Suprema Integration with Milestone XProtect

USER GUIDE

Version 3.0

English
EN 102.00.SIWMX

suprema
SECURITY & BIOMETRICS

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Introduction

> **Info**
> For more details on the functionality of XProtect VMS and XProtect Smart Client, see the manuals for Milestone software.

Target Audience

This document is intended for system operators as well as system administrators and describes the integration between Suprema BioStar X and Milestone XProtect. The system operators/administrators require a basic knowledge of Milestone XProtect and an in-depth knowledge of Suprema BioStar X.

The **MIPAccessControl** plugin provides seamless integration between Milestone XProtect and Suprema BioStar X access control systems. This guide describes how to install, configure, and operate the plugin to monitor access control events, manage devices, and control doors, elevators, and security zones.

Features

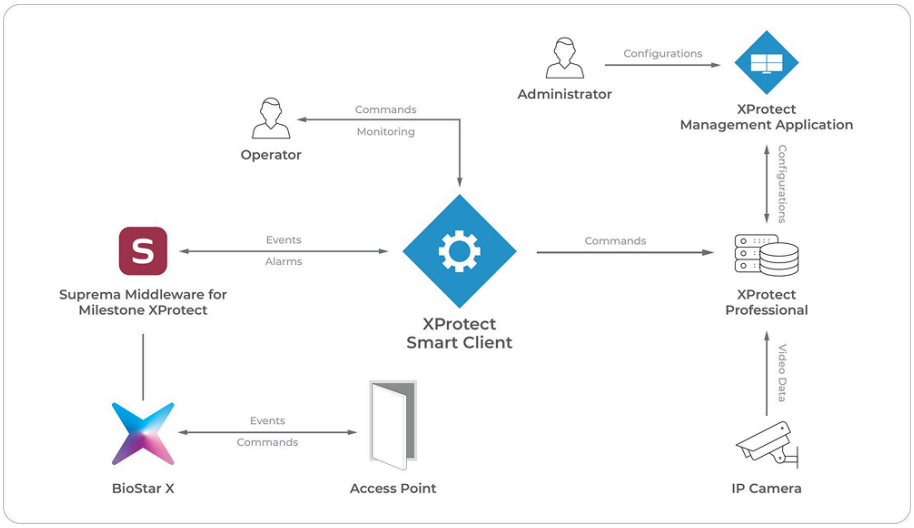
Suprema's BioStar X is the powerful web-based security platform that provides the ability to integrate with third-party systems easily. This integration is based on Suprema's BioStar X server and enables operators to display the access control events and alarm on the XProtect Smart Client.

With the full features of BioStar X, XProtect VMS creates a comprehensive access control solution. Furthermore, by coupling video and access control events, operators can control cameras and view real-time video and recorded video from one easy-to-use interface.

Suprema Integration with Milestone XProtect provides the following features:

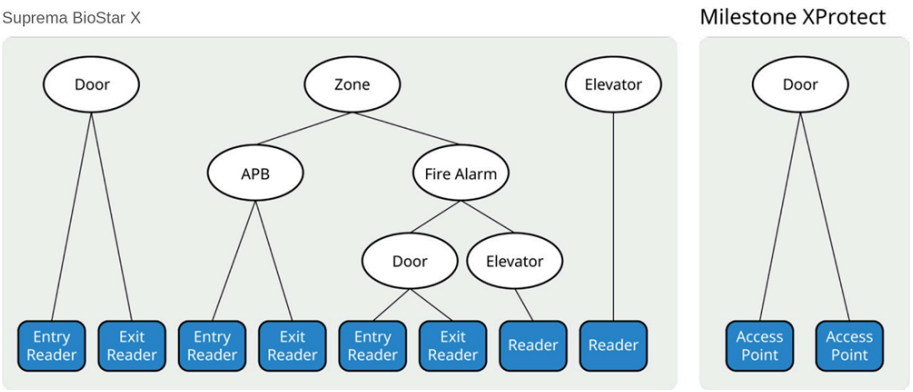
- Management and administration for users, doors, zones, and elevators with XProtect Smart Client.
  - **Monitor real-time events**: Track door access, violations, alarms, and system status.
  - **Control devices**: Lock and unlock doors, enable and disable elevators, and arm or disarm zones.
  - **Manage cardholders**: View user information, photos, and access permissions.
  - **Receive alerts**: Receive notifications for security events and system changes.
  - View live and historical access control events from within Milestone software and allows the operator to search for historical events with a range of parameters.
- Acknowledge the access control alarm of BioStar X in XProtect Smart Client.
- Open and close the doors through the Maps function of the XProtect Smart Client.

System Diagram



Structural differences between BioStar X and XProtect

BioStar X is a security platform which can manage all components for access control, but XProtect uses the simple ACU-based topology. Therefore, there are few differences between BioStar X and XProtect. For example, BioStar X's Door, Zone, Elevator has the same level as XProtect's Door, but BioStar X's element has more specified items. See below image.



Functionalities

In XProtect Smart Client, you can use below functionalities with this plugin:

- Retrieves the user (cardholder) from BioStar X.
- Retrieves the door from BioStar X.
- Retrieves the zone from BioStar X.
- Retrieves the elevator from BioStar X.
- Displays the status of the door in real-time.
- Displays the access control event in real-time.
- Displays the access control alarm of BioStar X.

- Acknowledges the access control alarm of BioStar X.
- Controls the door status of BioStar X (Clear Alarm, Clear APB, Open, Lock Door, Unlock Door, Release Door).
- Controls the zone status of BioStar X (Clear Alarm, Clear APB).
- Controls the elevator status of BioStar X (Clear Alarm).
- Links doors and cameras to monitor them together.
- Allocates and monitors the door, zone, and elevator with Maps.
- Generates a report on access control events.

Installation

Prerequisites

The following prerequisites are required to use Suprema Integration with Milestone XProtect. Check the support conditions before installing Suprema Integration with Milestone XProtect.

- XProtect 2026 R1
- Install BioStar X
- A licensed Milestone XProtect and BioStar X are required.

> **Info**
> XProtect VMS and BioStar X must be installed first.

- All access control configuration settings of BioStar X must be completed.
- System requirements
  - CPU: 4 GHz Quad Core
  - RAM: Minimum 10 GB
  - Hard disk space: Minimum 1 TB free hard disk space available
  - **Milestone XProtect Requirements**
    - Version: XProtect Professional or XProtect Corporate 26.1a or higher.
    - Platform: Windows Server 2016, Windows Server 2019, or Windows Server 2022.
    - .NET Framework: 4.8.1 or higher.
  - **BioStar X Requirements**
    - Version: BioStar X 1.0.2 or higher.
    - Network: TCP/IP connectivity between the Milestone XProtect server and the BioStar X server.
    - Access: Administrator credentials for the BioStar X system.

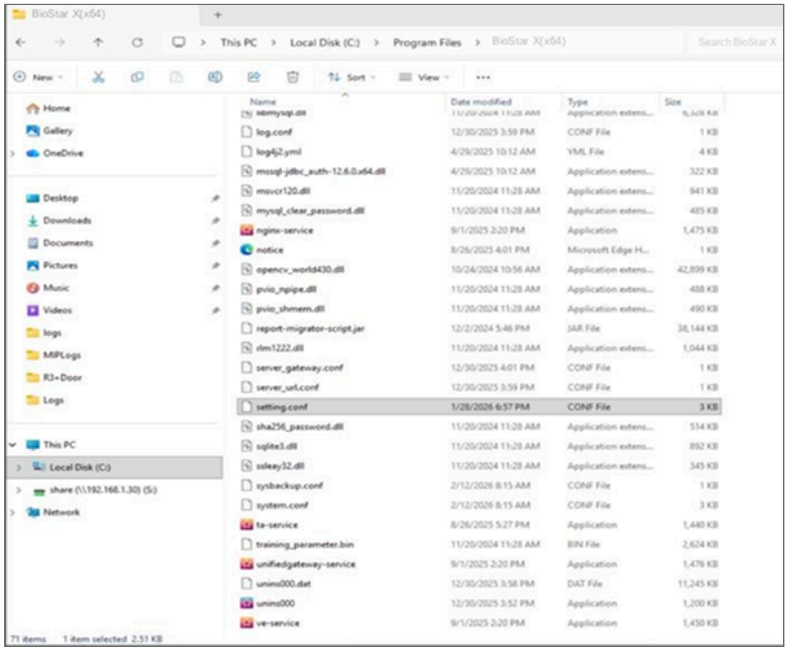
- **Network Requirements**

  Ports:

  - HTTP port: *Change Pre-defined port 9000 to available port*

    Default port (9000) is already used on Milestone so conflict with BioStar X configuration. Please change Port: 9000 to an appropriate or available port.

    You can find the port on `C:\Program Files\BioStar X(x64)\setting.conf`. Open the setting.conf file "Run as an administrator".

