

# ***XPRESSENTRY***

**XPressEntry / Nedap AEOS**  
**Revision 11/15/2023**

For use with the  
XPressEntry Mobile Access Control System

By



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## Purpose

This document is intended to instruct system administrators on how to synchronize an XPressEntry system with the Nedap AEOS access control system.

## Requirements

It is assumed that a version of AEOS is installed on a server prior to integration with XPressEntry.

1. XPressEntry 3.5+
2. AEOS Version 2022.2.3+
  - a. SOAP interface must be installed.

## Overall Order of Operations

1. Setup **AEOS SOAP API** for Data Synchronization
2. Setup **AEOS SocketInterface** and/or **ipBadge** (for Events)
3. Setup **Readers/Panels/etc.** in system to receive events.
4. Enable Data Manager Synchronization from XPressEntry
5. Initial Data Synchronization and Setup XPressEntry Data
6. Set up **XPressEntry Handheld Readers**
7. Scan data on card reader and validate functionality.

## Setting Up AEOS to Synchronize with XPressEntry

### AEOS Classic

1. Purchase license option **8019223**.
2. During the AEOS software installation, activate option **8019223 SOAP WebService**.

The screenshot shows the AEOS Classic Administration interface. The 'Administration' tab is selected, and the 'System properties' section is active. The 'Maintain system properties' table lists various system settings. The 'Soap WebService' option is checked, as indicated by a red arrow and the text 'make sure this is checked.'

| Number | Name  | Value                               |
|--------|---|-------------------------------------|
| 43.03  | OSS-SO - Default update interval in hours for visitors.               |                                     |
| 43.04  | OSS-SO - Default update interval in hours for employees.              |                                     |
| 43.05  | OSS-SO - Default update interval in hours for contractors.            |                                     |
| 43.06  | OSS-SO - Maximum number of day/time schedules on card                 | 1                                   |
| 43.07  | OSS-SO - Maximum number of DayTime-periods in schedule                | 1                                   |
| 43.08  | OSS-SO - Maximum number of intervals in a DayTime-period              | 1                                   |
| 43.09  | OSS-SO - Maximum number of authorisations per carrier (0 = unlimited) | 0                                   |
| 44.01  | Alarm handler   | <input type="checkbox"/>            |
| 44.02  | Graphical alarm handler   | <input type="checkbox"/>            |
| 44.03  | Anti pass back  | <input type="checkbox"/>            |
| 44.04  | Contractor management   | <input type="checkbox"/>            |
| 44.05  | Countgroup in zones (except neutral)                                  | <input type="checkbox"/>            |
| 44.06  | Counting movements (strip ticket)                                     | <input checked="" type="checkbox"/> |
| 44.08  | Guard tour  | <input type="checkbox"/>            |
| 44.10  | Maximum presence time   | <input type="checkbox"/>            |
| 44.11  | Multiple timezones  | <input type="checkbox"/>            |
| 44.12  | Special or invisible badges   | <input type="checkbox"/>            |
| 44.13  | Rule engine   | <input type="checkbox"/>            |
| 44.14  | CMS RP integration  | <input type="checkbox"/>            |
| 44.15  | Soap WebService   | <input checked="" type="checkbox"/> |
| 44.16  | Security levels   | <input type="checkbox"/>            |
| 44.17  | Translation mode  | <input type="checkbox"/>            |
| 44.18  | Units   | <input type="checkbox"/>            |
| 44.19  | Extended vendor management  | <input type="checkbox"/>            |
| 44.20  | Vendor management & permits   | <input type="checkbox"/>            |
| 44.21  | Verification PIN-code   | <input type="checkbox"/>            |
| 44.22  | Visit management  | <input type="checkbox"/>            |
| 44.23  | Violation & blacklist management                                      | <input type="checkbox"/>            |
| 44.30  | Enrollment: Bioscript fingerprint                                     | <input type="checkbox"/>            |
| 44.31  | Document scanner  | <input type="checkbox"/>            |
| 44.32  | Enrollment: Hitachi fingervein  | <input type="checkbox"/>            |
| 44.33  | Enrollment: Kosmos weight   | <input type="checkbox"/>            |
| 44.34  | Enrollment: Sagem fingerprint   | <input type="checkbox"/>            |
| 44.36  | Enable biometric API  | <input type="checkbox"/>            |
| 44.37  | 4 eyes verification   | <input type="checkbox"/>            |
| 44.38  | Lockers 2   | <input type="checkbox"/>            |
| 44.39  | LoXS lockers  | <input type="checkbox"/>            |

Follow the instructions from section 1 in the installed **AEOS\_WebService\_E.pdf** in the AEOS doc directory.

