Genetec – AEOS Nedap Plugin – Functional Description and installation manual

Genetec Security Center – Nedap AEOS Plugin

Thomas Verdonck – Pieter Hermans – Jef Vrancken

Genetec™

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Release notes

Version 1.1

- Multiple AEOS identity types can now be synchronized, provided they are bound to a Genetec credential format.
    - Note: This must be configured after upgrading from 1.0.19 or lower for the plugin to work again.
- After initial full synchronization, subsequent synchronizations now only update Genetec cardholders whose corresponding carriers have been updated or removed in the AEOS source system.
- Improved database connection.
- Changed logger from SampleServer.PluginModule to AeosPluginServer.AeosPlugin.
- ‘Start Sync’ button is now disabled until the plugin is correctly configured and started.
- Improved logging clarity for basic flow.
- Improved error handling.
- General improvements and bugfixes.

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Introduction

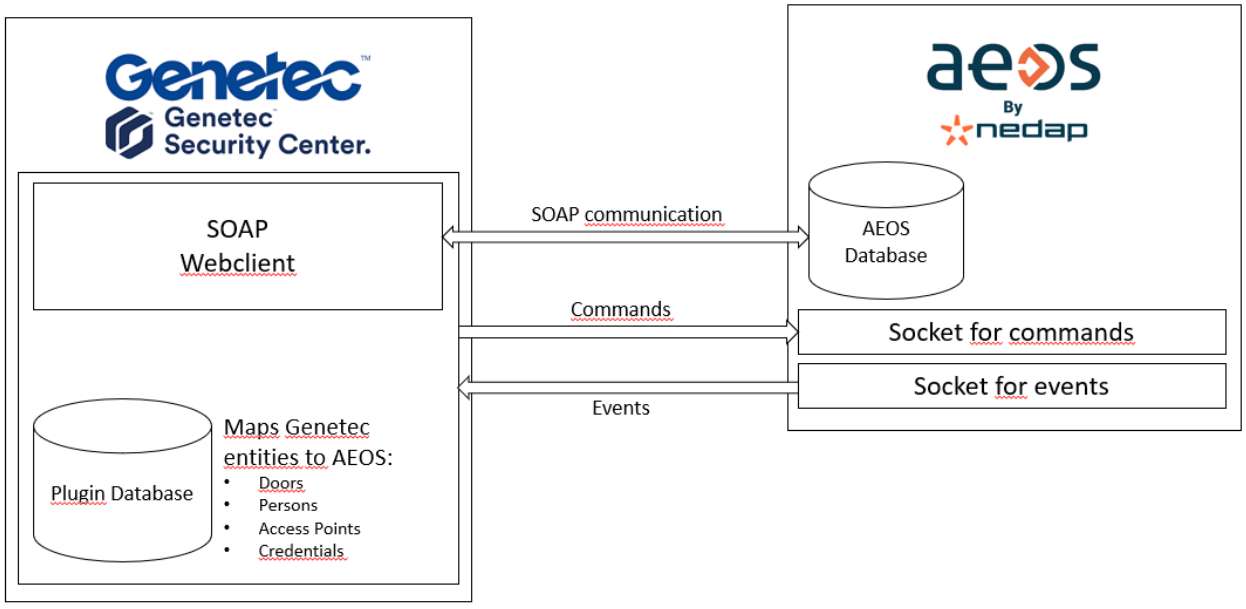
Nedap is an access control manufacturer in the Netherlands developing proprietary access control hardware and software. Their flagship product, Nedap AEOS, along with their AEpu hardware controller is targeted at medium to large customers in a variety of different verticals. Nedap AEOS also supports a variety of wireless online and offline locking systems (including support for the OSS Standard) and besides Access Control, also has a built-in Intrusion System. Nedap is a well established brand in the Benelux, France and Nordics region and considered as one of Genetec's main competitors in the Enterprise space.
For strategic purposes, integration of Nedap AEOS into Genetec SecurityCenter is requested and allows for new commercial opportunities.

In this document, we describe the functionality of the AEOS – Genetec Plugin, license structure, event synchronization, implemented actions & reporting on an AEOS federated door, and installation of the AEOS – Genetec Plugin.

Functionality description

The AEOS Genetec plugin enables the integration of AEOS access control as a federated entity in Genetec. The plugin creates Access Points of AEOS as Federated doors in Genetec. Additionally, live events will be received as events on the Federated doors. The events implemented in the plugin are described in this document. The plugin also allows the one-time opening of a Federated door. As a second aspect, Cardholders with corresponding credentials of the selected identifier types are created as Federated Cardholders and credentials (in AEOS, respectively Visitors, Employees). These AEOS carriers are thus established as Federated entities under the AEOS Genetec Plugin.

All this is achieved by connecting the two systems using a SOAP client to query the AEOS database and socket communication for sending commands to and receiving events from AEOS. The plugin holds a record of which entities from AEOS have been synchronized to which entities in Genetec (This only stores the information necessary to identify an entity on both systems, such as IDs / GUIDs, AEPUs, etc.)



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License structure

The license structure consists of two parts.

For the first part, you need to request the correct license for each AEOS Plugin role on an existing system ID from Genetec (SKU: GSC-1SDK-NEDAP-AEOS).

The second part of the license is generated with the following parameters: System ID, number of AEOS doors, Company Name (the entity purchasing the license), Validity Period of the license, and the email address of the license owner. This license is a key generated by DNCS. The purchase is made according to the distribution agreement.

This License Agreement for the use of the Plugin ("Agreement") is entered into between the licensee ("User") and the developer ("Developer") regarding the use of the software provided by the Developer. By accepting this Agreement, the User acknowledges agreement with the terms and conditions outlined below.

License Grant: The Developer hereby grants the User a non-exclusive, non-transferable license to use the software ("Software") for the duration corresponding to the purchase of the license.
Time Restriction: The license is limited to a specific time duration, as indicated during the purchase process. Upon expiration of this period, the User is no longer entitled to use the Software unless the license is renewed.
Ownership:
Intellectual Property: The code, architecture, documentation, and user interface/user experience (UI/UX) of the Software always remain the exclusive property of the Developer. The User acknowledges and agrees that they have no rights to the intellectual property of the Software, except the right to use the Software as specified in this Agreement.

Usage Restrictions:
Limitations: The User may not reverse engineer, decompile, disassemble, or attempt in any other way to discover the source code of the Software.
Transfer: The User may not transfer or sublicense the license without prior written consent from the Developer.

Support and Updates:
Support: The Developer may, at their discretion, provide technical support during the license period as specified in the purchase information.
Updates: The User may be entitled to updates of the Software during the license period, as made available by the Developer.

Termination:
Termination by User: The User may terminate the license at any time by discontinuing the use of the Software and removing all copies.
Termination by Developer: The Developer reserves the right to immediately terminate the license if the User fails to comply with the terms of this Agreement.

General:
Entire Agreement: This Agreement constitutes the entire agreement between the parties and supersedes all prior oral or written agreements.

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Applicable Law: This Agreement is governed by the applicable law in the jurisdiction of the Developer.

By installing or using the Software, the User agrees to the terms of this License Agreement.

Genetec support (first line)

https://www.genetec.com/support/technical-assistance/contact-us

Nedap support (AEOS)

https://www.nedapsecurity.com/contact

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Description of events

The plugin will establish a live connection over the NEDAP socket. This socket will actively receive TCP messages from the AEOS server. The AEOS server will post all live events on this socket. The AEOS plugin will capture the live events and pipe them to the Genetec events on the respective entity of the AEOS plugin in Genetec.