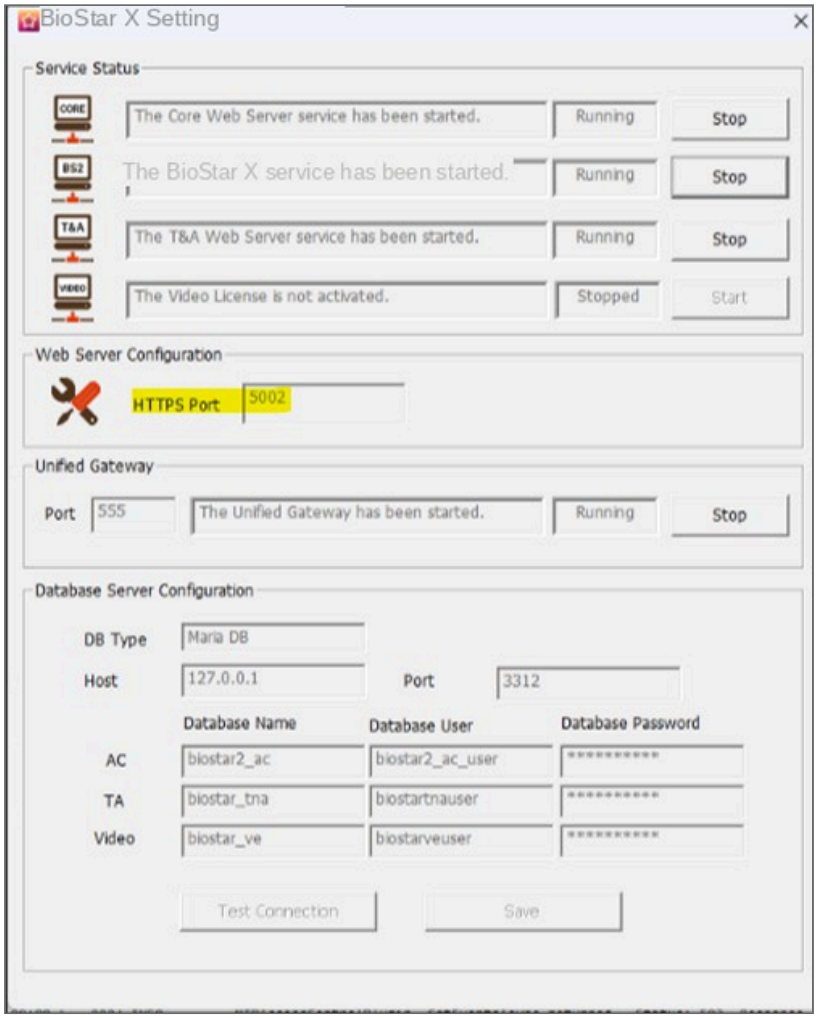




```
},
"api_port": "9010",
"webserver_thrift_port": "9310",
"webserver_fastcgi_port": "9000",
"mobile": {
    "use_mobile_credential": "0",
    "mc_server_addr": "https:\/\/api.mc.suprema.io",
    "mc_port": "443",
    "offline_mode": "0"
},
"websocket_port": "9002",
"eventlog": {
    "event_log_retain_days": "60",
    "active": "false"
```

– HTTPS port: *Change Pre-defined port 443 to available port*

  Default port (443) is already used on Milestone so conflict with BioStar X configuration. Please change port: 443 to an appropriate or available port.



– Protocols: TCP/IP, HTTP/HTTPS

– Firewall: Allow bi-directional communication between the Milestone XProtect and BioStar X servers on the configured ports.

– Operating system:

  Microsoft Windows® 10 Pro (64 bit)*

  Microsoft Windows® 10 Enterprise (64 bit)*

  Microsoft Windows® 11 Pro (64 bit)*

  Microsoft Windows® 11 Enterprise (64 bit)*

– Other: Microsoft .NET 4.5.1 Framework

Installing the Milestone x Suprema Plugin

Milestone x Suprema plugin is used to connect the access control system and XProtect VMS. In other words, it works as a middleware to exchange the data between BioStar X and XProtect VMS.

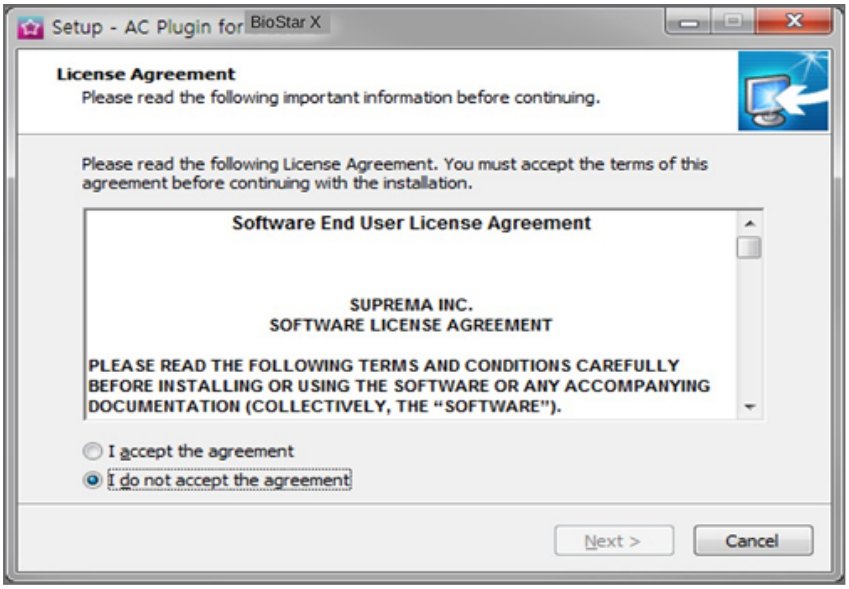
Before the installation **the Milestone XProtect Event Server should be stopped manually**.

To do this, go to the system tray and right-click on the Milestone XProtect Event Server icon and then click stop Event Server service. And if the **installation is completed successfully then start it again**.

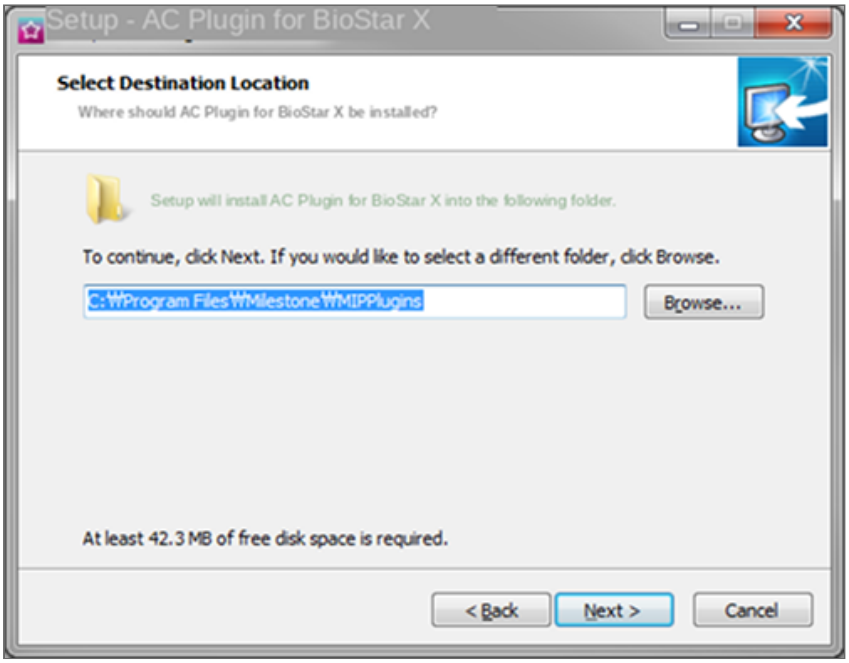
> **Info**
> These plugins were built with MIP SDK 2023 R3 and tested for Milestone XProtect Professional 2023 R3. For other versions of XProtect, please contact Suprema Global Technical Support Team.

1. **Download the plugin (v1.3.1)**
   - Obtain the MilestonePluginSetup.msi installer from your distribution source.
   - Ensure you have local administrative privileges on the Milestone XProtect server.
2. **Run the installer**

   Right-click MilestonePluginSetup.msi → Run as Administrator.
3. **Follow the installation wizard**
   - Accept the license agreement.



   - Select the installation directory (the default path is recommended).

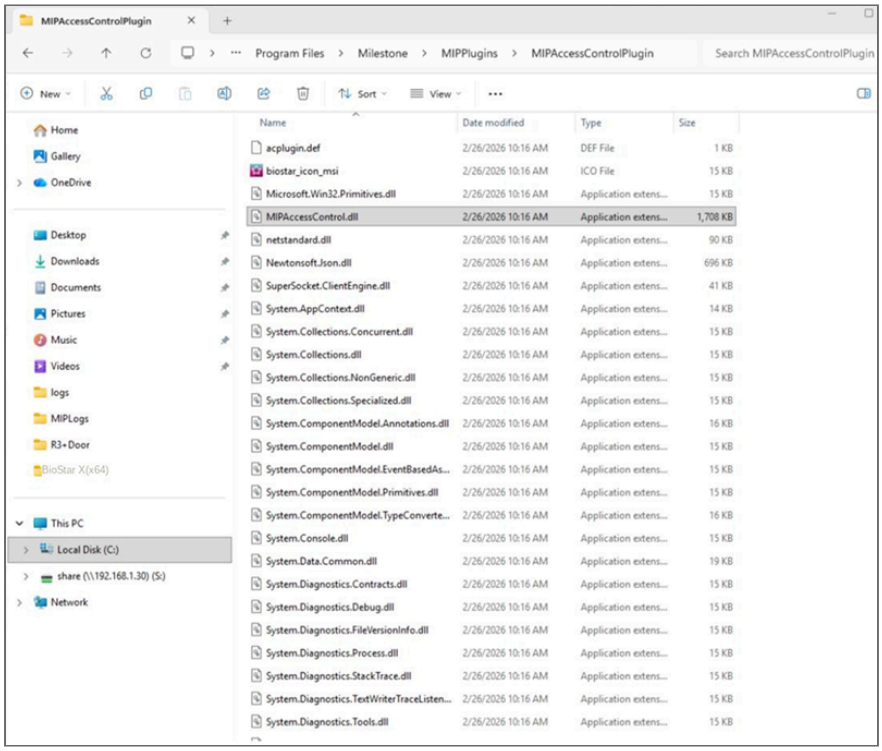


- Complete the installation process.



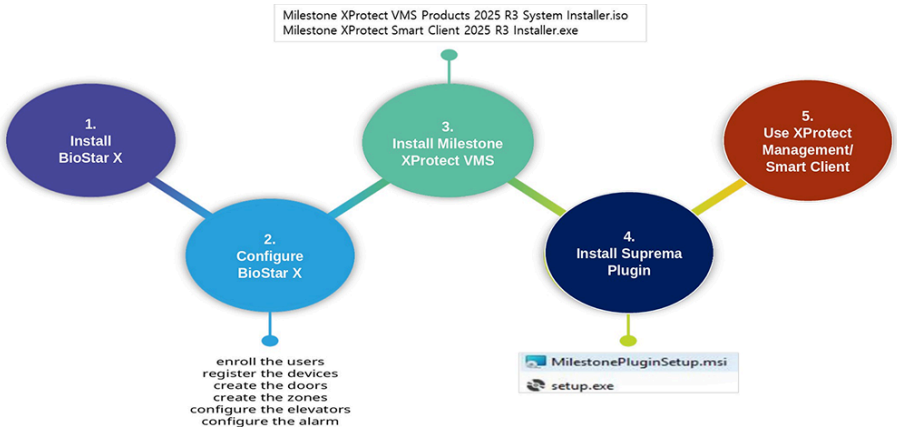
4. **Verify installation**

   - Confirm that `MIPAccessControl.dll` is present in the Milestone XProtect access control plugins directory.
   - Restart the Milestone Management Client to load the plugin.