Make sure **port 8443** and **port 8035** are available from the XPressEntry server. Both can be set in **aeos.properties** and are required to enable the API. Additional ports may be required depending on what options are used for pushing activities from XPressEntry to AEOS.

## Create User Account in AEOS

Create a **User Account** in AEOS for API Access. This User should have the minimum required access to synchronize data with XPressEntry, which includes:

1. The ability to search all tables.
2. The following permissions:
  - a. Administration
  - b. Integrations
  - c. AEOS Webservice
  - d. External Calls
3. The following functions for Events:
  - a. **Configuration, Socketconnection, Commands** – Enables the user that logs in through the socket connection to send commands to AEOS.
  - b. **Configuration, Socketconnection, Events** – Enables the user that logs in through the socket connection to retrieve the events of AEOS.

## Setup AEOS Readers and Access Levels

Setup the Entrances and Authorizations in the AEOS system. This can typically be delayed until a later date but is nice to have before you start synchronizing data.

## Enable Synchronization in XPressEntry

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

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, and Muster. The Settings menu is open, showing options: Handheld Status, Reports, Manual Enter/Exit Users, and Add Handheld Wizard. The main content area displays "All Zones (Occupancy: 7)" with a list of users and their entry details. Below this is a table titled "Activity Occurring in Last Day" showing a list of activities.

| User              | User Image | Time Stamp         | Start Zone | End Zone   | Door        | Reader     | Entry Granted  |
|-------------------|------------|--------------------|------------|------------|-------------|------------|----------------|
| Bell, Monica      |            | 07/11 06:25:27 ... | Outside    | Building 1 | Main Gate 1 | Handheld 4 | True           |
| Gale, Sarah       |            | 07/11 06:24:47 ... | Outside    | Building 1 | Main Gate 1 | Handheld 4 | True           |
| Pennington, Ma... |            | 07/11 06:24:03 ... | Outside    | Building 1 | Main Gate 1 | Handheld 4 | ACCESS DENI... |
| Gale, Sarah       |            | 07/11 05:13:51 ... | Outside    | Building 1 | Main Gate 1 | Handheld 4 | True           |

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

## Data Manager

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

The screenshot shows the 'XPressEntry Settings' application window. On the left is a sidebar menu with categories: General, Server, Data Manager, Reader Profiles, and Alert Settings. The 'Data Manager' category is expanded, showing sub-items like AEOS, Software Event Viewer, etc. The main area is titled 'Type AEOS' and contains an 'Add' button and a 'Remove' button. Below this, there are input fields for 'Name' (containing 'AEOS') and 'Prefix'. A large text area below these fields contains the text 'AEOS - Prefix()'. At the bottom right, there is a 'Sanity Check Data' button, and below that, 'Save' and 'Cancel' buttons. Red arrows point to the 'Type' dropdown, the 'Add' button, and the 'Save' button.

1. **Type** – This is the integration type. Select **AEOS** > **Add** > **Save**.
2. Go to **Data Manager** > **AEOS** in the sidebar menu.
  - a. **Setup Data Manager** – This sends you to the setup form for AEOS's data manager.
  - b. **Enable Data Manager** – Must be checked to enable Nedap AEOS Synchronization.
3. **IMPORTANT NOTE:** After any change on the AEOS Setup Page or the Data Manager view, you **MUST** hit Save for it to apply.

## Setup Data Manager

XPressEntry Settings

File Database SQL Import/Export

☒ Enable Data Manager Type: AEOS [Setup Data Manager](#)

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

- AEOS**
- Software Event Viewer

Reader Profiles

- Handheld Functionality
- Reader Validations
- Passwords
- Badge Settings
- Custom Display
- Validation Colors
- Doors
- Trend Settings