The events that are captured are listed below:

AEOS Event Code	AEOS Event Description	Genetec Event
1001	The access point has entered the 'locked' state.	DoorLock
1003	The access point has entered the 'unlocked' state.	DoorUnlock
1005	Door has been forced open (alarm, no legal action).	DoorOpenWhileLockSecured
1012	Manual unlock input activated on Access Point.	DooRexOn
1013	Manual unlock input no longer activated on Access Point.	DooRexOff
1015	Authorized badge has been given access by the Access Point.	AccesGranted
1043	A software device (AEbc or part of an AEbc) has been lost by the AEpu.	DoorOffline
1044	Network connection recovered after lost (1045).	DoorOnline
1050	Unlock output has been activated by the Emergency Unlock Input.	EmergencyDoorUnlockedOperatorUnlock
1060	AEpu has been reached by AEOS server (lookup server)	DoorOnline (+ Change door running state)
1061	AEpu cannot be reached any longer by AEOS server (lookup server)	DoorOffline (+ Change door running state)
1127	Unauthorized badge, badge is not assigned to a carrier.	AccessPointCredentialUnassigned
1129	Unauthorized badge, badge is not valid (begin-date, end-date).	AccessOutOfSchedule
1131	Unauthorized badge, badge has no authorization for this entrance.	AccessInsufficientPrivileges
1135	BadgeNoAccessEvent, APB illegal presence.	AccessAntipassbackViolation
1196	ProvideAccessEvent	DoorManuallyUnlocked
1201	Unauthorized badge, no authorization for this entrance.	AccessInsufficientPrivileges
1209	PowerMonitoring detects that Battery Capacity (Accu) goes below specified value.	UnitBatteryFail
1224	PowerMonitoring detects that only Emergency (24VDC) is available at startup.	DoorWarningBatteryFail
1226	PowerMonitoring undefined event.	DoorWarningBatteryFail
1448	Tamper has been activated.	DoorWarningTamper
1705	Tampering started.	DoorWarningTamper

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Heartbeat event: The heartbeat of AEOS system is monitored constantly to check the connection. If no heartbeat event is received for 3 minutes, the connection is assumed to be lost, causing all AEOS federated doors to be marked as “Not Running”.

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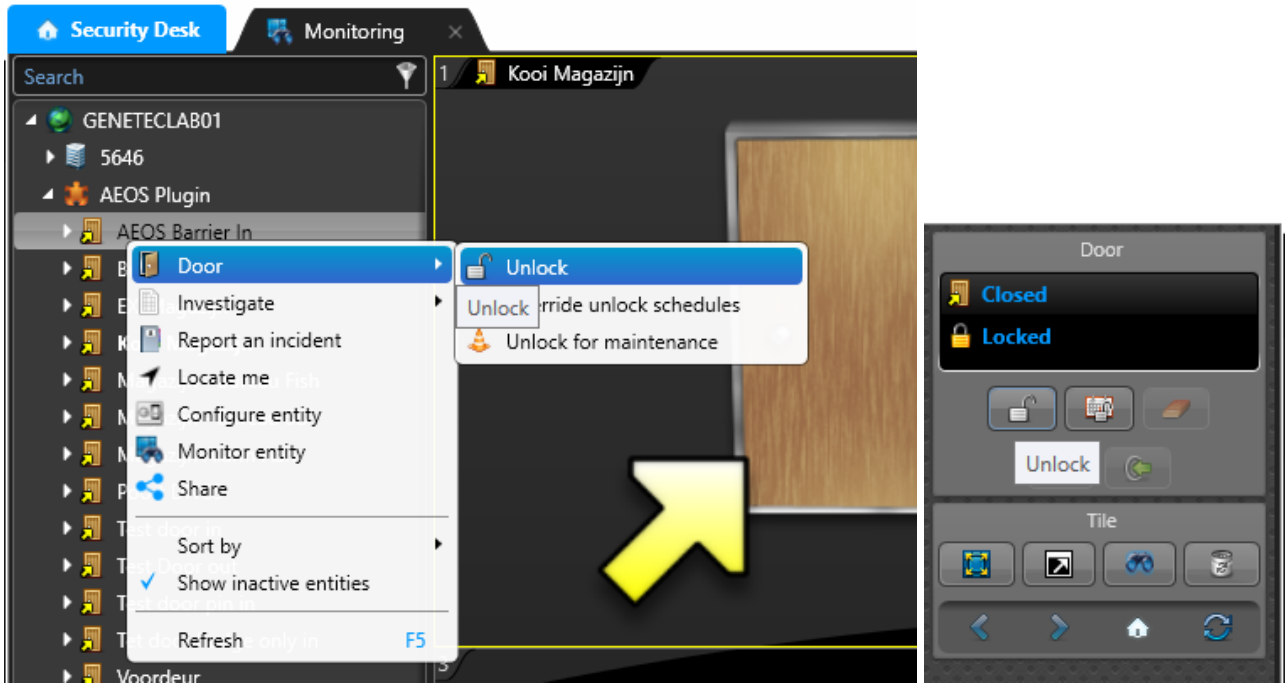
Implemented Actions & Reporting on an AEOS Federated Door

You can perform the following actions on a fully operational AEOS federated door integrated with a live AEOS server from Genetec Security Center. To control each federated door from workstations and/or servers, the "AEOS Plugin" must be installed following the instructions outlined in this document. Additionally, a valid license must be active on the server, as described in the licensing section of this document.

Manual unlock via monitoring task

On an AEOS federated door through the AEOS plugin, you can open the door using the Unlock button. You can access this function from the entity tree view in your monitoring task or through the action menu if you have selected the door in your tile overview.

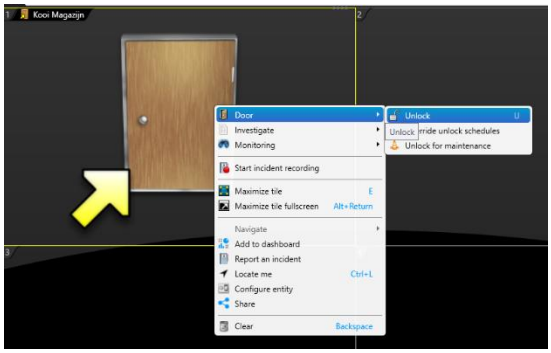
Command	Description
Unlock	Open the door a single time for the configured amount of seconds
Override unlock schedules	If a door is scheduled to be unlocked from 08:00 – 17:00, this command disables this unlock and sets the door to ‘access control mode’
Unlock for maintenance	Unlock door until this command is cancelled or overruled