MIPAccessControlPlugin
Program Files › Milestone › MIPPlugins › MIPAccessControlPlugin
Search MIPAccessControlPlugin
New
Sort
View
Home
Gallery
OneDrive
Desktop
Downloads
Documents
Pictures
Music
Videos
logs
MIPLogs
R3+Door
BioStar X(x64)
This PC
Local Disk (C:)
share (\\192.168.1.30) (S:)
Network
Name
Date modified
Type
Size
acplugin.def 2/26/2026 10:16 AM DEF File 1 KB
biostar_icon_msi 2/26/2026 10:16 AM ICO File 15 KB
Microsoft.Win32.Primitives.dll 2/26/2026 10:16 AM Application extens... 15 KB
MIPAccessControl.dll 2/26/2026 10:16 AM Application extens... 1,708 KB
netstandard.dll 2/26/2026 10:16 AM Application extens... 90 KB
Newtonsoft.Json.dll 2/26/2026 10:16 AM Application extens... 696 KB
SuperSocket.ClientEngine.dll 2/26/2026 10:16 AM Application extens... 41 KB
System.AppContext.dll 2/26/2026 10:16 AM Application extens... 14 KB
System.Collections.Concurrent.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Collections.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Collections.NonGeneric.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Collections.Specialized.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.ComponentModel.Annotations.dll 2/26/2026 10:16 AM Application extens... 16 KB
System.ComponentModel.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.ComponentModel.EventBasedAs... 2/26/2026 10:16 AM Application extens... 15 KB
System.ComponentModel.Primitives.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.ComponentModel.TypeConverte... 2/26/2026 10:16 AM Application extens... 16 KB
System.Console.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Data.Common.dll 2/26/2026 10:16 AM Application extens... 19 KB
System.Diagnostics.Contracts.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.Debug.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.FileVersionInfo.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.Process.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.StackTrace.dll 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.TextWriterTraceListen... 2/26/2026 10:16 AM Application extens... 15 KB
System.Diagnostics.Tools.dll 2/26/2026 10:16 AM Application extens... 15 KB

Configuration

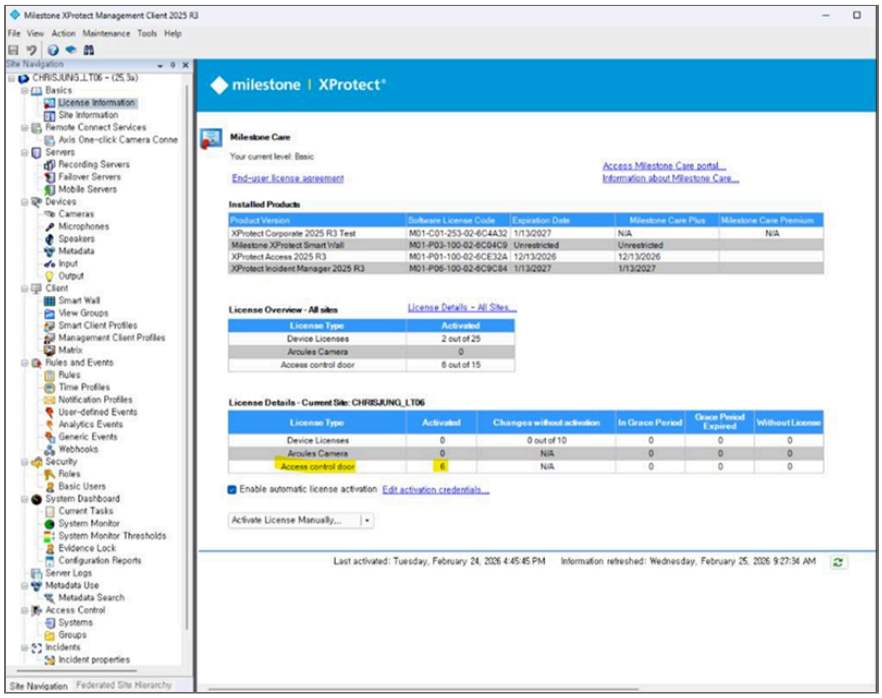
Configuration Procedure



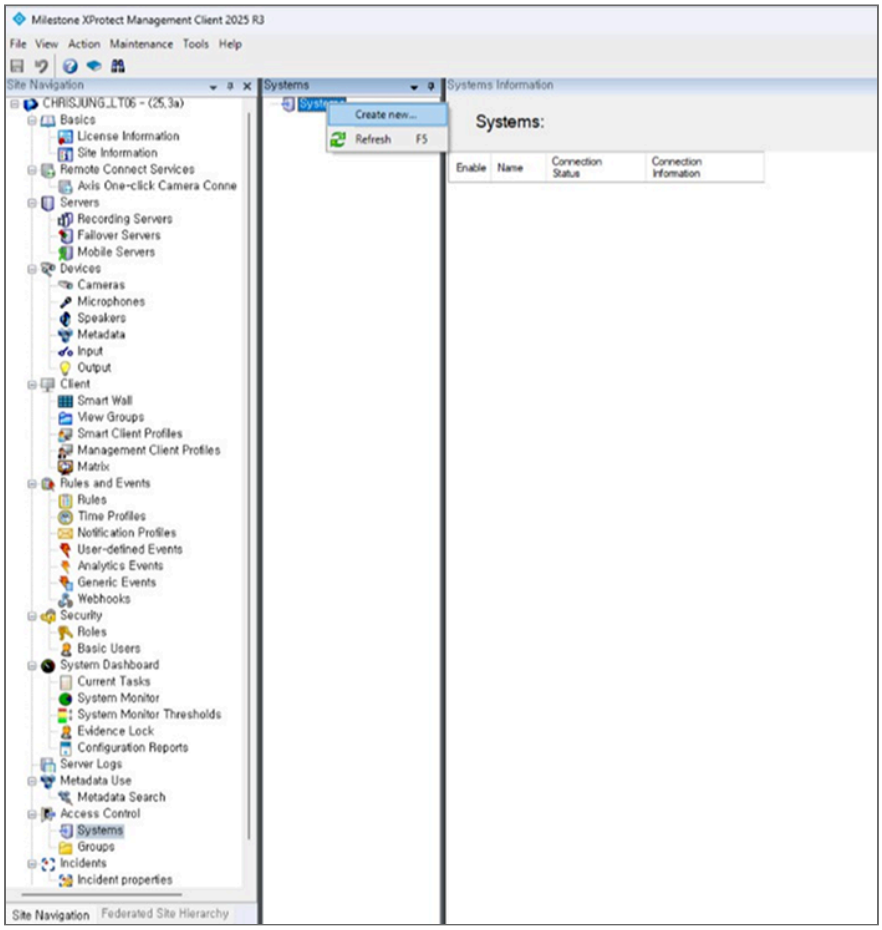
MIPAccessControl Plugin Setup

1. Access control settings must be completed in BioStar X first.
2. Run 'Milestone XProtect Professional+ 2026 R1 Management Client'.

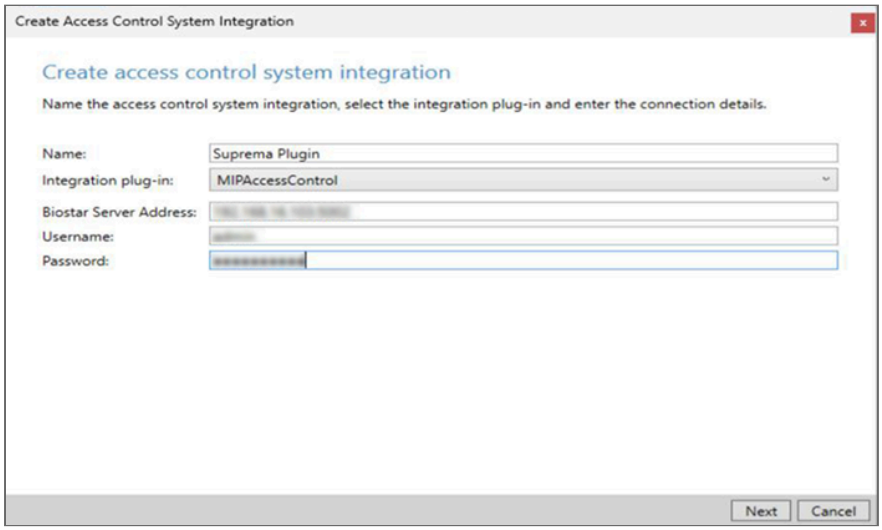
   Also, verify that the Access Control door license is included to enable the Suprema Plugin.



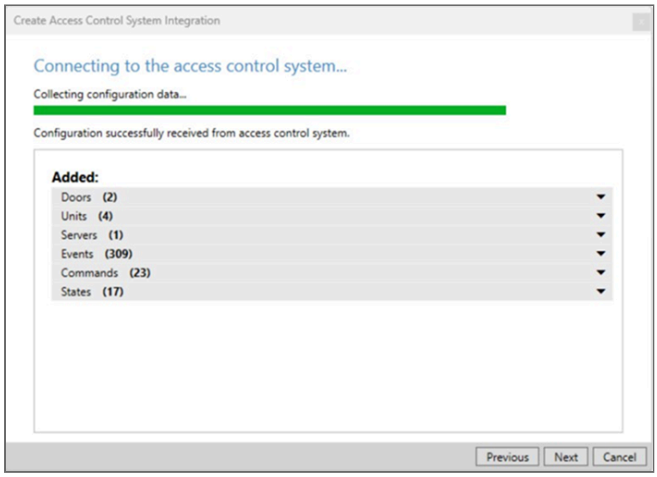
3. Navigate to the **Access Control – system** node. Right-click on it and click **Create new**.