Alert Settings

- Email Settings
- Twilio Alerts

Sync Timers Sync Options

☐ Disable Concurrent Syncs [Send XPressEntry Activities Now](#)

|                               |                      |                     |                       |                                       |
|-------------------------------|----------------------|---------------------|-----------------------|---------------------------------------|
| Download Activity Frequency   | <input type="text"/> | <a href="#">Set</a> | <a href="#">Clear</a> | <a href="#">Download Activity Now</a> |
| Occupancy Sync Frequency      | <input type="text"/> | <a href="#">Set</a> | <a href="#">Clear</a> | <a href="#">Occupancy Sync Now</a>    |
| Partial Sync Update Frequency | <input type="text"/> | <a href="#">Set</a> | <a href="#">Clear</a> | <a href="#">Partial Sync Now</a>      |
| Full Sync Update Frequency    | <input type="text"/> | <a href="#">Set</a> | <a href="#">Clear</a> | <a href="#">Full Sync Now</a>         |
| Custom Sync Update Frequency  | <input type="text"/> | <a href="#">Set</a> | <a href="#">Clear</a> | <a href="#">Custom Sync Now</a>       |

Data Manager Live Log View [Pause](#) Mirror Log To:  [Browse](#)

DEBUG: DataManagers Restarted

[Save](#) [Cancel](#)

1. Click on **Setup Data Manager**. This will take you to the AEOS Data Manager Setup Form.
2. Ensure that the following fields are filled out:
  - a. **Server:** DNS or IP Address of the AEOS System.
  - b. **Port:** Typically, 8443.
  - c. **User:** Username in AEOS for the SOAP calls.
  - d. **Password:** Associated with username.
  - e. **Socket Port:** Typically, 8035.
    - i. Used for events.
  - f. **APB Events:** These are the valid access events we are looking at to determine whether a cardholder has entered the facility.
  - g. **Enable User Paging:** Keep this checked unless you have a tiny system.
  - h. **Page Size:** The number of records on each paging request.
  - i. **Auto Assign Areas to Doors:** Check this if you want the **Outside Area** and **Inside Area** to be assigned to doors when we can't determine the proper area from AEOS.
3. To test whether the SOAP API is functioning, hit **Test Connect\***. You should expect a response like **Connection Success! AEOS VERSION** in the Status field at the bottom of the form.

5:33:07 PM : Connection Success!.

Server:  Port:  User:  Password:

Socket Port:  APB Events:

☒ Enable User Paging

Page Size:

Events User Search Limit:

☒ Download Pictures in User Events

☒ Process Users in Badge Issue Events

☒ Auto Assign Areas to Doors

Outside Area:

Inside Area:

Default Identifier Type for Unknown Cards:

☒ TCP Interface Verbose ☒ SOAP Verbose Log

☐ Use IPBadge for Activites ☒ Use Sockets for Activites

☐ IPBadge Fall Back to Socket Interface

Status

Socket Interface IP Badge Mappings Identifier Types Employee Visitor Contractor

Click this text to see the prefix mappings for the identifier types or find them in the accesspoint descriptions manual. ☐ Send to Access Points

AEPU IP:  Port:

AEPU Name:

Username:

Password:

Prefix:

Card Type:

\*Note that this does not check the Socket Connection for Events.

## Initial Data Synchronization and Setup XPressEntry Data

The next step is to synchronize the data from AEOS and set up intervals for synchronization.

XPressEntry Settings

File Database SQL Import/Export

☒ Enable Data Manager Type: AEOS

Sync Timers Sync Options

☐ Disable Concurrent Syncs

Download Activity Frequency

Occupancy Sync Frequency

Partial Sync Update Frequency

Full Sync Update Frequency

Custom Sync Update Frequency

Data Manager Live Log View  Mirror Log To:

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

- AEOS
- Software Event Viewer

Reader Profiles

- Handheld Functionality
- Reader Validations
- Passwords
- Badge Settings
- Custom Display
- Validation Colors
- Doors
- Trend Settings

Alert Settings

- Email Settings
- Twilio Alerts



## Sync Timers

- **Full Sync Now** – Synchronizes all the data from the AEOS system, including cardholders, tokens, visitors, and contractors. It should include picture information for cardholders, and all the data from the Partial Sync.
- **Partial Sync Now** – Synchronizes the following tables used for overhead:
  - Zones
  - Readers
  - Doors
  - BadgeType
  - Groups
  - Group/Reader Mappings
- **Occupancy Sync** – If the option **Pull DataManager Occupancy** is checked in Sync Options, this will synchronize the Cardholders with their current location from AEOS.
- **Activity Sync** – Synchronizes the **Events** from AEOS. This only applies if the **Pull DataManager Activities into XPressEntry** option is checked in Sync Options.