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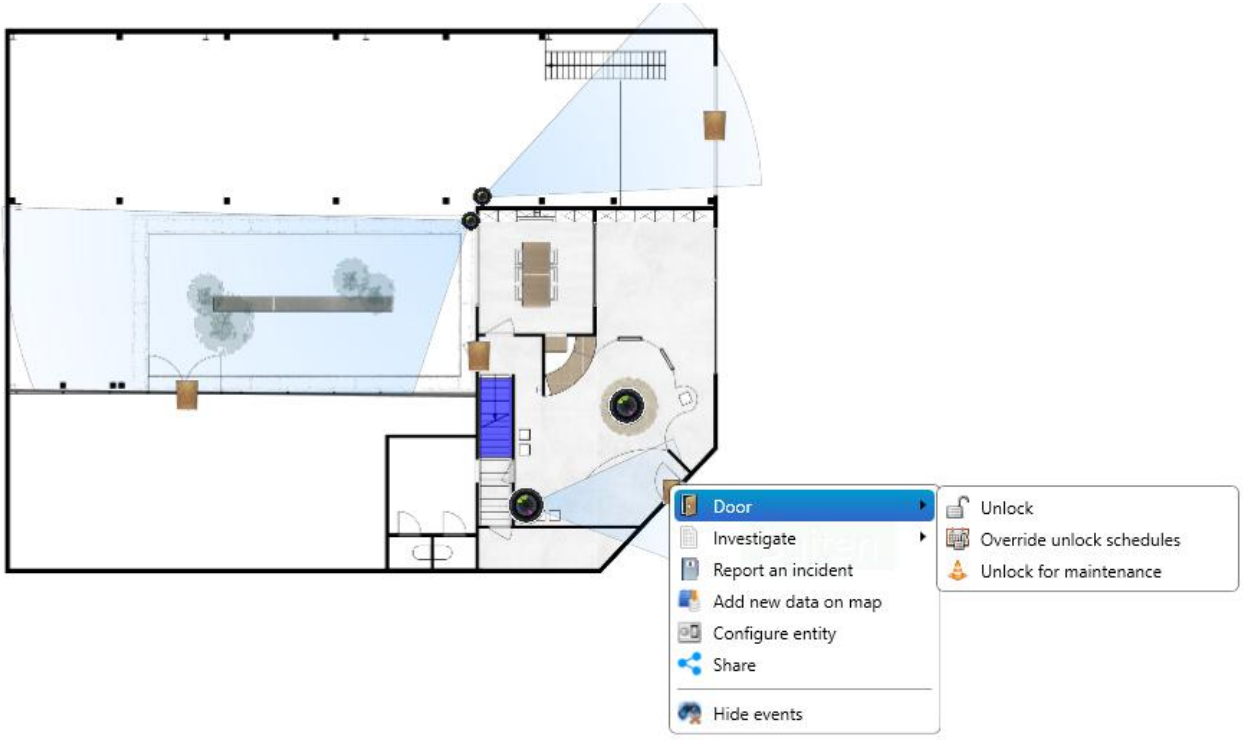
Known issue

Another aspect of the AEOS Genetec Plugin involves a known problem: attempting to invoke the same action by right-clicking on the door loaded in the tile does not allow you to open the door. This is a recognized issue within the functionality of the plugin.



Manual unlock via Maps

On an AEOS federated door through the AEOS plugin, you can send an open command to this door using the Unlock button. You can access this function from the entity tree view in your mapped layout. Doors can be mapped using the configuration tool on an existing and/or new layout. Similarly, through the Genetec Security Center, you can also send open commands to the doors in a similar manner.



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Reporting

Several reports have been implemented that you can easily access from within Security Center. All the reports described below retrieve data from the master data of the live AEOS server. This includes all Cardholder events, Credentials activity, and Door activities fetched from the AEOS server. The speed of the reports is determined by the response time of the AEOS server. The AEOS Plugin Role ensures that all retrieved history is passed on to the native reports in Genetec in the correct format.

Door activity report

Through the "Door Activity Report," you can select one or more Areas, Doors, or plugin roles and use the standard filter fields to customize the report according to your preferences. The fields available for customization include Firstname, Lastname, Credential, Event Timestamp, Cardholder, Credential Code, Card Format, and Email Address.
If cameras are linked to specific doors, the standard functionality of retrieving camera images for the respective timestamp will also work seamlessly.

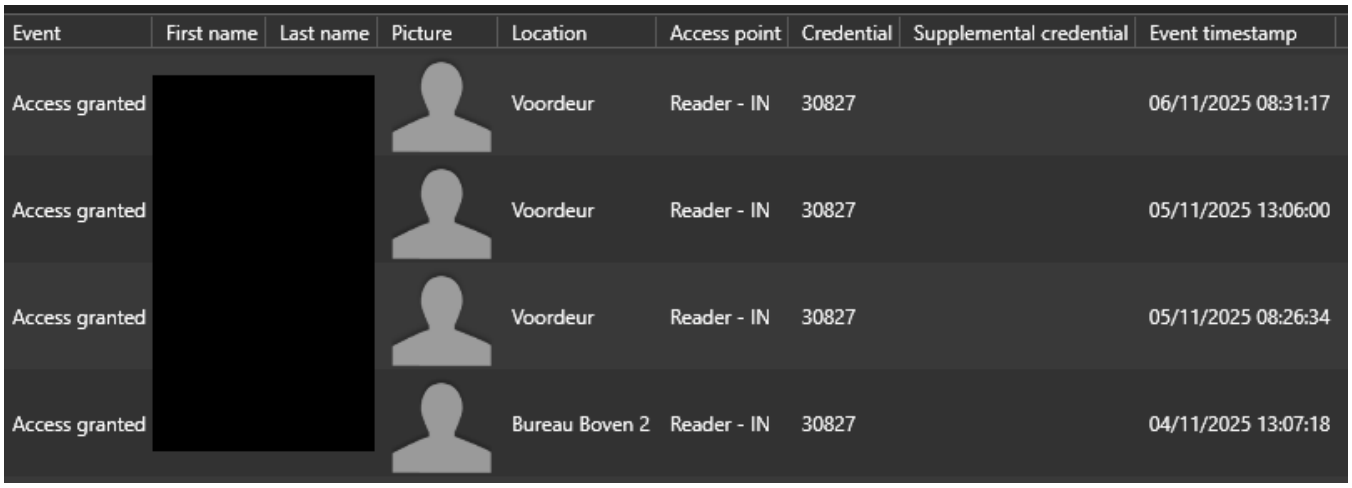


Event	Door	Side	First name	Last name	Picture	Credential	Supplemental credential	Event timestamp
Access granted	Voordeur	Reader - IN	[redacted]			30830		06/11/2025 09:30:43
Access granted	Voordeur	Reader - IN				30698		06/11/2025 09:21:48
Access granted	Voordeur	Reader - IN				30825		06/11/2025 09:17:42
Access granted	Voordeur	Reader - IN			[redacted]	1008		06/11/2025 09:13:23

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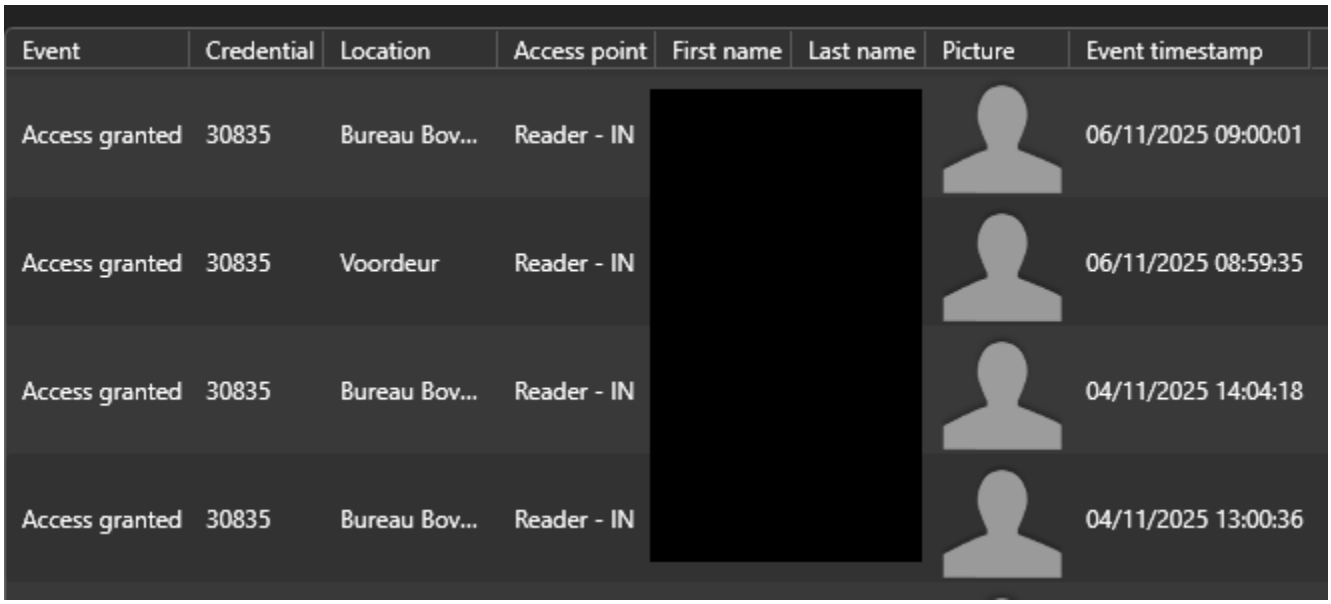
Cardholder activity report

Through the "Cardholder Activity Report," you can select one or more Cardholders, Doors, or plugin roles and use the standard filter fields to customize the report according to your preferences.
If cameras are linked to specific doors, the standard functionality of retrieving camera images for the respective timestamp will also work seamlessly.