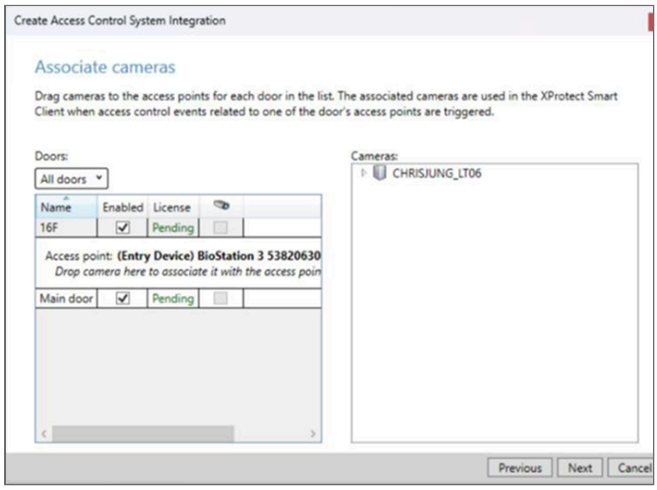


4. Enter the name of the plugin. Select **MIPAccessControl** as the **Integration plug-in**, and enter the **BioStar X Server Address**, **Username**, and **Password**.



5. Plugin trigger to retrieve the BioStar X setting and completed.





6. Click the Plugin and tab **General settings**. You can update the access control system name, network settings, and login information.

   If you change any setting on the BioStar X then press **Refresh Configuration** button every time and don't forget the save button.

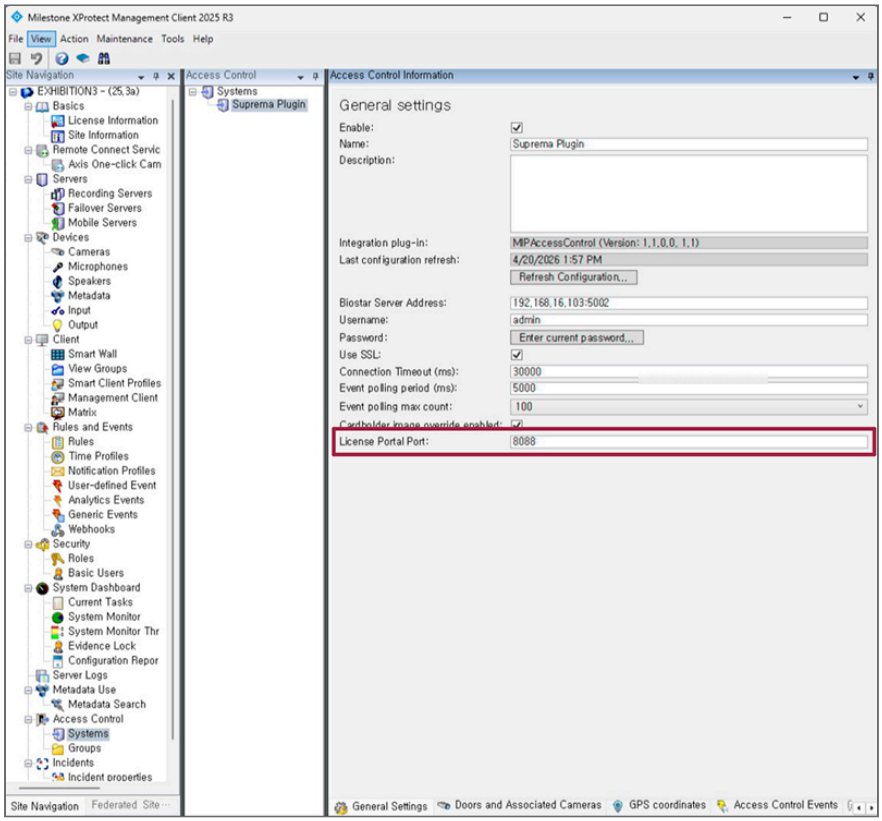
   1. BioStar X Server Address: 192.168.16.103:5002

      > **Info**
      > For HTTPS, you can use (your_BioStar X_IP):(HTTPS_PORT).

   2. **Username / Password**: BioStar X ID / PW
   3. **Connection Timeout (ms)**: 30000
      - **Event polling interval (ms)**: 5000 (default) → 3000 (Recommended)
      - **Event polling max count**: 100
   4. Plugin License portal access

      Use the **License Portal Port** (localhost:8088) to access the license portal.

      > *https://localhost:8088*

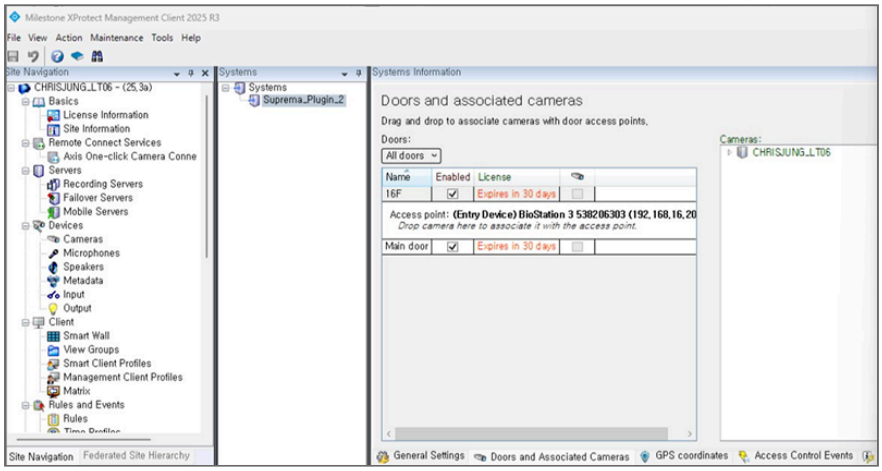


Setting	Description	Default Value	Range
Connection Timeout	Connection timeout for API calls, in milliseconds.	30000	5000–120000
Event polling interval (ms)	Interval in milliseconds between event polling requests.	5000 (5 seconds)	100–7200000
Event polling max count	Maximum number of events retrieved per polling cycle.	100	10, 50, 100, 200, 500
Cardholder image override enabled	Allows cardholder images to be overridden from external sources where supported.	true	true/false
Use Captured as Profile Photo	Uses captured access control images as profile photos when available.	true	true/false

- **Doors and associated cameras**: You can associate the cameras with access points. See Associating the camera.
- **Access control events**: You can activate or deactivate the access control event from BioStar X, also create and assign the userdefined categories.
- **Access control actions**: You can create an access control action or command which is performed by the operator on the associated access points. For example, when a cardholder requests the door open, XProtect display a notification and then operator sending a door open command.
- **Cardholders**: You can view or search the cardholder information. The cardholder information is synchronized with user information of BioStar X. In BioStar X, user information includes user name, access group, RFID card number, fingerprint template, face template, and PIN.

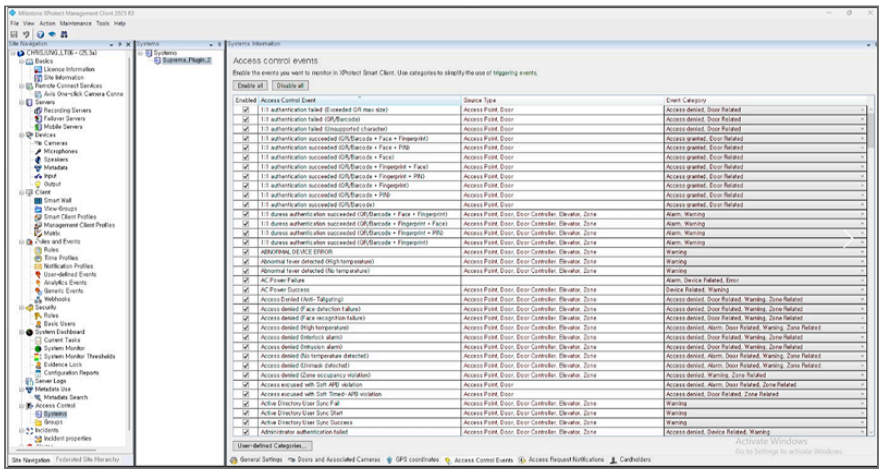
You can see to retrieve related BioStar X settings of users, door, devices.

7. Tab **Doors and associated cameras**. Also, You can associate the cameras with access points. See Associating the camera.



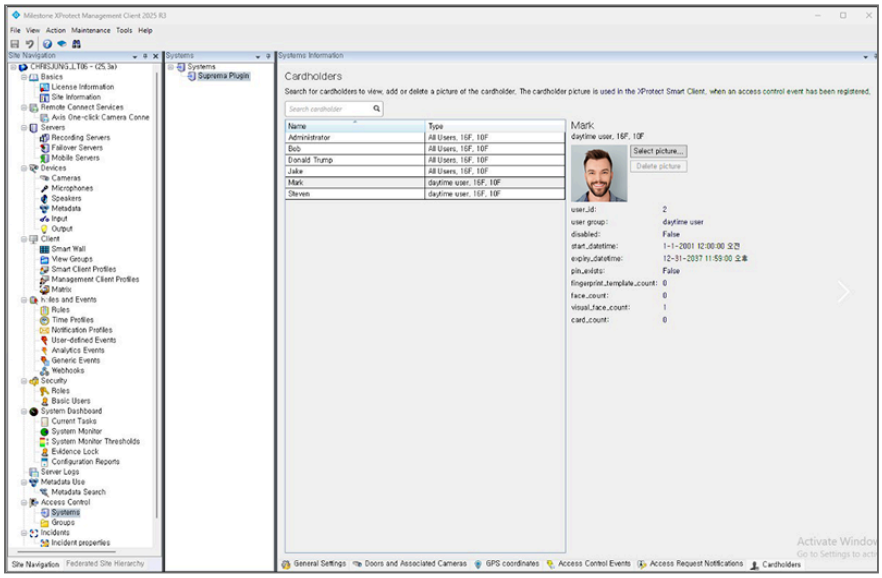
8. Tab **Access control events** that show all access control events from BioStar X.

   You can activate or deactivate the access control event from BioStar X, also create and assign the user defined categories.



9. Tab **Cardholders**. Show current User (Cardholder) information from BioStar X.

   You can view or search for the cardholder information. The cardholder information is synchronized with user information of BioStar X. In BioStar X, user information includes username, access group, RFID card number, fingerprint template, face template, and PIN.

