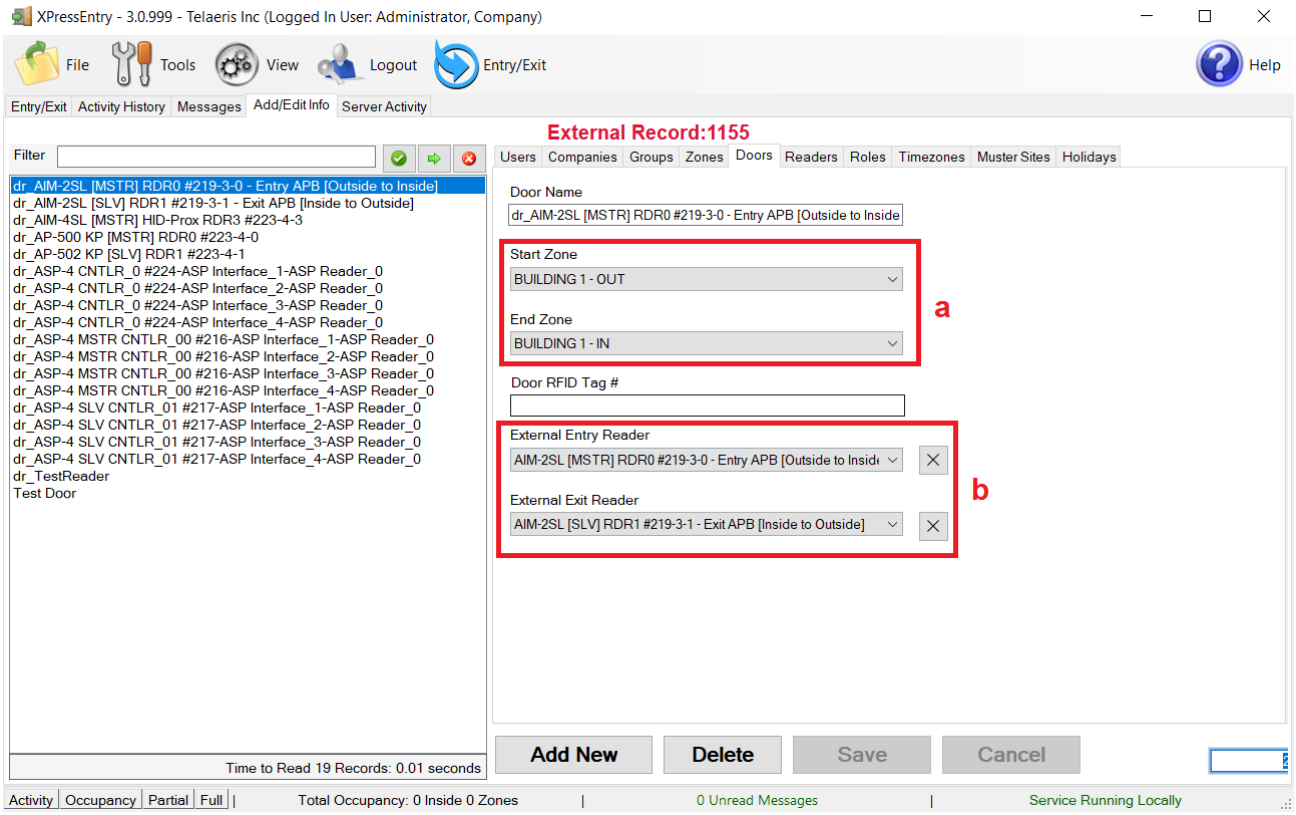
Entry/Exit permissions in XPressEntry are set by doors. Doors contain two readers, an exit and an entry reader. Door access is determined by the User's access to the door's reader. For entry, permission is based on the user's access to the door's external entry reader. For exit, permission is based on the user's access to the door's external exit reader.

Doors should be set by the user for each Handheld Reader in XPressEntry.

The XPressEntry Integration with Apollo APACS does not require additional start and end zones. However, XPressEntry can help keep track of what "zones" people are in if configured correctly.

While pulling readers from Apollo APACS a door is created in XpressEntry with respect to each reader as shown in the below image.