Credential activity report

Through the "Credential Activity Report," you can select one or more Credentials, Doors, or plugin roles and use the standard filter fields to customize the report according to your preferences.
If cameras are linked to specific doors, the standard functionality of retrieving camera images for the respective timestamp will also work seamlessly.



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AEOS Setup

This section details how to setup AEOS to correctly work with the plugin.
For information on how to install AEOS, or if you need clarification on the steps below, consult the AEOS Technical Webhelp pages.

Set up SOAP in AEOS

With the AEOS SOAP WebService, third parties can send and receive AEOS with SOAP calls.

0. **(ONLY ON AEOS 2022.2 OR LOWER)** During the AEOS software installation (setup), select SOAP WebService in the “Select the desired options for the AEOS application” window. If the AEOS is already installed, run the setup again and don’t change any settings except the selection of the SOAP WebService.

1. Open the AEOS web interface.
2. Go to **Administration > Maintenance > Settings > System properties.**
3. Select the **SOAP WebService** checkbox (44.15).
4. Press **‘OK’** in the bottom right corner.
5. Restart the AEOS application server service.

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Set up users

The plugin requires an AEOS user for:

- The SOAP Webservice (Accesses AEOS functionality)
- The command socket (Sends commands to AEOS)
- The event socket (Receives events from AEOS)

These users **must be administrators**.
The event and command sockets **must log in under different users** for the plugin to function correctly.

To make a user with administration rights:

1. Open the AEOS web interface.
2. Go to **Management > System users > Maintain user.**
3. Press **‘New’** in the bottom right corner.
4. Give the user a name and password. We recommend including ‘soap’, ‘event’ and ‘command’ in the name of the respective user, as well as using the same password for all of them.
5. Set the user role to **Administrator**.
6. Press **‘OK’** in the bottom right corner.

Networking

For the plugin to function correctly, make sure the machine the plugin will be installed on has network access to the relevant ports on the AEOS server.

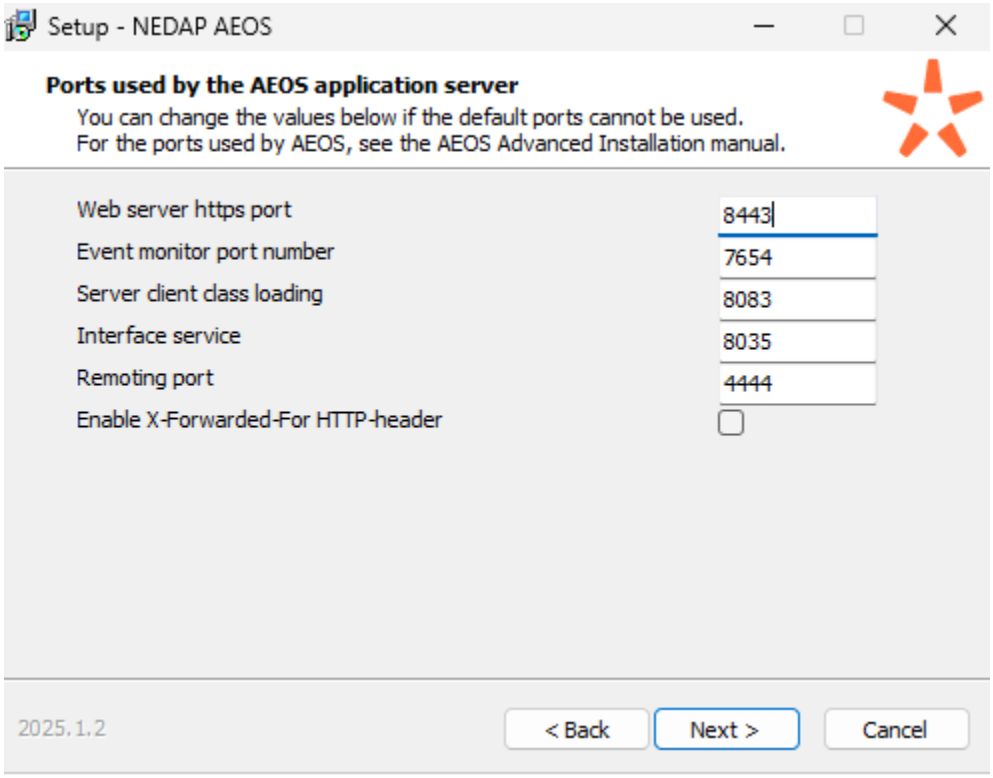
The default ports are:

- **8443** for the SOAP webservice.
- **8035** for the event and command sockets.

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If you wish to change the ports used by the AEOS server, you can do so via the AEOS setup wizard:

- Web server https port for the **SOAP webservice** (Note that this is also the port for the AEOS web interface)
- Interface service for the **event and command sockets**



Time zones

The plugin requires that the AEOS server machine operates on the same time zone as the Genetec server machine on which the plugin is installed.

(This pertains to the time AEOS uses to track when changes are made such as modifying or deleting users. This has no effect on access control related time zone management.)

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Installation Procedure AEOS – Genetec Plugin

The plugin is installed using a Windows Installer package. Upon receiving this installer, double click the file to begin the installation. Along with this installer, upon purchasing the license, you will receive a license key generated according to the data described in the License Structure section.

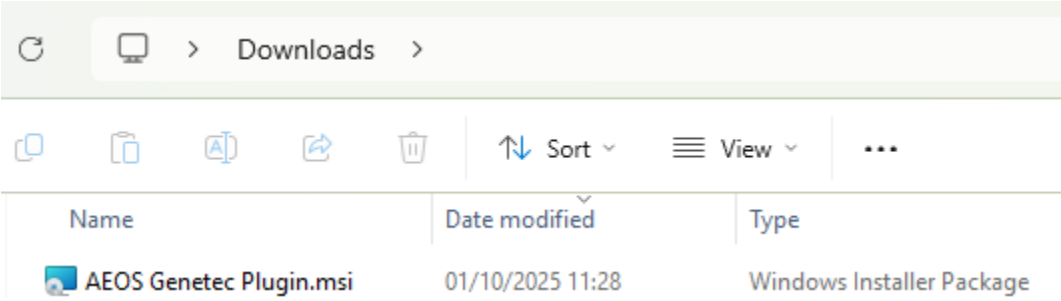
Below is the step-by-step plan outlined to install both the Client and Server AEOS plugin applications.