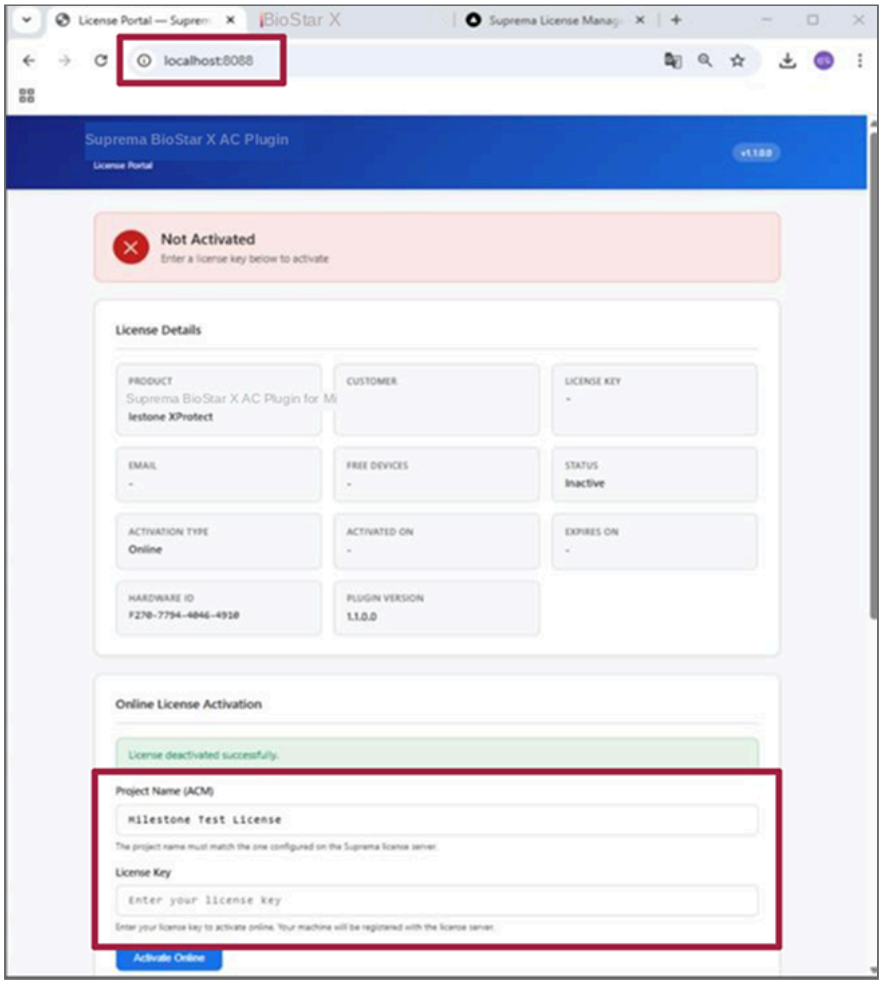


Milestone x Suprema plugin License Portal

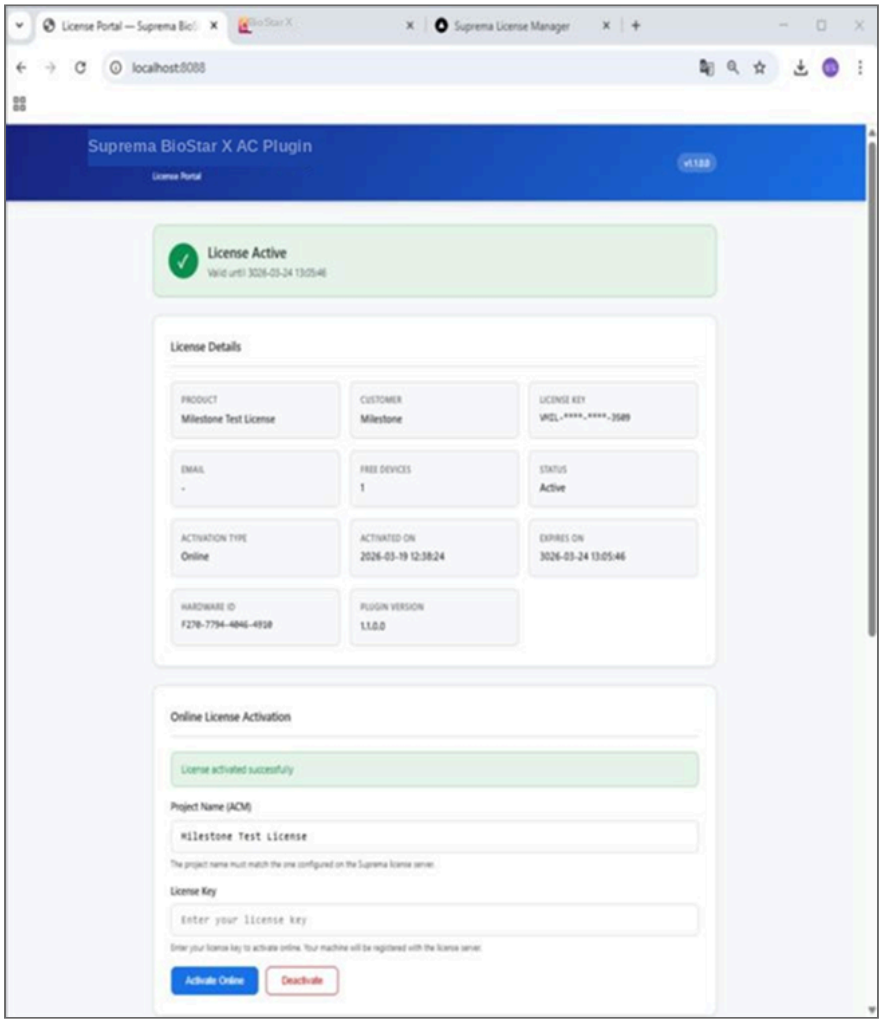
Activate using a license key through the Suprema license service; license data is verified and stored securely. Register the license from the Suprema License server for the Plugin operational condition.

Online Activation

1. Access at License portal, `localhost:8088` for online condition (if your server is connected to the internet). Ask Suprema license manager (int@suprema.co.kr) to get unique license key (16 characters) and project name.