Figure 22 – XPressEntry Doors



a. 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 a Apollo APACS readers).

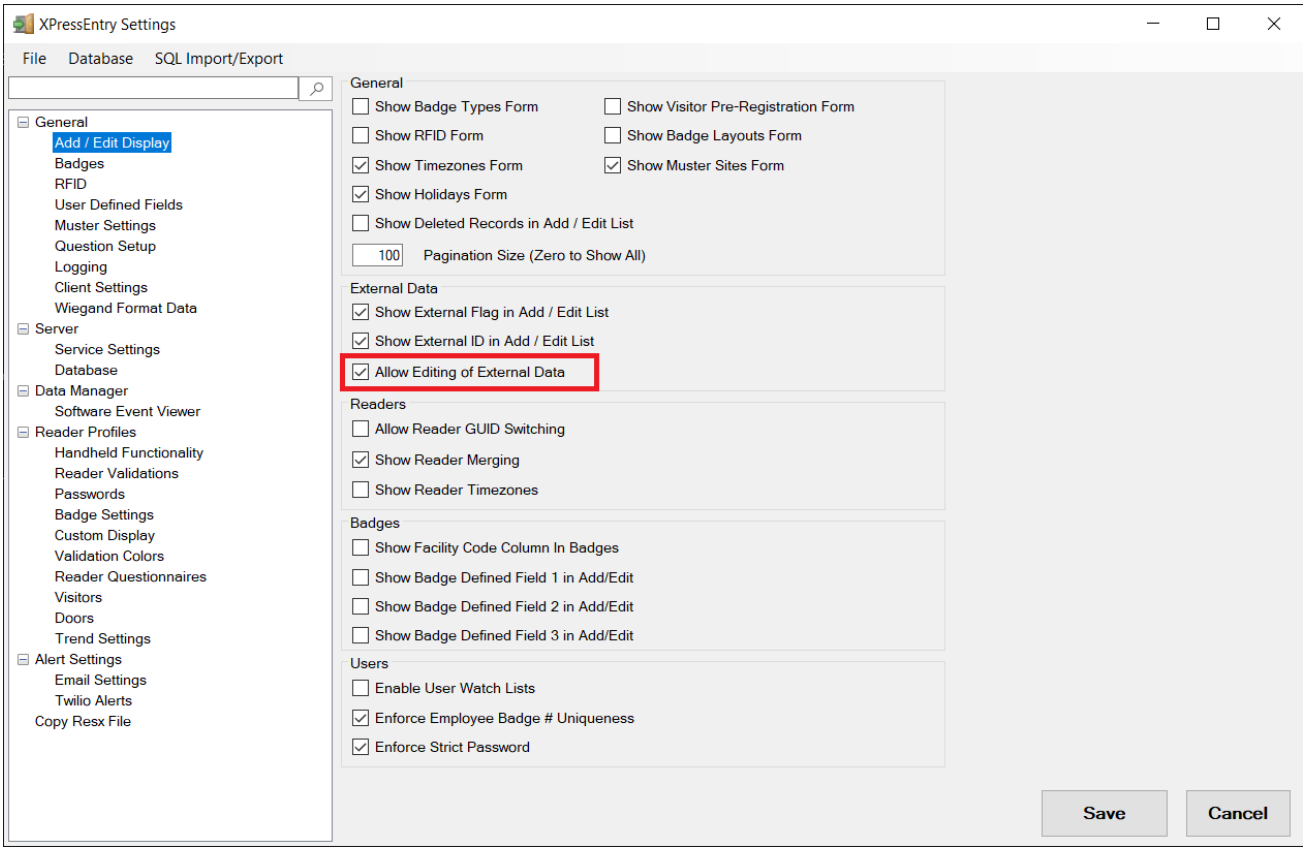
b. External Readers - Attach the logical entry and exit readers that you created in Apollo APACS.

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. To create a door, select “Add New” at the bottom of the form. Enter a name that clearly describes what this door represents. Select “Outside” for Start Zone and “Building” for End Zone. Since each door is created based on a reader, The “External Entry Reader” will be always the Selected Reader. “External Exit Reader” is one of the Exit readers you created in Apollo APACS.