Procedure for installation on Server and Client

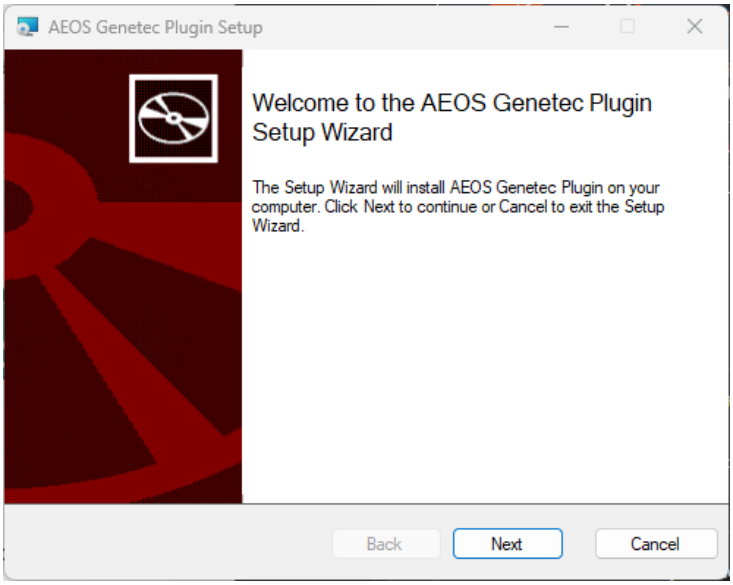
Before starting the installation, make sure all work has been completed and saved, as the installation will stop all Genetec services. These will need to be restarted after installing.

Copy or download the installer file locally to the server and/or client(s) that need to use the AEOS federated doors.

Open the installer file.

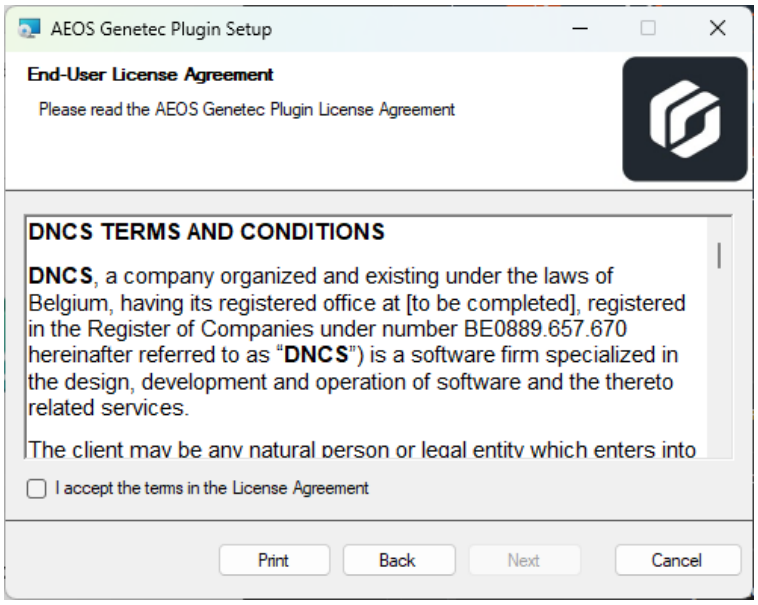


Click ‘Next’ on the welcome screen

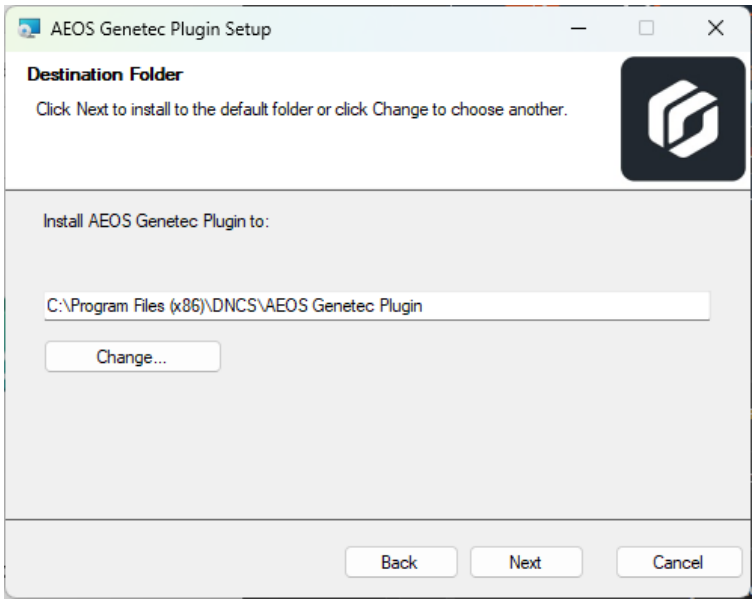


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Read and accept the License Agreement, click ‘Next’

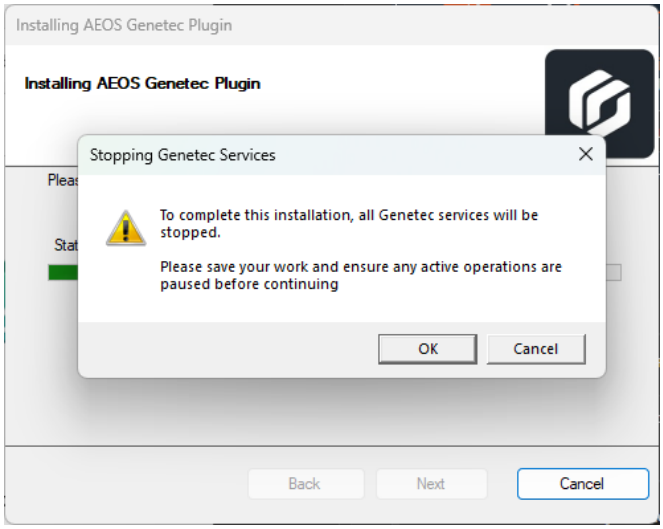


Choose the install location for the plugin files, click ‘Next’ to begin the installation.

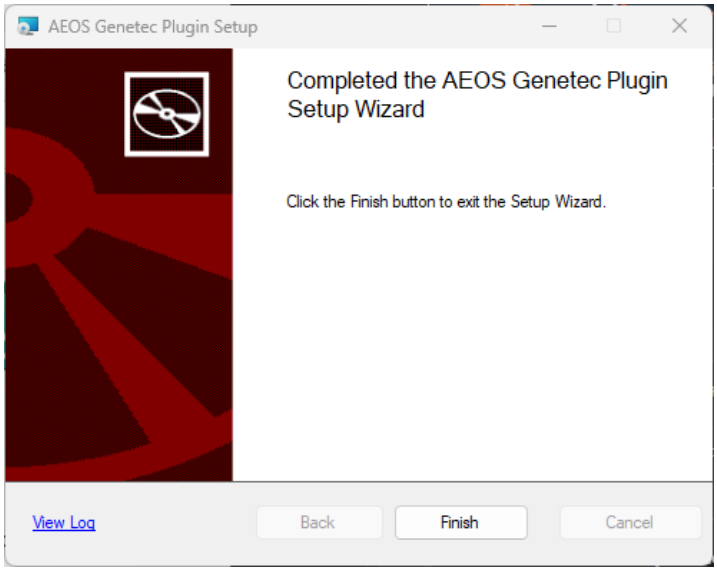


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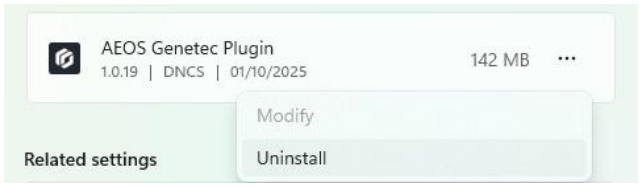
Before installation begins, all Genetec services will be stopped. Press ‘OK’ to stop the services and proceed with the installation or cancel to cancel.



The plugin files are now installed. Press ‘Finish’ to close the installer.



The plugin can be uninstalled through your windows settings Apps > Installed Apps.