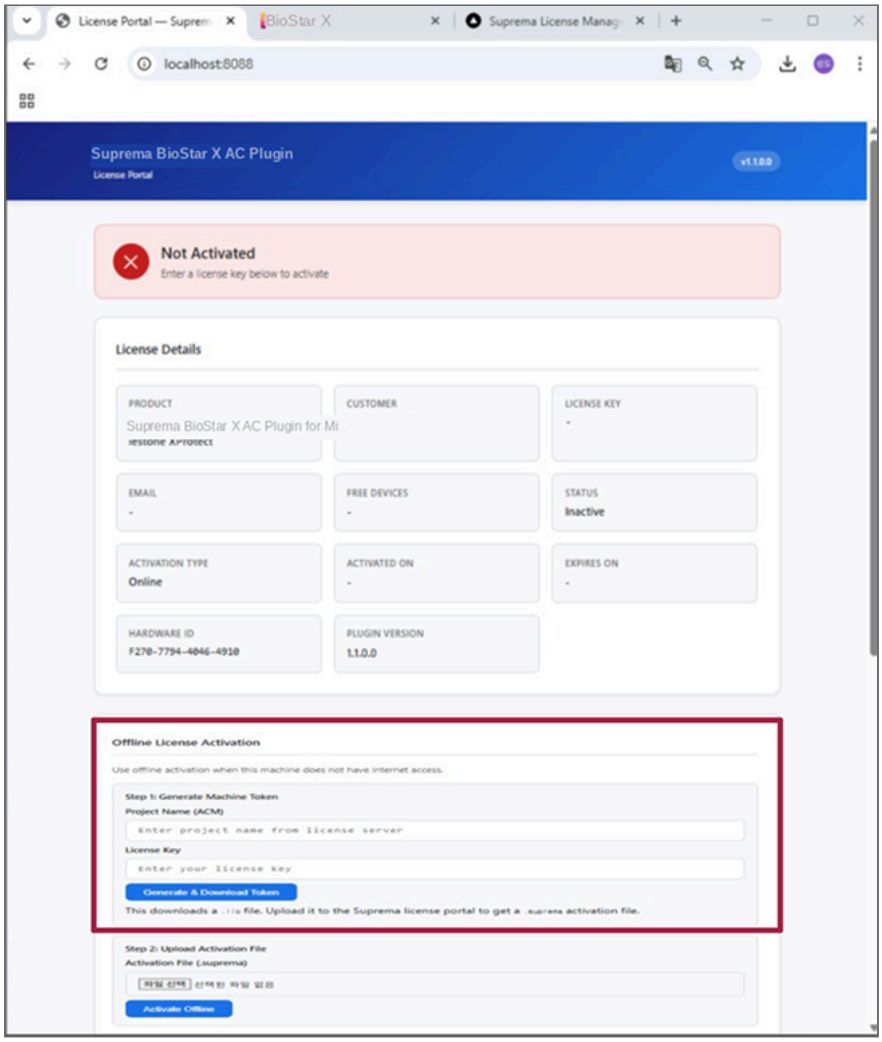


2. If you get the license key and project name, you can apply on it with **Activate Online**.

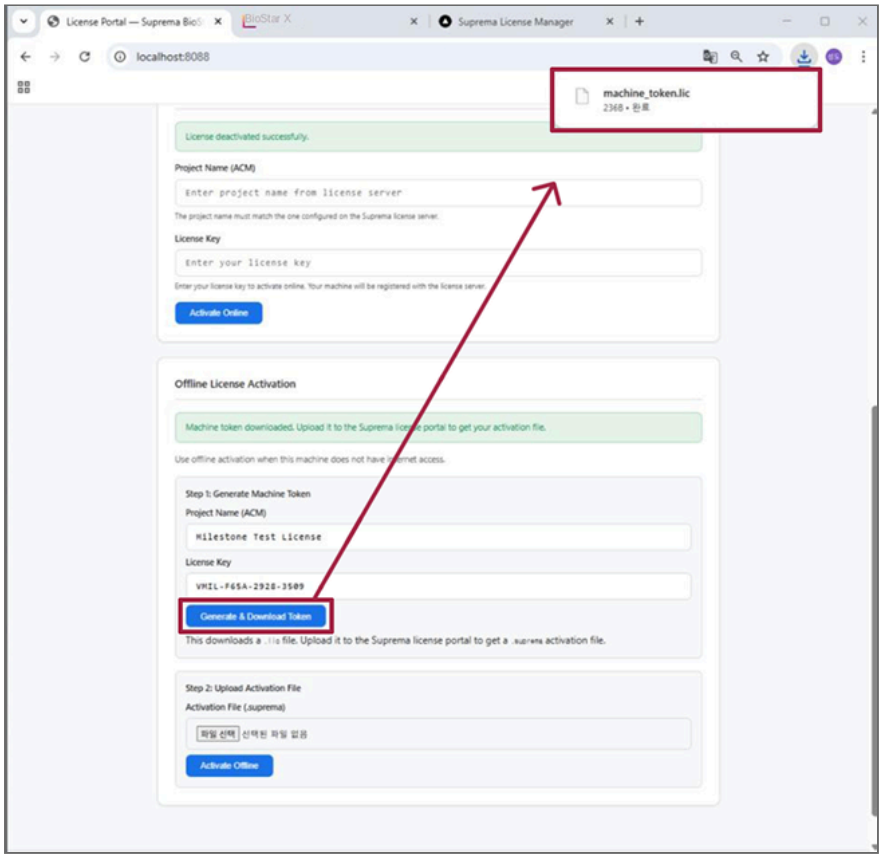


Offline Activation

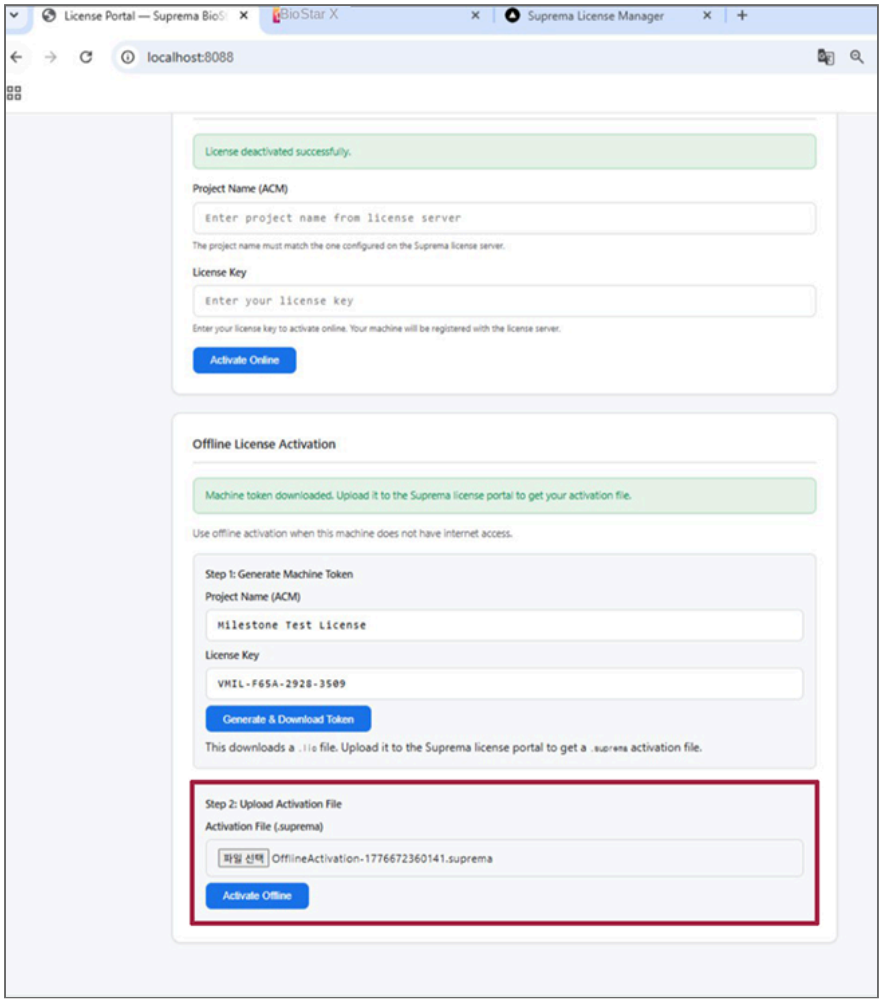
1. Access at License portal, localhost:8088 for offline condition (even though your server is offline (Can't access internet), license portal will be accessed with 'localhost'). Ask Suprema license manager (int@suprema.co.kr) to get unique license key (16 characters) and project name.



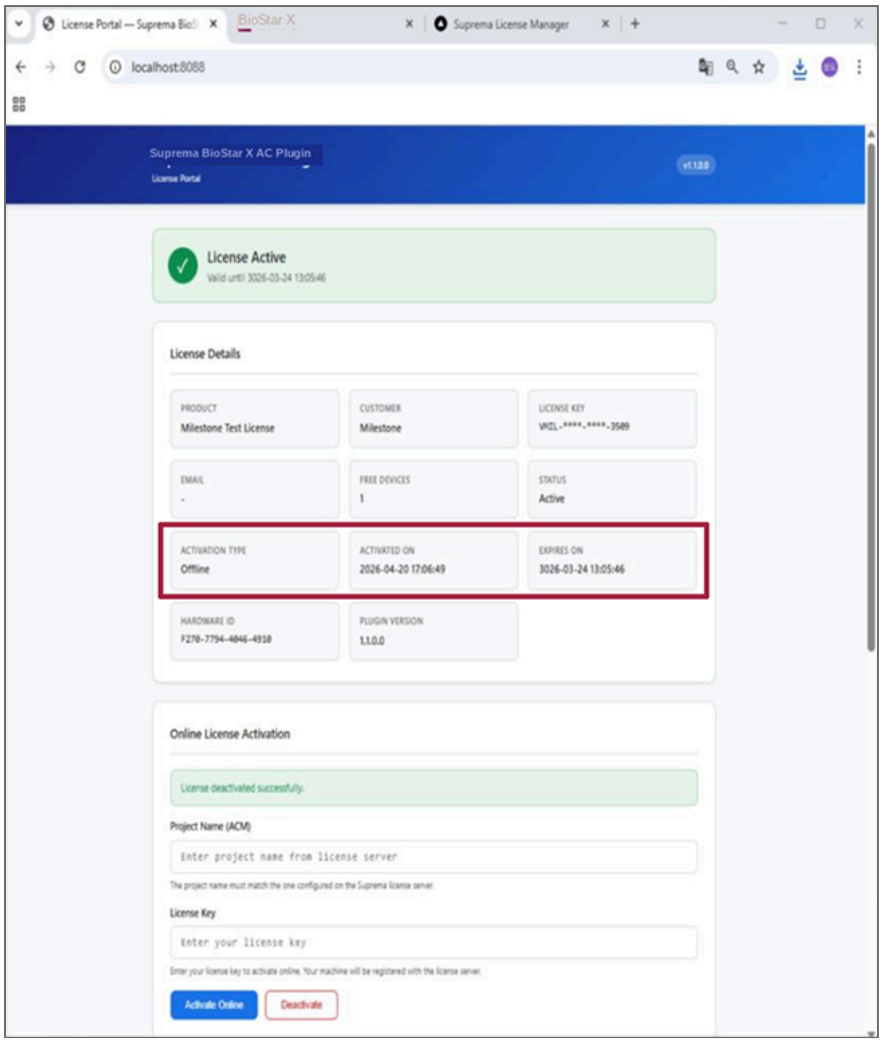
2. If you get the license key and project name, you can apply on it with Generate `Token.lic` on download folder (default). You send the token file to license manager.



3. The License Manager will provide the **.suprema** file, which is the result of synchronizing your system configuration data from your token with the license server. Apply 'activation token' with the **.suprema** file.



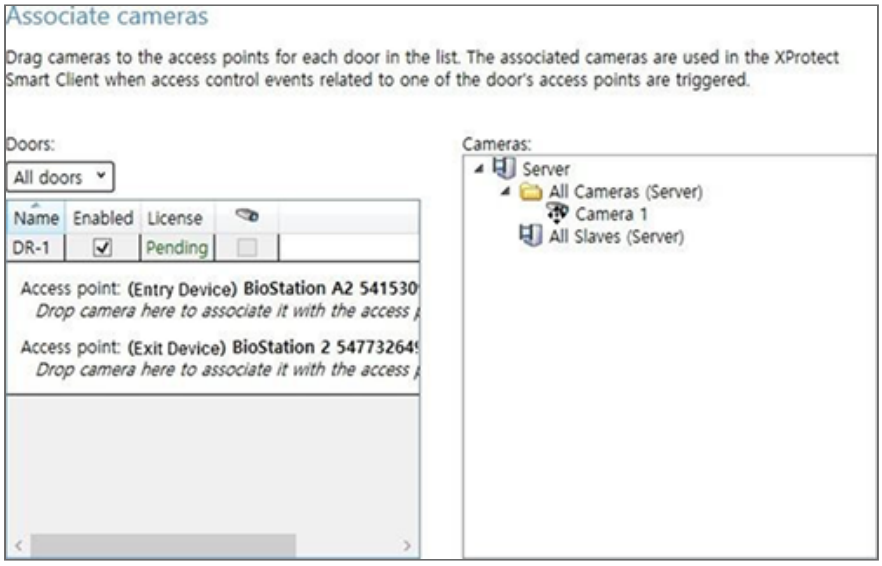
4. Offline license application successfully.



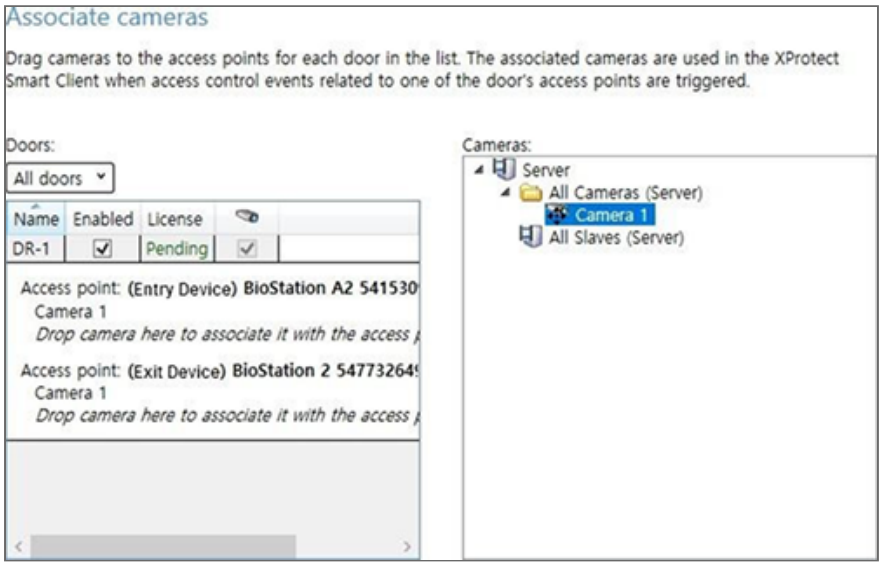
Associating the Camera

If BioStar X connected correctly, the **Associate cameras** screen appears. In this step, you can associate the cameras with access points on the Milestone XProtect Management Client.