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.

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

Figure 23 – External Data Settings



Readers

In XPressEntry's Apollo integration, it is not necessary to associate any reader in the system with a handheld. This association can be done on the handheld when it comes time to scan.

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.

For example, let us say that you have handheld A stationed at door A. Door A has two readers associated with it: Reader A-Entry and Reader A-Exit. 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.

Later, there is heavy volume exiting Door B. 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.

Activities

XPressEntry will synchronize activities to Apollo APACS if that option has been set by Data Manager.

If XPressEntry is configured to “push” activities, they will appear in the Alarm Mode Software. You can also tract the user location in the Alarm Mode> Commands> Cardholder location > Select user.

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.

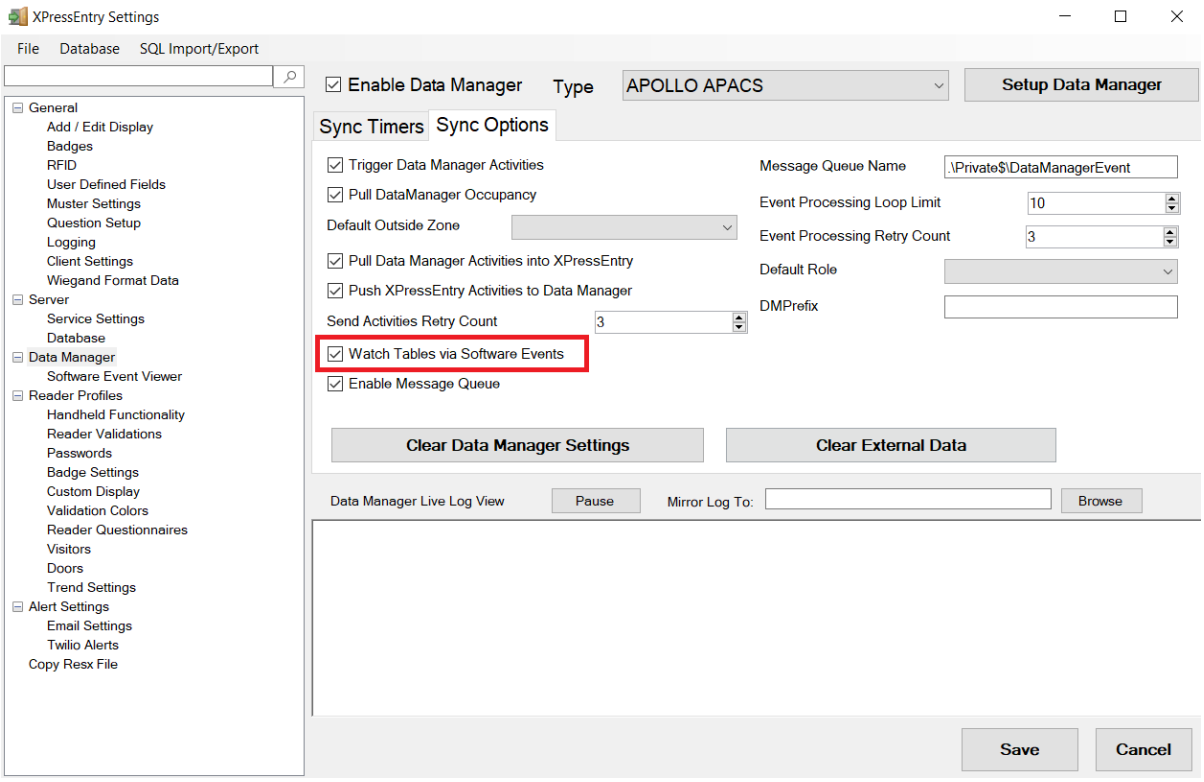
You may want to pull activities if…

1. You want to use XPressEntry to manage Emergency Evacuations.
    a. XPressEntry uses Apollo APACS 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.

In Addition to these When the Apollo APACS is configured to “Watch Table via Software Events” in Sync options. The live events change in Apollo APACS will be pulled in XPressEntry immediately. Such as: Live Activity updates, Cardholder, Badges, Access Level and Time Zones updates.

Figure 24 – Watch Apollo Live Events



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