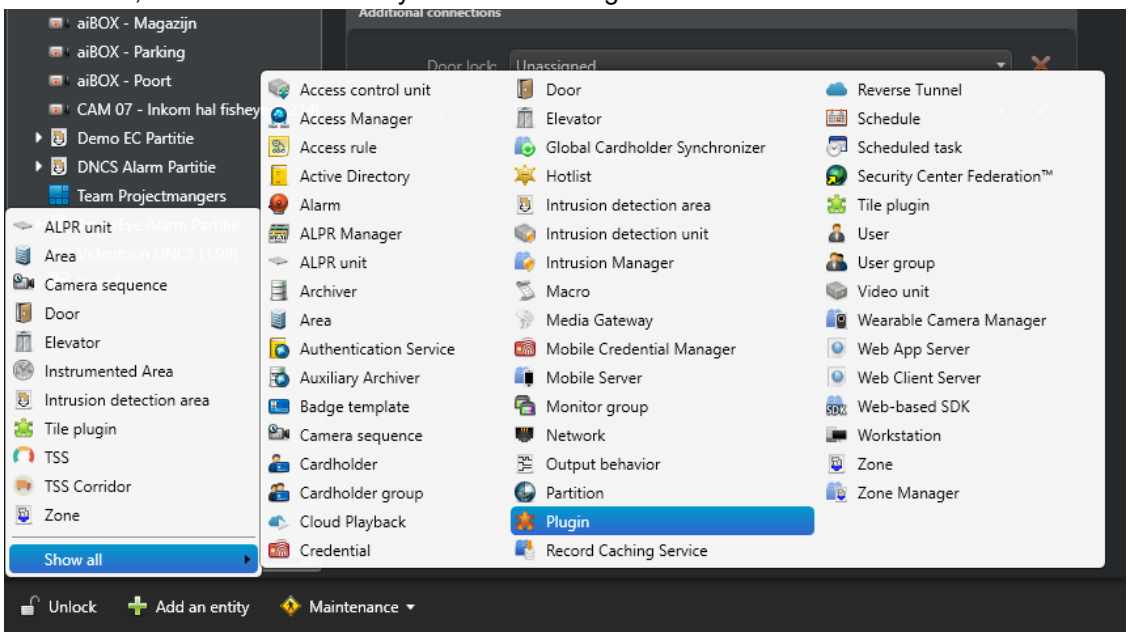


You may now reboot your Genetec services.
For client installations, this is sufficient. For server installations, you also need to perform the procedure below.

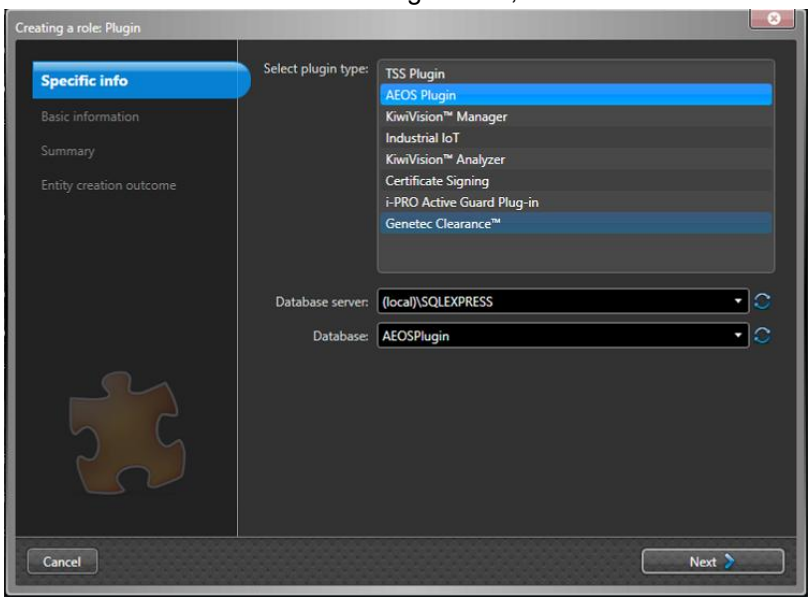
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Additional steps for server installation

Next, you need to start Config Tool to install the AEOS Plugin on the server. After launching it, open the Area View. Then, click on "Add an entity" and select "Plugin."

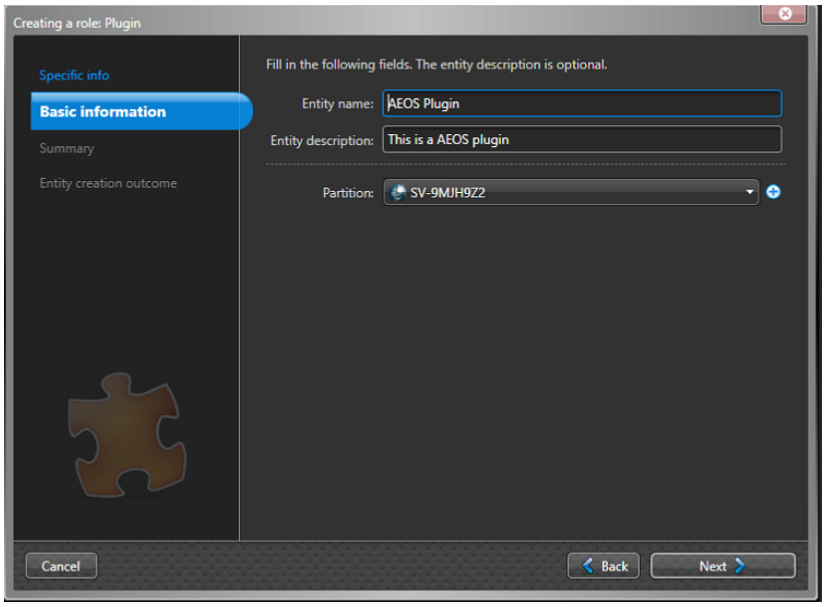


After this, you will be presented with a list of all installed plugins on your system to add. Choose the AEOS Plugin with the desired DATABASE settings. Then, click on "NEXT."

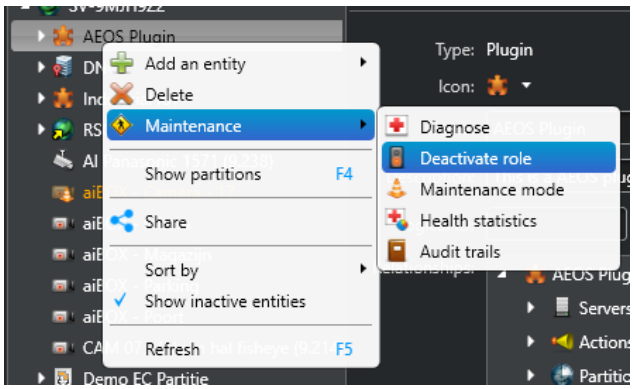


Next, you can give the entity a name and a description. Then, click on "Next."

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After this, you will see an overview of the settings you have entered. Click on "Create" to proceed. The Plugin will then be created on the server.
After this, you will see the "AEOS Plugin" role appear in the tree view. Right-click to temporarily deactivate this role.