## Data Mappings

Here we define what tables in AEOS map to which tables in XPressEntry.

1. AEOS → XPressEntry
2. Person/Visitor/Contractor → Users
3. Token → Badges
4. Entrance → Door
5. Access Point → Reader

## XPressEntry Handheld Readers / Doors

XPressEntry handheld authentication is done by two tables: Readers and Doors.

### Readers

There are three types of Readers in XPressEntry:

1. **The Server Reader** – Used to assign badge activities from the server. This will likely be named ***Server Reader: COMPUTER NAME*** and have a 20–22-character GUID.
2. **Readers** – Logical readers used to assign access control privileges from external systems. In the case of AEOS, they should **correspond to Access Points**.
3. **Doors** - Entrances and their permissions from AEOS are mapped into XPressEntry as doors.
4. **Handhelds** – The physical handheld devices. These are typically Android devices and have a GUID based on the physical machine.

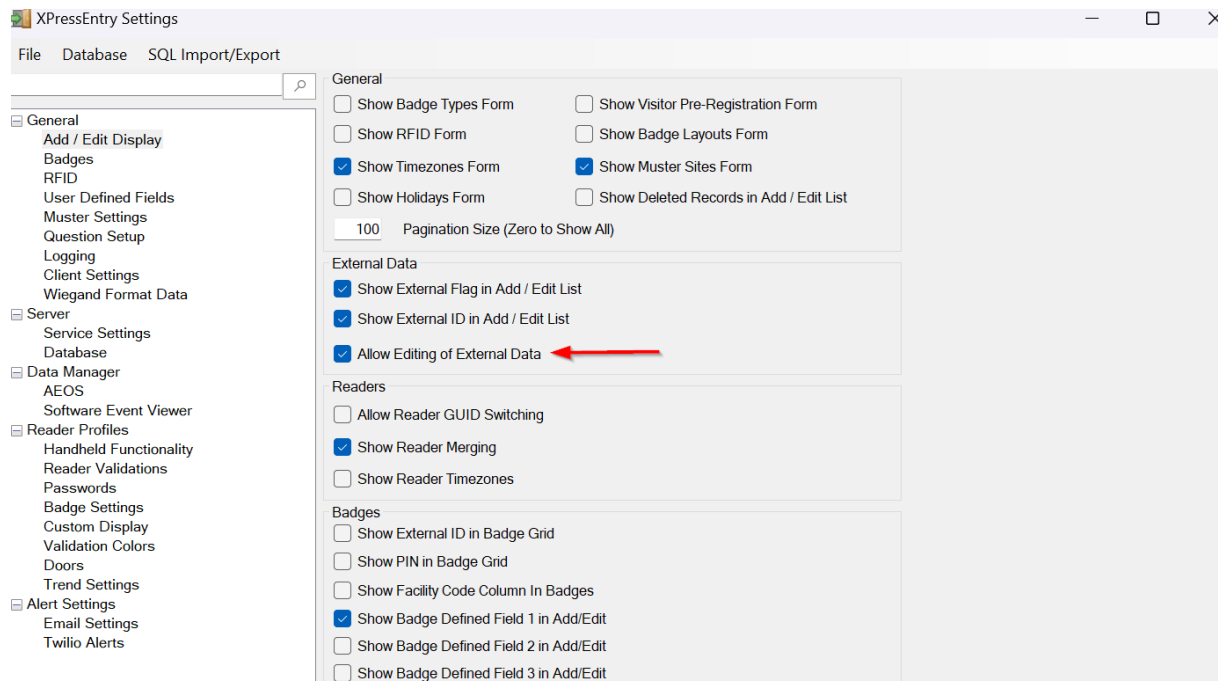
### Doors

Doors are used by handhelds to dynamically assign permissions on a device. By default, the user is allowed to switch doors from the device. The devices use the permissions for the **External Entry/Exit Readers** assigned to the door to determine whether the cardholder has permission to scan at the reader.