1. Find the camera in the **Cameras** pane and drag it to the associated access points.



2. When all access points associated with cameras, click **Next** to complete the settings.



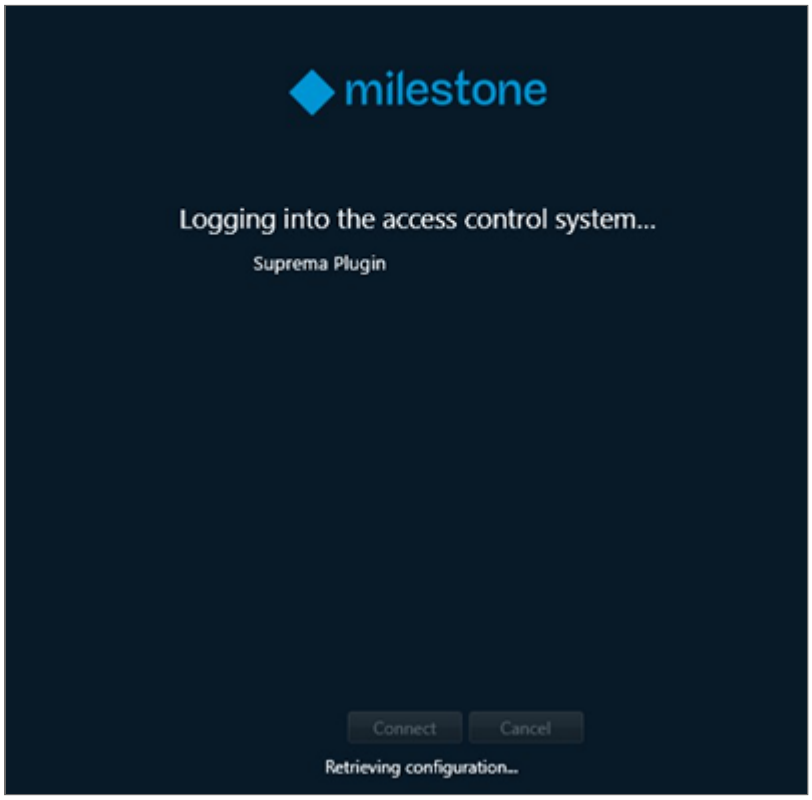
3. When the success confirmation window appears, click **Close**.



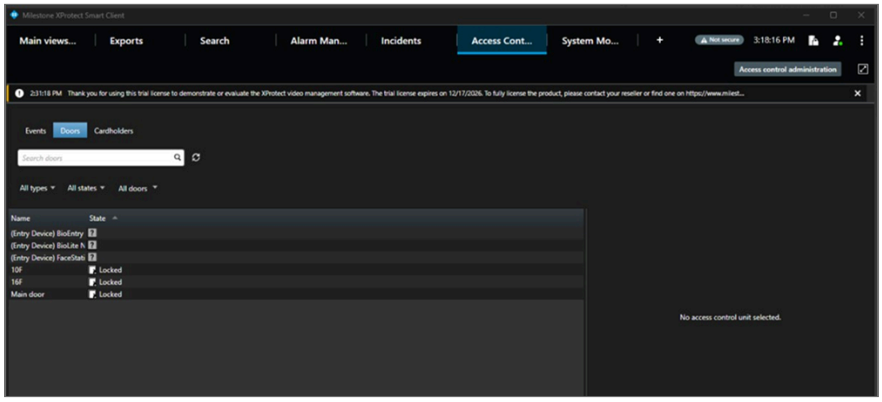
Synchronization Check

Milestone XProtect Smart Client and BioStar

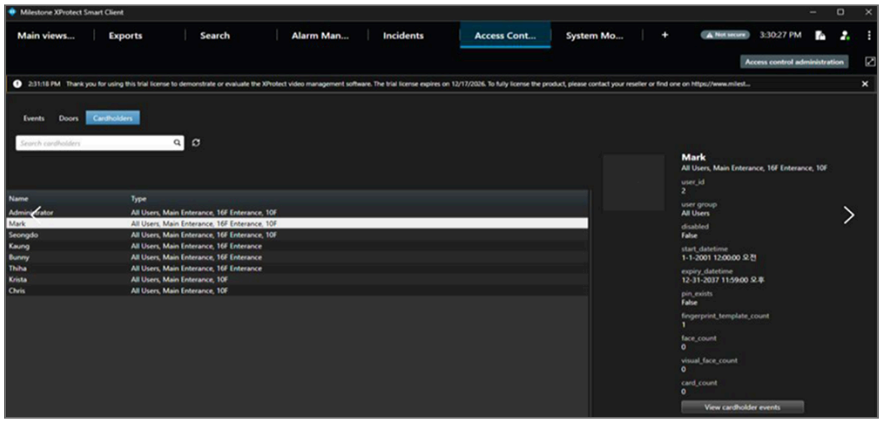
1. Run Milestone XProtect Smart Client. It is retrieving plugin information.

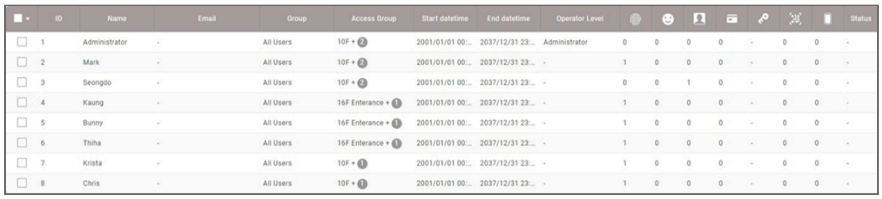


2. Move **Access Control** tab, Check the Device and door status sync with BioStar setting.

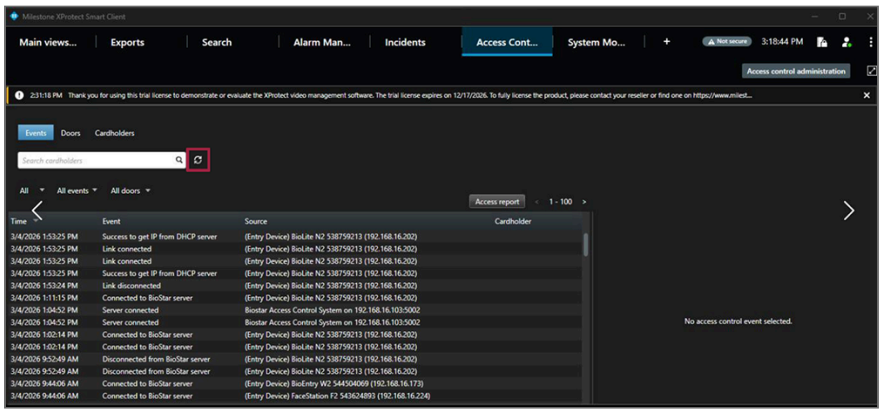


3. Check the Cardholders' information with BioStar setting.

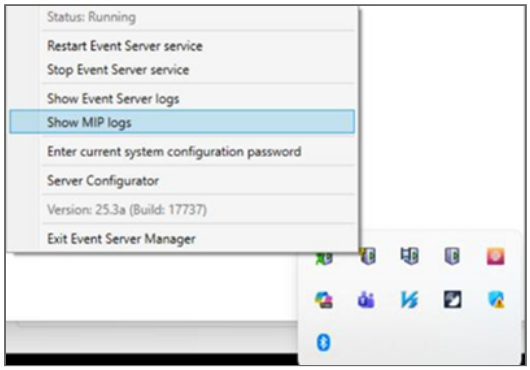


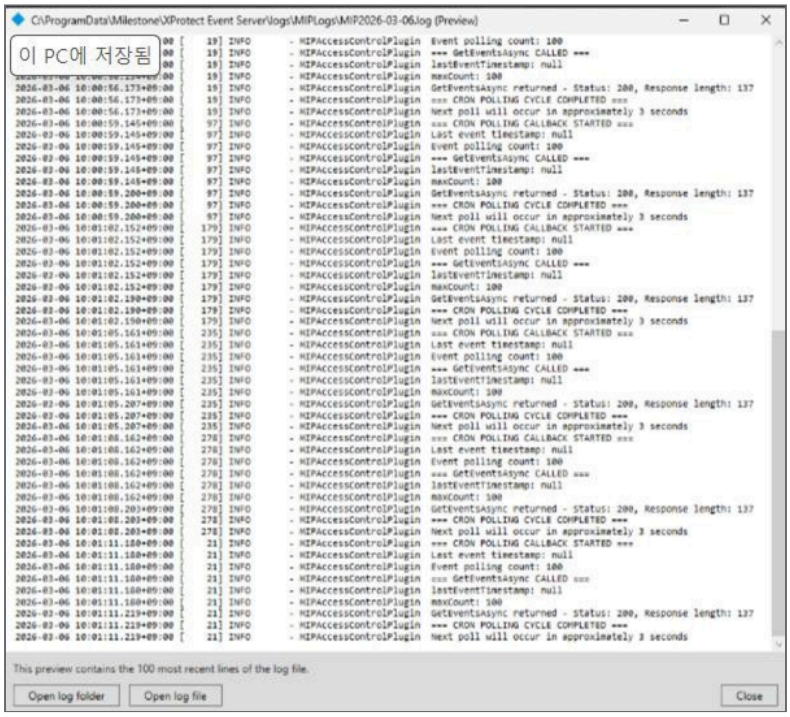


4. When you check the Event on real time, you need to press 'refresh' button.



5. You can check Realtime Plugin log (MIP logs) on the Event Server.




C:\ProgramData\Milestone\XProtect Event Server\logs\MIPLogs\MIP2026-03-06.log (Preview)
이 PC에 저장됨
This preview contains the 100 most recent lines of the log file.
Open log folder
Open log file
Close

Troubleshooting

Q. Connection Failed Error

A. Symptoms:

- The plugin cannot connect to the BioStar X server.
- Authentication or connection errors appear in the logs.