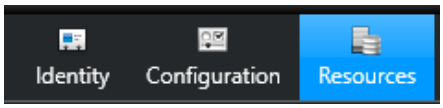


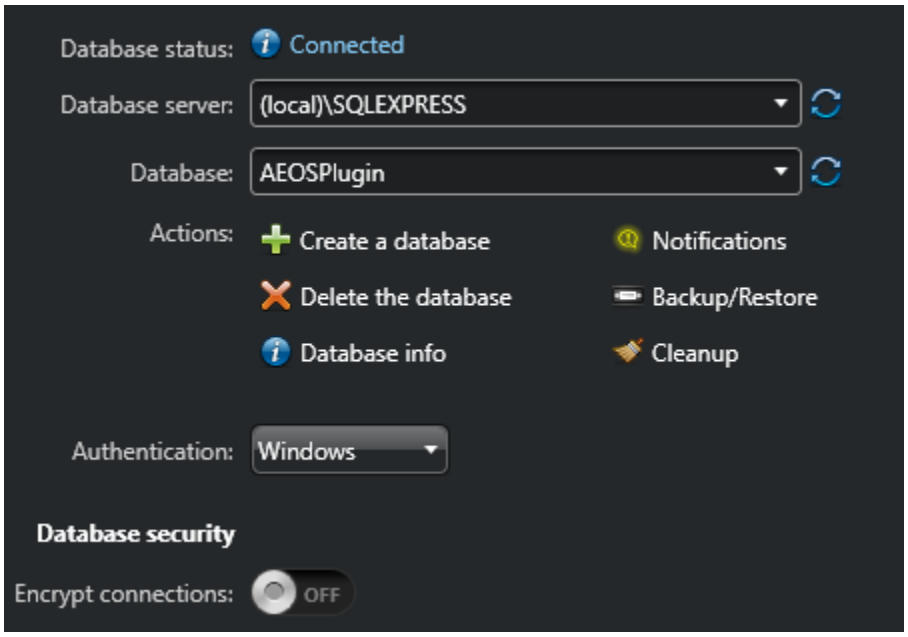
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Configuration

Database configuration

After creating the plugin role, select the role and open the Resources tab:





In the database settings, fill in the required information for the plugin to connect to the database:

Database Server: Address of the database server on which the database will be hosted.

Database: The name of the database the plugin will use. (If this does not exist yet, it will create a new one under the name filled in here.)

Authentication: Authentication the plugin will use to connect to the database. Can be either Windows Authentication or SQL Server Authentication. Make sure this authentication has sufficient read/write access.

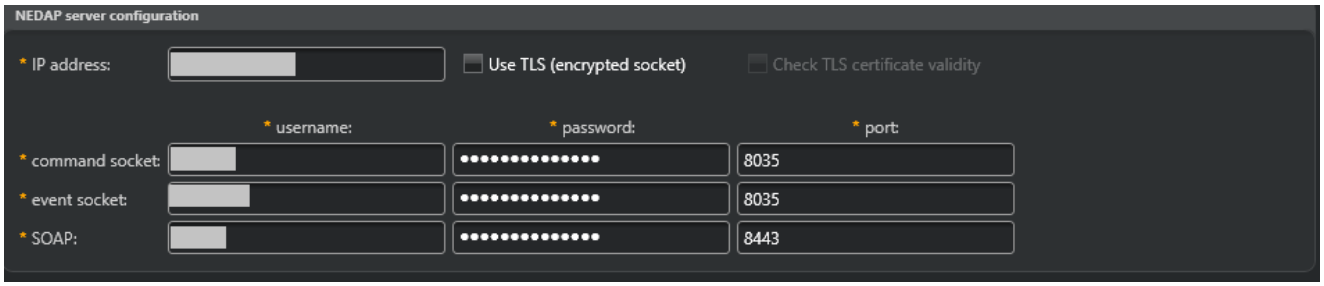
Database security: Settings for TLS encryption and certificates for database communication.

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NEDAP Server configuration

Select the plugin role and open the Resources tab:





In the fields above, fill in the following information:

IP Address: IP address or FQDN of the AEOS server.
Username: Username of the AEOS users for SOAP webservice, event socket, and command socket.
Password: Password of the respective AEOS user.
Port: Used ports for the respective sockets.

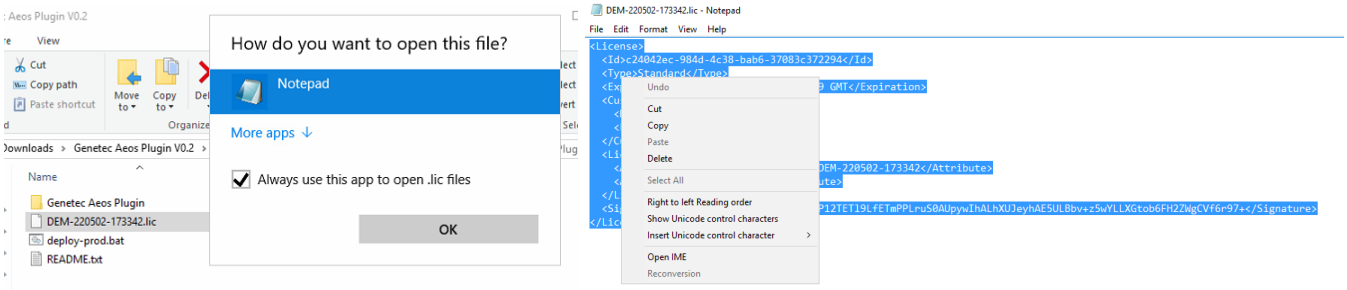
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License configuration

Paste the contents of the plugin license file (.lic) in the box below:



You can open the license file in Notepad or any other text editor to view its content:



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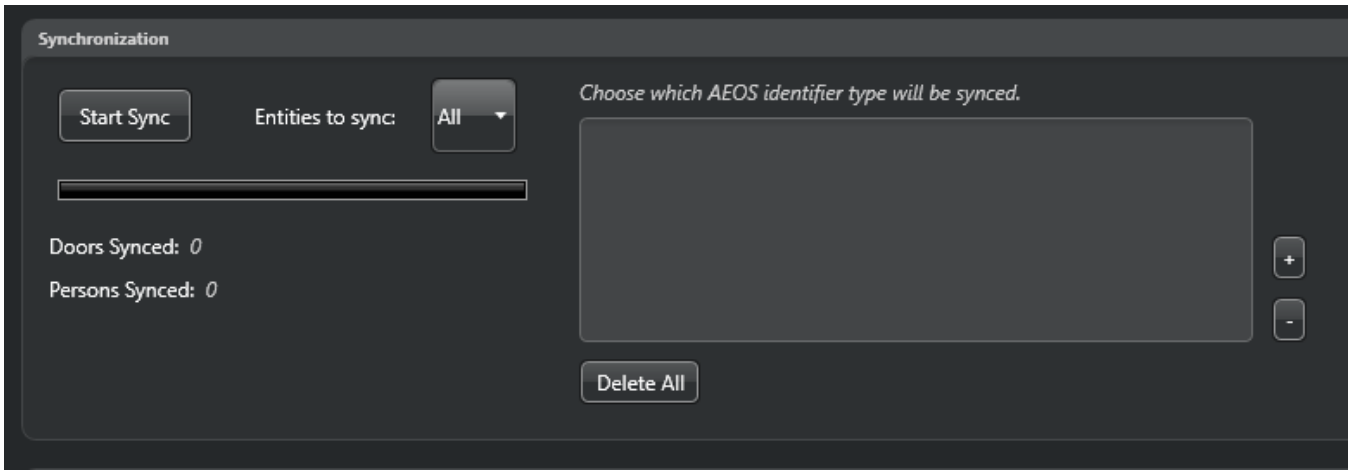
Synchronization

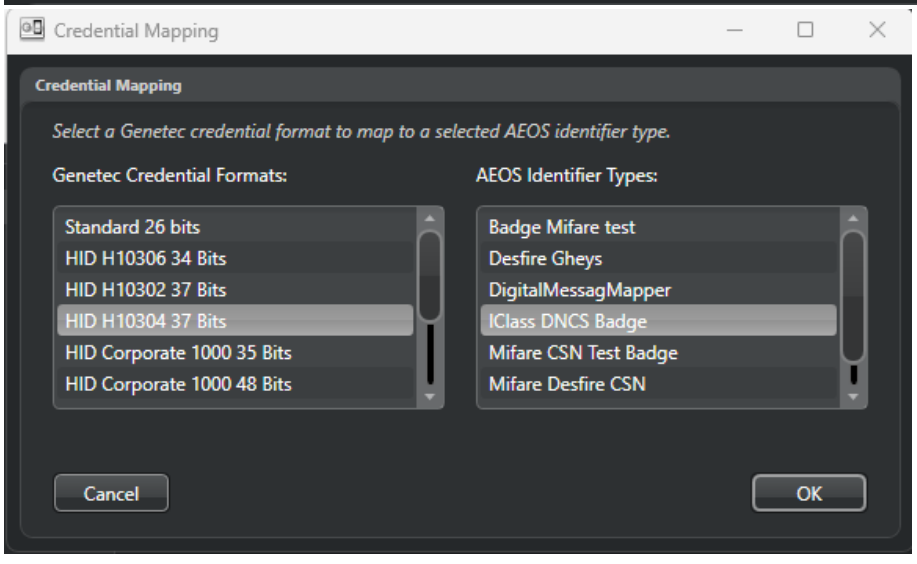
Next, in the synchronization panel, you must select which AEOS Identifier type you want to bind which Genetec credential format. The plugin will only synchronize credentials for AEOS Identifier types that have a Corresponding Genetec credential format.