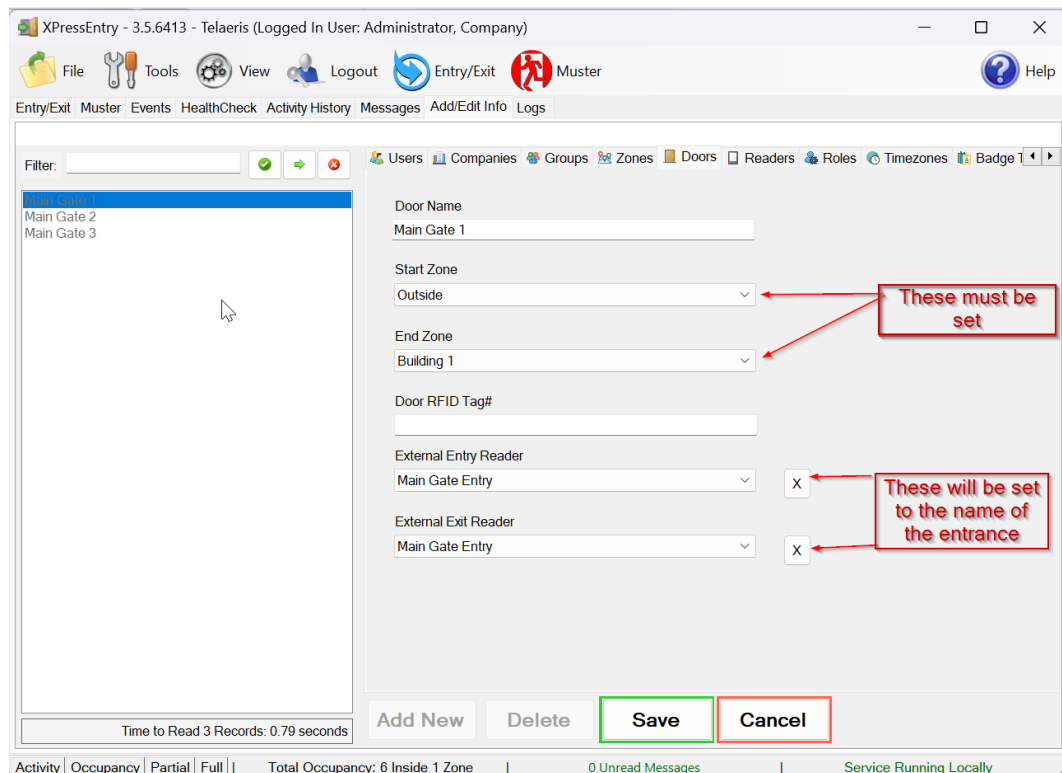
For AEOS, carriers who are allowed at an Entrance will be allowed at the corresponding doors.

The final piece we need to map for XPressEntry are the Areas/Readers for each Door. To do this, you may need to enable the setting **Allow Editing of External Data** in **General > Add/Edit**

## Display > External Data.



We can then assign the Door Areas/Readers from the XPressEntry interface, via **Add/Edit Info > Doors**.



If all Entrances are going to/from the **same area**, or if occupancy doesn't matter in your setup, you can choose the **Auto Assign Areas to Doors** option from the AEOS Data Manager Setup page. (See *Setup Data Manager section*).

For More information on setting up the handheld device and synchronizing with the XPressEntry Service, see the following document: [XPressEntry Android Documentation](#).

## Setup XPressEntry to Push Badge Activities to AE

AEOS needs to have an **InterfaceServer** object setup to receive Events.

1. Make sure that the **Event Generation Allowed** checkbox is enabled. Each Interface server can only serve one Identifier type.
2. Make sure the Data Manager Option **Push XPressEntry Activities to Data Manager** is enabled under Sync Options.