Solutions:

1. **Verify network connectivity**

   ping (BioStar X server IP) -t
2. **Verify credentials**
   - Confirm that the configured username and password are correct.
   - Log in directly to the BioStar X web interface using the same credentials.
3. **Check firewall and routing**
   - Ensure the required ports (for example, HTTP or HTTPS and `C:\Program Files\BioStar X(x64)\setting.conf`) are allowed between the Milestone XProtect and BioStar X servers.
   - Check the collision of port status.
4. **Confirm BioStar X server status**
   - Verify that the BioStar X service is running.
   - Restart the BioStar X service if necessary, in accordance with your change management process.

Q. No Events Received Issue

A. Symptoms:

- The plugin connects successfully, but no events are displayed in Milestone XProtect.
- Event lists remain empty even when access activity occurs.

Solutions:

1. **Review event polling configuration**
   - Set **Event polling interval (ms)** to a shorter interval, such as 1000–5000 ms, for near real-time event updates.
   - Increase **Event polling max count** to 200 or 500 to handle higher event volumes.
2. **Verify event generation in BioStar X**
   - Trigger test events (for example, present a credential at a reader) to confirm events are generated.
   - Check BioStar X event logs to confirm that events are recorded on the BioStar X side.

Q. SSL Certificate Errors

A. Symptoms:

- SSL/TLS connection failures between Milestone XProtect and BioStar X.

- Certificate validation or trust errors in the logs.

Solutions:

1. **Self-signed certificates**
   - For initial testing, you may temporarily set "Use SSL" to false to confirm connectivity over HTTP, if permitted by your security policy.
   - Import the BioStar X server certificate or issuing CA certificate into the Windows certificate store on the Milestone XProtect server to establish trust.
2. **Public or enterprise certificates**
   - Verify that the certificate is valid and not expired.
   - Ensure the full certificate chain (including intermediate CAs) is installed correctly on the BioStar X server.

Q. Slow Performance

A. Symptoms:

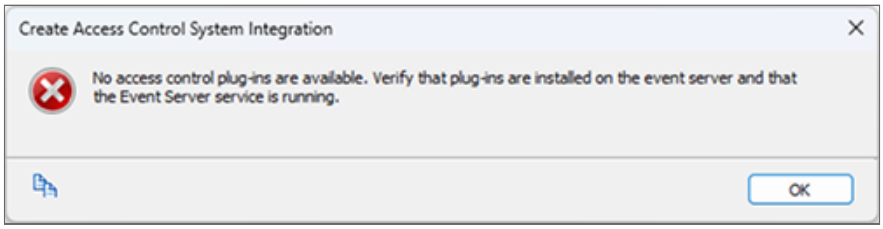
- Delayed event processing in Milestone XProtect.
- High CPU or network utilization on the Milestone XProtect or BioStar X servers.

Solutions:

1. **Adjust polling settings for load balancing**
   - Increase the **Event polling interval (ms)** to reduce the frequency of polling and server load.
   - Decrease **Event polling max count** if processing large batches of events is causing delays.
2. **Check network latency and bandwidth**
   - Ensure that latency between the Milestone XProtect and BioStar X servers is within acceptable bounds for your deployment.
   - If necessary, work with your network team to optimize routing, bandwidth, or Quality of Service (QoS) for access control traffic.

Q. "No access control plug-ins are available..." error pop-up message occurs

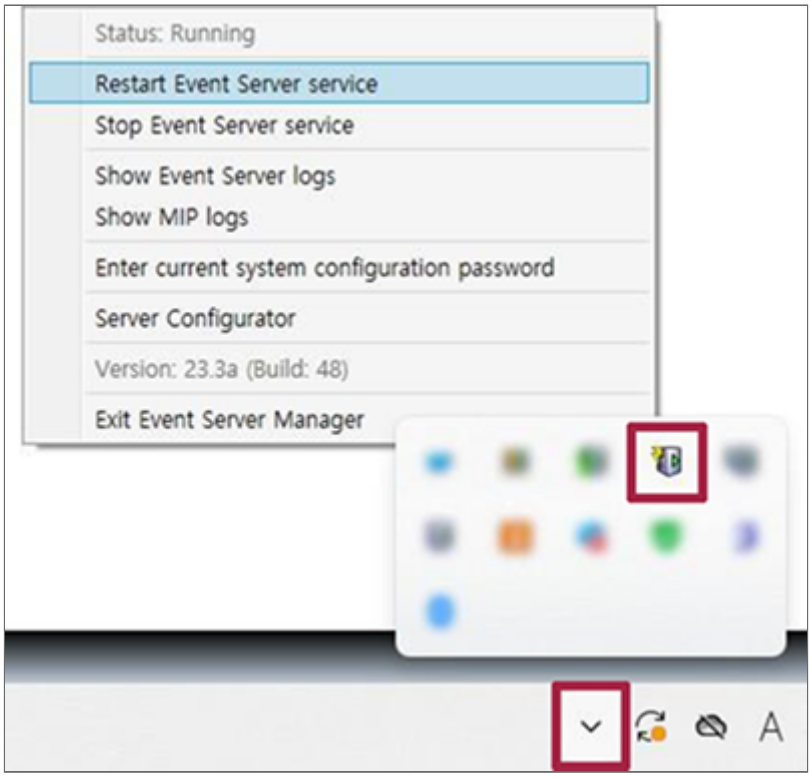
A. Symptom:



Create Access Control System Integration

- No access control plug-ins are available. Verify that plugins are installed on the event server and that the Event Server service is running.

Solution:



1. Right-click on the **Milestone Event Server** icon in the taskbar.
2. Select **Restart Event Server service** and then restart the **Milestone Event Server**, **Management Client**, and **Smart Client** to verify that the error is resolved.

Frequently Asked Questions

Q. How many devices can the plugin handle?

A. The plugin can typically support more than 1000 devices per plugin instance, subject to server hardware, database performance, and network capacity. For very large deployments, consider performance testing and scaling using multiple instances if required.

Q. Can I use multiple BioStar X servers?

A. Each MIPAccessControl plugin instance connects to a single BioStar X server. To integrate multiple BioStar X servers, configure a separate MIPAccessControl access control system instance in Milestone XProtect for each server.

Q. What is the difference between polling-related options?

A. The plugin uses HTTP-based polling of the BioStar X API at intervals defined by the **Event polling interval (ms)** and **Event polling max count** settings. Shorter intervals and higher max counts provide faster event delivery but increase load on both systems. Longer intervals and lower counts reduce load but may delay event visibility.

Q. How do I update the plugin?

A.

1. Download the latest version of the plugin installer from your distribution source.
2. In Milestone Management Client, stop or disable the relevant MIPAccessControl access control system instance if required by your operational procedures.
3. Run the new installer (MilestonePluginSetup.msi) with administrative privileges.
4. Restart the Milestone Management Client and, if required, restart the Milestone XProtect Access Control services.

Q. Can I customize event types?

A. Event categorizations and mappings used by the plugin are defined in the EventTypeCategories.json configuration file. You can adjust this file to customize how BioStar X events are grouped and displayed in Milestone XProtect, subject to your change control process and testing.

Q. Is the plugin compatible with BioStar X cloud deployments?

A. The plugin is designed primarily for on-premises BioStar X installations. Use with cloud-hosted BioStar X depends on secure network connectivity, routing, and API accessibility between the Milestone XProtect server and the BioStar X environment.

Q. How do I back up my configuration?

A. Plugin configuration, including connection and mapping settings, is stored in the Milestone XProtect configuration database. Ensure that your regular Milestone XProtect backup procedures are in place; these backups will include MIPAccessControl plugin settings.

Appendices

Event list

Here is an event list of BioStar X that can be handled by XProtect system. This list is part of BioStar X event list.

- 1:1 duress authentication succeeded (Access-on-card + Fingerprint + PIN)
- 1:1 duress authentication succeeded (Access-on-card + Fingerprint)
- 1:1 duress authentication succeeded (Access-on-card + PIN)
- 1:1 duress authentication succeeded (Access-on-card)
- 1:N authentication failed
- 1:N authentication failed (Access-on-card + Fingerprint)
- 1:N authentication failed (Access-on-card + PIN)
- 1:N authentication failed (Face)
- 1:N authentication failed (Fingerprint)
- 1:N authentication failed (PIN)
- 1:N authentication succeeded
- 1:N authentication succeeded (Face + PIN)
- 1:N authentication succeeded (Face)
- 1:N authentication succeeded (Fingerprint + PIN)
- 1:N authentication succeeded (Fingerprint)
- 1:N duress authentication succeeded
- 1:N duress authentication succeeded (Face + PIN)
- 1:N duress authentication succeeded (Face)
- 1:N duress authentication succeeded (Fingerprint + PIN)
- 1:N duress authentication succeeded (Fingerprint)
- Access denied
- Access denied (Blacklist)
- Access denied (Capture failure)
- Access denied (Disabled user)
- Access denied (Expired)
- Access denied (Face detection failure)

- Access denied (Forced lock schedule)
- Access denied (Hard anti-passback)
- Access denied (Invalid access group)
- Access denied (Soft anti-passback)
- Access denied (Soft timed anti-passback)
- Access denied (Timed anti-passback)
- Access-on-card issue succeeded
- All user deletion succeeded
- Authentication failed
- Authentication failed (Bad fingerprint placement)
- Authentication failed (Invalid authentication mode)
- Authentication failed (Invalid credential)
- Authentication failed (Timeout)
- Authentication failed (Server matching is off)
- Dual authentication failed
- Dual authentication failed (Invalid access group)
- Dual authentication failed (Timeout)
- Dual authentication succeeded
- Elevator activated
- Elevator deactivated
- Fake Fingerprint Detected
- Lock by emergency
- Lock by operator
- Lock by schedule
- Release by emergency
- Release by operator
- Release by schedule
- Unlock by emergency
- Unlock by operator
- Unlock by schedule
- User deletion failed

- User deletion succeeded
- User enrollment failed
- User enrollment succeeded
- User update failed
- User update succeeded

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