To add a binding, press the '+'. This will open a dialog window where you can select one AEOS identifier type and one Genetec credential format. Select one of each press 'OK'.
To remove the selected binding, press the '-' button. To remove all bindings, press 'Delete All'.
To see the list of AEOS identifier types, the plugin will have to be started and connected to the AEOS server.

You can also select which type of entity you want to synchronize, however, it is recommended to select "All".

If the plugin is connected and correctly configured, you can press "Start Sync" to start the synchronization, or configure the automatic synchronization first in the panel below.



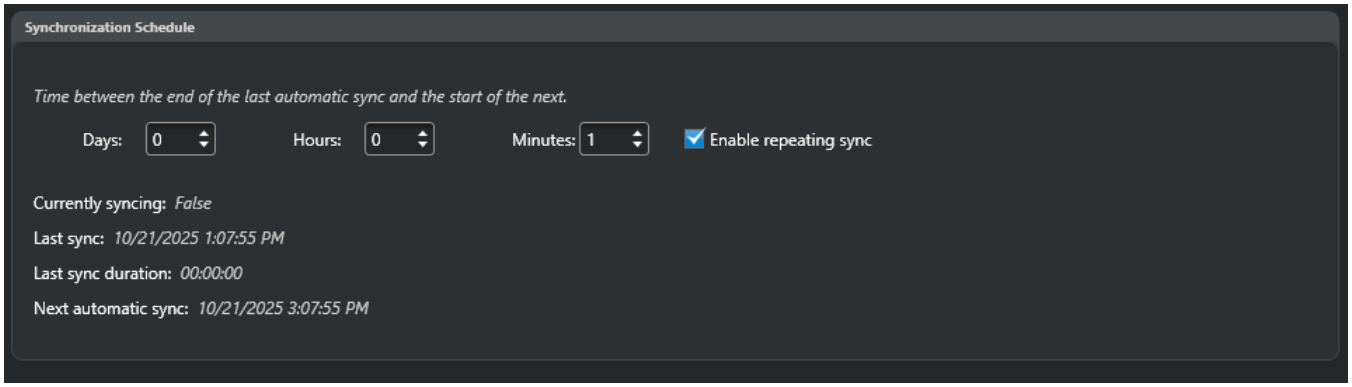


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Synchronization Schedule

Here you can choose how many days/hours/minutes after the end of the last automatic synchronization before the next one begins.

Automatic synchronization starts after the “Start Sync” button has been pressed and the initial synchronization has finished
You can also disable automatic synchronization entirely using the checkbox.



When synchronization is started, a connection will be established with AEOS, and the doors will be added as federated doors in Genetec Security Center.

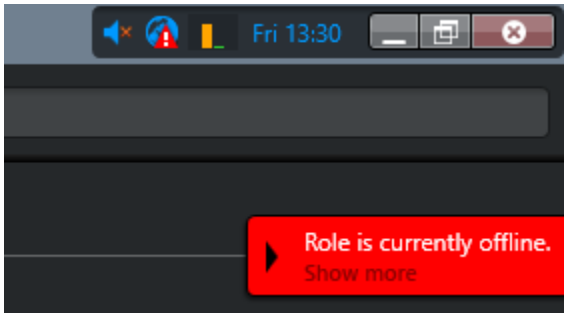
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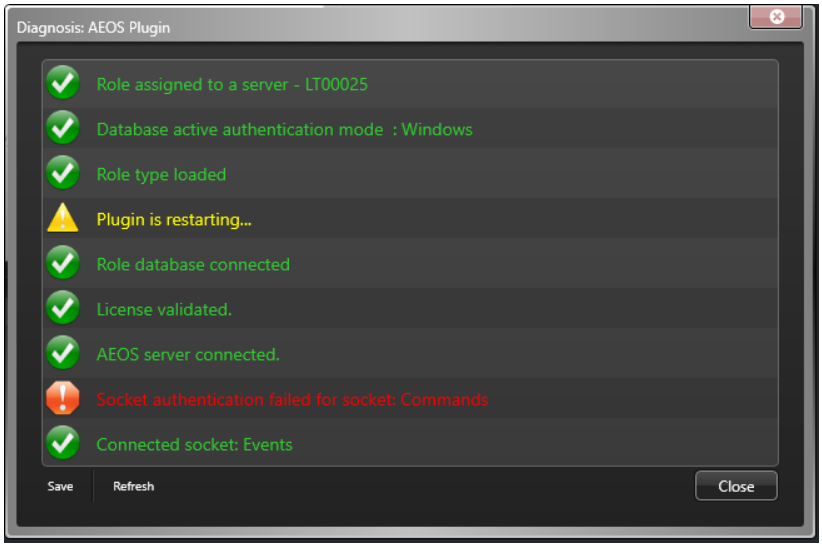
Troubleshooting

This section details what to do in case there are issues during the installation or usage of the plugin.

Problem diagnosis

Errors are visible in the diagnostic window, where there you can find details about which steps during plugin startup have succeeded or failed:





The plugin also logs information, errors, performance statistics, and warnings under the logger ***AeosPluginServer.AeosPlugin***, which can be inspected in Genetec Server Admin.

If the issue cannot be resolved using this information, escalated the issue with your distributor.

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Performance Testing Results AEOS – Genetec Plugin

Test Environment

The performance tests were conducted using a fresh Genetec Server with a simulated AEOS Server populated with 10,000 cardholders.

Initial Synchronization Time

During synchronization, the plugin processes all cardholders from the AEOS system into Genetec. In our test setup with 10,000 cardholders, the synchronization time was approximately 3 seconds per cardholder.

Thus, the total initial sync time:

10,000 cardholders × 3 seconds = 30,000 seconds

Converted to hours: 30,000 ÷ 3,600 = 8.33 hours (~8 hours 20 minutes)

During this time, the plugin will not be fully operational and will remain in a warning state. Once the initial synchronization is complete, the plugin will be fully active.

Impact of an Ongoing Synchronization

Any events related to cardholders, credentials, or doors that have had changes in AEOS, but have not yet been fully synchronized may cause anomalies in the interface. If you experience unexpected behavior during this period, please wait until the next synchronization is complete.

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How to Calculate Your Synchronization Time

To estimate the initial synchronization duration for your specific environment, follow these steps:

List the following data from your AEOS system:

- Total number of doors
- Total number of cardholders
- Total number of credentials

Calculate the total number of entities to be synchronized:

$$Total\ entities\ =\ Number\ of\ doors\ +\ Number\ of\ cardholders\ +\ Number\ of\ credentials$$

The synchronization process runs sequentially and takes approximately 2-3 seconds per entity. Multiply the total entity count by 3 seconds to get an estimate of the synchronization time in seconds:

$$Total\ synchronization\ time\ (seconds) = Total\ entities * 3$$

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