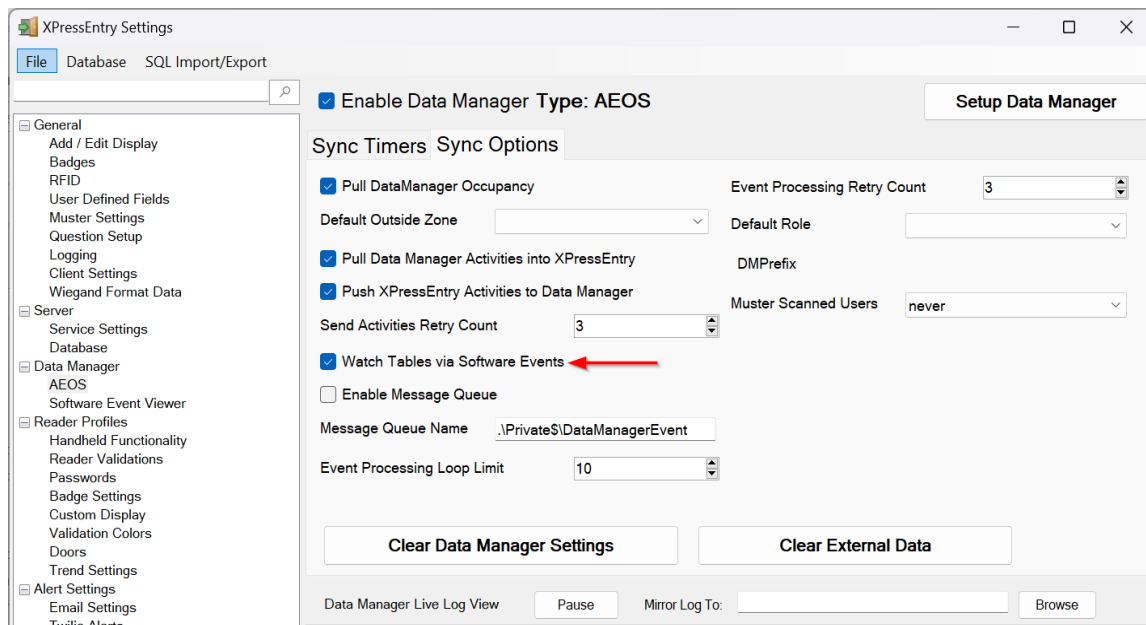
The screenshot displays two windows from the AEOS configuration software. The left window, titled 'Properties', shows the configuration for 'InterfaceServer.1 (Service:InterfaceServer)'. It contains a table with various settings:

| Name                                | Value                               | Units            |
|-------------------------------------|-------------------------------------|------------------|
| Port number                         | 8036                                |                  |
| User name                           | nedap                               |                  |
| Password                            |                                     |                  |
| RMI Command connection allowed      | <input checked="" type="checkbox"/> |                  |
| Event connection allowed            | <input checked="" type="checkbox"/> |                  |
| Event connection monitor enabled    | <input type="checkbox"/>            |                  |
| Event connection monitor timeout    | 300                                 | s                |
| AEpu filter definition              | empty                               |                  |
| Carrier name resolving enabled      | <input type="checkbox"/>            |                  |
| AEpu filter enabled                 | <input checked="" type="checkbox"/> |                  |
| Delegate state event subscriptions  | <input checked="" type="checkbox"/> |                  |
| Event generation allowed            | <input checked="" type="checkbox"/> |                  |
| Identifier type for incoming events | Generic(11)                         |                  |
| Event date format                   | Local Date                          | Default = Loc... |
| Use SSL                             | <input type="checkbox"/>            |                  |
| Use SSL client auth                 | <input type="checkbox"/>            |                  |
| Enable message logging              | <input type="checkbox"/>            |                  |
| Events enabled                      | <input type="checkbox"/>            |                  |
| Tags                                | <input type="checkbox"/>            |                  |
| Initialization priority             | 50                                  | 1-100            |

The right window shows the 'Data Manager' settings. The 'Sync Options' tab is selected, and the checkbox 'Push XPressEntry Activities to Data Manager' is checked, highlighted with a red arrow. Other settings include 'Enable Data Manager Type: AEOS', 'Pull Data Manager Occupancy', 'Pull Data Manager Activities into XPressEntry', 'Send Activities Retry Count' (3), 'Watch Tables via Software Events' (unchecked), 'Enable Message Queue' (unchecked), 'Message Queue Name' (\Private\$\DataManagerEvent), and 'Event Processing Loop Limit' (10). A 'Clear Data Manager Settings' button is at the bottom.

You can use either the **Socket Interface** or **IP Badge Interface** to send events. There are specific steps required both within AEOS and XPressEntry to set up either interface.

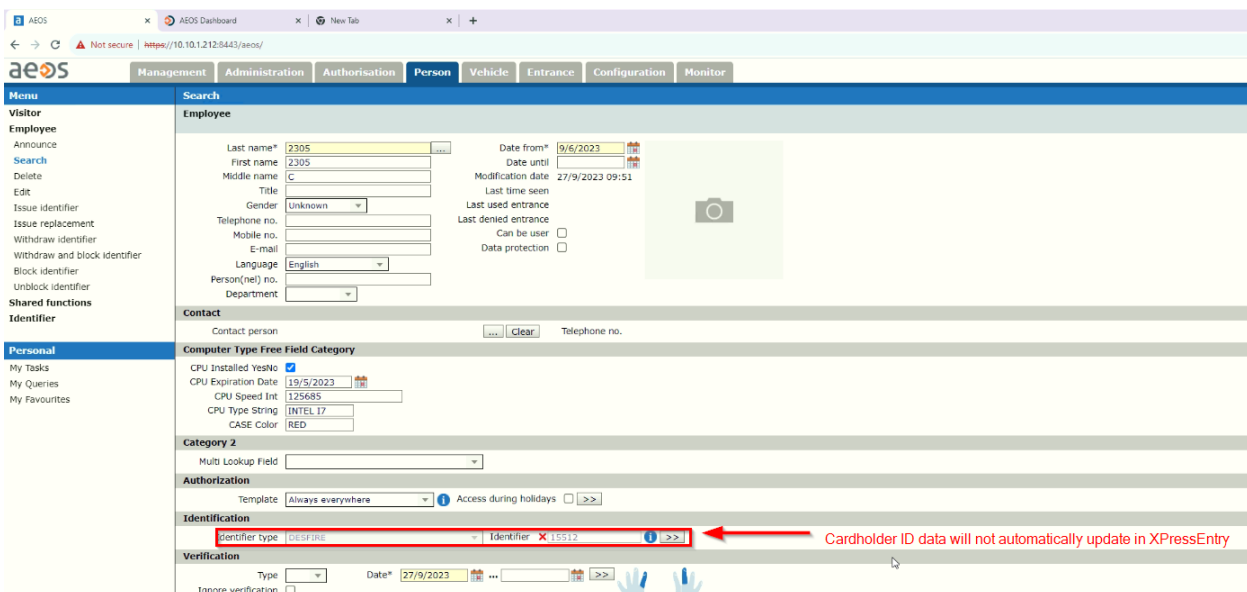
## Socket Events



To get Events into XPressEntry, enable the **Watch Tables via Software Events** option. When you hit **Save** on the Data Manager view, you should see something like the following in the log:

```
DEBUG: MSG:Response:acknowledgement=on; INFO: TCP Client  
Connected  
DEBUG: MSG:Status:connected to AEOS version 2022.2.3 built on  
2023-09-10 INFO: Starting Watching Tables
```

1. Send socket events to **AEPU** where the doors are mapped. All XPressEntry doors need to be set up on the same **AEPU**.
2. Send socket interface events for specific card types in AEOS.



3. Go to **Data Manager > AEOS > Set up Data Manager** and ensure data manager is set to **Socket Interface**.

4. You will need a separate **AEPU** for each badge type in each socket interface. Examples below:
- a. Mifare
    - i. 00001212
  - b. Desfire
    - i. 0000

## IP Badge Mapping

1. Pick an arbitrary prefix in **Data Manager > AEOS > Set up Data Manager > IP Badge Mappings**.
2. You can create up to **3 IP badges** in AEOS. Set up as **Generic**.

3. Each IP badge interface needs a unique port.

- a. Entry → Entry: **11020**
  - b. Exit → Exit: **11021**
4. Go to door itself and set up the badge types it will accept at the door. Under same door type for different badge interfaces:
  - a. Primary:
    - i. Target identifier is what the badge type will be (i.e., Mifare)
    - ii. Prefix: 1212
    - iii. Data type filter (set by XPressEntry): 00001212
      1. 0000: generic id type
      2. 1212: Mifare
  - b. Secondary
    - i. Target identifier: Desfire
    - ii. Data type filter: 0000

IP badge interface **sends raw badge data live to AEOS**; however, if you have a handheld that is offline, you may be sending old data to AEOS. There is an **activity timeout (seconds) field** that clears any badge types and will not send any badge types older than the set time. (i.e. 600 sec, etc.)

### Activity Types

You can choose to get full Activities from these events or just occupancy updates for your cardholders. In **XPressEntry Settings**, under **Data Manager > AEOS** you can select the following:

- To get full activities, check the **Pull DataManager Activities into XPressEntry**.
- To just get occupancy, check the **Pull DataManager Occupancy** option.
- If you don't care about occupancy, don't check either and don't check the **Watch Tables via Software Events** option.

### Audit Log Data Changes

AEOS can be configured to send Carrier and Badge changes to XPressEntry so it can get live updates.